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UPDATE

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Alumni Stories
Past, Present, and What Lies Ahead

Cornell University

FROM THE Director


Phil Liu

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On the cover: Lincoln Hall and Hollister Hall

Dear alumni and friends,

This issue's main feature is a collection of eight stories of alumni who graduated between 1949 and 2010. We asked them to recall some of the highlights of their Cornell CEE experience and their career. I hope that you find their stories interesting and perhaps they will trigger some of your own memories. If so, please feel free to write down those memories and send them to us. We would love to read them.

For many of you, this newsletter will be the first time you have heard about the passing of Professor Bill McGuire. Bill died peacefully on January 31, 2013 surrounded by family members. Until the end of his life, he kept in touch with alumni, faculty, and staff on a regular basis. Bill was 92 years old.

During the last year we have been working very hard in addressing two challenging issues: faculty renewal and the renovation of laboratory facilities. Based on our faculty demographics, we anticipate that more than one-third of our faculty will either retire or enter a phased retirement agreement in the next five to seven years. We are developing and implementing a strategic plan to replace these highly accomplished senior faculty members in a timely and effective manner. Our strategic plan also addresses the need to update our laboratory facilities.

At the time of last year's newsletter, we were conducting three faculty searches. I am very pleased to report that we were successful in finding three new, outstanding faculty members. Two of them, one in structural engineering and the other in environmental and water resource systems, will join us in fall 2013. The third new faculty member, whose research and teaching focus is in environmental processes, will arrive in spring 2014. We are very excited to have them on board and will highlight them in next year's *CEE Update*.

We are currently conducting two new faculty searches. One is taking place here on the Ithaca campus in the area of structural and/or geomechanical behavior across materials and time and length scales. The second search aims to fill a position at the Cornell NYC Tech campus. This search is very broadly defined and is focused in the applied information science area of the built environment. We anticipate a few more faculty openings in the built environment area at Cornell Tech in the near future.

To attract new faculty members who are doing cutting-edge research and meet higher standards, it is essential to upgrade and renovate our existing wet and dry laboratory facilities. A larger renovation project, the Environmental Processes Complex inside Hollister Hall, has been approved as part of the College of Engineering's five-year facility plan. We will need your support to make this come to realization.

In the fall, we will once again welcome a new group of students. Our faculty and staff members are looking forward to helping them meet their educational goals. Today's students use social media to stay connected, and CEE is now on Facebook, LinkedIn, and Twitter. I encourage you to stay connected with us, too, and send us your news. We enjoy hearing from our alumni and friends, and (as I mentioned above) we are always glad to hear about your CEE memories.

Sincerely yours,

Class of 1912 Professor and CEE Director

Quality, Diversity of CEE Program Spans Decades

Eight alumni of the School of Civil and Environmental Engineering's undergraduate and graduate programs were asked to discuss the school's impact on their lives and professions. Although each alumnus or alumna graduated in a different decade since the end of World War II, they all share a common esteem for CEE. Each person, whether having graduated in the 1940s or the 2000s, expressed how the school's faculty members were top-notch. And, more importantly, how they were demanding—yet fair—and often inspirational.

James W. Spencer '49, MCE '51
Professor emeritus of biological and environmental engineering

While digging a ditch for a public works job the summer after he graduated from Ithaca High School, James W. Spencer realized what he wanted to do with his life.

"I spent enough time in the ditch that I thought things would be more interesting on top of it, so I had the notion of becoming a civil engineer," says Spencer.

After a rough start academically, Spencer graduated in 1949 and was immediately offered a position as an instructor in civil engineering. While in graduate school, two years later, he was invited to join the faculty in agricultural engineering as an assistant professor. These positions marked the beginning of Spencer's 38-year career at Cornell—during which he never actually applied for a job.

It was the late Donald Belcher, widely regarded as the father of air photo interpretation, who offered Spencer the first job he had at Cornell.

"He was one of the best teachers I ever had," says Spencer. "You never got just a 'what' from him. You got a 'what' and a 'why.'"

Belcher made such an impression on Spencer that he chose to minor in education while working toward his master's degree, he says, "to try to learn something about the learning process and about what made Don Belcher such an effective teacher."

Others may want to learn something about what made Spencer himself both an effective teacher and administrator during his time at Cornell. He is renowned for the high level of commitment, care, and discipline he brought to everything he did.

In addition to conducting research and teaching local road improvement in the College of Arts and Sciences, Spencer also served as the college's associate dean and the vice director of Cornell Cooperative Extension. At the university level, he served briefly as special assistant to the president and then as vice provost. Among some of his other jobs along the way was his time spent assisting Belcher in exploring soil characteristics of possible sites for Brasilia (the capital city of Brazil). Not a bad resume for someone who admits his academic performance was less than stellar when he was a first-year student. That includes failing chemistry.

"I took it again," says Spencer. "Things went well, and I have never regretted having chosen civil engineering as a career."

Thomas Nuttle '51
Retired businessman

Thomas Nuttle came to Cornell in 1947, and thanks to a few extra college credits he earned in high school, he completed his five-year civil engineering degree in four and a half years. During his time at Cornell, he was an All-American lacrosse player and was the team captain his senior year, which earned him induction into the Cornell Hall of Fame in 2012. Nuttle was also elected to the Tau Beta Pi engineering honor society in his senior year.

Like James Spencer, Nuttle regards himself very fortunate to have crossed paths with Donald Belcher.


James W. Spencer '49, MCE '51


Thomas Nuttle '51

Katherine Anne Weible '10

"He was doing a lot of aerial identification of different problems and solutions, and it worked out well," says Nuttle, who was Belcher's assistant.

