



# Civil *and* Environmental ENGINEERING

Educating  
World-Class  
Engineers

WINTER 2014 EDITION



# Civil and Environmental Engineering Newsletter

WINTER 2014 EDITION, VOLUME 31

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On the front cover: Bridges to Prosperity students along with community members and kids who helped on the bridge.

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## Greetings from Department Head, Peggy Johnson

Dear Alumni and Friends:

I hope you are all well and having a great year. This has been a year of changes here in Civil and Environmental Engineering. In January, our new Dean of Engineering, Amr Elnashai, arrived, bringing with him an exciting new set of initiatives and many positive changes. Dean Elnashai and the Provost have committed to 38 new faculty positions across the college to help us meet the challenges of high-quality, cutting-edge research, combined with world-class engineering education. In addition to his new leadership, the college has a new Associate Dean for Research and Innovation, Theresa Mayer. And, finally, I have announced that I will be stepping down as the head of CEE in summer 2015 and will rejoin the faculty. A national search for my replacement is underway. I have thoroughly enjoyed the challenges and opportunities that being the head have brought my way. Now I look forward to reinvigorating my research and teaching.



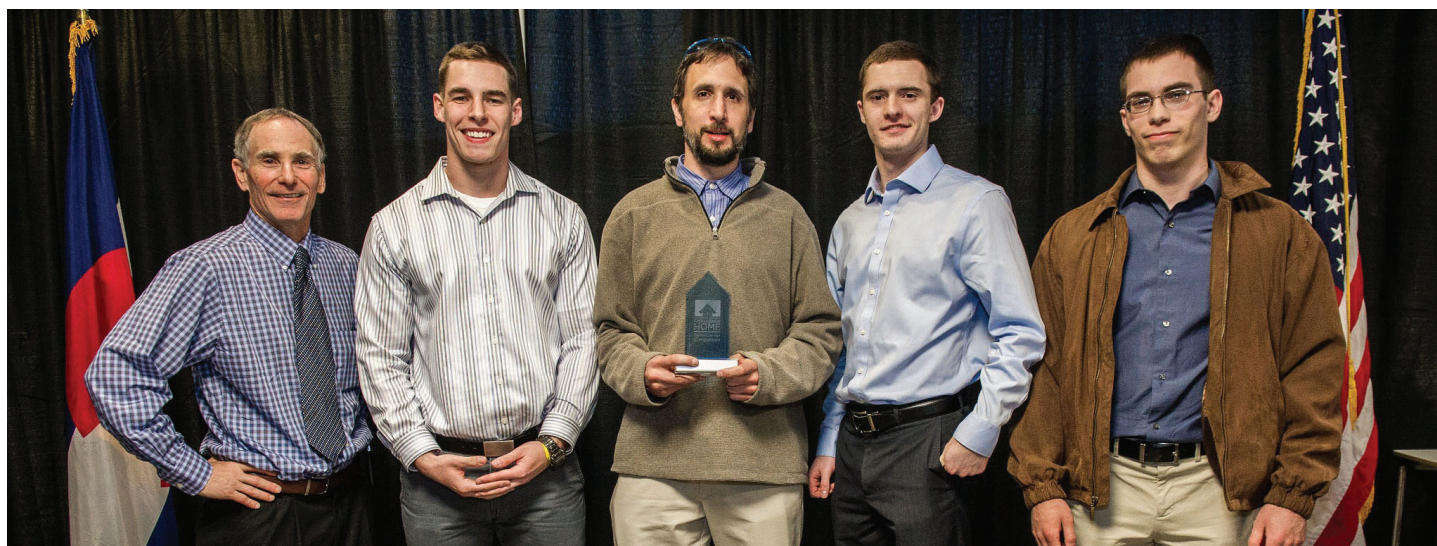
This year, we were very pleased to have several new faculty members join us. Xiaofeng Liu joined the faculty in January 2014. Liu came to Penn State from the University of Texas at San Antonio. His expertise is in the area of environmental hydraulics, sediment transport and computational modeling. In August, Parisa Shokouhi also joined the department. Shokouhi had previously been working at the Los Alamos National Laboratory. Her expertise is in infrastructure sustainability, non-destructive testing and structural health monitoring.

Our students are, as always, incredible! This year, our new student chapter of Bridges to Prosperity went to Panama and built a beautiful 250-foot pedestrian bridge. You will have an opportunity to read more about this amazing adventure in the pages of this newsletter. Our Engineers without Borders chapter is heading for Honduras where our students will design and deploy ecologically-designed wastewater treatment plants with solar energy systems in small island communities with the assistance of practicing engineers. Our concrete canoe and steel bridge students are hard at work preparing for the regional contest that will be held here at Penn State in spring 2015. In the 2013-2014 academic year, 168 undergraduates received B.S. degrees and 50 graduate students earned M.S., M.Eng, or Ph.D. degrees.

In the pages that follow, we highlight these and many other accomplishments by our faculty, staff, students and alumni. I hope you enjoy reading the newsletter, and please send us your news! We would love to hear from you and share your personal and professional accomplishments with all of our alumni in the next newsletter. Please send me an email ([paj6@psu.edu](mailto:paj6@psu.edu)), use the form in the back of the newsletter or call 814-867-6130 to give us an update on your career, your personal achievements and any other significant events.

Sincerely,

Peggy Johnson  
Professor and Head



Sam Rashkin, Drew Nicholas, Anthony Jellen, Aidan Gilrain-McKenna and Samuel Bridwell

## Students win Best Integration Award at inaugural DOE Challenge Home Student Competition

A team of Penn State students received the Best Technical Integration Award at the U.S. Department of Energy's (DOE) inaugural Challenge Home Student Design Competition held April 26-27 at the National Renewable Energy Laboratory in Golden, Colo.

The students needed to build a house that was cost-effective, energy efficient and demonstrated effective integration of building science principles.

The team of about 20 members included civil engineering graduate students **Tony Jellen** and **Ehsan Kamel**. The members were divided into four different groups including Architectural, Construction Management, MEP (mechanical, electrical and plumbing) and Building Enclosure.

"Because it was a multidisciplinary team, it was a great opportunity for everyone in the team to learn something new from other people in different areas," Kamel said. "Moreover, it provided us a great chance to see the A to Z of construction of an affordable, durable and energy efficient residential building."

Twenty-eight teams from the U.S. and Canada competed based on design/construction strategies, clear project plans, required analyses and overall competency applying best practice solutions and principles of building science from the DOE's Building America program.

Penn State's team designed and built a two-story, single family gas-powered residence in Berwick, Pa., dubbed "Nittany Lions E-den." The project took approximately five months to complete.

Entries were judged by national leading high-performance builders, building science professionals and researchers. The team won the Best Integration Award and got high marks for indoor air quality.

"Not winning the grand prize showed us that we still have a way to go, and there is room for improvement," Kamel said. "But winning that award helped us to gain more confidence in our capabilities and we realized that we are on the right track."

## Four engineering students win National Science Foundation Graduate Research Fellowships



Edwards



Kreider

Environmental engineering graduate students **Rebecca Edwards** and **Andrew Kreider** were among the four Penn State engineering students who have been named winners in the 2014 National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP).

The NSF GRFP is designed to recognize and support outstanding graduate students who are pursuing research-based master's and doctoral degrees in science, technology, engineering and mathematics at accredited U.S. institutions.

Each fellowship winner will receive three years of support, including a \$32,000 annual stipend, a \$12,000 cost-of-education allowance to the institution, international research and professional development opportunities and access to the Extreme Science and Engineering Discovery Environment supercomputer.

The NSF received more than 14,000 applications for the 2014 competition and made 2,000 fellowship award offers.

