

CIVIL AND ENVIRONMENTAL ENGINEERING



UNIVERSITY OF WISCONSIN-MADISON



ENGINEER AIDS
INTERNATIONAL EFFORT
TO PRESERVE
ANCIENT SITE





David Noyce

GREETINGS!

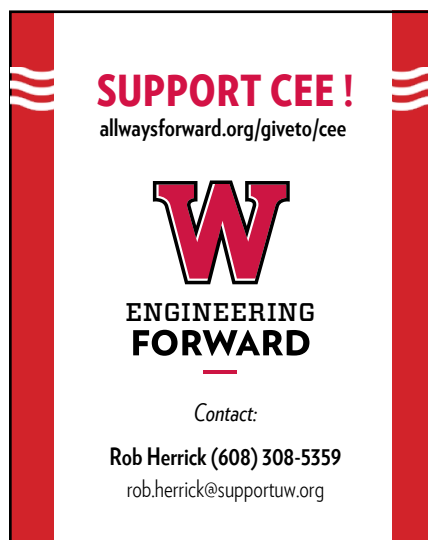
2016 was an exciting year filled with opportunity and growth! In summer, *U.S. News and World Report* named our great university

10th-best public university in the nation, up from No. 11 in 2015. We kicked off the largest fund-raising campaign in university history—and thanks to the incredible generosity of our alumni and friends, we already are well beyond halfway to our \$3.2 billion goal. At a time when public universities around the country are facing budget cuts, we are focusing on multiple revenue streams that will allow us to continue to grow and excel in our research, teaching and service to society.

Of course, our university also continues to address challenges that come our way—some of which come with the territory of being a public university. However, we also focus on the innumerable good things that happen here every day, and we remember that debate and dialog are intrinsic to our culture and serve to enhance our excellence.

Here are some university-wide examples of those good things:

- We have retained nearly all of the faculty who have received outside offers.



- We have hired several top faculty away from leading institutions.
- We raised \$250 million in endowments for faculty professorships and chairships, including two professorships in CEE.
- We have raised \$100 million to create additional undergraduate scholarships and graduate fellowships.
- We continue to have a \$15 billion economic impact on the state of Wisconsin.
- Our undergraduate enrollment in the fall of 2016 is at an all-time high, when many other CEE programs across the country are facing enrollment decreases.

At the department level, Pavana Prabhakar and Daniel Wright joined us as assistant professors. Affiliated Professor Tracey Holloway was tapped to lead NASA's Health and Air Quality Initiative, and several of our faculty members—among them, Professor Hussain Bahia, Assistant Professor Paul Block, Associate Professor Dante Fratta and Professors Jamie Schauer, Bin Ran and I—conducted research throughout the world.

Most recently, three of our most distinguished professors were rewarded with professorships. Bin Ran, an international leader in transportation engineering, received a Vilas Distinguished Professorship. Bill Likos, an international leader in geotechnical and geological engineering, was awarded the Gary F. Wendt Professorship. Awad Hanna received The Boldt Company Professorship for Construction Engineering and Management. They join the other seven professorship-holders in CEE.

Our Construction Engineering and Management program provides our students an unparalleled experience and continues to be nationally recognized as a model program—as does our undergraduate capstone course. Recently, our Geological Engineering Program became part of the department—an important merger that has increased the breadth of our research and enhanced education at both the undergraduate and graduate levels. Our student

BIGGER, BETTER, STRONGER: MERGER WILL BENEFIT

At UW-Madison, geological engineering faculty hail both from the College of Engineering and the Department of Geoscience in the College of Letters & Sciences.

And now, after decades straddling two colleges, our geological engineering (GLE) degree program has a new, official home in the College of Engineering. The program evolved in the 1980s from one of UW-Madison's oldest degree programs (the Department of Mining and Metallurgy, founded in 1871) and now is administratively part of the Department of Civil and Environmental Engineering. In CEE, it will maintain its status as a separate degree program—yet the merger provides both CEE and GLE students access to even more faculty, resources and expertise.