Within a month after he graduated, Nuttle was serving in the Korean War with the Second Infantry Division. Eight months later, after leaving active duty, he returned to the United States and went to work for an engineering consulting firm in Baltimore.

"But I soon learned I did not like consulting," Nuttle recalls. So he shifted his focus and found a family-owned company in Baltimore that dealt with building materials such as stone, ready-mix concrete, and blacktop.

"Two members of the family had attended Cornell, so they took a chance with me," he says.

Nuttle believes, above all, he was hired because his employers knew that Cornell graduates are able learners.

"All of a sudden I had to work with equipment that I knew nothing about. I was making little rocks out of big rocks. But I felt very confident in doing it."

Despite several changes in the company's ownership, Nuttle eventually became its chief executive officer. He retired in 1992 and still resides in Baltimore.

"Cornell has a very strong, nationwide position in engineering. If you have an engineering degree from Cornell, it's respected and that gives you an advantage," says Nuttle. "It worked very well for me. I got to be CEO of a company."

Katherine Anne Weible '10
Environmental engineer at URS Corporation

Katherine Anne Weible would agree with Thomas Nuttle that the education she received in the School of Civil and Environmental Engineering helped her "learn how to learn."

"Cornell definitely makes you a really good learner and that, I think, has been key in my job because I didn't have a remediation background," says Weible. "But I knew how to be a good student and how to learn things quickly."

Weible works for URS Corporation's remediation services unit, which cleans up nuclear and toxic waste sites.

David Goodyear '73, MEng '74

"When I graduated I felt confident that I had gotten a good education and that it had . . . prepared me for the real world," says Weible, who was a member of the AguaClara team and Engineers for a Sustainable World at Cornell. "Even though CEE didn't provide me with the perfect background for this kind of job, it did provide me with a strong background for being a good student, . . . a good worker, and a good team member."

Weible recommends CEE to prospective civil and environmental engineers without any hesitation, and she praises the school's faculty, especially Monroe Weber-Shirk.

"I know that my time spent with Monroe Weber-Shirk was beyond valuable. I'm so thankful for that. It kept me from straying away from civil engineering," she says. "Coming out of college I thought, 'I don't have to have an engineering job; I could do something else for a while.' But I really felt compelled to continue in it largely because of his influence."

David Goodyear '73, MEng '74
Senior vice president and chief bridge designer at T.Y. Lin International

One of the most respected and renowned bridge designers in the country, David Goodyear remembers a lesson that fell outside the engineering curriculum but nevertheless made a lasting impression.

"Professor Nilson was the only one who graded my grammar on an engineering exam. At the time we were all aghast, but he did it for a reason," says Goodyear. "One of the real advantages of attending Cornell is the diversity of opportunity you have there . . . to reach out beyond the engineering school."

For Goodyear, that meant taking courses in economics, political science, and even literature.

"You don't get projects funded by other engineers; you get them funded by politicians and administrators," says Goodyear, whose recent project list includes the Hoover Dam Bypass Bridge. "You need to be able to communicate the merit of what you're doing. . . . It's important to do that at least with reasonable effectiveness or you end up not having many projects."

Walter J. R. Buydens, PhD '92

Goodyear regards CEE's structural engineering professors as being the most influential, particularly William McGuire.

"Ever since I graduated I've come to appreciate the quality of education and the approach the professors took to engineering education," says Goodyear. "The focus on fundamental behaviors, . . . material science, and material behaviors, as opposed to rote memorization of codes and standards, really broadens the horizons of an engineering student. I hope the approach to engineering education is the same now as it was then, because it was certainly very good back then."

Walter J. R. Buydens, PhD '92
Country director at Royal Haskoning DHV, Qatar

Much of Walter Buydens's work, similar to that of David Goodyear, involves dealing with those who set public policy. In Buydens's case, it is in Qatar, which is a nation of 1.8 million people with only 250,000 Qatari citizens; it has both the world's highest GDP and largest carbon footprint per capita.

"The country has an environmental minister who is very serious about his job, and the ministry includes many people who were well educated in England and the United States," says Buydens. He explains the ministry is trying its best to reduce the carbon footprint, but the population is hesitant to take the necessary steps and thus progress in reducing the footprint is slow.

A common theme of Buydens's graduate school experience at CEE was resource optimization.

"You had linear programming, dynamic programming . . . all these helped me to gain insight into how you can mathematically optimize problems; but first, how you define problems in a mathematical way," says Buydens.

He regards Professor Christine Shoemaker, his thesis advisor, as a very influential faculty member. He says he admires her because her teaching was so practical.

"In the case of dynamic programming, Christine Shoemaker always said: 'This is the way we should look at life. It doesn't matter what is behind us; the main thing is to look at what's in front of you and how to get there in an optimal way.'"

Donna Fennell, MS '88, PhD '98

Donna Fennell, MS '88, PhD '98
Associate professor of environmental science at Rutgers University

If there is one aspect of Donna Fennell's experience at CEE that made the biggest impression on her, it was how much the faculty collaborated with scholars from other disciplines.

"The faculty [was] very supportive of a broad, interdisciplinary science education that went along with the higher-level engineering courses you were taking. So, civil and environmental engineering is an exciting field because you are constantly incorporating new science that comes along and looking for ways to include the best science in problem solving," says Fennell, who also earned an MS in agricultural engineering at Cornell.