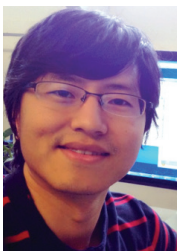
## Two CEE doctoral candidates receive CSDMS 2014 student scholarship

**Xuan Yu** and **Yu Zhang** received the Community Surface Dynamics Modeling System (CSDMS) 2014 student scholarship for their contribution to the research of landscape evolution and hydrological modeling. Both students are Ph.D. candidates in water resource engineering and supervised by **Christopher Duffy**, professor of civil engineering. The award supported their attendance at the CSDMS 2014 Annual Meeting.



Yu

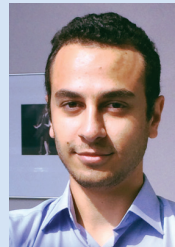
Yu focuses on the development and application of the Penn State Integrated Hydrologic Model (PIHM) on forest management, solute transport and glacier retreat. Recently, he used the state-of-the-art statistical methods to improve the quantification of uncertainty in hydrologic modeling and water resources assessment. He presented his research work titled “Uncertainty and Sensitivity in Surface Dynamics Modeling” in the CSDMS 2014 Annual Meeting.



Zhang

Zhang’s research interests are in hydrological and morphodynamic modeling. He developed a new 3D landscape evolution model (LE-PIHM), which fully coupled hydrological and morphological processes. Unlike other models, this model considered the feedback between groundwater flow and landscape evolution processes. He presented “Fully-Coupled Hydrologic Processes for Modeling Landscape Evolution” in the CSDMS 2014 Annual Meeting.

## Amir Manafpour named recipient of ASCE PA Student Award for 2014



Manafpour

**Amir Manafpour** is a second year M.S. student in civil engineering working with Aleksandra Radlinska, Farshad Rajabipour and Gordon Warn on a Pennsylvania Department of Transportation sponsored project related to bridge deck cracking. His focus is in structures and construction materials. Manafpour is an active student member of both the American Society of Civil Engineers and the American Concrete Institute and is in the Blue & White Alumni Society of Penn State.

## Civil engineering student nabs graduate award



Unal

Civil engineering Ph.D. student **Mehmet Unal**, advised by Gordon Warn, was one of four engineering graduate students who won awards in the Graduate School’s Graduate Exhibition held in the spring at the HUB-Robeson Center.

Unal placed third for “Balancing Tradeoffs: Modeling to Support Post-Earthquake Decision Making and Resource Allocation of Distributed Bridge-Transportation Networks.”

Each winner received a certificate and monetary award between \$100 and \$500.

Established in 1986, the Graduate Exhibition is open to all degree-seeking graduate students who are currently enrolled in graduate degree programs and wish to present their scholarly work. The event places special emphasis on communicating research and creative endeavor to a general audience and challenges graduate students to present their work in clear, comprehensible terms to people outside their fields.

## New scholarship benefits civil engineering students



Pattillo

For **David Pattillo**, endowing a scholarship at Penn State allowed him to say “thank you” in more ways than one.

“It was a way to recognize my parents and what they did for me and a way to recognize my roots,” said Pattillo about creating the Howard and Aileen Pattillo Scholarship in Civil and Environmental Engineering.

The scholarship from Pattillo and his wife Iris is designed to assist students from Pattillo’s hometown of Allentown, Pa., who are pursuing a degree in civil engineering.

Pattillo is founder and president of David Pattillo & Associates, a Duluth, Ga., a construction consulting

firm that advises key stakeholders on how to help keep complex projects on schedule and on budget. The firm also provides expert testimony when projects encounter time and cost disputes that cannot be resolved short of litigation.

For Pattillo, the scholarship in his parents’ names is a way to provide future civil engineers the same opportunity he had.

“Looking back on it, Penn State set the stage for who I am today,” he said. “I really wanted, at some point in my career, to give something back. There are a lot of smart kids out there who could really use a break.”

Howard and Aileen Pattillo are both retired and reside in Macungie, Pa.

# Student Awards & Accomplishments

## Student Marshal

Simon Banzaquen Gabay

## Excellence in Environmental Engineering

Stephen Salwocki

## Excellence in Geotechnical and Materials Engineering

James Dell

## Harry H. West Undergraduate Student Award for Excellence in Structural Engineering

Matthew Gombeda

## Excellence in Transportation Engineering

Anthony DeLuca

## Excellence in Water Resources Engineering

Eric Simmons

## Gert and Jean Aron Endowment

Mitchell Collins  
Scott Ripple

## Richard Austin

Zachary Makarewicz

## Beavers Scholarship in Heavy Construction

Craig Schriener

## John J. Blazosky

Matthew Landro  
Benjamin Roman

## Carnahan Family Trustee Scholarship

Markie Caine

## College of Engineering General Scholarship

Mitchell Collins

## Janet B. Cunningham

Katie Koontz

## Engineering Underrepresented Scholarship

Dewey Amos  
Ayodeji Battles-Williams  
Samantha Burt  
Aaron Fonesca  
Dennis James  
Jennifer Kearney  
Amy Reimer  
Stefen Rice  
Karalyn Slocum

## Evans Trustee Scholarship

Yulissa Guerrero

## Robert E. Felsburg

Jared Bigham

## Leonard S. Fiore

Andrew Stoops

## Helen Fiedler Heckert

Travis Frey

## Frank Holzer Memorial

Colin Barbish  
Ayodeji Battles-Williams  
Sean Brennan  
Markie Caine  
David Cantoran  
Bradley Catalone  
Mitchell Collins  
Matthew Dinuzzo  
Gary Gabor  
Megan Kawamoto  
Devin Kelly  
Christopher Lazration  
Briana Lebovitz  
Michael Lockerman  
Stefen Rice  
Steven Rusnak  
Maria Sabatino  
Josh Swain  
Zachary Szoke  
Vincent Theys

## Robert & Judith Hontz

Jordan Powell

## Russell E. and Eleanor B. Horn Scholarship

Ashley Myers

## James R. and Nancy L. Miltenberger Trustee Scholarship

Ayodeji Battles-Williams  
Dylan Crolley  
Gary Gabor  
Jacob McTavish

## George W. Johnstone

William Grkman

## Stan & Flora Kappe

Joel Becker  
Emily Mahoney

## Walter J. Kinsey Honors Scholarship

Emily Mahoney  
Eric Simmons

## R. Rupert Kountz Memorial

Joel Becker  
Thomas Kaley

## Leonhard Center Enhancement

Matthew Tofani

## Harold J. Light Scholarship

Dane DeWire

## Anthony F. Lisanti

Christopher Bomba

## Michael D. Loy

Matthew Gombeda

## William Marciniak Scholarship

Thomas Ross

## William H. Megonnell Trustee Scholarship

Andrew Stoops  
Russell Keller

## Thomas A. Mekis

Christopher Connelly  
Dane DeWire  
Russell Keller  
Dipen Patel

## Dean Meyers Memorial Scholarship

Robert Huston  
Chase Lyle

## Arthur & Mary Miller Scholarship

Carrie Weinhold

## Albert and Betty Moore

Dewey Amos

## Helen Wood Morris Scholarship

James Dell

## Walter K. Morris Scholarship

Colvin Adey

## Paul Morrow Endowed Scholarship

Ayodeji Battles-Williams

## John R. and Brenda T. Myers Trustee Scholarship

Bradley Catalone

## C. R. and Annette Pennoni Scholarship

Matthew Gombeda

## John Pursley

Emma Pugh

## Joseph R. and Mary Reed Scholarship

Sarah Saxman

## Leland S. Rhodes Memorial

Craig Schriener

## James M. Roberts Scholarship

Colvin Adey  
Matthew Dinuzzo  
Maria Sabatino

## Elizabeth A. Shattuck

Robert Huston

## Harold B. Shattuck

Elliott Woolridge

## Charles and Linda Sorber

Emily Mahoney

## Walter E. and Dr. Regina B. Thompson Scholarship

Bradley Catalone

## Kenneth and Marilyn Stevens Tracy

Ashley Head  
Olivia Hopkins

## Triangle Fraternity

Cameron Mueskes

## Vought Scholarship in Engineering

Jennifer Kearney

## Roy I. Webber

Matthew Dinuzzo

## Harmer A. Weeden

Eric Bogumil

## Paul M. Wentworth

James Dell  
Yulissa Guerrero  
Andrew Lohr  
Rodney Salazar

## Paul and Rachel White

Katherine Derrick

## George M. Wildasin Memorial Trustee Scholarship

Samantha Burt  
Cory Jackson  
Shawn Mooney  
Matthew Paroda  
Dipen Patel  
Maria Sabatino  
Derek Schmidt

