

CEE@LEHIGH:



CEE'S INTELLECTUAL
FOOTPRINT CROSSES
CONTINENTS
AND CULTURES.

To date, 238 students and scholars from 55 countries have traveled to Bethlehem for the singular chance to teach, study or conduct research through the civil and environmental engineering program at Lehigh.

CEE INTERNATIONAL

2013-2014 CURRENT CENSUS:

-  GRADUATE ALUMNI
-  UNDERGRADUATE ALUMNI
-  CURRENT GRADUATE STUDENTS
-  UNDERGRADUATE STUDENTS
-  RESEARCH SCHOLARS



Source: Alumni Association, Office of International Affairs, July 2014



TAKING STOCK, MOVING FORWARD

YEAR IN REVIEW 2013-14 

TAKING STOCK, MOVING FORWARD: THE VIEW FROM FRITZ 201A



ON BEHALF OF THE DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING (CEE) AT LEHIGH, it is my pleasure to welcome you to this CEE Year in Review 2013-14. It has been an eventful year for CEE, a time of fresh starts and auspicious undertakings. We celebrate them in this commemorative print publication and online as well, at www.lehigh.edu/cee.

I write to you for the first time as CEE's new chair after 25 years as a professor and researcher at Virginia Tech. I feel fortunate indeed to leave one esteemed university for another. The legacy of civil and environmental engineering at Lehigh is as long and time-honored as the University itself—150 years long, to be exact, next year.

As a civil engineer who appreciates history, I view the chance to lead this venerable program as an exciting new chapter in my career. It's quite humbling to come to work every day in Fritz Engineering Laboratory, the administrative home of a department that now sprawls across three buildings and two campuses. Built in 1909 and designated by the American Society of Civil Engineers as a historic civil engineering landmark in 1991, the lab that John Fritz built set the standard for all the university and research labs to come.

Today, CEE at Lehigh continues the Fritz tradition of ingenuity and progress with a reach and impact far greater than one would expect from a department of this size. As the map on the back cover attests, our alumni, faculty and students have distinguished themselves, and Lehigh's reputation, all across the globe.

While we take pride in our past, we are equally taking stock of our present and future, which is bright. Our department is rich in the resources upon which every academic enterprise thrives: talented students, an outstanding faculty and a dedicated staff. That we continue to attract such exceptional people to our educational and research mission is a testament to the enduring strength and success of our program.

As CEE moves forward, so, too, does the university. This fall, Alice Gast, Lehigh's 13th president, and S. David Wu, dean of the P.C. Rossin College of Engineering and Applied Science, began their own new career chapters: Alice as president of Imperial College London and David as provost of George Mason University in Virginia. The Lehigh brand is stronger for their stewardship; our graduates enter the workforce and graduate school in high demand. As we wish Alice and David well, we look forward to the influx of new ideas and leadership headed to Lehigh at a time of rapid change in higher education.

Progress requires change. Societal challenges evolve and bring greater expectations with them. All the more reason CEE's objective remains steadfast: to train and nurture the next generation of leaders who will advance the civil and environmental engineering professions and society at large.

We look forward to reconnecting with you on the following pages. Feel free to send a note to share your stories, thoughts or comments.

PANOS DIPLAS

*P.C. Rossin Professor and Chair
Department of Civil and Environmental Engineering
panos.diplas@lehigh.edu*

"CEE's objective remains steadfast: to train and nurture the next generation of leaders who will advance the civil and environmental engineering professions and society at large."

— PANOS DIPLAS

WELCOME BACK, LENNON

Jerry Lennon rejoined the active faculty ranks in spring 2014 after a three-year hiatus from teaching. Since 1998, when then-dean Harvey Stenger asked him to serve as associate chair of CEE, the professor of water resources engineering has served in four administrative positions, none of which he actively sought. Like the [C. J. McCollum](#) of Lehigh administration, Lennon was recruited for his reputation as the "go-to guy" who could help execute strategic goals.

The organizational hats that Lennon wore grew in size and responsibility. He first served two 3-year terms as CEE's associate chair, staying on an additional year after each one to transition a new dean and a new department chair, respectively. In 2005, then-dean S. David Wu tapped Lennon to become the associate dean for undergraduate studies in the [P.C. Rossin College of Engineering and Applied Science](#). Then, after receiving multiple nominations, he assumed the post of deputy provost for academic affairs in 2010. Lennon now returns to the department where he started in 1980 to teach, conduct research and serve as CEE's next faculty graduate program coordinator.

Looking back on the arc of his executive career, Lennon credits a "get-'er-done, no nonsense" approach

to new challenges that matched well with visionary leadership. His affinity for listening and consensus-building, coupled with the tenacity to see ideas through to reality, lengthened a resume that was always more about disposition than ambition.

"I think 'willing,' rather than 'ambitious' or 'seeking,' is a better way to characterize how I came to hold such positions," says Lennon.

A talent for developing high-quality academic programs didn't hurt, either. Lennon counts among his most important leadership contributions his service as chair of the committee that established the Bachelor of Science degree in environmental engineering; the latest revisions to the first-year engineering course curriculum; and the creation of the [IDEAS \(Integrated Degree in Engineering, Arts and Sciences\)](#) program.

Acquired skills in matters of accreditation and assessment are another point of pride. Working with CEE faculty members, in 2001 Lennon was lead author of the department's first ABET (Accreditation Board for Engineering and Technology) report focused on new, outcomes-based criteria. In 2010, as associate dean, he led the coordination of all 10 Lehigh engineering programs that



Lennon and Russ Vignali '14 measure the location of contaminant arrival (the red dye) from a simulated upgradient spill. The test site is the 10-meter-long hydraulic modeling tank in Fritz Lab.

subsequently received ABET's full, six-year accreditation, and in 2013 helped earn Lehigh a "superlative" rating from the Middle States Commission on Higher Education in his role as deputy provost.

A 34-year-long career and three major university teaching awards to his credit, these days Lennon is looking forward to applying his experience to some brand-new Lehigh initiatives. Among them: the development of a new online modeling course and the exploration of an active learning classroom environment.

Visit bit.ly/JerryLennon to learn more about Lennon and his work. ●

SPECIAL COLLECTIONS AWARDED GRANT FOR CIVIL ENGINEERING PROJECT

Soon, a broad, new audience will have unprecedented access to the history of civil engineering at Lehigh.

A grant awarded to [Lehigh University Special Collections](#) from the Mellon Foundation has provided \$93,700 to fund "Bridge and Building Forensics: Civil Engineering Archives at Lehigh University." The two-year project will create finding aids for six civil engineering collections, including the papers of John Fisher, Blair Birdsall, Willis Slater, and the Council on Tall Buildings and Urban Habitat. Descriptions of postcards depicting American bridges and



a series of photographs showing laboratory testing will round out the collection.

Lehigh received the grant through the Cataloging Hidden Special Collections and Archives Program of the Council on Library and Information Resources (CLIR). CLIR works to expand access to information, however recorded and preserved, as a public good.

The descriptive information that award recipients create will eventually be linked to and interoperable with all other projects funded by the grant program. This year, 21 institutions received grants, including Amherst College, Columbia University, the Newberry Library and Princeton University.

Leading the grant project for Lehigh are Lois Fischer Black, curator of special collections, as principal investigator; and Ilhan Citak, archives and special collections librarian, as project manager. ●



CEE ADVISORY BOARD CONVENED

CEE leadership recently sat down with some of its distinguished alumni to take stock of the department and consider how best to move it forward.

On May 6, 2014, [Panos Diplas](#), P.C. Rossin Professor and Chair of the Department of Civil and Environmental Engineering, convened his first CEE advisory council. Representing CEE leadership with him were [Clay Naito](#), Associate Professor and Associate Chair, and [Derick Brown](#), Associate Professor and Co-Director of the Environmental Initiative.

Members of the advisory council who were present for the inaugural meeting included [Jeffrey C. Evans](#),

[Ph.D., P.E.](#), Professor and Chair, Department of Civil and Environmental Engineering, Bucknell University; Colonel [Stephen J. Ressler, P.E., Ph.D., Dist.M.ASCE](#), Professor and Head (Retired), Department of Civil and Mechanical Engineering, U.S. Military Academy; and [Kenneth J. Wright, P.E.](#), Senior Vice President/Senior Professional Associate, Transportation Business, HDR Engineering, Inc. [Mark J. Tamaro, P.E., LEED AP](#), a Senior Principal with Thornton Tomasetti, participated in the meeting via Skype.

Board members [Tim Marks, President](#), EcoTech Marine, and [William T. Thumm, DBIA, LEED AP BD+C, STS](#), a project engineer at Hensel Phelps Construction Company, round out the six-member advisory council.

The goal of the meeting was twofold: to bring the advisory council up to speed on the status of CEE at Lehigh and to acquire feedback on the department's educational objectives, capstone programs, [ABET](#) (Accreditation Board for Engineering and Technology) process, outreach efforts and topics for future meetings. Highlights included:

» A review of student census data showing a healthy upward trend for academic year 2014-15. The numbers reflect a 21 percent uptick in civil engineering enrollments compared

to 33 percent on the environmental engineering side. The 2014 *U.S. News and World Report* rankings revealed that Lehigh civil engineering programs placed 22nd and 20th for graduate and undergraduate programs at schools that offer doctorates, respectively.

» S. David Wu, dean of the [P.C. Rossin College of Engineering and Applied Science](#) (RCEAS), stopped by to talk with the council about interdisciplinary and study abroad opportunities within the College.

» Over the lunch break, the alumni board members had the opportunity to interact with many CEE faculty and student club members. Six student leaders impressed with club presentations about the ASCE Student Chapter; the Steel Bridge team; Chi Epsilon; Engineers Without Borders; Bridges to Prosperity; and the American Academy of Environmental Engineers and Scientists. Student involvement in the meeting continued back at Fritz with two capstone project presentations from civil and environmental engineering seniors.

» Assistant professors and new faculty members [Paolo Bocchini](#) (structures), [John Fox](#) (environmental) and [Spencer Quiel](#) (structures) spoke with the council about their undergraduate research experiences. ●

MAKING THE CALL ON THE WORLD'S TALLEST BUILDING

On Nov. 8, 2013, the [Council for Tall Buildings and Urban Habitat](#) (CTBUH) declared New York City's Freedom Tower the tallest building in the U.S., surpassing by 47 ft. the previous American record-holder, Chicago's Willis (formerly Sears) Tower. The world's leading body on skyscrapers, CTBUH began at Lehigh in 1969 through the efforts of [Lynn Beedle](#), a university distinguished professor and Fritz Lab's director of research for 25 years. Beedle's vision and groundbreaking studies on the properties of steel structures helped establish Lehigh's worldwide reputation for civil and structural engineering research. They also earned the founding father of CTBUH membership in the [National Academy of Engineering](#). ●

RIVALRY? WHAT RIVALRY?