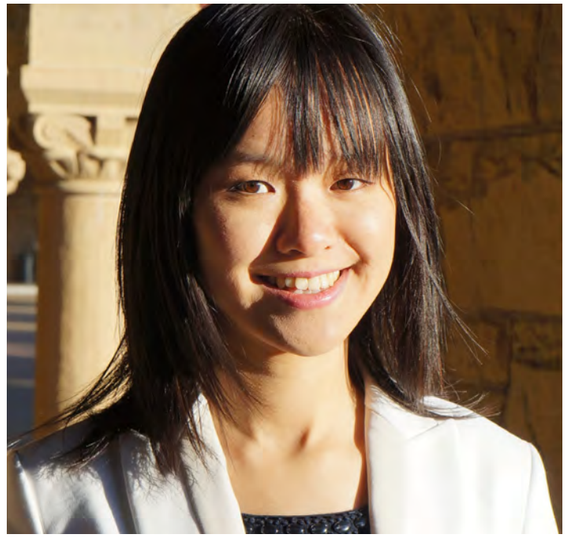
Since leaving Cornell, Fennell says her work has always included people from other disciplines.

"I think a degree in civil and environmental engineering really sets you up very well to enter new areas, because you get that exposure to science and learn how to incorporate it into engineering problem solving," says Fennell.

"Looking back, the thing I remember from the courses is that they were extremely challenging and I learned so much. Later on I had the opportunity to be a teaching assistant for a couple of the courses, so I really had to gain a fundamental knowledge of the material because I had to grade homework and figure out all the ways a problem could be solved (or messed up!)," she says.

Fennell says she "can't overstate" how much Professor Jim Gossett, her thesis advisor, continues to influence her approaches to teaching and research.

"He is not only extremely brilliant—I learned a lot of facts from him and a lot of methods from him—but also has very high standards," she says. "With everything I do now, in the back of my mind there's always, 'what would Jim say about this? What would he think about it, and would it be up to his expectations?' It's always something that drives what I do."



Ting Lin '06

Ting Lin '06
Postdoctoral fellow at Stanford University's John A. Blume Earthquake Engineering Center

Ting Lin says her experience as an undergraduate in CEE lit a passion within her that burns fiercely to this day.

During her first summer at Cornell, Lin noticed how busy Pete Loucks (now a professor emeritus) was.

"He was teaching class, guiding graduate students, and doing research in several different areas. I asked him how he managed it, because he basically didn't have any holidays at all the first summer I was at Cornell," she says. "The answer he gave me was 'life is a holiday' and I came to realize that as long as you love what you are doing, every day *is* a holiday. That has helped to sustain my passion for almost a decade now."

During her sophomore year, professors Thomas O'Rourke, Harry Stewart, and Michael Palmer invited Lin to join their team doing research on lifeline earthquake engineering.

These professors got Lin very interested in research, which encouraged her to go to graduate school, take a position as a post-doc, and consider joining academia in the future.

"Their passion for research was inspiring. They taught me not only how to do research but also how to advise students. Now it's my turn and I really want to be able to pass on that passion and encourage more students to become engineers and contribute to our profession."

Lin says Ezra Cornell's quote, "I would found an institution where any person can find instruction in any study," also motivated her to venture out and take courses outside of CEE.

"That really broadened my perspective and helped me to realize what our role as civil engineers is and how it connects to other fields," says Lin, who earned a concentration in architecture. "Cornell has a very strong architecture program, so if students can take advantage of that, they benefit from the logical thinking of engineering and from the creative side of the architecture program."

David Darwin '67, MS '68

David Darwin '67, MS '68
Deane E. Ackers Distinguished Professor in the Department of Civil, Environmental, and Architectural Engineering at the University of Kansas

David Darwin's professional life began because of an encounter with a "good guy" when he was taking his first-year, introductory engineering course.

"During freshman year, seminar sections in Introduction to Engineering were always taught by tenure-track faculty members. I happened to be assigned to a seminar taught by a civil engineer," recalls Darwin. "When you're a teenager and you're trying to decide which direction to go, sometimes one person can have a big impact and help you decide what path to take. George H. Blessis, assistant professor of civil engineering, was the person who did that for me."

By his junior year, Darwin says he was "knocked over" by the quality of the civil engineering faculty. People like Peter Gergely, Richard White, and William McGuire were "giants of their field" he says, "and they were teaching us undergraduates."

"The career preparation Cornell provided was superb. Between my bachelor's and my master's, I got a really good grounding in the fundamentals and in some of the advanced areas of structural engineering," says Darwin.

After serving four years with the Army Corps of Engineers, Darwin entered the University of Illinois to work toward his doctorate and felt as well prepared, or better prepared, than his classmates despite being away from academia for four years.

Darwin thinks it was a wise, strategic move to add "environmental" to the school's name, a change that occurred after he graduated.

"When communicating with the public, one of our problems as civil engineers is the adjective that goes with "engineering" in our title," says Darwin. "You have to explain that you're a structural engineer, geotechnical engineer, transportation engineer, water resources engineer, or environmental engineer. 'Environmental' adds just a little bit more of a description of what is available in the curriculum. At Cornell, this has helped attract more students to the school. All fields within civil engineering are reaping the benefit."

International Student Study and Experiential Learning

CEE students share knowledge abroad and at home

From Honduras to Nicaragua or from Spain to China, the School of Civil and Environmental Engineering offers international experiences to students through a variety of exchange and research programs.

In Honduras, CEE students in the group AguaClara partner with Agua Para El Pueblo, a Honduran nonprofit, and work with local communities to develop and improve sustainable water treatment. Led by Monroe Weber-Shirk, senior lecturer in civil and environmental engineering, the team developed a suite of water treatment technologies ideally suited to rural areas of the country. These gravity-powered, electricity-free systems fit the population and financial needs of any community by providing a simple, low-cost water treatment solution.