One major benefit of the merger, according to Arthur F. Hawnn Professor and CEE department chair David Noyce, is that geological engineering faculty and students are formally included as part of the CEE department. Unlike those at many peer institutions, both the CEE and GLE programs have seen growing enrollment in recent years, and with the addition of geological engineering's 150 students, the civil and environmental engineering department student body has grown to more than 600.

"The reality is that most civil and environmental engineering departments are shrinking in student size," Noyce says. "Even without the merger, our civil and environmental student population continues to steadily grow."

Another significant benefit of the merger comes in connecting students with a wider alumni base, says Gary F. Wendt Professor William Likos, director of the GLE program. "We're having joint events with civil and environmental and geological engineering now," Likos says. "That's been fun already."

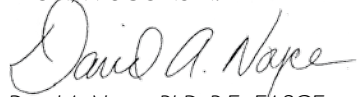
Both CEE and GLE will maintain separate alumni boards of visitors, whose members have also been supportive of the merger. "It makes good sense," says Al Erickson, chair of the CEE board of visitors. "It seems like the merger is an exciting adjustment and a change that'll be good for everybody."

Jerry Krueger, chair of the GLE board of visitors, agrees. "I think this merger is only going to help our students find opportunities to learn

Concrete Canoe and Steel Bridge teams once again each had very strong showings in their national competitions, and the American Concrete Institute cited UW-Madison an ACI Outstanding University based on the activities of our ACI student chapter. We continue to greatly benefit from the incredible support and involvement of our industry partners and mentors, whose expertise deepens our students' knowledge and sets them apart as top candidates with employers around the globe. And our alumni—well, simply put, our alumni are amazing. Through their lives and jobs, they make valuable contributions to our society in every corner of the globe—and through their advocacy and passionate support, they have shown their hearts certainly are right here in Madison.

We all have reason to be proud: Our university, our college, and our Department of Civil and Environmental Engineering remain vibrant—and our work makes a difference in the lives of people around the world. Thank you for your continued support and encouragement, and please call upon me if I can be of service to you.

ON WISCONSIN!



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CEE AND GLE

from other areas and be more well-rounded," he says. "The administration streamlining has really been a benefit to the geological engineering program, too."

The opportunity to unite CEE and GLE ultimately reinforces the breadth and preeminence of each, in both research and education. "We're bringing in a number of affiliate faculty members who are now collaborative colleagues of folks in our department, and we do all that really seamlessly," says Noyce. "It's been very efficient and with no financial impact on the College of Engineering."



ENGINEER AIDS EFFORTS TO PRESERVE ANCIENT SITE

Using state-of-the-art, non-destructive evaluation and underground imaging techniques, Dante Fratta reveals buried secrets without lifting a shovel. And in summer 2016, Fratta, an associate professor of civil and environmental engineering and geological engineering, was part of international team of experts who used modern methods in an effort to preserve the ancient Church of the Nativity in Bethlehem. Their research, published in a preliminary progress report Aug. 3, 2016, already has helped prevent an important piece of world history from crumbling.

Located in the center of Bethlehem, the Church of the Nativity is a World Heritage Site and a major tourist attraction, particularly for Christians, because it is located atop the site where Jesus Christ is said to have been born. But the structure itself is damaged and degraded; in 2008, the World Monuments Fund placed it on a watch list of the 100 most endangered world sites. In 2010, the Palestinian Authority announced plans for a multimillion-dollar restoration effort, the initial phase of which concluded earlier in 2016.

The church's age—originally built in 339 A.D.—and many additions and iterations also pique archaeologists' interest. And when a recent excavation came precariously close to undermining the support beneath a structural column within the Church of the Nativity's Hall of Saint Jerome, Palestinian authorities wisely called a halt to all digging until experts could assess the edifice.

Those experts—a team led by Professor Miguel Pando and hailing from such diverse locales as Portugal, Peru, North Carolina and Wisconsin—traveled to Israel in July 2016 with one primary mission: measure everything they could about the ancient building in order to protect it from damage. Each person brought unique knowledge and expertise. Together, they spent a week placing sensors, measuring vibrations, scanning surfaces with lasers, and probing beneath the soil with ground-penetrating radar (GPR) and seismic waves.