Lehigh-Lafayette may be the longest-running competition in college football history. But when it comes to shared academic pursuits around civil and environmental engineering, this rough-and-tumble rivalry turns downright, well, civilized.

Crosstown collaborations between the two schools occur regularly throughout the year. Students, faculty and alumni join forces for meetings, trips, social gatherings, bridge tours and more.

A new highlight of the Lehigh-Lafayette CEE partnership is the [Kappe Lecture Series](#). Inaugurated in 1989 by the American Academy of Environmental Engineers and Scientists (AAEES), the series provides an annual forum on college campuses where today's practitioners can share their knowledge with future environmental engineers.

Last fall, the CEE departments from both schools and the Environmental Initiative at Lehigh University hosted [George Tchobanoglous, Ph.D., P.E., NAE](#), professor emeritus at the University of California, Davis and the AAEES 2013 Kappe Lecturer. Tchobanoglous shared his views on possible solutions to stressed

public water supplies in his talk, "Direct Potable Reuse: A Future Imperative." Le-Laf will host the Kappe Lecture Series again in fall 2014.

Now in its 19th year, the Lehigh-Lafayette ASCE Student Chapters Career Fair consistently attracts more than 30 major employers and hundreds of internship and job seekers. For engineering companies in the recruiting hunt, it's fertile ground.

"Our company has been attending the Lehigh-Lafayette Career Fair for many years and has hired several of the graduate engineers and interns discovered there," says [Glenn Rentschler, '72G, '79 Ph.D., P.E.](#), a senior principal for Wiss, Janney, Elstner Associates, Inc. "We have found that these students were well-prepared, respon-

sible individuals who were able to face their work challenges in a professional manner."

In a magnanimous show of split allegiances, Lehigh alum [Art Kney '95G, '99 Ph.D.](#), chair of the CEE department at Lafayette, has even left Easton to address a room full of Mountain Hawks at the [Fritz Engineering Research Society \(FERS\)](#) annual banquet. Kney took his audience on a whirlwind tour of the rise of environmental engineering and its past, present and future implications. His call to action, however, transcended engineering discipline.

"Our job, especially as engineers and scientists, is to teach others about the stewardship of the earth. Education is the most powerful weapon you can use to change the world." ●



THE FIRST-EVER CEE CLUBS PICNIC

In a novel outreach to CEE undergraduates, six clubs threw a party on the STEPS lawn in August 2013. CEE's newest students were treated to fun, food, a chance to meet new friends, and a one-stop shop for learning more about club opportunities within the department.

Visit bit.ly/CEESTudentGroups to learn more about CEE's many student clubs and societies.



FRITZ LAB DIGITAL ARCHIVE JOINS LEHIGH PRESERVE

The Lehigh Preserve is an online, open-access archive of dissertations, historic photographs, posters, catalogs and more. The Preserve is now also the new online home to searchable versions of Fritz Lab and ATSS Research Center reports, as well as CEE doctoral dissertations and master's theses.

The Preserve supports the University's mission by expanding access to scholarly materials from Lehigh authors and invigorating academic conversations worldwide.

Visit bit.ly/CEELUPreserve to browse the entire catalog of the civil and environmental engineering collection.



DR. O. MARKS A MILESTONE

On Oct. 1, 2013, professor emeritus Alex Ostapenko celebrated a big birthday. To honor his longevity and career, Dr. O.'s family gathered with CEE faculty, alumni, staff and friends in front of the Baldwin 5M-pound universal testing machine. Partygoers reveled, reminisced and paid their fond respects to a great scholar, still going strong.

Visit bit.ly/Ostapenko to read a Q&A with Dr. O. ●



1



2



3



4

CEE WELCOMES 4 NEW FACULTY

1 PANOS DIPLAS | P.C. ROSSIN PROFESSOR AND CHAIR OF CEE

2 TARA TROY | ASSISTANT PROFESSOR, WATER RESOURCES ENGINEERING

3 SPENCER QUIEL | ASSISTANT PROFESSOR, STRUCTURAL ENGINEERING

4 MESUT PERVIZPOUR | PROFESSOR OF PRACTICE

Q | A WITH THE NEW CHAIR

MEET PANOS DIPLAS

PC. ROSSIN PROFESSOR AND
CHAIR OF CEE

Q: After 25 years as a professor and researcher at Virginia Tech, what attracted you to CEE at Lehigh?

A: Lehigh's reputation for engineering in general and civil and environmental engineering in particular is well known. Our department has had a profound influence on both disciplines.

The medium size of the department also played a role in my decision to make the move. It affords me the opportunity to maintain my research activities, although at a reduced level. Research is important to me. Its challenges are demanding, but at the same time intellectually rewarding and invigorating. It also allows me to interact with students, which I believe is the main reason most of us chose to work in a university setting.

Ultimately, I was ready for a new challenge, and I believe 25 years of experience prepared me for it. I would not have pursued this job earlier in my career.

Q: Looking back on your time at Virginia Tech, what makes you most proud?

A: My students. The chance to educate a good number of undergraduates in the area of water resources engineering, and collaborate closely with my graduate students, was the highlight of my time there. I never tire of hearing from them about the progress they're making and the careers they've launched. Making a positive impact on somebody's life, however small, is what teaching and mentoring young people is all about. Like research, the work is demanding, but gratifying.

I'm also proud of establishing the Baker Environmental Hydraulics Laboratory. Building that state-of-the-art facility from scratch occupied a great deal of my time at Virginia

Tech. The lab brought considerable new research capabilities and name recognition to the water resources program there. As I work to improve the Imbt Environmental Hydraulics Laboratory at Lehigh, the Baker experience is proving quite helpful.

Q: What individual strengths do you bring to the leadership of the department?

A: Having been active in research and teaching for a long time, I feel that I can better relate to the faculty who are in the trenches, doing the real work on the department's behalf. I've also learned a lot about operations, having participated in a wide range of departmental, university and professional activities at Virginia Tech. Taken together, I feel well prepared to represent CEE throughout Lehigh, in the broader engineering community and out in the world. I also hope that my expertise in water resources engineering will enhance research efforts in that area.

Q: You've been CEE chair for a year now. Have you learned anything surprising in that time?

A: The CEE department at Lehigh has a long and distinguished history. I've learned a great deal about John Fritz, the father of the steel industry, and his legacy. Five professional engineering societies joined forces to honor him by establishing the John Fritz Medal, one of the most venerated distinctions any engineer can receive. Two of our own faculty, Lynn Beedle and John Fisher, are recipients, as is CEE alumnus George Tamaro. That's impressive!

I was also surprised to learn that Lehigh is home to the very first hydraulic engineering laboratory ever built at an American university. It was



constructed in 1887 by Mansfield Merriman, who was a pioneer in hydraulic engineering research, a polymath and a prolific author. Among his many works are the classic book *Treatise on Hydraulics*, which went through 10 editions, and the first edition of the ASCE handbook of civil engineering. Interestingly, Merriman was also the first chair of civil engineering at Lehigh.

Both Fritz and Merriman clearly understood the importance of engineering laboratories for research, testing and training. They were certainly way ahead of their time.

Q: What are your aspirations for CEE going forward?

A: Attract the best students and equip them, through academic and practical experiences, to advance the professions of civil and environmental engineering. Pursue research that anticipates and contributes to the new discoveries and findings upon which societal well-being depends. Increase our outreach efforts to industry, alumni and their families so they may share in our successes. Preserve and grow our reputation for excellence.

Visit bit.ly/PDiplas to learn more about Diplas and his work.

"I hope that my expertise in water resources engineering will enhance research efforts in that area."

— PANOS DIPLAS



MEET TARA TROY

ASSISTANT PROFESSOR
WATER RESOURCES ENGINEERING

Every fall, Lehigh welcomes alumni back to campus for homecoming weekend. Last fall, alumna Tara Troy arrived for a longer stay, as a member of the CEE faculty.

What's it like to have former professors as colleagues? "It's been a little surreal, actually," says Troy.

The assistant professor's hiring reflects the resurgence of water resources research at Lehigh. Together with Panos Diplas, the P.C. Rossin Professor of Civil and Environmental Engineering and new department chair, Troy's arrival brings both new research questions and problem-solving systems to CEE's traditionally strong program in the fundamentals of hydraulics and hydrology.

Troy's research examines the interrelationships between climate, hydrology and society. She takes a holistic approach to the work, a perspective she credits in part to a B.A. in history earned while a president's scholar at Lehigh. "Since a lot of the research I do is societally relevant," says Troy, "the ability to understand how we got here can sometimes be critical to understanding a research problem."

Her work pursues two lines of

inquiry. One considers how agriculture and the need to feed growing populations affects global water resources; the other focuses on flooding across large river basins and its connection to climate. "They're two different hydrology problems, but I use similar tools to study them," says Troy. "Their commonality lies in their importance to society."

The tools are mainly computational, relying on large data sets and long time scales to inform Troy's predictive modeling. By using simulations of the hydrologic cycle over land, for example, Troy can evaluate the sustainability of water resources relative to crop growth, water demand and human impacts. Another model employs statistical methods to understand how climate extremes, such as heat waves and drought, affect crop yields, depending on whether a crop is irrigated or rain-fed. Her findings can help decision-makers shape global water resources policies for decades to come. "We know populations are projected to increase in many regions, and climate change is expected to change the frequency and intensity of climate extremes. Both will put pressure on our water and food systems," says Troy. "Our research can help society better prepare for the future."

Visit bit.ly/TaraTroy to learn more about Troy and her work.

MEET SPENCER QUIEL

ASSISTANT PROFESSOR
STRUCTURAL ENGINEERING

After a childhood spent playing with Legos and reading about the largest structures ever built, Spencer Quiel knew from an early age that civil engineering was his calling.

That calling took on new purpose during Quiel's sophomore year at the University of Notre Dame. The events of September 11, 2001, would define his graduate work at Princeton University and his career ever since.