Currently seven systems serve 30,000 Hondurans, but AguaClara's long-term goal is to develop and share these high-performing, low-cost, reliable, and sustainable technologies with nongovernmental organizations, governments, and private engineering firms in the developing world. As a result, the AguaClara research team was honored with the 2012 Katerva Award in the urban design category. This distinguished award highlights the world's most promising sustainability ideas and honors the best sustainability innovators.

Talented students are also on the Solar Cooker Project (a part of Engineers for a Sustainable World) and continue to work to increase the use of solar ovens in Nicaragua. Working with Grupo Fenix, an organization at the Universidad Nacional de Ingeneria in Managua and Las Mujeres Solares de Totogalpa, a women's collective in Sabana Grande, the team advocates for the increased use of solar cookers.

These solar cookers provide the people of Nicaragua, and potentially other countries, with an inexpensive, sustainable, and simple alternative to wood-fired cooking. Students in the ESW Solar Oven Project class worked on a foldable, portable, lightweight cooker; a lightweight box cooker; and a water distiller this semester. Of the 22 students in the class, eight traveled to Las Mujeres and Grupo Fenix in Sabana Grande, Nicaragua, over their spring breaks to assemble the cookers and a water purification distiller and use them with the Nicaraguans.

Unlike the brief international visits AguaClara and the Solar Cooker teams make, the Cornell-Cantabria Exchange Program (CCEP) offers a longer-term experience for CEE students. Students spend their junior year immersed in Spanish at the Universidad de Cantabria in Santander, Spain. Each group of Cornellians pairs up with a group of Universidad de Cantabria second-year engineering students. The groups complete the exchange program when the Spanish students who partnered with the Cornell students spend their third year in Ithaca.

The CCEP was not only designed to provide engineers with global skills, but also to help them understand Spanish, an increasingly valuable skill to have in the United States. Recognized by the International Institute of Education as an outstanding international higher education initiative, the program allows students with solid high school backgrounds in the Spanish language to take the College of Engineering's curriculum-approved courses, primarily in English, while studying at the Universidad de Cantabria in Santander, Spain, for a full academic year.

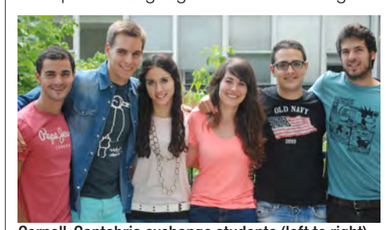
CEE's newest international program, the CEE–Cornell China Exchange Program with Southwest Jiaotong University, began with its first students arriving on campus in the fall of 2012. Because five of Southwest Jiaotong University's previous presidents had been Cornell graduates, its current president and a delegation visited Cornell in 2011 to express a strong interest in collaborating with Cornell's academics, teaching, and research. While there is no research collaboration established at this time, Southwest Jiaotong University students have the opportunity to come to Cornell to contribute academically and socially, interact with the professors, and learn about Ivy League teaching philosophies.

Like the Chinese students, three new undergraduate students from Brazil are studying in CEE for the 2013 academic year along with 24 other Brazilians who came to study at Cornell under the auspices of Academic do Brazil em Cornell. This pilot program is part of an initiative that expands educational opportunities for Brazilian citizens and is funded by the Brazilian government's Ciência sem Fronteiras program.

While the Brazilian students learn from Cornellians, their presence further helps to internationalize the campus and broaden the horizons of Cornell students who may not be able to travel abroad.

For those students who can study overseas, CEE offers a wide range of exciting opportunities around the world.

CEE-Cornell China Exchange Program students (left to right) Kaijun Zhu, Da Yi, and Jian Cui



Cornell-Cantabria exchange students (left to right) Sergio Lorenzo Llarena, Jorge Gorrochategui Ruiz, Irene Medina, Clara Coromina Nestares, Mikel Martin Santiago, and Ivan Toribio Sanchez

Brazilian students (left to right) Marlon Passos, Marina Servino, and Hugo Lima

CEE Professor Emeritus William McGuire, NAE

by J.F. Abel with R.D. Ziemian

The School of Civil and Environmental Engineering lost one of its most distinguished faculty members when Professor Emeritus **William McGuire** died on January 31, 2013 at the age of 92. In 1994, he had been elected to the National Academy of Engineering and was also named a Distinguished Member of the American Society of Civil Engineers.

McGuire was born in Staten Island, New York. After receiving a BSCE degree from Bucknell University in 1942, he served in the U.S. Navy in the Pacific as an aircraft maintenance officer on the aircraft carrier *U.S.S. Franklin*. Those who came to know McGuire later in his life realized that his intense experiences of three years in the wartime navy remained strongly with him, especially the disastrous bombing of the *Franklin* on March 19, 1945, just 50 miles off the coast of Japan, that resulted in the death of more than 800 crew members, although the carrier itself remained afloat despite raging fires.

While on active duty in the navy, McGuire courted and married Barbara Weld, and they celebrated their 65th anniversary just months before she died in 2009. Two sons, Robert McGuire of Ithaca and Thomas McGuire of Tucson, two granddaughters, and two great-grandsons survive them.

Following World War II, McGuire earned an MCE degree in structural engineering at Cornell while having his first opportunities to serve as an instructor of undergraduate courses. In 1947, he worked for Jackson & Moreland Engineers, Boston, as a structural designer of power plants and atomic energy projects. In 1949, he accepted George Winter's invitation to join the structures faculty in CE at Cornell. He was promoted to associate professor in 1952 and then to professor in 1960, served as director of the school from 1966 to 1968, and was named professor emeritus after 40 years of service in 1989. In that time, he also spent periods as a visiting faculty member at the Asian Institute of Technology (Bangkok), the University of Canterbury, the University of Western Australia, the University of Tokyo, the University of Liege, and the Strathclyde University.