They created virtual three-dimensional maps of the hall that featured detailed descriptions of all cracks and damage, and they also installed a network of sensors that will monitor the church long-term and ensure it doesn't deteriorate further.

Throughout their investigations, the researchers also were conscious and respectful of the varying political views and religious customs prevalent in the region. In fact, not one, but four, different denominations oversee all activities at the Church of the Nativity. Different sections of the church belong to the Roman Catholic, Greek Orthodox, and Armenian Apostolic, and Syriac Orthodox church authorities. And even though the Hall of Saint Jerome falls under the auspices of the Armenian Church, all of the churches needed to grant approval for every protocol.

One of the researchers' early recommendations was that one of the columns in the hall desperately needs retrofitting and stabilization before any future excavations can proceed. However, even though they have returned to their homes, the researchers continue to communicate and interpret data from the sensors they left in place. In the future, they also will guide future excavations so that archaeologists can learn more about ancient history in the region.

Support through the Civil & Environmental Engineering annual fund, which enables us to respond quickly to emerging opportunities, helped make Fratta's participation in this important research possible.

Dante Fratta

In 2016, both the UW-Madison Concrete Canoe and Steel Bridge teams found success at their national competitions, winning fifth and eighth place, respectively.

Every year, the two teams compete regionally at the American Society of Civil Engineers Great Lakes Student Conference, hosted by a school in the conference. Perennial national contenders, each team advanced to its national competition this year, once again. The Steel Bridge team has qualified for nationals for 19 straight years—which is the longest streak in the nation.

The Concrete Canoe competition took place at the University of Texas at Tyler, where the team faced the desert heat in a three-day event that tested their design work and physical stamina.

Each year, the team must design its canoe to satisfy specific criteria. One of the biggest challenges is having to make a boat that is less dense than water. Aside from the regulations, team members have free reign over their design and the type of concrete they use.

The team combines students from a number of different engineering disciplines, which enables the students to collaborate and combine their varying design skillsets. “While this team is composed primarily of civil engineers, we also have members ranging from mechanical to biological systems engineering,” says UW-Madison team co-chair Alex Fasking, a civil and environmental engineering fifth-year senior. “We recognize that a diverse team can approach problem solving with many unique perspectives, and that we can all learn from each other throughout that process.”

The national steel bridge competition took place at Brigham Young University in Utah this year, with more than 42 teams competing. The team’s final product was a 20-foot long bridge, weighing about 116 pounds, that is collapsible and able to fit into a relatively small box. Based on extensive analysis, the team decided to design



CONCRETE CANOE AND STEEL BRIDGE TEAMS EXCEL AT NATIONAL COMPETITIONS

the bridge using an overhead truss, which means that most of the structural support runs over the bridge, rather than beneath it. The team created the actual bridge at Endres Manufacturing, a steel manufacturing company in Waunakee, Wisconsin, that helps to fund the building process with both financial and in-kind support. In fact, both the bridge and the canoe teams receive support from private gifts to the CEE department, as well as from donors like Endres.

For members of both teams, collaboration among members to create a design project is deeply rewarding, and a perfect opportunity to practice their engineering skills outside of the classroom while also meeting other students. “It’s a good way to get involved,” says Andrew Tesch, the team’s co-chair and a physics major. “The reason I like it so much is because I met a lot of my good friends through the organization, and it feels like a second family. I share a lot of classes with these people, and I can rely on them. It’s also a great way of getting to know the college on a more real level.”

Longtime engineering dean passes away

As dean of the College of Engineering, Paul Peercy constantly sought ways to help students succeed in engineering. In ongoing efforts to educate “global” engineers, he focused on diverse and interdisciplinary experiences, innovations in teaching engineering, and on hands-on work that connected the technical aspects of engineering students’ education with real challenges facing society. “Engineering is where science meets society,” he said in a 2012 interview, referring to myriad global challenges, including energy

needs and pollution. “These are problems that can’t be solved without engineers and can’t be solved by engineers alone.”