Quiel completed his doctorate in structural engineering on a Department of Homeland Security (DHS) graduate fellowship. His dissertation research focused on the response of steel building structures to fire. His dissertation adviser was Lehigh alumna Maria Garlock '91, Ph.D. '03, an associate professor of civil and environmental engineering at Princeton.

During his DHS fellowship, Quiel spent two months at the Building and Fire Research Laboratory at the National Institute of Standards and Technology. While there, he collaborated on a study of the role of fire in the collapse mechanism of the World Trade Center's Twin Towers.

After Princeton, Quiel worked in the Washington, D.C., office of Hinman Consulting Engineers, a firm that specializes in protective design for structural and infrastructure systems. At Hinman, he contributed to numerous projects on extreme load resistance of critical structures, including government facilities, embassies, hospitals and a long-span bridge.

Today, Quiel's research specializes in structural resistance to extreme loads, particularly fire, blast and progressive collapse. He continues to consult with his colleagues at Hinman, and the real-world design practice has inspired several of his research projects that are currently underway at Lehigh's ATLSS (Advanced Technology for Large Structural Systems) Center.

"For being a smaller, private university, Lehigh really competes above its 'weight class' in structural engineering research because of its resources for experimental testing and computational modeling," says Quiel. "When you have both resources in one place, it helps generate ideas and momentum that culminate in something that has impact within the profession."

Much of his excitement about joining the structural engineering faculty is its legacy in the field.



"There's a lot of active research going on here, as well as a long history of research spanning back to Lehigh's beginnings. When I was in practice, I had often encountered standards or research that Lehigh faculty had worked on," says Quiel. "Lehigh's work is out there. It's making noise."

"As a researcher, you want the opportunity for your work to matter. For someone to read it and, hopefully, use it. You get that opportunity here."

Visit bit.ly/SQuiel to learn more about Quiel and his work.

MEET MESUT PERVIZPOUR

PROFESSOR OF PRACTICE

By definition, a professor of practice at Lehigh is someone who adds instructional value to university programs, enhances the research or professional missions of their departments, and/or permits Lehigh to expand its course offerings, often in cutting-edge areas.

Mesut Pervizpour, CEE's new professor of practice of civil engineering, is all of the above. His hiring brings industry, government and academic experience to the faculty.

Although the appointment is new, the workplace is as familiar to Pervizpour as a homecoming.



An alumnus who earned his doctorate in geotechnical engineering at Lehigh in 2000, Pervizpour has often worked as an adjunct professor for his alma mater, teaching graduate courses in geotechnical engineering while serving on the faculty at other colleges. He's glad to be back in front of Lehigh students.

"I always enjoyed coming to Lehigh because the students take responsibility for their learning here," says Pervizpour. "They are ready to receive and run with what they're being taught."

These days, Pervizpour's charges are averaging around 150 undergraduates a semester. In many ways, he finds them quintessentially Lehigh: serious, technically astute, and eager to expand their horizons. What's most striking to him is how the student's interests have evolved since he walked in their shoes.

And that's why he's here.

Pervizpour's hiring addresses a growing demand from students for courses that apply the principles of civil and environmental engineering to their industry ambitions. Interest in business and construction courses is particularly high. That's why classes such as Construction Management, Planning and Engineering Economics, and Advanced Project Management are now standard offerings in the CEE curriculum—one that will surely evolve with the professor of practice role as well as the times.

"By responding to today's needs, we're increasing our appeal to a bigger crowd," says Pervizpour. "These first couple of years will be my time to learn more about what is needed and how I can contribute."

Visit bit.ly/MPervizpour to learn more about Pervizpour and his work. ●

IN MEMORIAM

LE-WU LU

PROFESSOR AND CHAIR EMERITUS

Le-Wu Lu, who gained international renown for his research into the strength and behavior of building structures during a Lehigh career that spanned six decades, died July 27 at the age of 81.

Lu, the Bruce G. Johnston Professor Emeritus of Structural Engineering, received eight major awards, published more than 250 journal articles and conference papers, and supervised or co-supervised 24 Ph.D. students during his academic career.

He also served as chair of the department of civil and environmental engineering and as an investigator for Lehigh's Chinese Bridge Project.

Throughout his research and teaching career, Lu's expertise helped expand Lehigh's global reputation for structural engineering. He is best known for his extensive studies on the seismic response of steel building structures, precast concrete structures, innovative structural systems, composite steel-concrete structures, structural connections, and the repair and retrofit of structures.

Research by Lu and his Lehigh colleagues has been cited thousands of times, according to Google Scholar, and continues to inform codes and specifications, design recommendations, and the work of practicing engineers and professional organizations.

Lu belonged to a number of professional engineering societies, including the American Society of Civil Engineers, the Earthquake Engineering Research Institute, and the International Association for Structural Safety and Reliability. He held administrative positions on committees at many of these organizations.

He was also a member of the original Joint Committee on Tall Buildings, which later became the Council on Tall Buildings and Urban Habitat. He was particularly proud of serving on the organizing committee that brought the Council's first International Conference on Tall Buildings to Lehigh in 1972.

Active well into his retirement, Lu served as one of six principal investigators for Lehigh's Chinese Bridge Project, where he helped teach two courses on modern Chinese fiction, a hobby of his. He also helped the Lehigh Library Materials Center organize a donation of more than 2,000 Chinese books.

Lu is survived by his wife, Dorothy Lu; a daughter, Julia; a son, Paul; and one grandchild.

To honor his memory, the department has established the Le-Wu Lu Endowed Prize Fund for Civil and Environmental Engineering Students. Visit bit.ly/LeWuLuFund to make a gift. ●





67
TOTAL NUMBER OF
CEE FACULTY & STAFF

5 PROFESSORS
EMERITUS
14 RESEARCH
SCIENTISTS AND
POSTDOCS
22 PROFESSORS
12 ADMINISTRATIVE
AND SUPPORT
STAFF MEMBERS
14 TECHNICAL
STAFF MEMBERS

**U.S. NEWS
& WORLD
REPORT
RANKINGS**

22nd
BEST GRADUATE
PROGRAM FOR CIVIL
ENGINEERING
Published spring 2014

20th
BEST UNDERGRADUATE
PROGRAM FOR
CIVIL ENGINEERING
Published fall 2013

**DID
YOU
KNOW?**

Tau Beta Pi was
founded at
Lehigh in 1885.
It is the nation's
second-oldest
honor society.



**THE
2013 / 2014
GRADUATES**

26 B.S., ENVIRONMENTAL
ENGINEERING
5 INTERDISCIPLINARY
DEGREES
42 GRADUATED WITH HONORS
8 STUDENTS GRADUATED
WITH >1 HONOR
18 TAU BETA PI INDUCTEES
82 MASTER'S DEGREES
12 DOCTORAL DEGREES
15 M.S., STRUCTURAL
ENGINEERING
23 M.S., ENVIRONMENTAL
ENGINEERING
7 M.S., CIVIL ENGINEERING
37 M.ENG., STRUCTURAL
ENGINEERING
113 BACHELOR'S DEGREES
82 B.S., CIVIL ENGINEERING



Twelve students graduated with their doctorates from the department of civil and environmental engineering between 2013 and 2014.

**RICLES HONORED FOR "SUBSTANTIAL
IMPACT" ON STEEL INDUSTRY**

James Ricles, the Bruce G. Johnston Professor of Structural Engineering, was recently awarded a special achievement award by the American Institute of Steel Construction (AISC) for his work related to the design of steel structures for earthquake loading, including moment-resisting connections and self-centering frames.

Ricles was one of eight top structural steel professionals recognized by AISC at the 2014 North American Steel Construction Conference in Toronto. The awards honor individuals who have accomplished notable achievements in

structural steel design, construction, research or education.

The AISC accolade is the latest recognition among many Ricles has received through the years, including the National Science Foundation Presidential Young Investigator Award (1991-1996); the NASA Research Fellowship Award (1990-1991); and an American Institute of Steel Construction National Fellowship (1987). In addition, between 1987 and 2003, Ricles won the James F. Lincoln Arc Welding Foundation Award for Arc Welded Design eight times.

Visit bit.ly/JRicles to learn more about Ricles and his work. ●



At the *NEES Lehigh Equipment Site*, Jim Ricles, left, and his graduate research assistants inspect a viscous damper after a laboratory seismic simulation. The researchers are developing performance-based design procedures for building dampers that reduce seismic damage and promote community resiliency to earthquakes.

FRANGOPOL, STUDENTS GARNER INTERNATIONAL ACCLAIM

Dan Frangopol, the Fazlur R. Khan Endowed Chair of Structural Engineering and Architecture and professor of civil engineering, has had an active 2014. Highlights of his prodigious year include:

» An honorary doctorate received June 5 from the Gheorghe Asachi Technical University of Iași (TUI) in Iași, Romania. The award cited Frangopol for "remarkable scientific merits [in] the development of civil engineering, especially in the field of structural engineering" and for contributing to the development of cooperation with the faculty of civil engineering from TUI. One of the country's top universities, TUI has the longest tradition of engineering education in Romania.

» An honorary professorship awarded May 13 from Dalian University of Technology (DUT) in Dalian, China. DUT is one of China's leading universities for engineering and applied science.

» The 2014 James R. Croes Medal awarded in October by the American Society of Civil Engineers (ASCE) to Frangopol; Sunyong Kim '11 Ph.D., his former doctoral student; and his current Ph.D. candidate Mohamed Soliman. The team won for their paper, "Generalized Probabilistic Framework for Optimum Inspection and Maintenance Planning," which was published in the March 2013 issue of the *Journal of Structural Engineering*.

The Croes Medal is one of the two most prestigious awards given by ASCE to one of more than 7,000 papers published by ASCE in all of its 34 journals in the preceding year. It was established in 1912 to recognize ASCE papers that make a definitive contribution to engineering science.