His professional interests were primarily in the area of steel structures, and his early research on such topics as connections, welding, and fatigue culminated in his classic textbook, the monumental and influential *Steel Structures* (1968). Starting in the 1970s, his interests evolved to progressive collapse of structures, nonlinear analysis and design, and nonlinear torsional-flexural behavior—all connected to innovations in the application of interactive computer graphics techniques to computational structural analysis and design. Through the 1970s and 1980s, his supervision of graduate theses exhibited a marked upswing, and his students from that era have distinguished themselves by filling a number of faculty positions, deanships, and one presidency at leading institutions or by undertaking successful careers in structural design. In addition to authoring—or co-authoring with his students and colleagues—numerous papers, McGuire was the senior author of two editions of the widely used textbook, *Matrix Structural Analysis* (1979 with R.H. Gallagher; and 1999 with R.H. Gallagher and R.D. Ziemian).

McGuire's teaching, mentoring, research, writing, and consulting earned him wide respect from his students, faculty colleagues, and those in the wider structural engineering profession. He was invited as a keynote speaker at several national and international conferences and he delivered seminars at dozens of American and foreign universities. McGuire served on several national committees related to the specifications for design of steel structures, including the ASCE A7 Task Committee on General Provisions (1975–1990), the American Iron and Steel Institute Subcommittee on Welding of Cold Formed Steel (1975–1985), and the American Institute of Steel Construction Specification Committee (1985–1991). He was twice a winner of the annual ASCE Norman Medal for co-authoring the paper that makes a definitive contribution to engineering (with G.P. Fisher in 1962; and with R.D. Ziemian and G.G. Deierlein in 1994). Among his other recognitions were the ASCE's Shortridge Hardesty Award in 1992, the AISC's 1992 T.R. Higgins Lectureship and 2000 Geerhard Haaijer Award, and the Structural Stability Research Council's 2005 Lynn S. Beedle Award. Within Cornell, the undergraduate Chapter of Chi Epsilon selected him as Professor of the Year in 1979.

McGuire's consulting as a licensed professional engineer included the design of special structures and the investigation of a number of structural failures, including such notables as the Hyatt Regency walkway collapse in Kansas City (for NBS/NIST) and the L'Ambiance Plaza collapse in Bridgeport, Connecticut (for OSHA). McGuire was one of the very few engineers who were selected and served as independent reviewers of FEMA's post 9/11 report titled *World Trade Center Building Performance Study: Data Collection, Preliminary Observations, and Recommendations*. He had a longtime involvement on behalf of Cornell in the planning, design, upgrading, and maintenance of the large radio telescope structure of the National Astronomy and Ionosphere Center, Arecibo, Puerto Rico. He was also co-designer (with S.C. Hollister) of the Fall Creek Suspension Bridge on the Cornell campus.

His colleagues remember McGuire as a true gentleman, an avid reader, especially of nonfiction, and a wonderful conversationalist who invoked history, travel, politics, and current news in addition to what he termed his "sea stories," much of which had nothing to do with the navy. For the current Cornell CEE faculty, he was the sole source of tales of when the school inhabited Lincoln Hall before its move to Hollister Hall in 1959. For many individuals, McGuire has a significant place in their fond memories of Cornell.

William McGuire in the 1960s during his time as director of the School of Civil and Environmental Engineering

Memorial Gathering on September 7

CEE will host a memorial gathering on Saturday, September 7, 2013 to celebrate Professor William McGuire's life and achievements. All are welcome, and further information will be posted on the CEE website, **www.cee.cornell.edu**, by early summer.

Memorial Gifts

For those wishing to make a memorial contribution, please consider giving to the William McGuire Master of Engineering Fellowship in the School of CEE that was established when he retired.

Gifts in Bill's honor can be made by check, payable to Cornell University with memo "McGuire Fellowship" and mailed to CEE; or by credit card on the CEE website: Alumni > Give to CEE > Click here to donate > under "other designation or special instructions" please enter McGuire Fellowship.

Jamal Cherry of Tampa, Florida is a junior in civil engineering whose interests lie in the energy sector. In summer 2012 he interned in Ghana, West Africa with the region's largest energy company, Volta River Authority (VRA). Cherry's goal is to help develop technologies that increase the efficiency and safety of both conventional and unconventional oil extraction methods. He hopes to devise innovative techniques to decrease the environmental impact of such extraction methods. Cherry is specifically interested in the process of hydraulic fracturing (fracking), its interactions with the environment, and how to make it as environmentally safe as possible while maximizing profit.

Michael Hyland of Pittsburgh, Pennsylvania earned a bachelor's degree in civil engineering in May 2012. After graduating, he decided to stay at Cornell to pursue a master of engineering degree in transportation systems engineering. In his research with Professor Mark Turnquist, Hyland has developed a model to determine facility locations that meet uncertain demand. The model balances overall costs and coverage requirements and combines scenario-based planning for uncertainty with coverage restrictions (for example, a specified portion of total demand must be within a fixed distance of a facility). This work represents an important advance in the field of location modeling for transportation systems that provide logistics services.

Erika Johnson of Catonsville, Maryland came to Cornell to pursue a PhD in environmental fluid mechanics and hydrology. Her interests are in turbulence and environmental fluid flow. Her ultimate goal is to obtain a faculty position. Johnson's research focuses on developing a methodology to improve the U.S. Geological Survey (USGS) process of river gaging, which measures volumetric flow rate at approximately 7,000 locations in our nation's rivers and streams. The current USGS method of determining volumetric flow rate involves point measurements of river velocity spanning the width and depth of the river. Johnson's proposed technique involves imaging the river's surface through the use of remote sensing technology and applying turbulence theory to determine volumetric discharge. Her advisor is Professor Edwin Cowen.