## Albert Wilson Trustee Scholarship

Colin Barbish  
Robert Huston

## Graduate Scholarships

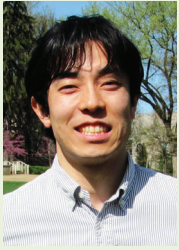
### Cmt Laboratories Graduate Scholarship in Civil Engineering

Pezhouhan Tavassoti Kheiry

### George W. Johnstone Graduate Fellowship in Civil and Environmental Engineering

Andrew Kreider  
Travis Tasker

## Penn State CEE student wins WEF competition



Kashima

Doctoral candidate **Hiroyuki Kashima**, under the direction of **John Regan**, professor of environmental engineering, has been selected as the winner of the 2014 Water Environment Federation (WEF) Student Paper Competition in the Graduate Division for his paper “Competitive Nitrate Reduction by Current-Producing Bioanodes: Critical Conditions to Develop Integrated Nitrogen Removal Strategy with Energy Producing Bioelectrochemical Systems.”

The WEF Student Paper Competition is intended to promote the education of students in water issues including water quality problems, water-related concerns, hazardous wastes or related areas.

As this year’s winner, Kashima received a \$500 reward for his efforts.



**ASCE**  
American Society of Civil Engineers

## Penn State American Society of Civil Engineers

The Penn State student chapter of ASCE has a very exciting year coming up. With new programs and events, in addition to the annual tradition, students will be able to engage in many different ways. Some of the different events are the spring career fair, panel discussions, distinguished alumni lecture and the Mid-Atlantic Regional Competition.

The fall career fair was held September 29. The event was again a great success. The venue was at capacity with a wide variety of companies attending, from multi-billion dollar companies to local State College engineering firms. In total, more than 60 companies attended, most of which were looking for both full-time employment and summer internships. The spring career fair is currently being organized and has a tentative date of February 2, 2015.

Penn State ASCE also hosted a panel discussion on November 13. The panel was made up of Penn State CEE alumni, who are actively involved in the workplace. All focuses—structures, water, transportation, environmental and geotechnical—were represented.

Next April, our chapter will be hosting the 2015 Mid-Atlantic Regional competition (MAR). At this event, our steel bridge and concrete canoe teams will compete against other schools including the University of Pittsburgh-Johnstown, the University of Maryland, the U.S. Naval Academy, Temple, Drexel and Bucknell. The competition will be held April 11 and 12, 2015 and will take place on campus and at Stone Valley Recreation Area.

## Penn State team places third at Collegiate Traffic Bowl

The Penn State student chapter of the Institute of Transportation Engineers (ITE) placed third in the 2014 ITE Collegiate Traffic Bowl Grand Championship held Aug. 12 in Seattle, Wash.

The annual contest pits teams against each other in rounds of questions, answers and clues related to transportation planning and engineering. The ITE established the event to encourage students to become more active members, to enhance their knowledge of the traffic/transportation engineering and planning profession, to strengthen the programs of the ITE student chapters and to foster a collegial spirit among the students and professionals.



Sixty-four teams from the United States and Canada competed. The University of Texas and the University of Florida took first and second place, respectively.

Penn State’s team was advised by **Martin Pietrucha**, director of the Thomas D. Larson Pennsylvania Transportation Institute (LTI), and **Vikash Gayah**, assistant professor of civil engineering. The team included civil engineering graduate student **Jeffrey Gooch** and LTI research assistants **Andrew Butsick**, **Philip Kulis** and **Andrew Nagle**.

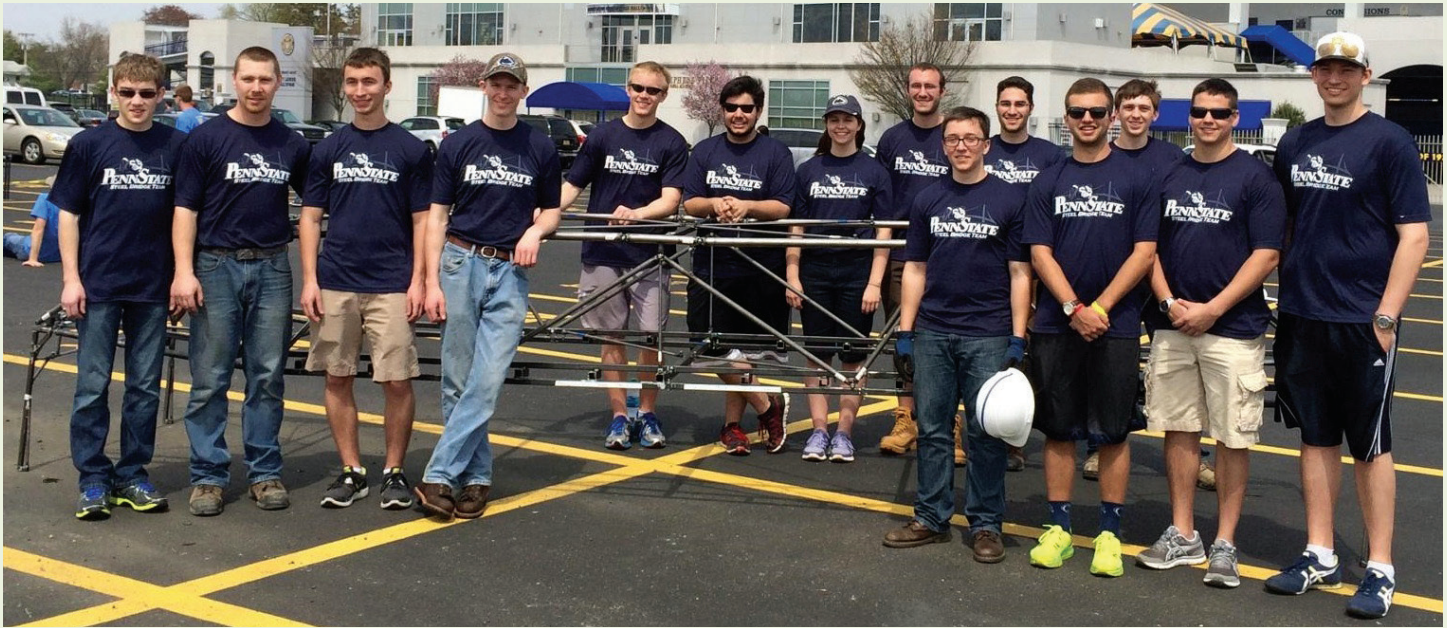
Founded in 1930, the ITE is an international educational and scientific association of transportation professionals who are responsible for meeting mobility and safety needs.

## We’re on Facebook and Twitter!

Keep up-to-date on Penn State Civil and Environmental Engineering upcoming events, teaching and research and the latest department news by following us on Facebook and Twitter.

Department employees, alumni, students and supporters can “like” the Facebook page at [www.facebook.com/PennStateCEE](http://www.facebook.com/PennStateCEE) or “follow” us on Twitter at <https://twitter.com/PennStateCEE>.