For more information about Dan Frangopol and his work, visit bit.ly/DFrangopol. ●

**32 ACHIEVEMENTS AND HONORS
EARNED IN 2013/14**

- | | |
|--|--|
| 1 ASCE-EMI BOARD OF GOVERNORS APPOINTMENT | 10 INVITED PLENARY KEYNOTES |
| 1 ASCE MEDAL | 1 LEHIGH AWARD FOR RESEARCH EXCELLENCE |
| 3 BOOKS CO-EDITED | 2 SIGNIFICANT JOURNAL PAPERS SELECTED BY THE SOCIETY OF NAVAL ARCHITECTS AND MARINE ENGINEERS (SNAME) |
| 1 DISTINGUISHED VISITING SCIENTIST HONOR | 1 VICE PRESIDENCY OF THE INTERNATIONAL ASSOCIATION FOR STRUCTURAL SAFETY AND RELIABILITY (IASSAR) |
| 2 GUEST EDITORSHIPS | |
| 1 GUEST PROFESSORSHIP | |
| 1 HONORARY DOCTORATE | |
| 2 HONORARY PRESIDENCIES | |
| 3 HONORARY PROFESSORSHIPS | |
| 1 INAUGURAL FELLOWSHIP | |
| 2 INTERNATIONAL CONFERENCES CO-CHAIR | |

249
TOTAL STUDENT
CENSUS
FALL 2014

52 DOCTORAL STUDENTS
42 MASTER'S STUDENTS
155 UNDERGRADUATE STUDENTS



PAMUKCU, JELLISON TAKE THE LEAD AT LU-ADVANCE

In 2010, Lehigh University became one of seven schools to receive an ADVANCE Institutional Transformation Grant from the National Science Foundation (NSF). Lehigh's winning proposal, "Building Community Beyond Academic Departments," focuses on harnessing the university's interdisciplinary strengths to enhance recruitment, retention and the advancement of women faculty in the science, technology, engineering and mathematics (STEM) fields.

Ever since the grant's inception, two CEE faculty members have been leading the ADVANCE charge.

Sibel Pamukcu, professor of geotechnical engineering, was the first to serve ADVANCE as co-director and co-principal investigator (Co-PI). Looking back, Pamukcu cites the awareness she helped raise as her proudest



achievement. "We started a conversation about the importance of diversity and the need to increase the number of women faculty in STEM areas. As a result, many more people now know and understand what ADVANCE is all about."

In June 2013, **Kristen Jellison**, associate professor of environmental engineering (pictured left), became the sole director of the ADVANCE program.

Jellison has steadily built upon the foundational work of her predecessor, who remains a Co-PI. On Jellison's watch, ADVANCE has helped facilitate search committee orientations; advised on mentoring programs for associate professors; cultivated male allies and advocates for gender equity; engaged department chairs; and planned for the sustainability of the program going forward.

Through the success of the LU-WISE (Women in Science and Engineering) program, ADVANCE has also helped foster a strong community among Lehigh's female STEM faculty.

Yet for all its progress to date, the program's greatest accomplishments will ultimately be measured against Lehigh's highest ideals.

"Succeeding in ADVANCE is living Lehigh's principles of our equitable community," says Jellison. "If we do ADVANCE right, then we're putting those principles into action in a meaningful way."

Visit bit.ly/LU-ADVANCE to learn more about the grant. ●



Kent Yu of Degenkolb Engineers (left) and Clay Naito examine structural damage caused by a tsunami after the 2011 Tohoku Earthquake in Japan.

SAFEGUARDING STRUCTURES AGAINST TSUNAMI DEBRIS

March 2014 marked 50 years since the Great Alaska Earthquake of 1964, which caused the largest and most devastating recorded tsunami ever to strike the Pacific Coast.

Researchers have made great strides toward understanding the destructive power of these dangerous waves since then. Yet engineers could only estimate the forces at work when debris struck a home or a similar structure under tsunami conditions—until now.

In a lab at Lehigh's **ATLSS** (Advanced Technology for Large Structural Systems) Engineering Research Center, **Clay Naito**, an associate professor of structural engineering and associate chair of the department of CEE, is measuring the real-world impact of tsunami debris with tests involving a telephone pole and a shipping container. His work is part of a larger effort by engineers across the country, with support

from the National Science Foundation (NSF), to design and carry out a series of large-scale tests aimed at better understanding what happens when debris strikes.

"The research project is essentially looking at the types of debris that would be in a typical tsunami environment, and what forces are being generated by that debris," Naito said. "The general understanding gained from these models allows the team to determine building-design loads for impact by various debris types, based on their impact velocity, mass and stiffness. These data allow us to examine the response of buildings, and provide engineers with the information needed to design for an accidental impact."

Naito's work was featured on the *NSF Science Nation* channel and shared by *The Weather Channel* and other news outlets. Visit bit.ly/TsunamiDebris to view the video. ●



CEE FACULTY WORLD TOUR

ISRAEL

SENGUPTA VISITS ISRAEL TO SHARE WATER RESEARCH

Arup SenGupta, P.C. Rossin Senior Professor of Environmental Engineering, traveled to Israel in early 2014 on an international cooperative research grant. SenGupta gave lectures at Technion University in Haifa and Ben Gurion University in Negev about a brackish water desalination technique developed with Ryan Smith, his doctoral student. The desalination process creates significantly less waste, which is an important consideration for the water-stressed country. The project is currently funded by the National Science Foundation's Advancing Research Innovation program.

ITALY

PAOLO BOCCHINI, PRIDE OF THE ALMA MATER

Few academic institutions are steeped in tradition like Italy's University of Bologna, which was founded in 1088. For example, it is the University's custom to inaugurate each academic year by inviting a prominent public figure to give the *lectio magistralis*, a speech by a master teacher or expert. Recently, the school also known as the *Alma Mater Studiorum*—the very first "alma mater" and Europe's oldest university—instead invited five young, successful alumni to give their own version of the inaugural speech. Representing *la forza dei migliori*—the strength of the best ones—for the area of engineering and applied science was CEE's own **Paolo Bocchini**, assistant professor of structural engineering (pictured far left.)



QATAR

SULEIMAN STARTS RESEARCH PARTNERSHIP WITH QATAR U.

In May 2013, **Muhannad Suleiman**, assistant professor of geotechnical engineering, visited Qatar University on a trip funded by the office of international affairs at Lehigh. His mission: initiate collaboration on a three-year research project to study how geothermal deep foundation systems perform in cooling-dominated environments (like Qatar's). The proposal Suleiman developed recently received nearly \$845,000 in funding from the Qatar National Research Fund. Students and faculty from Lehigh and Qatar University will visit both countries during the course of the project.



CHINA

PESSIKI BROADENS OPPORTUNITIES OVERSEAS

Stephen Pessiki, professor of structural engineering, spent eight weeks in China during spring 2013 as a visiting scholar at Tongji University in Shanghai. He also visited several other universities in his role as senior faculty adviser to the office of international affairs at Lehigh. Pessiki lectured on sustainable seismic design, an alternative to traditional earthquake engineering pioneered at Lehigh; promoted a summer research program for Lehigh undergraduates; and received an honorary professorship from the University of Jinan.

GERMANY

FOX, GERMAN RESEARCHERS TAKE ON FOUNDRY POLLUTION

The U.S. and Germany are home to the most productive foundries in the world—and now, a productive partnership. **John Fox**, assistant professor of environmental engineering, is working with researchers at Freiberg University of Mining and Technology to develop technologies specifically aimed at pollution prevention for foundries. Freiberg's focus on foundries provides an ideal research partner for Fox, who specializes in biomaterial-based foundry binders and mold material recycling. Their work informs efforts to develop technology-based solutions that meet increasingly stringent global environmental regulations.



PAKZAD RECEIVES NSF CAREER AWARD

The five-year grant will support the development of mobile sensor technology for structural condition assessment.

SHAMIM PAKZAD, an associate professor of structural engineering, has received a five-year CAREER Award from the National Science Foundation (NSF) to support his research on the development of mobile sensor technology for structural condition assessment.

Pakzad's research aims to create an entire class of new methods for understanding how structural systems behave using mobile sensors to collect data. His CAREER project will focus on analytical models and experimental platforms for validation and verification that improve the safety and reliability of highway bridges.

Driving the data collection is a network built on the ubiquitous mobile devices of daily life. The same sensors that orient smartphones, tablets, GPS and their like connect a wide, dense

measurement grid ideally suited for data mining. This revolution in electronic sensing technology has created unprecedented opportunities for gauging structural response and environmental conditions at rates, volumes and locations not possible before.

"Structural sensing used to be a very expensive and impractical thing to do. Now, not only do we have devices that we can build and design for this purpose, we have this untapped wealth of data that could be collected from devices we already have to add to our knowledge," says Pakzad.

An expert in wireless sensing and structural health monitoring, Pakzad believes that the ability to identify the condition of structural systems in real time has far-reaching implications for society.



Graduate student Tom Matarazzo (left), Shamim Pakzad and Babette Hohrath '15 inspect a beam designed to simulate a highway bridge and provide mobile sensing data.

"Our communities need structures and systems that are more resilient to hazards, disruptive events and the deterioration that occurs as a result of wear and tear," he says. "The goal of my research through this CAREER project is to use the novel capabilities of mobile sensors to address those needs."

Future engineers will also benefit from Pakzad's CAREER award. Research outcomes of the project

will be incorporated into a comprehensive educational plan for underclassmen and students underrepresented in STEM (Science, Technology, Engineering and Mathematics) disciplines through two programs: a hands-on summer school in sensing and structural health monitoring, and project-based research at Lehigh for Pennsylvania community colleges.

Visit bit.ly/SPakzad to learn more about Pakzad and his work. ●

STRUCTURES GRAD STUDENTS LAND TOP PLACEMENTS IN CONCRETE COMPETITIONS

Clay Naito, associate professor and associate chair of civil and environmental engineering, guided three teams of graduate students to high-placed finishes in two national competitions.

Last October, an accurate calculation of the blast resistance of a six-inch reinforced concrete wall earned his team first place in the complex analysis group and second place in the simplified prediction group at the American Concrete Institute's Blast Blind Prediction Contest.

The team consisted of Ph.D. candidates Patrick Trasborg and Pierluigi Olmati, who is currently a student in Italy. Their work, which assessed structural safety following an explosion, has significant relevance to the public. "Our placement in this contest shows that the predictive methods we're using are very good at estimating these behaviors," says Naito.

Another Naito team, consisting of Ph.D. candidate Kourosh Mahvashmohammadi and graduate students Nicola Carey and Mustafa Furkan, took first place in the Precast/Prestressed Concrete Institute (PCI)'s Big Beam Contest.

This was the first national win for Lehigh, which leap-frogged from its former spot at sixth place. Cash prizes are awarded based on factors such as design efficiency, accurate prediction of capacity and economics.

A third team, comprised of M.Eng. in structures students Hardik Doshi '13G, Jose Hernandez '13G, and Ben Nichols '13G, placed second at the Big Beam Contest. The teams earned \$2,000 and \$750 respectively to fund their educational pursuits.