Jonathan Lamontagne of Deerfield, New Hampshire is an MS/PhD student in environmental and water resource systems. Lamontagne has two primary areas of ongoing research. The first concentrates on improving flood risk estimation techniques and could be broadly described as flood frequency analysis. The second area is hydropower operations optimization, which involves the design of algorithms to optimally use finite water resources as generators of electricity in the face of uncertain weather and energy prices. Lamontagne's advisor is Professor Jery Stedinger.

student spotlights

Sarah Levine of Beachwood, Ohio is a junior who is pursuing an environmental engineering degree. Levine decided to enhance her educational experience by taking classes like engineering economics, earth science, and energy systems, which are not part of the standard curriculum. Outside of the classroom, her primary work is with Cornell University Sustainable Design (CUSD), an interdisciplinary, student-led, design-build project team. The group focuses on realizing a future of economic, social, and ecological sustainability. Levine co-leads a team of roughly 25 students that is working on two CUSD design projects. For one of them, the team is designing and prototyping a small-scale, constructed wetland for household gray water treatment.

Rudolph Powser of Branchburg, New Jersey is a senior who is following two passions: structural engineering and architecture. He aspires to be an international architect and a professional engineer. Powser is working on research that uses computational mechanics to predict the macroscopic mechanical properties of materials. His research also compares the accuracy and computational efficiency of plane wave calculations to localized basis set calculations. He is minoring in architecture to balance the technical aspects of his engineering studies with aesthetically focused projects. Powser has been the design team leader for the CEE Student Steel Bridge Team and the structural team leader for the Cornell Wind Power Club. He has guided his teammates through the research and design process in both groups.

Ashley Spear of Cheyenne, Wyoming is pursuing a PhD in structural engineering. Her research is focused on understanding the fundamental cracking mechanisms in metallic materials and structures and simulating, or predicting, these cracking processes at various length scales. Her research findings and the tools she has developed can be used in advanced structural-prognosis technology to help build and maintain smarter, safer, and more reliable structures. For two years, Spear conducted physical experiments at the NASA Langley Research Center to support her numerical modeling efforts. In fall 2012, she returned to campus where she uses the physical data and observations she collected at NASA and the Argonne National Laboratory to build 3D, small-scale numerical models of cracking structures. Ashley's advisor is Professor Anthony Ingraffea.

Sue Nee Tan, a native of Kuala Lumpur, Malaysia, is an MS/PhD student in environmental and water resource systems engineering. She researches multi-reservoir hydropower systems and intermittent wind power in a deregulated market setting. With her advisor, Professor Christine Shoemaker, Tan focuses on multi-stage stochastic optimization using stochastic dynamic programming (SDP). She is coding the SDP optimization in Matlab and creating a power production model of the hydropower system using flow and wind data from the Pacific Northwest. Tan is also working on a paper for her master's project on efficient sensor network placement in a watershed.

To read more on each student spotlight, visit www.cee.cornell.edu.

AGUACLARA

The AguaClara program at Cornell University was recognized in a report by the National Academy of Engineering as one of 29 United States college and university engineering programs that effectively incorporates real world experiences into its curriculum. The report, *Infusing Real World Experiences into Engineering Education*, was released on November 13, 2012.

In February 2013, the AguaClara research team won a 2012 Katerva Award in the category of urban design. This award is given to highlight "the world's most promising sustainability ideas and honor the best sustainability innovators."

ASCE

The Cornell Engineering Alumni Association presented the ASCE's Steel Bridge Team with the 2012 Albert George Student Team Award.

In February 2013, the ASCE celebrated National Engineers Week by participating in an engineering event at the Ithaca Mall. Shoppers watched the Steel Bridge Team assemble a model bridge and attempted to make their own structures with marshmallows and toothpicks.

The Rochester Institute of Technology in Rochester, New York hosted the 2013 ASCE Regional Conference on April 19–20. Cornell's ASCE members competed in both the concrete canoe and steel bridge competitions. Preparations have begun for the 2014 ASCE Regional Conference, which will be hosted by Cornell University.

ESW

The **E**ngineers for a **S**ustainable **W**orld Solar Oven Project class is 22 students strong this semester. The class is working on six projects: 1) construction and documentation of a lightweight, double-box cooker; 2) construction and documentation of a lightweight, foldable and portable cooker; 3) construction of a solar water distiller that will make potable water from dirty or salty sources; 4) continued testing of a small cooker with a slanted window that is appropriate for demonstration at Ithaca's latitude; 5) testing of a large Fresnel lens as an input for small box ovens and griddles that are used for preparing tortillas; and 6) continued testing of conduction and convection properties of box-style solar cookers.

Eight of the group's members traveled to the Sabana Grande community in Totogalpa, Nicaragua on March 18–22, 2013 for a technical exchange with Las Mujeres Solares de Totogalpa and Grupo Fenix. This exchange is part of a long-term, technical collaboration and support project among the groups.

For more information, including pictures and video, visit: confluence.cornell.edu/display/SolarCooker

STUDENT AWARDS

Jeffrey Alfano '13 is the recipient of the 2013 Moles Scholarship. The annual scholarship is awarded to a deserving and academically qualified senior who is studying civil engineering and has expressed an interest in pursuing a career in the construction industry.

Emma Lejeune '13 is a recipient of a 2013 Merrill Presidential Scholars award. Lejeune identified Professor Ken Hover as the faculty member who has contributed the most to her Cornell education.