## Penn State Steel Bridge Team

The Penn State Steel Bridge Team is a student-run organization sponsored by ASCE that offers civil engineering students the opportunity to participate in a practical design/build competition. Each year, a 1/10 scale steel bridge is designed and fabricated according to the American Institute of Steel Construction rules and specifications. It must be assembled on-site during the competition and must not deflect larger than a pre-defined maximum deflection when a 2,500 pound load is applied. The bridge is evaluated based on cost efficiency including: construction time, deflection and

weight. The 2014 team, shown in picture, participated in last year's regional competition, held at the United States Naval Academy in Annapolis, Md. It was a very informative and fun experience. The team was watchful of other competing schools and took creative ideas back home for the 2015 competition.

Returning team members recruit new students and train them on safety procedures and the rules of the competition. Most of the non-technical activities such as fundraising, training, design, modeling and ordering the necessary materials are done

during the fall semester. In the spring semester, however, the focus is shifted toward fabrication and practice to optimize the most efficient construction time.

Every year, the steel bridge team raises its expectations and seeks new ways to improve and be innovative. This year, the team will host the Mid-Atlantic Regional Competition and the trophy is on the mind of its members. The aim is to design, fabricate and construct a state-of-the-art winning bridge. It is time to bring the championship back home to Penn State and show everyone our Penn State pride!



## Bridges to Prosperity student chapter wins award at second annual bridge builder conference

The Penn State student chapter of Bridges to Prosperity attended the second Annual Bridge Builder Conference hosted by Bridges to Prosperity in Winter Park, Colo., held September 12-14.

Penn State Bridges to Prosperity (B2P) won the Bridge Team of the Year Award. Penn State was the only school selected for the award out of over 15 B2P university chapters. In addition, Penn State B2P received an honorable mention award for social media, and **Jen Kearney**, chapter president, received a research award.

The students and technical adviser that attended the conference are as pictured; back row, left: Jake Rausch, Steve Mezzacappa, Mr. Garrett Hoffman with Figg Bridge Engineers, Matt Malencia, in front, left: Hannah Greider, Jen Kearney, Yulissa Guerrero and Allie Hoffman.



## Penn State National Association of Home Builders Student Chapter

The Penn State National Association of Home Builders (NAHB) student chapter is off to a running start for the 2014-15 academic year. The NAHB student chapter is a group of students spanning many different majors, including civil and environmental engineering, who focus on all aspects of the residential construction industry. The group is connected to the National Association of Home Builders at the national level through local (Builders Association of Central PA) and state (Pennsylvania Builders Association) organizations.

The NAHB student chapter has been regularly holding chapter meetings with invited speakers, including Dave Yelovich, compliance officer with Tilson Homes, and Jeffrey Shoemaker, Wells Fargo home mortgage consultant. The Chapter has also been active on site visits throughout the state, including a recent visit to Summerset at Frick Park, a traditional neighborhood development within the city limits of Pittsburgh, Pa. This development has been under construction since the early 2000s and presents unique engineering challenges due to the fact that it is built on an old slag dump from the days of steel manufacturing in Pittsburgh. Students were able to discuss these challenges as well as core design principles with Roger Glunt, from Glunt Development Co., and Murray Rust from Montgomery & Rust, Inc., two of the builders responsible for bringing the project to fruition.

On top of regular chapter meetings, the NAHB student chapter is actively preparing to compete in the Residential Construction Management Competition at the 2015 International Builders Show in Las Vegas, Nev. The competition gives students the opportunity to apply skills learned in the classroom to a real construction company by completing a management project/proposal. Proposals are submitted to a group of construction company executives who act as judges. During the International Builders Show, students defend their proposals to the judges. This year's project focuses on a 40-acre site located in Lebanon, Tenn. It is approximately 28 miles east of downtown Nashville and a part of Hamilton Springs, Middle Tennessee's first transit-oriented development. The management proposal must include a construction estimate/budget, construction schedule, cash flow projections, project management and organization, marketing and risk analysis, project site plan and land development plan and green building initiatives.

## Concrete Canoe Team

The Penn State Concrete Canoe Team is back and ready to compete. This year's canoe has been inspired by the previous team's design. They have learned from their mistakes and improved on their weaknesses. In the summer of 2013, their previous leaders spent the summer implementing a gang-form system, which allowed for a superior de-molding and finishing process of concrete. This process is a large part of what led to their team's success in the 2014 competition.

At the 2014 Mid-Atlantic Regional Competition in April at the Naval Academy in Annapolis, Md., the Penn State Concrete Canoe Team made leaps and bounds toward success. The annual competition consisted of four scoring areas: oral presentation, final product, design paper and races. The canoe team placed second in the design paper, fourth in the races, fourth in the final product and first in the oral presentation. This was a great improvement from previous years. Their canoe placed third overall.

The 2015 Concrete Canoe Team motto is "not to reinvent the wheel, but improve it." The goal of the canoe is to be fast in the water yet maneuverable, but these two goals don't always go hand in hand when it comes to making a concrete canoe. In order to achieve precision with the canoe, designs are made using computer-aided design (CAD) programs. The hull design of the canoe was designed and analyzed by Solidworks and Delftships, allowing for very precise and accurate models and analysis. The shape and structural analysis was done on Solidworks. The hydro analysis was done by Delftships. The gang-form molding system was designed in AutoCAD. To get the same precision that AutoCAD offers, building the forms through use of a computer numerical control (CNC) machine was crucial. The CNC machine cuts all of the cross sections that would form the gang-form system.

The 2015 Mid-Atlantic Regional Competition will be hosted by Penn State on April 10-12, 2015. The team has high expectations for 2015 and hope to show Happy Valley what a national championship trophy looks like.







A walking view of the finished bridge.



A view from the bridge of how strong the current of the river is.



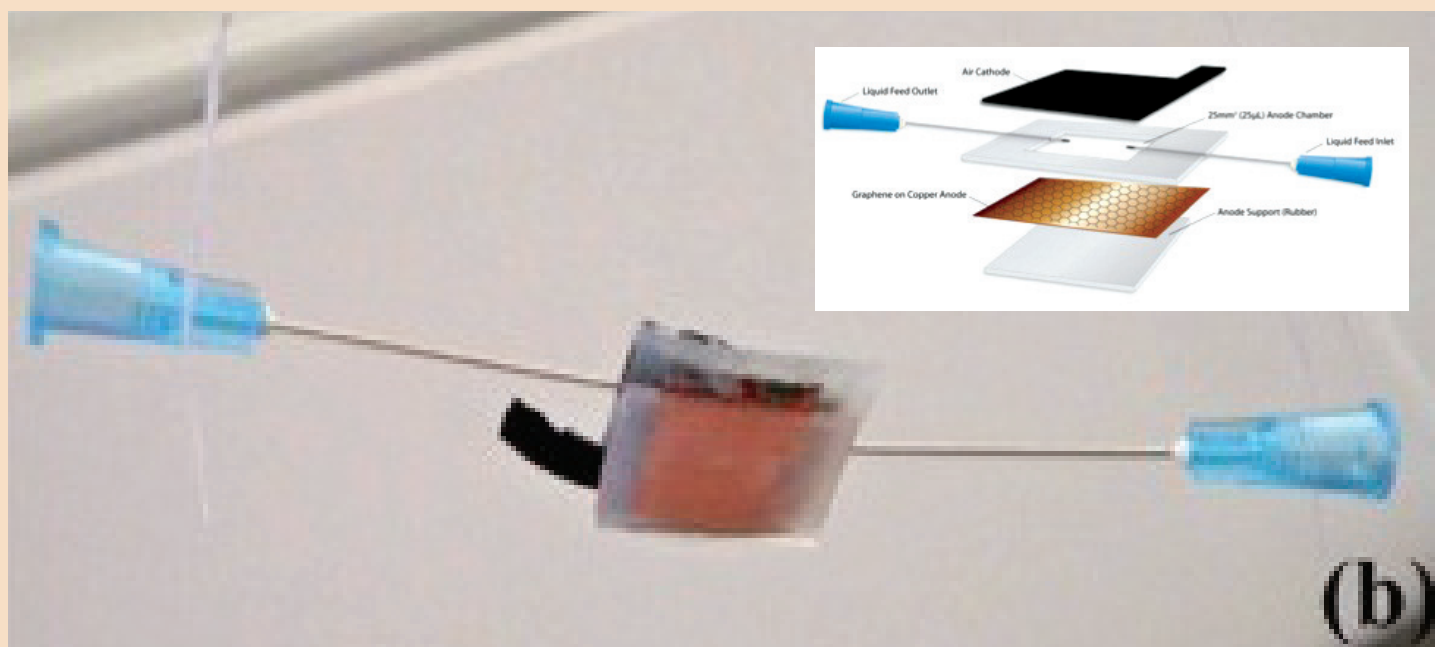
Bridges to Prosperity students photographed on the anchor of the bridge in photo above are from left to right: Jake Rausch, Danielle Berman, Matt Malencia, Yulissa Guerrero, Steve Mezzacappa, Allie Hoffman, Zach Makarewicz, Eric McCall, Nicolai Zoretich, and Jen Kearney.