The beams were generously produced by PCI Producer Member Northeast Prestressed Products, LLC, (NPP) of Cressona, Pa., which views the Lehigh support as an investment in the future of the precast/prestressed concrete industry. "The students have to design a beam that will withstand a certain loading while considering its cost and 'constructability,'" says Gary Lehman, NPP plant manager. "They're involved in the process from design to fabrication to final testing, which helps prepare them for the real-life engineering ahead." ●

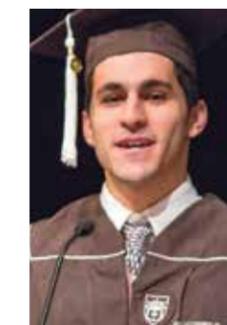


FULBRIGHT FELLOW'S RESEARCH RECEIVES "RARE RECOGNITION"

A top research journal showcased the work of a Lehigh master's student on its cover. Michael German, a Fulbright fellow pursuing his Ph.D. in environmental engineering at Lehigh, is the lead author of a paper on waste neutralization featured on the March 5, 2013, cover of *Environmental Science and Technology*. The study is co-authored by Arup SenGupta, who advises German, and CEE alumnus John Greenleaf. "This is a very rare recognition for a graduate student or even faculty, for that matter," said SenGupta. Visit techhumanface.weebly.com to learn more about their global efforts in groundwater remediation. ●

CEE'S VIGNALI REPRESENTS RCEAS AT 2014 HONORS CONVOCATION

Russ Vignali '14, a student in the [Integrated Business and Engineering program](#), was selected to represent the College of Engineering at the 2014 Honors Convocation. The high-honors student and star track athlete was also the president of Lehigh's founding chapter of Bridges to Prosperity (see feature, p. 16). Vignali, who graduated as a president's scholar, is using his tuition-free fifth year to earn a master of engineering in structural engineering. ●



EWB WINS 2013 STUDENT CLUB/ ORGANIZATION ADVISER OF THE YEAR AWARD

The student club/organization advisory award recognizes those who significantly contribute to a student organization outside of their primary job responsibilities. These advisers provide support, guidance and mentoring that empowers the organization to effectively lead and self-govern. CEE proudly recognizes award recipients Rick Weisman, professor of water resources engineering, Kristen Jellison, associate professor of environmental engineering, and Dan Zeroka, engineering technician, for their continuing contributions to the Lehigh Chapter of [Engineers Without Borders](#). ●

FACULTY AT A GLANCE

5
NUMBER OF
NATIONAL SCIENCE FOUNDATION
CAREER AWARD RECIPIENTS

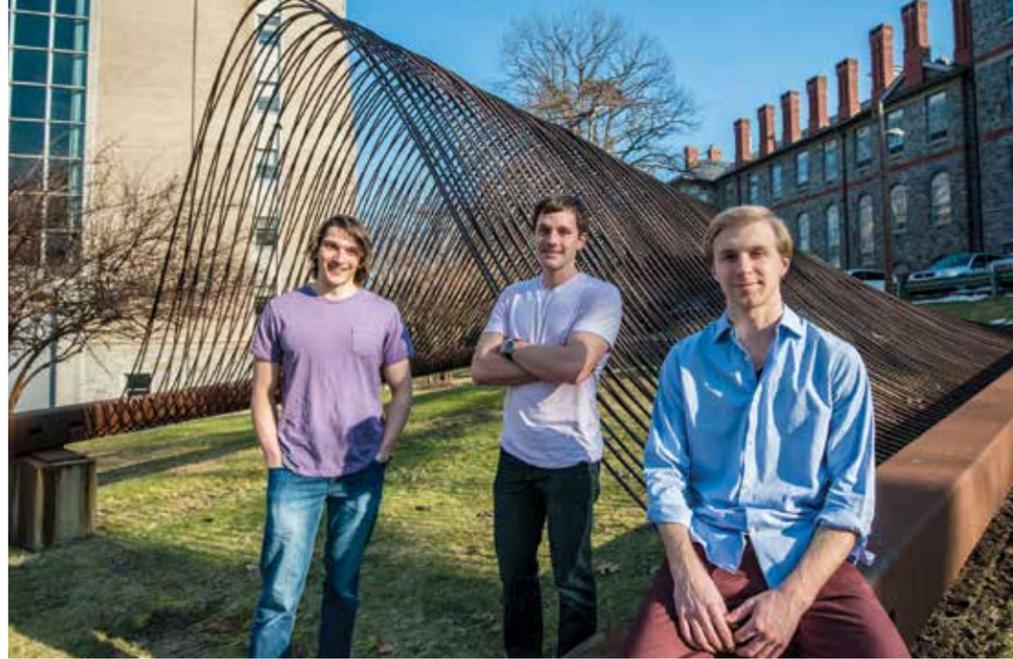


DERICK BROWN · PANOS DIPLAS · KRISTEN JELLISON
SHAMIM PAKZAD · JIM RICLES

2
NATIONAL
ACADEMY OF
ENGINEERING
MEMBERS:

JOHN FISHER
PROFESSOR EMERITUS

ALAN PENSE



THREE CEE STUDENTS NAMED 2014 MARTINDALE STUDENT ASSOCIATES

Thomas Jawin '14, Agustin Villarreal '15 and Alexander Niewiarowski '14 (l-r) traveled to the Republic of Slovenia in May 2013 as part of the [Martindale Student Associates Program](#). The select group of 12 was tasked with reporting on a variety of Slovenian business, economic and social issues. Students attended briefings in Washington, D.C., before departing for Slovenia, where they met with government and business leaders. Their findings will be published in the 2014 edition of the undergraduate journal *Perspectives on Business and Economics*.

Now graduated, Jawin was an environmental engineering major and Niewiarowski was a dual-degree major in civil engineering and architecture. Villarreal is a civil engineering major. ●



CEE REPRESENTS AT 2014 FREED UNDERGRADUATE RESEARCH SYMPOSIUM

Amy Shoebottom '15 (pictured right) and Heba Elsayed '15 presented research at the Freed Undergraduate Research Symposium earlier this year. Advised by [John Fox](#), assistant professor of environmental engineering,

Shoebottom is a LEED-accredited environmental engineering major researching diesel particulate filter reclamation. Elsayed, who is advised by [Paolo Bocchini](#), assistant professor of structural engineering, presented research on bridge restoration following an earthquake. Over the summer, Shoebottom worked for the water/wastewater division of [KCI Technologies](#) while Elsayed interned at the [Turner Construction Company](#).



LU STUDENT CHAPTER PRAISED BY NATIONAL ORGANIZATION

The [American Society of Civil Engineering Committee on Student Members](#) awarded Lehigh's ASCE Student Chapter a letter of honorable mention for its outstanding activities and contributions to developing the future of civil engineering. This honor is received by only the top third of all ASCE student organizations. According to ASCE's director of educational activities, the chapter's accomplishments reflect the enthusiasm and hard work of student officers and members, as well as the guidance of faculty adviser [Jennifer Gross](#). ●

PH.D. CANDIDATE AWARDED NSF FUNDING FOR DESALINATION RESEARCH

In May 2014, a three-minute pitch at a National Science Foundation conference earned doctoral candidate Ryan Smith second place in a competition designed to school young researchers in the art of the funding proposal. Smith attended the conference on a grant he earned for the marketing promise of his Ph.D. research: an environmentally friendly desalination process that pretreats brackish water to selectively remove sulfate and produce less brine. Smith recently submitted an application to patent the new desalination technology. ●



TSAMPRAS SECURES GRANT FROM GERONDELIS FOUNDATION

Graduate student Georgios Tsampras won a \$5,000 grant from the Gerondelis Foundation Inc. for the 2012-13 academic year. The Massachusetts-based foundation awards grants to deserving Greek students attending graduate school at American universities. Tsampras, a P.C. Rossin Doctoral Fellow, is working with [Richard Sause](#), the Joseph T. Stuart Professor of Structural Engineering, on an experimental validation of a building system that reduces seismic inertial force and floor accelerations during an earthquake. Visit bit.ly/NEESLehigh to read an abstract. ●



PARKER PRESENTS PAPER AT ASCE REGIONAL COMPETITION

During her last year as an undergraduate, the research that Olivia Parker '13, '14G conducted on bridge damage caused by earthquakes and floods earned her a second-place finish at the 2013 Steel Bridge Mid-Atlantic Regional Competition in Pittsburgh. The paper specifically explored the impact of water on the unseating of bridge spans and the preventative measures available to prevent structural failure due to natural disaster. The M.Eng. in structural engineering alumna is currently employed by [Severud Associates](#), New York City. ●



JHA PAPER LANDS SECOND PLACE IN EWRI STUDENT COMPETITION

Rajan Jha's study, "Classifying Streams on the Basis of Elevation Above Mean Sea Level, A Statistical Approach" garnered second place in the 2014 national student technical paper competition sponsored by the [Environmental and Water Resources Institute](#) (EWRI) of ASCE. The award earned Jha \$250 in prize money and an invitation to present his research at the 2014 World Environmental and Water Resources Congress. As a master's student, Jha was advised by Panos Diplas, the P.C. Rossin Professor and chair of CEE, while both were at Virginia Tech. Jha is currently employed by the international consultancy [ARCADIS-US](#) in its Richmond, Va., office. ●



PH.D. STUDENT EARNS SCHOLARSHIP FROM TAIWANESE GOVERNMENT

WuRong Shih (pictured left), a Ph.D. student in CEE's water resources program, has received a two-year, \$32,000 scholarship from the Ministry of Education of Taiwan to pursue his doctorate abroad. Shih's research in the area of fluid mechanics and sediment transport helped earn him the prize, one of nine conferred in the engineering/natural disaster category.

Shih earned his master's in hydraulic and ocean engineering from Taiwan's National Cheng-Kung University. He is currently working with [Panos Diplas](#), Professor of Water Resources Engineering, to complete his doctoral work. ●

AZERO RECOGNIZED BY LEHIGH FOR ASCE LEADERSHIP

At the annual student life leadership award ceremony in April, civil engineering major Alexander Azero '14 won the Allegiance Award for his four years of exemplary work with the Lehigh student chapter of the American Society of Civil Engineers (LU-ASCE). "We quite intentionally nominated Alex for the Allegiance Award because it honors the spirit of continuous improvement within an organization," says Panos Diplas, chair of the department of CEE. "LU-ASCE has prospered under Alex's leadership in multiple ways, and quite often because of his individual efforts." ●



GEO-INSTITUTE APPOINTS LIN TO ADMINISTRATIVE ROLES

Ph.D. candidate Thomas Hai Lin attended the ASCE Geo-Congress 2014 in Atlanta to present his research. He returned the elected chair of the Geo-Legends committee and a member of the public relations committee. Both committees report to the Student Leadership Council of the [Geo-Institute](#) national organization.