The following master's of engineering students received 2012–2013 fellowship awards:

Sean Augustino, of Bethlehem, Pennsylvania, received a bachelor's degree in civil and environmental engineering from Cornell University. His MEng concentration is in structural engineering.

David Buck, of Brookfield, Wisconsin, received a bachelor's degree in biosystems engineering from the University of Minnesota. His MEng concentration is in environmental processes.

Kristopher La Pan, of Glens Falls, New York, received a bachelor's degree in civil engineering from Clarkson University. His MEng concentration is in environmental and water resource systems engineering.

Molly McDonough, of Pittsburg, Pennsylvania, received a bachelor's degree in mechanical engineering from Cornell University. Her MEng concentration is in engineering management.

Bethany Potter, of Auburn, Maine, received a bachelor's degree in civil and environmental engineering from Cornell University. Her MEng concentration is in structural engineering.

Rachel Proske, of Corpus Christi, Texas, received a bachelor's degree in civil engineering from Texas A&M University. Her MEng concentration is in environmental fluid mechanics and hydrology.

Marissa Yang, of Plano, Texas, received a bachelor's degree in operations research and information engineering from Cornell University. Her MEng concentration is in engineering management.

ALUMNI

Francesca Dal Molin '78 has worked for more than 15 years as a developer and project manager on real-time, steady-state and transient pipeline flow models for the oil and natural gas industry. She claims that the problem solving techniques and report writing skills she learned at Cornell proved to be indispensable for her work. Dal Molin later branched out and began working with software that analyzed oil and gas production, including gas lift optimization; offered tools for interpretation of well log data, which addressed such issues as borehole stability; and provided reservoir modeling and seismic inversion applications. Her course work at Cornell was, in part, the impetus for her career choices and provided her with a solid foundation for handling these jobs.

Dal Molin is currently enrolled in a master of science program to study geographical information systems.

"I thank Cornell for opening doors, for providing me with a solid approach to problem solving, and for stoking my interests in a number of subjects that have helped to shape my career and my life," she says.

David Darwin '67, MS '68 was recognized as one of the ASCE's 2012 Class of Distinguished Members. Darwin was honored for his numerous contributions to the concrete industry, his research on bond strength and corrosion resistance, his development of ASTM International tests that have radically changed reinforced concrete design practices, and his achievements in educating the next generation of civil engineers.

Gregory G. Deierlein '81, a professor in the Department of Civil and Environmental Engineering and the John A. Blume Professor in the School of Engineering at Stanford University, was recently elected to the National Academy of Engineering for "development of advanced structural analysis and design techniques and their implementation in design codes."

Rosemarie Fang '08 and Charles McClure '08 were married on September 1, 2012 in Sage Chapel. Many classmates attended the weekend's wedding celebrations.

After graduating from Cornell, Fang went on to receive an MEng degree in structural engineering from the Massachusetts Institute of Technology in 2009. In 2011, she obtained her Professional Engineer's license while working for Weidlinger Associates in New York City. She now works for an engineering firm in Raleigh, North Carolina.

McClure chose to follow his interests in economics and management after graduating from Cornell, rather than his love of civil engineering, and worked for a real estate investment firm in downtown Chicago. In 2010, he moved to New York and enjoyed a brief stint on Wall Street before beginning graduate studies in economics at Duke University. In summer 2013, he plans to pursue a PhD in accounting.

Rich Gallagher '76 published his ninth book, released by AMACOM, in March 2013. *The Customer Service Survival Kit: What to Say to Defuse Even the Worst Customer Situations* teaches readers how to handle worst-case customer situations by applying the same techniques that hostage negotiators, crisis counselors, and police officers use during worst-case scenarios. A former customer support executive and practicing psychotherapist, Gallagher now heads Point of Contact Group, an Ithaca-based training and development firm that has trained more than 25,000 people, including those participating in ORIE's annual MEng Connect communications skills and leadership program. One of his previous books on customer service has become a national number one best seller; another book on career skills is considered one of the top 10. Gallagher's work has been featured in Dale Carnegie training and on CNN, *Businessweek*, Morning Drive Radio, and other media outlets.

The phoenix on Dragon Day 2013

David Goodyear '73, MEng '74 senior vice president and chief bridge engineer for North American operations at T.Y. Lin International Group in Olympia, Washington, was recently elected to the National Academy of Engineering for "leadership in concrete segmental, cable-stayed, and hybrid bridge design and construction."

Daniel S. Herr '07 has worked in real estate development as a project engineer with DMB/Highlands Group in Truckee, California for the construction of Martis Camp. He also built up a renewable energy installation company, Clean Energy Center, that installs solar photovoltaics, solar hot water, and wind energy systems throughout Nevada. Herr now manages the Project Vesto statewide seed capital competition with the Nevada Institute for Renewable Energy Commercialization. He is working on completing his MBA at the University of Nevada, Reno in the evenings.

Levent Kahraman '92 is founder and CEO of KGS Alpha Capital Markets. He recently discussed his development of an innovative trading game with ORIE financial engineering master's students in the Cornell Financial Engineering Manhattan (CFEM) semester-long program. During the third and final semester of the ORIE financial engineering degree program, students complete projects and courses with CFEM in the heart of New York's financial district.

Daene McKinney, MS '86, PhD '90 was named an alternative governor of the World Water Council after serving as chair of the Activities Committee. The announcement was published in the December 2012 edition of *ASCE News*. The World Water Council, established in 1996, raises public awareness and plays a major role in fostering political commitment to

efficient and environmentally sustainable management of water on the global stage. McKinney is a professor at the University of Texas at Austin.