## Penn State chapter of Bridges to Prosperity builds bridge for small Panama community

The Penn State chapter of Bridges to Prosperity spent this summer in Panama building a bridge to support a local community. The suspended pedestrian bridge leading to Caimital has a 76-meter span. The bridge connects the people of Caimital to Penonome, which is the local capital of Coclé, a province in Panama. The community members need to get to Penonome in order to access markets, higher education and doctors. The Caimital side of the bridge has a standard gravity anchor with three tiers. The anchor on the Penonome side of the bridge was redesigned as a hybrid rock anchor since rock was struck during excavation. This side has two tiers. The large number of tiers are required in order to meet the two-meter spacing requirement between the bridge decking and high-water level when the river floods.

The footbridge is built over a huge ravine with a river in the bottom. The river floods often during the rainy season, which isolates the community. The existing road bridge flooded once while the team was working on construction on the Penonome side of the bridge; they waited several hours for the large trees and debris to travel down the river and then walked through rushing water above their knees in order to get home that evening. The water comes hard and fast whenever it rains a great deal upstream. The bridge will provide a much-needed connection during flood season between the people of Caimital and the surrounding communities.

The advisers for the trip were Jay Regan, professor of environmental engineering, Alfonso Mejia, assistant professor in civil engineering, and department head staff assistant Devon Johnson.



Above: Micro microbial fuel cell. Inset: Schematic of micro microbial fuel cell showing saliva input ports, anode, cathode and chamber.

## Tiny power generator runs on spit



Saliva-powered micro-sized microbial fuel cells can produce minute amounts of energy sufficient to run on-chip applications, according to an international team of engineers.

**Bruce E. Logan**, Evan Pugh Professor and Kappe Professor of Environmental Engineering at Penn State, credited the idea to fellow researcher **Justine E. Mink**. “The idea was Justine’s because she was thinking about sensors for such things as glucose monitoring for diabetics and she wondered if a mini microbial fuel cell could be used,” Logan said. “There is a lot of organic stuff in saliva.”

Microbial fuel cells create energy when bacteria break down organic material producing a charge that is transferred to the anode. Logan, who has studied microbial fuel cells for more than ten years, usually looks to wastewater as a source for both the organic material and the bacteria to create either electricity or hydrogen, but these tiny machines are a bit different.

“By producing nearly 1 microwatt in power, this saliva-powered, micro-sized MFC already generates enough power to be directly used as an energy harvester in microelectronic applications,” the researchers report in a recent issue of Nature Publishing Group’s Asia Materials.

The researchers believe that the emergence of ultra-low-power chip-level biomedical electronics, devices able to operate at sub-microwatt power outputs, is becoming a reality. One possible application would be a tiny ovulation predictor based on the conductivity of a woman’s saliva, which changes five days before ovulation. The device would measure the conductivity of the saliva and then use the saliva for power to send the reading to a nearby cell phone.

Biomedical devices using micro-sized microbial fuel cells would be portable and have their energy source available anywhere. However, saliva does not have the type of bacteria necessary for the fuel cells,

and manufacturers would need to inoculate the devices with bacteria from the natural environment.

In the past, the smallest fuel cells have been two-chambered, but this micro version uses a single chamber with a graphene- rather than platinum-coated carbon cloth anode and an air cathode. Air cathodes have not been used before because if oxygen can get to the bacteria, they can breathe oxygen and do not produce electricity.

“We have previously avoided using air cathodes in these systems to avoid oxygen contamination with closely spaced electrodes,” said Logan. “However, these micro cells operate at micron distances between the electrodes. We don’t fully understand why, but bottom line, they worked.”

The anode is actually composed of carbon nanomaterial graphene. Other microbial fuel cells used graphene oxide, but the researchers showed that pure multi-layered graphene can serve as a suitable anode material.

While the researchers tested this mini microbial fuel cell using acetate and human saliva, it can use any liquid with sufficient organic material.

Justine E. Mink, recent Ph.D. recipient, King Abdullah University of Science and Technology, was first author of this paper. Also working on this project were Muhammad M. Hussain, assistant professor, and Ramy M. Qaisi, graduate student, KAUST.

KAUST supported this work.



Students and faculty pose in front of the Millennium Science Complex during the Water Heroes summer camp at Penn State.



Rachel Brennan, Chris Gorski, Manish Kumar, and Stephanie Velegol

## Penn State CEE faculty participates in children's summer day camp

Environmental engineering faculty members spread their knowledge during a June 2014 summer camp for students entering grades 6-8.

The camp, called Water Heroes, introduced students to ways in which they could better protect valuable water resources. The students tested and monitored water in drinking water fountains, streams, lakes and swimming pools and developed water treatment techniques to make the water safe.

The directors of the camp were department faculty including **Rachel Brennan**, **Chris Gorski**, and **Stephanie Velegol** as well as **Manish Kumar**, from Penn State's chemical engineering program.

**SCIENCE-U**  
Penn State Summer Science Camps

## Peggy Johnson to step down as head of civil and environmental engineering



**Peggy Johnson** has announced that she will step down as head of the Department of Civil and Environmental Engineering next August.

She will remain in the college and resume teaching and research in the department.

Amr Elnashai, Harold and Inge Marcus Dean of Engineering, shared, "Peggy has performed at the highest level on all aspects

of the duties of a department head and a leading faculty member. During her tenure, CEE faculty secured many National Science Foundation Faculty Early Career Development awards and other prestigious awards. Her work with CEE alumni has resulted in tremendous progress, and her service on so many college and University committees has been exemplary."

A member of the Penn State faculty since 1996, Johnson has focused her research on reliability analysis, bridge scour, hydraulic engineering, stream restoration, sediment transport and decision analysis.

Prior to joining Penn State, she held faculty positions at the University of Maryland and served as a graduate research fellow at the Federal Highway Administration.

Johnson's awards and honors include the Penn State Howard B. Palmer Faculty Mentoring Award, the American Society of Civil

Engineers' (ASCE) Environmental and Water Resources Institute (EWRI) Margaret S. Petersen Outstanding Woman of the Year Award, the National Science Foundation's Young Investigator Award and Presidential Faculty Fellow Award and the University of Maryland's Outstanding Teacher Award and Lilly Teaching Fellowship.

She has served as president of the ASCE EWRI and associate editor of several leading journals.