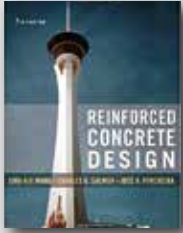
Peercy (dean from 1999 until retiring in 2013) died Oct. 20, 2016, after a lengthy illness.

Read more and learn how you can make a gift in Peercy’s memory to carry on his commitment to undergraduate education here:

go.wisc.edu/peercy-passes-away



PASSING THE TEXTBOOK TORCH



Our tallest buildings, longest bridges, deepest tunnels, and most-trafficked roadways are built using reinforced concrete. And many engineers have learned about reinforced concrete from a highly

influential UW-Madison text. In 1965, the first edition of *Reinforced Concrete Design*, a go-to textbook for structural engineering students, was published by Professors C.K. Wang and Charles (Chuck) G. Salmon, who both were among the nation's leading structural engineers. In the 7th edition of the book, Wang and Salmon added Associate Professor José Pincheira (*top/left*) as co-author. "I almost fell off of my seat when Chuck asked me to be a co-author of the book," says Pincheira. "I studied with their books when I was a student and I would have never imagined that would meet the authors one day, let alone be asked to be a co-author of one of their books."



Now the 8th edition of the textbook is in the process of being published, and Gustavo Parra-Montesinos (*above*), the C.K. Wang Professor in structural engineering, joins Pincheira as co-author. "Starting such a comprehensive textbook from scratch requires years of hard work, patience and discipline. We are thus fortunate to be able to build upon such a strong foundation," says Parra-Montesinos.

Between 2008 and 2014, a major reorganization of the American Concrete Institute (ACI) building code took place. So Parra-Montesinos and Pincheira entirely restructured the 8th edition of *Reinforced Concrete Design*, explaining concepts differently and revamping practice problems accordingly. They also added additional content and practice exercises throughout the book. For instance, Pincheira added a new chapter on wall design, while Parra-Montesinos added a new chapter on design of composite members.

Pincheira feels humbled by the opportunity to carry on a legacy. "I would dare to say that most civil engineers know about the university from the books—just to give you a sense of the impact that they had, not only in the U.S., but around the world," he says.

FOCUS ON NEW FACULTY



PAVANA PRABHAKAR

**Maintaining integrity
of structural materials**

Pavana Prabhakar ensures that structures maintain their integrity in the face of extreme conditions, or in other words, that our buildings, ships and vehicles don't break.

As a new assistant professor in civil and environmental engineering, she will be working with a variety of hybrid materials and novel manufacturing technologies, such as additive manufacturing for lightweight polymeric composites, to improve their load-bearing abilities by developing relevant simulation and computational tools. "Not all components are load-bearing in structures," she says. "But if a component has to sustain extreme loads and is situated in critical areas of a structure, then you have to pay more attention to what is manufactured and the technology used."

One of the major challenges of her field is gauging the effectiveness of certain structures before they are actually manufactured. Because trial and error is expensive and time consuming, researchers like Prabhakar must develop predictive tools to understand the influence of myriad system parameters that are often encountered with extremely complex hybrid materials.

Modern manufacturing technologies produce a huge variability in materials, and for Prabhakar, it's important to ensure their quality, and understand their failure behavior under extreme conditions.

In 2015, she received a Young Investigator Program Award from the Air Force Office of Scientific Research, which will continue to fund her research at UW-Madison on the topic of novel multiscale design of interfaces for polymeric composites and bonded joints using additive manufacturing.

Prabhakar always has had a very focused approach to her education: She knew above all that she wanted to earn a PhD so that one day she could become a faculty member. From pursuing her undergraduate degree at the National Institute of Technology Karnataka in India, she moved to California to study structures in civil and environmental engineering at UC-Berkeley. She received her master's degree in 2008, and then moved to the University of Michigan, where she earned her PhD in aerospace engineering. Following her education, she worked for three years as an assistant professor at the University of Texas at El Paso. "This is what I always wanted to do—I wanted to be an educator," Prabhakar says.