Lin's been equally busy as an author. Two articles about geotechnical professors Edward Kavazanjian Jr. and J. Carlos Santamarina, co-written with fellow Ph.D. candidate Suguang Xiao, were published in *Geo-Strata* magazine. ●



GOOD BRIDGES, GOOD NEIGHBORS

STORY BY KELLY HOCHBEIN



A 243-foot bridge over Panama's Rio Indio now connects the remote villages of El Harino and Vallecito. It was built by civil engineering majors in the Lehigh student chapter of Bridges to Prosperity (B2P). Quite an accomplishment for a club that started only a year ago.

IN LATE MAY, SEVEN STUDENTS FLEW TO PANAMA CITY and boarded a bus headed southwest to the mountains in the center of the country.

One hour later, the students got into the back of a pickup truck and continued for another hour on a dirt road.

When the pickup could go no further over the muddy, mountainous terrain, the group got out and hiked for another hour, hauling their belongings and equipment to their base of operations, the small village of El Valle along the Rio Indio river.

The students, seven civil engineering majors, were now ready to build a bridge.

The Rio Indio divides the remote communities of El Harino and Vallecito. During the dry season in Panama, from mid-December to early May, the river runs approximately three feet deep. Still, residents cross it on foot.

When heavy rains begin in May, the Rio Indio can rise five feet in 30 minutes. Now impassible, the surging river completely cuts off residents' access to essential resources located on the other side of the river. Children in El Harino cannot attend school. Residents of Vallecito cannot reach the paved road, shop at the market, or receive medical care. The isolation makes daily life in this already impoverished community challenging at best, devastating at worst.

A footbridge, however, changes everything.

The students who traveled to El Valle were members of the Lehigh student chapter of Bridges to Prosperity (B2P), a nonprofit organization that partners with university student chapters to build footbridges in isolated communities around the world.

Clockwise from left: Stringing the center line. Bridge by Lehigh U. Excavation of anchorages. The lunch house.



A 243-FOOT-LONG CAPSTONE PROJECT

Hardik Doshi, a former B2P intern who received a master of engineering degree in structural engineering from Lehigh in 2013, introduced B2P to a group of undergraduate civil engineering students a little more than a year ago.

The students applied to B2P for chapter status and raised \$10,000 for their project in Panama, receiving a Thornton Tomasetti Foundation grant and a Grant for Experiential Learning in Health from Lehigh.

In January, Russ Vignali '14 and Juan Viteri-Yaquian '14 traveled to Panama to survey and select a site. Equipped with the necessary information about the Rio Indio, the group began to design a suspended foot-bridge with a 243-foot span.

"This is pretty much a capstone of everything they learn," says Clay Naito, associate professor of structural engineering and the B2P chapter's adviser. "The part which we are almost never able to do in the classroom is that they can then take the design, go out to the site, and actually build it."

Advisers who accompanied the students on the three-week bridge-building trip were Naito, Peter Bryan, Darrick Fritchman, Patrick Trasborg and Dan Zeroka. Local families in El Valle hosted the group. Assisted by local volunteers, the group dug trenches with shovels and carried equipment and materials such as cement, rebar and 1,000-pound cables on the arduous 40-minute hike from El Valle to the bridge site in Vallecito. Hard work and creative problem-solving became routine on the project.

Engineering students typically work on paper or build a replica of something already in existence, says Doshi, who assisted with the project, "but this is completely different. They get a chance to actually make a difference and at the same time use their engineering knowledge for something that's really valuable."

Today, the footbridge is completed and its impact on the community is immeasurable. Children no longer miss months of school. Farmers can travel to the main marketplace to sell their crops. Obtaining medical care no longer involves tremendous risk. The Lehigh B2P footbridge has changed everything.

Next year, the chapter is planning to build another bridge in Panama. Tara Hofferth '15, who is leading this year's group, says the transformative project taught her how to think innovatively.

"This experience gave me the opportunity to work with a group of students that I did not know on an unprecedented project," Hofferth wrote in a report about the project. "[It] involved being creative and innovative, thinking from a multidisciplinary perspective, networking, and stepping outside of my comfort zone.

"I think we're going to be a lot more prepared to be even more successful next time.

"The Lehigh University Bridges to Prosperity Chapter is just getting started."

Visit bridgestoprosperty.org to learn more about the international organization.

Visit facebook.com/BridgesToProsperityLehigh/timeline to view the Lehigh chapter's Facebook page with photos.

Visit ignite.lehigh.edu/b2p to donate to the club. ●



Top to bottom: Carrying supplies across the river. Fabricating the anchor block reinforcement. Trench teamwork on the cage.



21%
OF 2014
GRADUATES ARE
PLANNING TO ATTEND
GRADUATE SCHOOL

Where they're headed:

- COLUMBIA UNIVERSITY
- LEHIGH UNIVERSITY
- PENN STATE UNIVERSITY
- PRINCETON UNIVERSITY
- RENSELAEER POLYTECHNIC INSTITUTE
- STATE UNIVERSITY OF BUFFALO
- UNIVERSITY OF PENNSYLVANIA
- UNIVERSITY OF TEXAS AT AUSTIN
- VIRGINIA TECH

**THE
PRESIDENT'S
SCHOLARS**
2013 / 2014

9
NUMBER OF UNDERGRADUATES WHO
EARNED A TUITION-FREE,
FIFTH YEAR OF STUDY AT LEHIGH

1
PRESIDENTIAL FELLOW, PURSUING A
PH.D. IN STRUCTURAL ENGINEERING,
STARTING FALL 2014

ROSSIN FELLOW APPOINTMENTS

2013 / 2014

12
DOCTORAL FELLOWS

6
JUNIOR FELLOWS

1
EXECUTIVE BOARD APPOINTMENT,
SARAH EARLY AS SECRETARY

18

NUMBER OF GRADUATE STUDENTS
WHO HAVE PARTICIPATED IN THE
LEHIGH TEACHER
DEVELOPMENT PROGRAM*

*Includes fall 2012 participants

DID YOU KNOW?

The U.S. Department
of Education has
cited Lehigh's graduate
tracking system as
a model for
measuring student
success.

ON THEIR WAY: The Class of 2014

21

NUMBER OF COMPANIES
THAT EXTENDED OFFERS OF
EMPLOYMENT TO CEE GRADS

- | | |
|-------------------------------|-------------------------------|
| ANADARKO PETROLEUM | KPFF |
| BAKER HUGHES | MCLAREN ENGINEERING GROUP |
| BSI CONSTRUCTION LLC | MICHAEL BAKER CORPORATION |
| CLARK CONSTRUCTION | PHARIS STRUCTURAL ENGINEERS |
| DESIMONE CONSULTING ENGINEERS | PHILADELPHIA WATER DEPARTMENT |
| DEWBERRY ENGINEERS | SEVERUD ASSOCIATES |
| D'HUY ENGINEERING | SIMPSON GUMPERTZ HEGER |
| HOPE FURRER ASSOCIATES | TORCON |
| JOHN MORIARITY AND ASSOCIATES | TURNER CONSTRUCTION COMPANY |
| KCI TECHNOLOGIES | WHITING-TURNER |
| KLEINFELDER | |

COMPANIES THAT HAVE HIRED LEHIGH CO-OP STUDENTS

- HBK ENGINEERING
- HNTB
- KCI TECHNOLOGIES
- LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES
- LARSON DESIGN GROUP
- PENNONI AND ASSOCIATES
- REMINGTON AND VERNICK ENGINEERS AND AFFILIATES
- SOUTH WHITEHALL TOWNSHIP

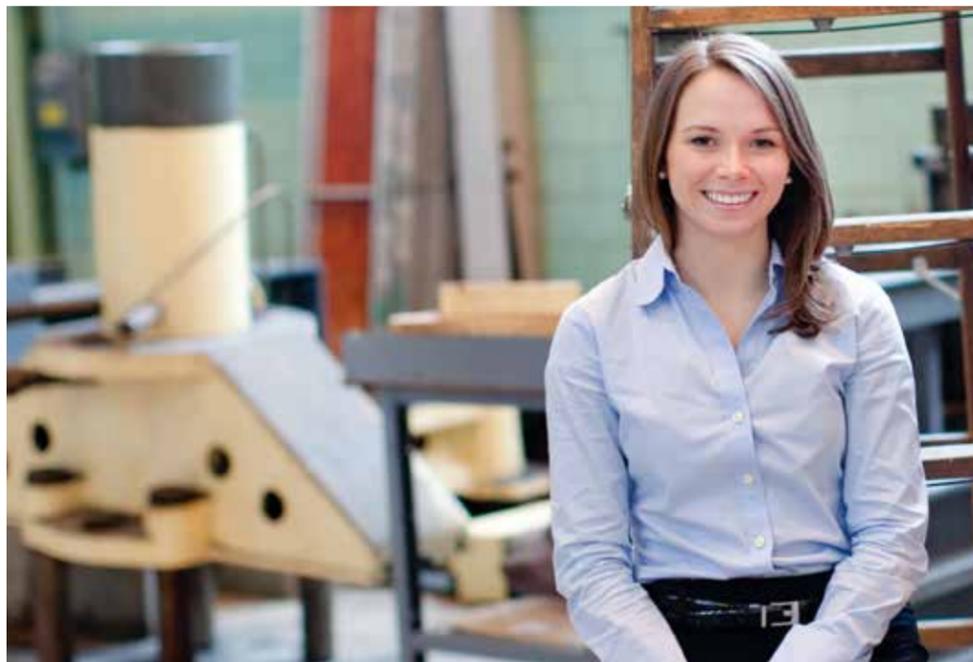
Ruigen Yao '11G graduated with her doctorate in structural engineering in 2014. She's currently a post-doc at the University of Michigan, Ann Arbor.



**CO-OP
PROGRAM
GRADUATES**
2013/2014

2013:
4
STUDENTS

2014:
7
STUDENTS



ALUMNA LANDS “DREAM JOB COME TRUE”

The arc of Michelle Tillotson’s career has quite literally reached the stratosphere. After the Lehigh alumna earned her B.S. in civil engineering in 2010 and her M.Eng. in structural engineering in 2011, the former research assistant joined the nuclear division of PPL as a structural engineer in September 2012. Opportunity soon came knocking again, and this time it offered Tillotson the job of her dreams: In July 2013, the E.I.T. accepted a position with NASA’s Marshall Space Flight Center in Huntsville, Alabama.