Johnson received her bachelor's degree in geological sciences from New Mexico State University and her master's and doctorate degrees in civil engineering from the University of Maryland.

She reflected, "My time as department head has been so rewarding. I have had the opportunity to work with an incredibly talented faculty, a devoted and supportive staff, a great group of colleagues and the best students anywhere. I have also appreciated the high level of support that the University provides to the department heads. I will miss the many challenges and opportunities of being a department head but also look forward to reinvigorating my teaching and research."

Elnashai said, "I have known Peggy way before I joined Penn State, through the Big Ten CEE department heads meetings. She will be missed as a department head, but we are fortunate that she is staying as a most valued member of the faculty."

The search for a new department head is underway; screening of applicants will begin on Dec. 1 and it is intended that the position be filled by the beginning of the 2015-2016 academic year. For application information visit [http://www.engr.psu.edu/ce/faculty\\_searches.html](http://www.engr.psu.edu/ce/faculty_searches.html)

## College of Engineering welcomes new Dean



**Amr Elnashai**, the Harold and Inge Marcus Dean of Engineering, took over as dean of the College of Engineering in January 2014. He replaced David Wormley, who retired at the end of 2013 after 21 years at Penn State.

Before coming to the University, Elnashai was the head of the Department of Civil and Environmental Engineering at the University of Illinois at Urbana-Champaign. He served as the Bill and Elaine Hall Endowed

Professor and director of hybrid simulation at the National Science Foundation's Network for Earthquake Engineering Simulations laboratory.

Prior to joining Illinois, he was professor of earthquake engineering and head of division at Imperial College London from 1985 to 2001. Since 1997, Elnashai has been a visiting professor at Britain's University of Surrey, and has held other visiting professor appointments at the likes of the University of Tokyo, University of Southern California and the European School for Advanced Studies in Reduction of Seismic Risk in Italy.

Elnashai is a fellow of the British Royal Academy of Engineering, the American Society of Civil Engineers and the Institution of Structural Engineers. He is the founder and co-editor of the Journal of Earthquake Engineering.

His research interests include multi-resolution distributed analytical simulations, network analysis, large-scale hybrid testing and field investigations of the response of complex networks and structures to earthquakes.



Rachel Brennan, James Cockle and Michael Shreve in Roatán, Honduras.

## Associate professor participates in new Global Engineering Leadership Program that supports international outreach, promotes leadership experience

**Rachel Brennan**, associate professor in civil engineering, and **David Riley**, professor in architectural engineering, were recently awarded a Global Engineering Leadership Program grant from the College of Engineering to initiate a new program in Sustainable Engineering. In this program, Brennan and Riley are training undergraduate and graduate students to design and deploy ecologically-designed wastewater treatment plants with solar energy systems in small island communities with the assistance of practicing engineers. The long-term sustainability of this program will be pursued through cross-disciplinary research, course development and mentoring of the Penn State chapter of Engineers Without Borders. The first global partner for this program is the island community of Roatán in Honduras, which is home to a diverse set of ecosystems, socio-economic conditions and immersive learning opportunities. As the initiative gains momentum, they will utilize their existing partnerships to enable broader future participation of additional Penn State students and faculty in the areas of wind energy, coral reef resilience, food systems science, economic development and eco-tourism.

The Harry West Teaching Award for the Advancement of Civil Engineering Education is supporting Brennan's efforts to include this international component in her new, senior-level course, Ecological Engineering (CE 497B), offered for the first time at Penn State in fall 2014. This course directly supports the mission of the College of Engineering, which is to "nurture and train world-class, socially-aware,

globally-connected, diverse engineers, educators and researchers... to develop innovative solutions to the world's most pressing challenges through transformational interdisciplinary research."

Brennan also received the Premier Teaching Award in April as part of the 2014 Penn State Engineering Alumni Society (PSEAS) Awards ceremony. The PSEAS Awards recognize outstanding efforts in teaching, research, advising and service.

### Associate professor of civil engineering honored for service



Stoffels

**Shelley Stoffels**, associate professor of civil engineering, was one of 15 faculty and staff members awarded the Twenty-Five Year Service Award at the College of Engineering's spring ceremony. The reception honored those who have given 25 years of service to Penn State.

Each honoree was given a commemorative plaque and pin, plus their choice of a Penn State captain's chair, rocking chair or Penn State Elms mantel clock.

# Faculty Awards & Accomplishments

## Assistant professor wins National Science Foundation CAREER Award



Assistant professor of civil engineering **Gordon Warn** was one of two Penn State engineering faculty members who were awarded the National Science Foundation (NSF) Early Career Development (CAREER) Award in 2014.

The prestigious NSF CAREER Awards provide five years of funding for researchers. They are designed to support junior faculty who have shown exceptional promise in teaching and research.

Warn received a \$400,000 grant for the project “A Performance-Based Multi-Objective Optimization Framework to Define Innovative Structural Concepts and Support the Seismic Design of Critical Buildings.”

His work seeks to develop a computational framework that simultaneously identifies innovative structural concepts and tradeoffs between conflicting design objectives to support decision-making.

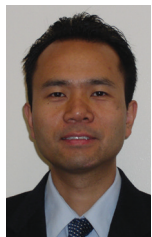
Warn has been a member of the Penn State faculty since 2008. His research interests include high performance structural systems for hazard mitigation; modeling and diagnostic assessment of complex systems; many-objective optimization and visual analytics; and structural monitoring for the health assessment of structural components and systems.

## Civil engineering benefits from College of Engineering internal grant program



**Aleksandra Radlinska** and **Tong Qiu**, assistant professors of civil engineering, were awarded one of six grants through the College of Engineering’s brand new Innovation Grant Program (IGP) for their proposal titled “Synthesis and Optimization of High Energy Absorbing Materials.”

The grant program was created by the college to support integrative research that involves two or more engineering faculty members.



Amr Elnashai, the Harold and Inge Marcus Dean of Engineering, said the innovation grants will provide an immediate resource allocation to new research initiatives. “This program will help get them off the ground when traditional funding sources might be too slow to respond, and the outcome of their process is quite uncertain.”

He added that providing funds specifically for cross-disciplinary and interdisciplinary research will encourage the college’s faculty to work on emerging topics and diversify their research portfolios.

To be eligible, projects were required to meet one or more of the following criteria: bring to maturity a new, high-risk or underdeveloped idea; take fundamental research to the next stage of development; establish faculty in new collaborations or in new areas of research; and turn an existing idea into a product that meets pressing needs.

Forty-six proposals, involving 90 engineering faculty members and 17 faculty members and researchers from the Applied Research Laboratory (ARL), the Materials Research Institute, the Huck Institutes of the Life Sciences and academic departments outside the college, were submitted.

Each of the six research teams received up to \$50,000 for one year.

## Penn State-led effort seeks to develop improved Amazon hydrology model for climate prediction



A new grant will allow a Penn State-led team to develop an improved computer model of the Amazon that could ultimately help scientists better understand climate.

The three-year, \$976,000 grant from the Department of Energy is for “Scale-Aware, Improved Hydrological and Biogeochemical Simulations of the Amazon Under a Changing

Climate.” **Chaopeng Shen**, assistant professor of civil engineering, is the grant’s principal investigator.

“The goal is to improve the hydrological descriptions of the Amazon,” Shen said. “There’s been increased attention on interactions between the water and carbon cycles.”

The civil engineer explained that the Amazon is usually thought of as a massive carbon sink, absorbing carbon dioxide from the atmosphere.

But, Shen said, “The Amazon forest, instead of absorbing more carbon, was shown to have turned into a carbon source during droughts.”