For her, students offer new and exciting perspectives on many challenges in research, which is much of the reason she enjoys the university environment. Her research and teaching style are student-centric, and she encourages the involvement of undergraduate students—giving them experience so they can understand the value of research early on, and then pursue their own interests.

Prabhakar also provides a unique perspective in her research because of the summers she has spent working in government facilities. By engaging in these experiences, she has ensured that her research pursuits are relevant and current. She has spent time at the Oak Ridge National Laboratory, Naval Surface Warfare Center and Air Force Research Lab as a summer research faculty member. At Oak Ridge, she worked toward relieving defects in materials fabricated by additive manufacturing processes. By developing a computational model to simulate the steps involved in the electronic beam melting process, and experimenting with different parameters, she was able to identify key problems associated with their methodology.

Because Prabhakar's research intersects a number of fields, she looks forward to collaborating with faculty in engineering physics, materials science and mechanical engineering, dissecting topics such as additive manufacturing, mechanics of materials, damage and failure of materials in extreme conditions. "I think I have a lot of avenues to enrich myself because of the wide range of expertise in faculty here," she says. "That's one of the reasons I really liked UW-Madison, other than the fact that I just like the vibe of Madison itself."

MATCHING GIFT HELPS 'STRUCTURE' THE FUTURE OF WISCONSIN ENGINEERING

A recently created matching gift opportunity aims to inspire additional gifts to support the renovation of the **Wisconsin Structures and Materials Testing Laboratory**. The match was created by Jun (BSCE '68, MSCE '69, PhDCE '73) and Sandy Lee (BA '69) after the structures lab renovation budget estimate increased to \$3.2 million due to changes in the scope and location of the lab.

All new gifts of \$1,500 or more and pledges of \$5,000 or more are being matched one to one by Jun and Sandy, up to \$500,000.

The new structures lab will revolutionize structural engineering education and research, allowing faculty and students to conduct research on full-scale structural elements, and providing a state-of-the-art testing facility for structural and construction industries in the Midwest and beyond.

Get involved today! Contact University of Wisconsin Foundation Director of Development Rob Herrick, (608) 572-1850 or rob.herrick@supportuw.org, to learn how to take advantage of the match and build the future of structural engineering at UW-Madison.

Wisconsin is almost as far away from New Zealand as any other place on Earth, and the flight from Taipei to Dane County Regional Airport takes almost 25 hours. But long distance travel couldn't keep alumni away from campus for the third Environmental Engineering Reunion Conference, June 23-25, 2016.

During two days of rapid-fire talks, alumni of all ages presented on how their education helped them succeed at projects running the gamut from bioremediation of solvent-contaminated soils to designing the future of engineering education. Underneath the diverse array of topics, one common foundation united all of the speakers: commitment to using their rock-solid training from UW-Madison to make the world a better place.

Jeffrey Starke (MS '01, PhD '11), the environmental sequence curriculum coordinator at West Point Military Academy, emphasized the critical need for engineers to communicate about their work—a message that several speakers echoed. Gil Hantzsch (BS '86, MS '92) noted that leadership by Wisconsin engineers spurred the city of Madison to replace its lead-containing water supply pipes long ago, preventing a potential emergency comparable to current events in Flint, Michigan. "Civil engineers don't only need to do the work," says Hantzsch. "They need to lead."

Teaching leadership skills has long been a top priority for the environmental engineering program. Although the modern era's increasing demands on infrastructure and rapid pace of innovation create extraordinary challenges, unprecedented opportunities also exist.



Attendees of the third UW-Madison Environmental Engineering Reunion Conference

engineers need to maintain constant communication with their team and the people that they serve. "Engineers need to be present in perpetuity," says Richard Greiling (BSIE '73, MSCEE '75). "You need to be at a site sometimes physically but all of the time

mentally. Your name goes forward as a representative of the profession."

Greiling has been to sites around the world during his 40-year career. He first brought concepts he learned at UW-Madison to Seattle—such as using activated sludge to process spent grains from breweries. Greiling then went on to troubleshoot waste-water treatment systems in the United States and beyond, even in such far-flung locations as Djibouti, Africa.