In her role as a stress analyst, Tillotson is part of a team working to reduce costs and risks for NASA’s next-generation rocket. Called the Space Launch System (SLS), the rocket will be what a NASA press release describes as “the world’s most powerful launch vehicle... capable of taking a crew and cargo on deep space missions, including to an asteroid and eventually to Mars.”

The young engineer is also the manufacturing lead at the Marshall Center for the NASA Shell Buckling Knockdown Factor Program, part of

a larger project led by the NASA Engineering and Safety Center (NESC). The goal of the project is to engineer stronger, lighter rocket tanks—one of the heaviest parts of the rocket—so the rockets can carry heavier payloads to space more cost-effectively. And every pound counts at these scales: The SLS core stage will stand at more than 200 feet tall with a diameter of 27.6 feet. It will store cryogenic liquid hydrogen and liquid oxygen that will feed the vehicle’s RS-25 engines.

Tillotson is excited to be applying her expertise in mechanics of materials and finite element modeling to aerospace engineering. She discovered the possibility in classes with John Wilson, professor of structural engineering. “His courses in Mechanics and Finite Elements made me realize my scope of knowledge wasn’t limited to bridges and buildings,” said Tillotson. She credits all her Lehigh professors for the preparation that helped her realize her potential as an engineer. ●

WHERE ARE THEY NOW?

THE CLASS OF 2013

95%

OF BSCE GRADUATES ARE EMPLOYED OR IN GRAD SCHOOL

72%

OF BSEE GRADUATES ARE EMPLOYED OR IN GRAD SCHOOL

\$55K

AVERAGE STARTING SALARY OF CEE GRADS

INDUSTRIES WHERE THEY’RE WORKING

- BUILDING MATERIALS AND CONSTRUCTION
- CHEMICAL, DRUGS AND ALLIED PRODUCTS
- COMPUTER SOFTWARE AND DATA PROCESSING
- CONSULTING SERVICES
- ENGINEERING/SURVEYING
- ENVIRONMENTAL/WASTE MANAGEMENT
- OTHER MANUFACTURING EMPLOYERS
- PETROLEUM AND ALLIED PRODUCTS
- TRANSPORTATION

Source: Lehigh Career Services, June 2014

UNIVERSITY OF MINNESOTA DEDICATES STRUCTURES LAB TO GALAMBOS

On May 7, 2013, the University of Minnesota renamed its cavernous structural engineering laboratory after one of its most prominent and gifted engineering faculty—and one of Lehigh University’s most distinguished alumni.

The Theodore V. Galambos Structural Engineering Laboratory is a four-story lab designed for modeling and testing large-scale structural components. Now, it is also a testament to Galambos’ more than 40 years of groundbreaking contributions to civil engineering at the University of Minnesota and the profession at large.

Galambos earned his Ph.D. in civil engineering from Lehigh University in 1959 after receiving both his B.S. and M.S. at the University of North Dakota in Grand Forks in the same field. Upon graduation from Lehigh, Galambos taught and researched at the university until 1965, when he left to join the civil engineering faculty of Washington University in Saint Louis.

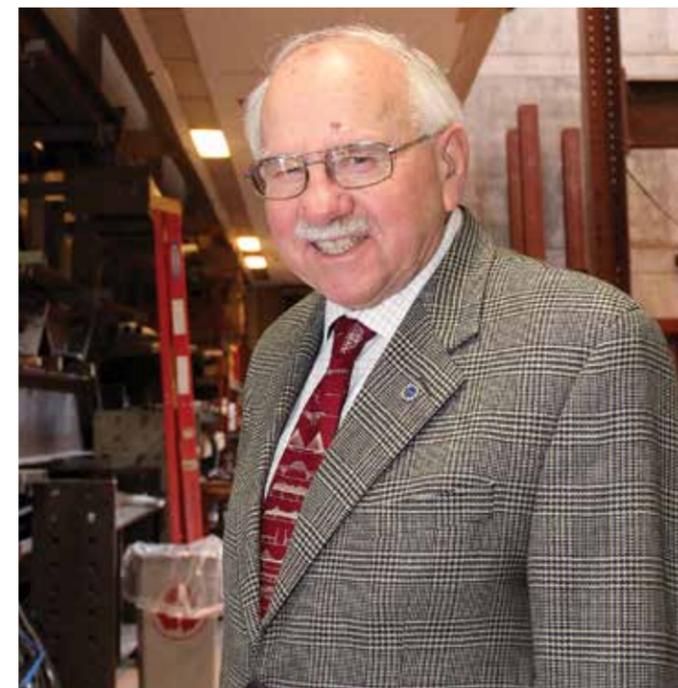
In 1981, Galambos left Washington University to become a professor of engineering at the University of Minnesota, where he has served as emeritus professor of structural engineering since

his retirement in 1997.

Galambos’ research areas include the reliability of structures, structural design standards and stability of steel structures. He has authored more than 100 publications on various aspects of structural engineering, and participated in almost every major specification committee for metal structures in the U.S.

In 1979, Galambos was elected to the National Academy of Engineering, one of the highest honors accorded to engineers. His single largest contribution to the field is his key role in developing the reliability-based load factor and resistance design code for steel structures that the profession uses today.

In 2002, Galambos was awarded the American Society of Civil Engineer’s (ASCE) prestigious Outstanding Projects and Leaders (OPAL) award for his contributions to civil engineering education. Other notable awards include the 1992 Ernest E. Howard Award, also from ASCE, for his contributions to the field of civil engineering. ●



TANK-TECH COMPANY SCORES A WIN

An aquarium-technology company co-founded a decade ago by environmental engineering alumnus Tim Marks ’04, ’06G and his fellow Lehigh alum Pat Clasen ’04, ’07G has been named a “Small Business Exporter of the Year” by the U.S. Small Business Administration’s Philadelphia district and mid-Atlantic regional offices. The company’s growth in international markets accounts for 33 percent of its total sales.

EcoTech Marine hatched in an Integrated Product Development class at Lehigh in 2003. Revenues of \$3.8 million in 2009 helped place the company into Inc.com’s Top 500 companies in 2010. In 2012, the business expanded into a 36,000-square-foot facility in Hanover Township, Lehigh County. Credit EcoTech’s strong sales of products such as the patented VorTech tank pump, which prevents aquarium water from heating up. ●

CLARKSON’S COLLINS HONORS FELLOW CEE ALUM SARKISIAN



Clarkson University’s 120th commencement ceremony also set the stage for a distinguished CEE reunion. Mark Sarkisian ’85G, director of seismic and structural engineering in the San Francisco office of Skidmore, Owings & Merrill LLP, received an honorary doctor of science degree from his fellow CEE alumnus, Anthony Collins ’73G, ’82Ph.D., the president of Clarkson.

Clarkson awarded Sarkisian the degree for his “dedication to the science and art of engineering, for his visionary development of sustainable buildings and construction methods, and his inspiring work with future generations of engineers, designers and builders.”

To read Sarkisian’s bio, visit bit.ly/Sarkisian. To read Collins’ bio, visit bit.ly/CollinsClarkson. ●



NYIKADZINO LANDS PRINCETON U. RESEARCH INTERNSHIP

After graduation, Virginia Nyikadzino '11 worked as a design engineer for structural consultants [PCB International LLC](#). Compelled by her passion for geoenvironmental research, a desire to pursue graduate study, and hopes of working in research and development within Africa, the former Botstiber Scholar found her opportunity to do so in the Ivy League.

In April 2013, Nyikadzino began a research internship with Kelly Caylor, an associate professor of civil engineering and director of the NSF-supported [Princeton Ecohydrology Lab](#). The internship took her to the Mpala Research Center in Kenya, where she worked on a project to collect soil gas and atmospheric data, focusing on hydrogen isotopes in water vapor.

In October 2013, Nyikadzino headed to Botswana, where she did similar work on atmospheric carbon dioxide. The young researcher concluded her year in Zambia, where she contributed to an integrated environmental and agricultural mapping project.

Visit bit.ly/LUBotstiber to learn more about the Botstiber Scholars Program. ●

LIFE AFTER CEE@LEHIGH

Hard-earned diplomas in hand, recent graduates of the department of civil and environmental engineering are launching careers at major companies and pursuing advanced degrees at prestigious schools. Visit bit.ly/CEEAlumni for a sampling of where our newest alumni are earning and learning.



FALOTICO FEATURED IN WOMAN ENGINEER

Kristen Falotico '12, '13G, an environmental engineer with [AECOM](#), was featured in the Winter 2013/2014 issue of *Woman Engineer* magazine for her work on contaminated groundwater at a mining site. "My average day consists of operating and maintaining a system that injects solution into wells deep in the ground," Falotico said in the article. The solution provides food for naturally occurring bacteria in the ground. Bacteria consume the contaminant along with the food, decreasing its concentration in the groundwater.

Falotico, whose graduate research focused on microbiology, sees remediation technology as a growing and important field. "You feel good about the work you are doing by cleaning up the environment, and in turn, making it a safer place to live," she said. "It is a great feeling, knowing that I am part of the team that is directly involved in cleaning up this groundwater." ●



ZARRILLI APPOINTED TO FEMA NATIONAL ADVISORY COUNCIL

In August 2014, the Federal Emergency Management Agency ([FEMA](#)) appointed Daniel Zarrilli '97 to serve on its [National Advisory Council](#) (NAC). NAC was established by the Post-Katrina Emergency Management Reform Act of 2006 and advises FEMA on all aspects of emergency management.

U.S. Senators Charles Schumer and Kirsten Gillibrand urged FEMA to appoint Zarrilli to the Council, citing his experience as the director of the City of New York's Office of Recovery and Resiliency and his leadership following Hurricane Sandy. FEMA received more than 200 applications for the open positions; Zarrilli is one of only 12 new members. His appointment ends in July 2017.

Zarrilli currently serves as both the director of the New York City Mayor's Office of Recovery and Resiliency and the acting director of the Office of Long-Term Planning and Sustainability (OLTPS). The professional engineer is leading the implementation of "A Stronger, More Resilient New York," the City's effort to improve resiliency by strengthening coastal protections, upgrading buildings, improving infrastructure, and making neighborhoods safer and more vibrant. On Zarrilli's watch, in September the City also committed to reduce greenhouse gas emissions 80 percent by 2050, making NYC the largest city in the U.S. to adopt that goal.