Shen’s team, which includes John Melack, professor of ecology evolution and marine biology at the University of California, Santa Barbara, and William Riley, a scientist at the Lawrence Berkeley National Laboratory’s Earth Sciences Division, seeks to improve existing hydrological predictions and study how small-scale processes are linked with large-scale ones.

“We have to understand the coupling of water with the rest of the environment and improve our predictive capability, which involves better handling of the scale issue. Accurately representing processes across a large range of scales has been a long-term challenge to the modeling community, and the ongoing work attempts to tackle this challenge with novel methods, decreasing the uncertainties in predictions,” he stated.

The team hopes their work can be used to improve and augment existing climate simulations and create decision-making tools for future extreme weather events.

“Our modeling system is now a virtual world that seeks to mimic the tightly integrated real world by considering surface/subsurface water, energy, carbon and nitrogen cycles, ecosystems and human influences altogether,” Shen said. “It bears a direct significance to the U.S. We saw in 2012 and 2013 there were severe droughts in large parts of the U.S., and devastating flooding in some areas. In order to mitigate the damage from these extreme events, we have to better understand the hydrology and how it interacts with other sub-systems. It offers us a strategic tool to assist in decision-making.”

## Penn State civil engineering professor issued patent



**Ali Memari**, professor of architectural and civil engineering and Hankin Chair of Residential Building Construction, and his co-inventor, Joseph Standley, have been issued a patent this fall for their development of the “Transparent Sustainable Wall System.”

Memari said the patent offers a new residential wall system type that can be used as an alternative to conventional wood-frame walls on the sides of the building where maximum daylighting is desirable. The wall system is like a full height (floor to ceiling) window that can carry the weight of the floor above.

“Current wall systems are mainly wood-frame with openings for windows,” Memari said. “In some designs, the architect or the home owner may wish to have an all glass looking wall/side of the building. This could be the case for homes with a view to wooded areas, beach or other scenery. Currently, if floor-to-ceiling high and very wide windows are used, the gravity load resistance and lateral (wind) load resistance of that side of the wall may be weakened because windows are not generally designed to carry the weight of the floor above or resist in-plane lateral loads. The wall we have developed offers the benefits of a story-high window but it works as a wall as well.”

This is the second patent for Memari.

## Penn State environmental engineer named Thomson Reuters Highly Cited Researcher



**Bruce Logan**, Evan Pugh Professor and the Stan and Flora Kappe Professor of Environmental Engineering, made Thomson Reuters’ Highly Cited Researchers 2014 list.

Researchers earned the distinction by writing the greatest numbers of reports officially designated by Essential Science Indicators as Highly Cited Papers—ranking among the top 1 percent most cited for their subject field and year of publication — between 2002 and 2012.

A Penn State faculty member since 1997, Logan is a member of the National Academy of Engineering and a fellow of the Water Environment Federation and International Water Association. His main research interests are in the sustainability of the water

infrastructure, including bioenergy, bioadhesion, bioremediation and water treatment and colloids and particles.

The Thomson Reuters Highly Cited Researchers list is one of several criteria used by the Center for World-Class Universities at Shanghai Jiao Tong University to determine the Academic Ranking of World Universities.

The list is comprised of more than 3,200 researchers in 21 fields of the sciences and social sciences. Logan is one of only 187 engineers worldwide to appear on the list. Chao-Yang Wang, William E. Diefenderfer Chair of Mechanical Engineering at Penn State, also made the list.

For more information and a complete list, visit <http://highlycited.com>.

## Parisa Shokouhi joins CE’s geotechnical and materials engineering faculty



**Parisa Shokouhi** joined the civil and environmental engineering faculty as an associate professor in August 2014. She received her doctoral degree in civil engineering in the area of non-destructive testing and geotechnical engineering from Rutgers University in 2006. She is a registered professional engineer in the state of Ohio. From 2006 to 2008, Shokouhi served as an assistant professor of civil and environmental engineering at the University

of Texas at El Paso. Afterward, she was a researcher at BAM—Germany’s Federal Institute for Materials Research and Testing—first as an Alexander von Humboldt (AvH) fellow and later as a research group leader. She was also a visiting faculty researcher at Los Alamos National Laboratory for several months. Shokouhi’s main research interests are: infrastructure sustainability, non-destructive evaluation and structural health monitoring of civil infrastructure (bridges, pavements, buildings and runways), non-invasive material characterization at various scales, monitoring of material degradation due to damage mechanisms and near-surface geophysical investigation. Her experience includes both laboratory and field testing as well as numerical modeling and advanced data analysis. Her most recent research projects included the application of data mining for synergic combination of multi-sensor data and using nonlinear acoustics-based techniques to characterize various rocks and concrete. She is establishing a Civil Infrastructure Health Evaluation and Monitoring laboratory as a part of the Civil Infrastructure Testing and Evaluation Laboratory.

## Department head receives Graduate School award



**Peggy Johnson**, professor and head of civil engineering, received the Howard B. Palmer Mentoring Award. The award is presented to a full-time faculty member who demonstrates “effective mentoring through guiding and nurturing the collegial and professional development of junior faculty.”

Five engineering students and one faculty member were honored with awards from the Graduate School. The awards ceremony took place in the spring.

## Robert Felsburg receives the Outstanding Engineering Alumni Award for civil engineering



Robert Felsburg

**Robert Felsburg** graduated with a B.S. in civil engineering in 1970 and a M.S. in civil engineering in 1972.

As an undergraduate, he was inducted into Phi Eta Sigma, Sigma Tau, Chi Epsilon, Tau Beta Pi and Blue Key Honor Societies and was President of Acacia Fraternity.

As a graduate student, Felsburg conducted high-way safety research at the Pennsylvania Transportation and Traffic Safety Center (now the Thomas D. Larson Pennsylvania Transportation Institute).

Upon graduation, he was commissioned as a 2nd lieutenant in the U.S. Army Corps of Engineers and then went on to work as a transportation engineer with HDR and PRC Engineering in Omaha, Neb.; Berkeley, Calif.; and Denver, Colo.

In 1984, he co-founded the firm of Felsburg, Holt & Ullevig in Denver to provide transportation services to both the public and the private sectors. He served as president for 14 years before becoming chairman.

He is a member of the Institute of Transportation Engineers, has served as the president and national director of the American Council of Engineering Companies of Colorado (ACEC/CO), and in 2012, Felsburg was honored with the Orley O. Phillips Award, ACEC's highest honor for outstanding contributions to the consulting engineering profession.

At Penn State, Felsburg currently serves on the Industrial and Professional Advisory Council (IPAC) to the College of Engineering.

## Civil engineering alumnus Joseph Smak chosen to speak to rail program



Joseph Smak

**Joseph Smak**, a 1980 Penn State civil engineering graduate and president of the American Railway Engineering and Maintenance-of-Way Association (AREMA), spoke to Penn State Altoona's Rail Transportation Engineering (RTE) program on April 22, 2014. His presentation was titled "AREMA and the Railroad Engineering Student: Your Future Industry."

Smak has 34 years of experience in railroad engineering. After graduation from Penn State, he held positions at Conrail and CSX Transportation and is currently the Senior Director of Track Maintenance and Compliance at Amtrak, where he was also the Director of Track Standards and Specifications for Amtrak in Philadelphia, Pa.

Smak is also the president and chairman of the Board of Governors of AREMA, serves on the North American Track Standards group and is a member of the American Association of Non-Destructive Testing. Smak was a member of the FRA Rail Integrity Task Force and currently serves on the FRA Rail Fatigue Working Group as well as the FRA Rail Safety Advisory Committee.

Smak is also the president and chairman of the Board of Governors of AREMA, serves on the North American Track Standards group and is a member of the American Association of Non-Destructive Testing. Smak was a member of the FRA Rail Integrity Task Force and currently serves on the FRA Rail Fatigue Working Group as well as the FRA Rail Safety Advisory Committee.