Throughout his travels, the Wisconsin Idea remained at the top of his mind. "As engineers we learn to identify problems, and it's our responsibility to use the knowledge we gain to benefit people's health, the environment and society," says Greiling.

Environmental engineering graduates make their marks around the world, but never forget their time on campus. "I'm so grateful for the training I received," says Langmuir Wang (MS '97, PhD 2000), chair of environmental engineering at National Cheng Kung University-Tainan, Taiwan. "I still consider Madison my second home."

More: www.engr.wisc.edu/alumni-share-career-accomplishments-environmental-engineering-reunion-conference/

ALUMNI SHARE CAREER ACCOMPLISHMENTS AT ENVIRONMENTAL ENGINEERING REUNION

Practicing engineers can pursue advanced coursework and professional development while working—currently, 10 students, some living as far away as Iceland, are enrolled in a new entirely online master's degree program in civil and environmental engineering through UW-Madison, thanks to a curriculum developed, in part, by Adjunct Professor Michael Doran (BSME '72, MSCEE '74).

Lindsey Busch (BS '07) manages the Chicago branch of Carollo, the largest firm in the United States devoted solely to water engineering, from her home office in Madison. She and other speakers emphasized that

Unearthing the source of radium in municipal wells

Rocks and sediment in the aquifers deep below the earth naturally add elements such as radium to the groundwater. Yet, even as our public drinking water systems draw on this groundwater, the levels of radium—a known carcinogen—historically have fallen well below the U.S. Environmental Protection Agency’s (EPA) maximum contaminant levels.

Yet, there are exceptions—particularly in the eastern and central United States—and Assistant Professor Matthew Ginder-Vogel and Madeline Gotkowitz, a hydrogeologist at the Wisconsin Geological and Natural History Survey, are leading an effort to find out why.

They are starting locally, in Wisconsin, where elevated radium levels in some municipal wells are a concern. In May 2016, for example, the city of Waukesha earned a unanimous vote from Great Lakes governors for its proposal to tap water from Lake Michigan after city wells repeatedly were found to contain levels of radium that exceeded limits set forth in the EPA’s Safe Drinking Water Act. Waukesha is located in the “Radium Belt” in eastern Wisconsin, where deep, saline brines are the predominant source of radium to municipal wells. However, in the south-central part of the state the geologic sources of radium are not as well defined. Ginder-Vogel is hoping to determine the sources of radium in the groundwater of the Mt. Simon aquifer, which Madison and many other communities in Wisconsin, Illinois and Minnesota use for drinking water. Since the aquifer stretches across several states, the project could have a far-reaching impact.

The aquifer is structurally complex, which makes it difficult to make overarching assumptions about the radium’s source. Because the aquifer is made of limestone-cemented sandstone and held together by calcium carbonate minerals, it’s possible, says Ginder-Vogel, that decaying uranium and/or thorium in the cement is releasing radium as a byproduct.

“Additionally, there are interbedded shales within the aquifer itself, as well as saline brines at the bottom,” says Ginder-Vogel. “So everyone’s question is, if all three of these

components are possible sources of radium, where is it actually coming from?”

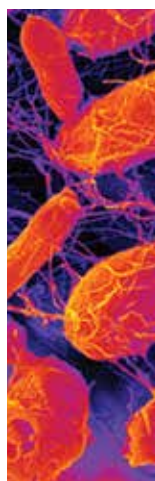
Ginder-Vogel and Gotkowitz are working on extracting groundwater samples from area wells to evaluate their isotopic composition. By comparing the isotopic ratio, they can start to determine where exactly the radium is coming from. “If the isotopic composition of the samples is similar to the uranium-thorium ratio in limestone, I can say it came from the limestone,” Ginder-Vogel explains. “If it’s similar to the uranium-thorium in the shales, I know it came from a shale.”

The scientists are working closely with the Madison

Water Utility, since their tests can help municipal well managers plan for the future. For instance, if the brines moving toward the bottom of the well are causing the high levels of radium, it’s possible to abandon that part of the well entirely. Although such a change could mean a reduction in the amount of water produced, it would be a small concession for safe and drinkable water.