Until June 2013, Zarrilli served on the Mayor's Special Initiative for Rebuilding and Resiliency, where he led the City's efforts to develop a comprehensive coastal protection plan for the five boroughs. In a previous role, he was the senior vice president for asset management at the New York City Economic Development Corporation (NYCEDC), where he was responsible for maritime assets and operations. Before joining NYCEDC, Zarrilli spent five years with [Bechtel Infrastructure Corporation](#).

In addition to his B.S. in civil engineering from Lehigh, Zarrilli earned an M.S. in civil and environmental engineering from MIT. He currently resides in Staten Island, N.Y., with his wife, Christine, and sons, Adam, 5, and Nathaniel, 2.

Visit bit.ly/Zarrilli to read what the senators wrote on Zarrilli's behalf. ●



KUKLINSKI HONORED BY LEHIGH VALLEY ASCE AND LEHIGH ALUMNI ASSOCIATION

The [American Society of Civil Engineers–Lehigh Valley Section](#) named Gregory Kuklinski '98, P.E., its 2013 Engineer of the Year. The award recognizes civil engineers who have distinguished themselves through outstanding contributions to their profession and communities, including the education and support of younger and future engineers. Kuklinski, a structural engineer working at [Alfred Benesch & Co.](#) in Allentown, is the practitioner adviser to Lehigh University's ASCE Student Chapter.

An active alumnus, Kuklinski serves the University on the Board of Trustees, Alumni Association Board of Directors, as the Class of 1998 correspondent, and as a founding member of the Young Alumni Council. For all his efforts, a grateful Lehigh honored Kuklinski with the Alumni Award for his class at its 15th reunion in 2013. ●



LINDA KAPLAN, PITTSBURGH'S YOUNG CIVIL ENGINEER OF YEAR



The [American Society of Civil Engineers \(ASCE\) Pittsburgh Section](#) named Linda Kaplan '10G, P.E., the 2013 Young Civil Engineer of the Year. Kaplan is a bridge engineer based in [Gannett Fleming's](#) Pittsburgh office.

ASCE confers the award to an engineer under the age of 35 who has demonstrated outstanding performance in the field of civil engineering

and who is actively involved in both ASCE and the community.

Kaplan is the vice president of the ASCE Younger Members Forum and is a member of its outreach and program committees. The Pittsburgh resident also volunteers with the ACE (Architecture, Construction, and Engineering) Mentor Program. Her professional projects include Pittsburgh's Squirrel Hill Tunnel Rehabilitation and the Hulton Bridge Replacement in Allegheny County. ●



A MOMENTOUS COMMENCEMENT

Graduations mark major milestones in the life of a family. This was doubly so for the Wu family in 2014, as Dean S. David Wu officiated over his last Lehigh commencement while his son Brian received his B.S. in civil engineering. Both commenced to bigger, new challenges: provost of George Mason University and graduate student in the master of engineering in structural engineering program at Lehigh.

Visit bit.ly/LUMEngStructures to learn more about the M.Eng. in structures program.





WESLEY MORRIS PHOTOGRAPHY

SHARING VOWS AND HARD HATS

It seemed only fitting that CEE alumna Lauren Horwath '10, '11G wed journalism alumnus Andrew Daniels '10 beside the scaffolding built for the Packer Chapel renovation. Lauren, an assistant project manager at Whiting-Turner, and Andrew, a senior associate editor at Men's Health magazine, were married a year in June 2014.



JAN PHOTOGRAPHY

AN ARTS/ENGINEERING WEDDING

Bob Antes '10, '11G married Danielle Setola '10 on Sept. 21, 2013. True to Lehigh's interdisciplinary spirit, the groom brings his BSCE and M.Eng. degrees to the union; the bride, her B.A. in psychology.



AND BRAYDEN MAKES FOUR

Dawn and Greg Kuklinski '98 welcomed son Brayden to the family on March 4, 2013. He enjoys playing with his big sister Ashley and attending Lehigh football games.

DONOR HONOR ROLL

CEE gratefully acknowledges the generosity of those who supported the department in 2013-14:

- | | |
|---|--|
| Mr. John M. Archibald | Mr. and Mrs. James L. Long |
| Ms. Dinah S. Barrionuevo | Mr. Ernest Maiteri |
| Mr. Douglas E. Beam | Mr. and Mrs. John E. McCartney Jr. |
| Mr. and Mrs. Paul C. Beck | Mr. Daniel McLaughlin |
| Dr. and Mrs. Craig H. Benson | Mr. and Mrs. Edward McLaughlin |
| Bentley Systems, Inc. | Mr. and Mrs. Charles Merino |
| Mr. and Mrs. James P. Braun | Mr. Evan M. Mullen |
| Ms. Melissa Braun | Dr. Clay Naito |
| Mr. Ryan Camp | Dr. Ronald E. Nece |
| Mr. Adrien S. Campbell | Mr. Alexander A. Niewiarowski |
| Mr. George Cancel | Dr. Thomas J. and Anna A. Niewiarowski |
| Mr. David A. Caso | Ms. Jennifer L. O'Connell |
| Clark Construction Group, LLC | Mr. and Mrs. Kenneth S. Peoples |
| Mr. Tim J. Collopy | Mr. John R. Perrotta |
| Mr. and Mrs. Charles R. Cummings | Ms. Linda Petri |
| Ms. Lauren Horwath Daniels | Mr. and Mrs. Raymond J. Poletto |
| Mr. and Mrs. Chad W. Davis | Mr. and Mrs. Gregory J. Polyniak |
| DeSimone Consulting Engineers | PPL Corporation |
| Mr. and Mrs. Thomas A. DiBlasi | Ms. Maureen Rinkunas |
| DNJ Property Management Services Inc. | Ms. Nicole Rivera |
| Mr. and Mrs. Robert K. Doty | Mr. John F. Ruff Jr. |
| Mr. and Mrs. Daniel B. Drawbaugh | Ms. Christa M. Schenk |
| Ms. Shelley E. Drozd | Mr. and Mrs. Shepherd |
| Mr. Daniel W. Elliott and Ms. Jeanne E. Stahl | Mr. Kyle Sidle |
| ExxonMobil Corporation | Simpson Gumpertz & Heger |
| Mr. Corey T. Fallon | Mr. Joseph T. Smith |
| Fast Weld | Ms. Kathleen F. Smith |
| Mr. Gregory F. Force | Ms. Caroline N. Sporck |
| Dr. and Mrs. Theodore V. Galambos | Mr. and Mrs. James C. Suermann |
| Mr. Zachary W. Gant | Mr. Charles E. Tanzler |
| Mr. and Mrs. Gerard M. Hiller | Mr. Kyle Terry |
| Mr. and Mrs. William T. Hofferth | Mr. and Mrs. William G. Thomas |
| KCI Technologies, Inc. | Thornton Tomasetti Foundation |
| Ms. Lori Knickerbocker | Ms. Michelle L. Tillotson |
| Mr. Kareem T. Kombarji | Mr. Patrick A. Trasborg |
| Dr. and Mrs. Brandon A. Krick | Trevcon Construction Company |
| Dr. and Mrs. Lung-Yang Lai | Verizon Foundation |
| Mr. and Mrs. Bevan E. Lawson | Mr. and Mrs. Rosario M. Vignali |
| Mr. Patrick A. Lee | Mr. and Mrs. Keith L. Webb |
| Mr. and Mrs. Donald G. Leitch | Mr. and Mrs. Paul Wiedorn |
| Mr. and Mrs. Theodore V. Lenthe | Wiss Janney Elstner Associates |
| Mr. and Mrs. Frank C. Lenzo | Mr. Andrew T. Woodward |

DEVELOPMENT OF CEE

A TRADITION OF GIVING HAS LONG SUPPORTED THE TRAINING OF LEHIGH ENGINEERS. From the cutting-edge labs where young researchers create new knowledge to the advanced degree programs that sharpen their minds, our students owe much of their success to the generosity of alumni and friends that made possible their exceptional educational experience.

Designating your gift to the department of civil and environmental engineering will have a lasting impact on students now and for generations to come. Your donation today will help CEE:

- » PROVIDE FINANCIAL AID TO GRADUATE STUDENTS
- » EQUIP AND MAINTAIN UNDERGRADUATE TEACHING LABS
- » ATTRACT GUEST SPEAKERS TO COMPLEMENT THE LEARNING EXPERIENCE
- » OFFER OPPORTUNITIES FOR INTERNATIONAL TRAVEL/STUDY
- » SUBSIDIZE PARTICIPATION IN STUDENT COMPETITIONS
- » SUPPORT STUDENT TRAVEL TO CONFERENCES
- » FUND UNDERGRADUATE RESEARCH WITH CEE FACULTY
- » PRODUCE INDUSTRIAL TESTS WITH "REAL WORLD" INSTRUCTIONAL VALUE
- » SEND STUDENTS TO EXTERNSHIPS AND INTERNSHIPS
- » SPONSOR FIELD TRIPS
- » ENHANCE THE CEE STUDENT LOUNGE

To make an online donation to CEE, visit [HTTP://MYLEHIGH.LEHIGH.EDU/ENGINEERING](http://mylehigh.lehigh.edu/engineering).

If you are also celebrating a reunion year, you can designate your gift to the department and have it count toward your class totals.

We hope that you will also continue to support the Lehigh Fund, which goes toward financial aid, the university's top priority.

EDITOR
Shelley Drozd

ASSISTANT EDITOR
Sara Vigneri

RESEARCH ASSISTANTS
Christine Moyer
Dawn McClay
Prisca Vidanage

DESIGN AND WEB SERVICES
Gipson Studio, LLC

COPY EDITOR
Amy Kovalski

PHOTOGRAPHERS
Christopher Barry
David Coulter
John Kish IV
Andrew Chung Chee Law
Clay Naito
Christa Neu
Li Wang
Wu Family



4,784
NUMBER OF
CEE ALUMNI

112 NUMBER OF DOCTORAL DEGREES GRANTED, 1993-2014
46 NUMBER OF ALUMNI IN TENURE-TRACK FACULTY POSITIONS
11 NUMBER OF TENURE-TRACK FACULTY AT U.S. UNIVERSITIES WITH TOP-50 GRADUATE PROGRAMS*

*as ranked by U.S. News and World Report

Questions?
Contact Brad Superka at
brs209@lehigh.edu or 610-758-6197.