James J. O'Brien '51 was elected to the National Academy of Engineering for "development of standards of practice for computerized scheduling of construction projects and capital programs." He retired from O'Brien Kreitzberg Corporation in 1999.

Abena Sackey Ojetayo '07, MEng '09 was recently recognized by the American Society of Civil Engineers as a "New Face of Civil Engineering" for the 2013 year. Upon completing her undergraduate degree, Ojetayo worked as assistant director for Cornell's Office of Diversity Programs in Engineering. During that time she participated in the employee degree program and completed her MEng degree. Ojetayo went on to work with an international development project in Nigeria before returning to Cornell last year to take a position as a project engineer.

Upon being selected for the New Faces of Civil Engineering, Ojetayo stated, "I think that I have not necessarily taken the purest path of civil engineering, but receiving this honor from ASCE is encouraging that I have a place with the broader future of our profession. Having read about the past honorees, I was ecstatic . . . it's a real honor."

Justin Vandever '04 was recently recognized by the American Society of Civil Engineers as being one of the "New Faces of Civil Engineering" for the 2013 year. While at Cornell, Vandever worked with Phil Liu and Todd Cowen in the DeFrees Hydraulics Lab studying the viscous damping and shoaling of solitary waves in a wave tank. Solitary waves are often used to model the onset and inundation of tsunamis. He also interned with the U.S. Army Corps of Engineers and studied tidal inlet dynamics and sediment transport on the Outer Banks of North Carolina.

Currently, Vandever is living in San Francisco, California and is working as a coastal engineer for AECOM, focusing on coastal flood hazard mapping, sea level rise vulnerability studies, and tidal wetland restoration design.

Remembering Staff Member Paul Jones

Paul Jones passed away on January 6, 2013. He was 94 years old. Jones worked for Cornell University for 52 years as an experimental machinist for faculty and graduate students in the School of Civil and Environmental Engineering. He also worked with several teams on projects involving soil testing and bridge building and helped design Cornell's sundial. He enjoyed getting to know many students from around the world and a few of them became his life-long friends.

Jones graduated from Ithaca High School in 1938 and was later drafted into the United State's Army during the war. He played baseball for the army's team.

After retirement, Jones and his wife had the opportunity to travel to many foreign countries; sometimes they visited former students. Spain was their favorite country, which they visited twice. Jones's hobbies included working with his hands and building—he even built the family home with his son, Michael. A licensed glider pilot, Jones loved flying and taking other people for rides. He was an avid reader of history and enjoyed watching sports on television, observing wildlife from his porch, or attending his children's and grandchildren's activities. He also liked dancing and going to the Elks Lodge where he was a lifetime member.

Jones is survived by his wife, Mary, of 62 years; his children: four daughters and one son; seven grandchildren; 11 great grandchildren; one great-great grandson; several nieces and nephews; and many friends. A memorial service for Jones was held on Saturday, January 12, 2013. He will be remembered for his kind ways and wonderful sense of humor.

Article originally published in the Ithaca Journal.

FACULTY

Wilf Brutsaert is a recipient of the 2012 College of Engineering James and Mary Tien Excellence in Teaching Award.

Todd Cowen has received the 2012 Award for Excellence in the Teaching, Advising, and Mentoring of Graduate and Professional Students. This award honors the extraordinary service of faculty members who provide exemplary assistance to the graduate and professional students they advise.

Tony Ingraffea gave a lecture for New York State Society of Professional Engineers M.G. McLaren Lecture Series titled "Unconventional Development of Gas From Shale Using Fracking" on February 14, 2013.

Fred Kulhawy was recognized for his many contributions that advance the science, art, teaching, and practice of geotechnical engineering at a special symposium held in his honor on March 4, 2013 during the annual ASCE Geo-Institute meeting in San Diego, California. At the meeting, Professor Kulhawy's distinguished friends, colleagues, and former students gave presentations and the ASCE published *Foundation Engineering in the Face of Uncertainty: Honoring Fred H. Kulhawy* (Geotechnical Special Publication 229).

Tom O'Rourke was elected by the State University of New York University at Buffalo to present his 2012 Earthquake Engineering Research Institute Distinguished Lecture, "The New Normal for Natural Disasters," at its T.T. Soong Student Lecture Series on October 11, 2012.

Derek Warner is the recipient of the 2012 Chi Epsilon Professor of the Year Award.

Contact us with your news:
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Fiftieth reunion of CEE Class of 1962 (BCE degrees in 1963 in the five-year curriculum) at the June 9, 2012 CEE Reunion Breakfast (left to right): Joel Caves, CEE Director and Professor Philip Liu, John Abel, Al Leitch, Alex Vollmer, Mary Ann Huber Franson, Bill Mobbs, Richard Tilles, Marc Gerber, and Dean Williams. (Also attending Reunion but absent from photo: Bill Dodge, Fred Hart, and Tom Hoekelman.)

John Sarna '57, George Rocklein '57, and Gonzalo Ferrer '57

Paul Schmied '59 and Robert (Al) Leitch '62

Alice and Jon Rook '52, MEng '67

CEE Director Phil Liu presenting to alumni

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Upcoming Events

Reunion 2013

June 8, 2013

Plan to attend this year's CEE alumni breakfast event—especially if it's your reunion year. The buffet breakfast is free and will be held from 7:30 to 9:30 a.m. in McManus Conference Center, Hollister Hall. All CEE alumni and their families are invited. Please let us know if you are planning to attend the breakfast by emailing civil_env_eng@cornell.edu or by phone at 607.255.3690.

Homecoming 2013

September 21, 2013

Cornell versus Bucknell

First-Year Parents' Weekend

November 1–3, 2013

For the class of 2017