Madeline Gotkowitz (left) and graduate student Madeleine Mathews collects a water sample for Radium analysis.
Inset: Matt Ginder-Vogel



UW-Madison seeks to capitalize on push to harness helpful microbes

The federal government has launched the National Microbiome Initiative to foster the integrated study of microbiomes across different ecosystems, and environmental engineers Trina McMahon and Dan Noguera are among many UW-Madison experts working to better understand microbes in context and how they work. The initiative rests on the growing array of technologies that make the sequencing and analysis of genetic material cheap and easy, says Noguera. Most microorganisms can’t be cultured in the lab, but they can be cracked open and their genetic material can be plumbed with growing speed and accuracy. “We’re able to do things we weren’t able to do 10 or 12 years ago,” says Noguera, who uses a Madison sewage treatment plant as a laboratory. “There are some very sophisticated tools and models, but only a few people are good at using them and interpreting them, so the hope is there will be some synergy.”

More: www.engr.wisc.edu/uw-madison-seeks-capitalize-push-harness-helpful-microbes/

CEE ALUM RECEIVES COLLEGE OF ENGINEERING AWARD DURING THE ENGINEERS' DAY CELEBRATION NOV. 11, 2016

Read more: www.engr.wisc.edu/eday

♦ Why did you choose engineering as your major?

It's a family tradition. Both my parents actually graduated from the University of Michigan in civil engineering. In fact, my mom is a structural engineer. So it's part of the family history.

♦ What was your favorite engineering class?

To be very honest, I liked all of the engineering courses I took because they were all challenging. But there's one course that was quite outstanding and away from the technical details. That course was called technical writing. I enjoyed that course quite a bit because it taught communications. It taught you how to communicate clearly.

♦ What's your fondest memory of your time on campus?

That would be walking my sweetheart home.

♦ What lesson learned as a student has benefited you most in your career?

Well, there are quite a few things. The first is that as a student you really have to work hard. You can't take anything for granted. You work hard. Secondly, as a student, you need to understand the basic principles and think outside of the box. That to me is very important. Once you understand the principle, you can think outside the box rather than being hemmed in. One thing that I always relate to other people that's very true is that when I got my BS degree I thought I knew everything there is to know in engineering.

Of course that's wrong. When I got my MS, I knew that there was something yet that I could learn. When I get my PhD, I knew that I know nothing. The knowledge that I had was so minute and the knowledge out there is so vast that relatively I knew nothing. That is really a very hardened truth in terms of learning. And the last thing that I will say is that the more you learn, the more humble you become. Our brain's capacity is limited and there's only so much time in a day and in a lifetime.



Civil and Environmental Engineering
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DISTINGUISHED ACHIEVEMENT AWARD

JUN LEE

President, SRI Design
BSCE '68, MSCE '69, PhDCE '73

♦ Who played the greatest role in your achievements?

The person who contributed the greatest role in my achievements first and foremost would be my mom. She's a structural engineer in her own right. The important thing is she's also a pioneer in structural engineering in that she is the first woman certified

structural engineer in the entire Far East. It's very inspiring. And at the time she was a structural engineer she used slide rules—not computers, which makes her that much more inspiring. The second person would be my major professor Jack Johnson. The encouragements from my wife, Sandy, my dad and mom were also very important to me.

♦ What advice would you give students in your discipline today?

I would say three things: One is work hard. Work really, really hard and learn everything you can. Second, think outside of the box. The third is never lose your principles, whether it's your own personal principles, your professional ethics, your professionalism, no matter how much the temptation is in the outside world.

♦ What are your hobbies/interests?

I have several hobbies. Sports is one of my hobbies. We love watching football and basketball among other things. Myself, I play tennis. The other hobby or passion I have is music. I'm a vocalist. I sing all kinds of music: classical music, traditional music, Irish songs, Chinese songs, you name it, I sing it. I do perform from time to time. I normally have an accompaniment—somebody who accompanies me on a piano. Sometimes I collaborate with another vocalist.