## Civil Engineering alumnus honored for educational excellence



Richard Porter

Penn State civil engineering graduate **Richard Porter** received the American Society of Civil Engineers (ASCE) 2014 Excellence in Civil Engineering Education (ExCEED) New Faculty Excellence in Teaching Award from the University of Utah, where he works as an assistant professor in civil and environmental engineering. Porter was recognized for his outstanding teaching record, commitment to education and contributions to the academic and local communities.

Porter received his B.S. (1999), M.Eng (2000), and Ph.D. (2007) in civil engineering from Penn State.



## CEE Alumni News

**Charles Kleeman**, a 1975 graduate of Penn State's civil engineering master's program, retired from the U.S. Environmental Protection Agency and is now in his eighth year of teaching at Delaware Valley College in Doylestown, Pa. Kleeman teaches Environmental Remediation and Environmental Geology and is active in service mission projects in Haiti.

**Michael Isbir Jr.** graduated in 2002 with a B.S. in civil engineering. He is the founder and president of Isbir Construction & Landscape Corp., which was formally established in 1997 under the name of Mickey's Lawn Service. The company is located in Elizabeth Township, Pa. Isbir Construction & Landscape Corp. provides services to the Pittsburgh area.

# Civil and Environmental Engineering Mentoring Program

The Department of Civil and Environmental Engineering (CEE) and the Penn State Civil and Environmental Engineering Alumni Society (CEEAS), in cooperation with the Penn State American Society of Civil Engineers student chapter, collectively sponsor the Civil and Environmental Engineering Mentoring Program. The program is intended to provide career guidance to current Penn State CEE undergraduates by Penn State graduates currently engaged in the civil engineering profession and to facilitate a bridge between academia and industry for current students. Mentors and proteges interact on a one-to-one basis using mutually agreed methods of communication. This effort also includes group meetings and activities of all program participants several times a year.

Seventy one students and mentors have applied to participate in the program. CEEAS is currently matching the students and mentors.

Detailed information on the program can be found at <http://www.engr.psu.edu/ce/alumni/mentor/about.html>.

Additional students and alumni are encouraged to apply.



## CH2M Hill CEO Jacqueline Hinman delivers spring commencement address



Jacqueline Hinman

Approximately 1,120 students received their baccalaureate degrees at the College of Engineering's spring commencement exercises on May 9 at the Bryce Jordan Center.

This year's commencement address was given by 1983 environmental engineering alumna **Jacqueline Hinman**, chief executive officer of CH2M Hill, a Fortune 500 company and global leader in consulting, full-service engineering, construction, procurement, program management and operations for public and private clients.

"What we do as engineers is design and build a better world," she told the audience. "As you receive your diploma, please do not take this lightly."

Hinman explained to graduates that no matter where their careers take them, they should not be the best in the world, but rather be the best for the world. "Being the best IN the world is about you.

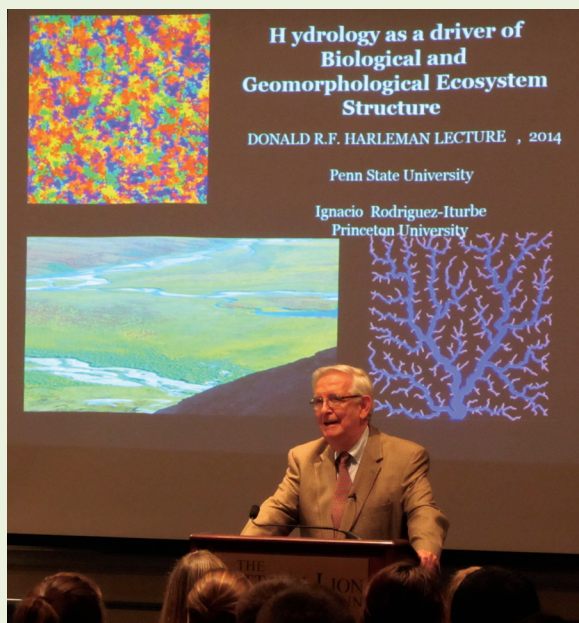
Being the best FOR the world is about others. The world needs your help."

She pointed out that despite decades of technological advancements, many of today's pressing issues, including hunger, pollution, urbanization and industrialization, are not isolated to developing countries. "There are challenges regarding mobility, energy and infrastructure right in this state, and in this town," Hinman said, adding that engineering graduates "are the very people who can—and will—drive positive change."

She concluded, "What you really learned here, and what will always be part of you, is how to solve problems. Go ahead and solve a few that help you personally along the way, but make sure you solve some that help others in your neighborhood and beyond."

Hinman is a registered professional engineer and is accredited under the U.S. Green Building Council's Leadership in Energy and Environmental Design program.

In 2013, Hinman was honored with the Outstanding Engineering Alumna Award, the highest honor bestowed by the College of Engineering.



## Rodríguez-Iturbe presents D. R. F. Harleman honorary lecture



**Ignacio Rodríguez-Iturbe**, professor of civil and environmental engineering and the James S. McDonnell Distinguished University Professor at Princeton University, presented “Hydrology as a Driver of Biological and Geomorphological Ecosystem Structure” at the Nittany Lion Inn on October 16 as the 2014 D. R. F.

Harleman honorary lecturer.

During his presentation, Rodríguez-Iturbe identified three key frontiers in hydrology as a keystone for sustainable development—hydrology as a driver of biological river basin dynamics, geomorphologic and ecosystem structure and agriculture and food trade.

Rodríguez-Iturbe earned his civil engineering degree at Universidad del Zulia in Maracaibo, Venezuela and his Ph.D. at Colorado State University. He is a member of numerous academies including the National Academy of Sciences, National Academy of Engineering, American Academy of Arts and Sciences, Spanish Royal Society of Sciences, Vatican Academy of Sciences and several others.

## Hankin lecture focuses on sustainable residential construction



**Peter Yost**, director of residential services for Building Green and technical director for Taunton Press’s Green-BuildingAdvisor.com, delivered the 2014 Hankin Lecture.

Yost has more than 25 years of experience in building, researching, teaching, writing and consulting on high-performance homes. His expertise stretches from construction waste management and advanced framing to energy efficiency and building durability.

His lecture, titled “The Art, the Science, and the Business of Sustainable Residential Construction,” addressed three primary attributes that combine to make truly sustainable homes and provide examples of homes and builders that are leading the way in sustainable construction.

Yost has been called upon to provide his building-science expertise to the nation’s leading homebuilding programs, including the National Association of Home Builders’ (NAHB) Green Building Standard, the U.S. Green Building Council’s (USGBC) Leadership in Energy and Environmental Design (LEED) for Homes, the Environmental Protection Agency’s WaterSense and the U.S. Department of Energy’s Building America.

He is an instructor for Yale’s School of Forestry and Environmental Studies, Boston Architectural College’s Sustainable Design Certificate program and for the University of Massachusetts Amherst’s Department of Building Materials and Wood Technology program.

A LEED Accredited Professional, Yost is a past co-chair of the USGBC’s LEED for Homes program, a member of the LEED faculty and a certified instructor for the NAHB Advanced Green Building: Building Science course.

Established in 2006 in honor of the late Bernard Hankin, the Hankin Distinguished Lecture Series brings world-class speakers to Penn State to address students and faculty with thought-provoking topics and education.

## Jennifer Swales joins department staff as communications strategist



**Jennifer Swales** joined the College of Engineering’s Marketing and Communications team as a communications strategist for the department of civil and environmental engineering in October 2014. She is responsible for developing, planning, and implementing various integrated marketing and communications initiatives involving CEE and College of Engineering activities.

Swales previously worked for Videon Central, Inc., a State College engineering company, where she designed and wrote a company history book, began producing a newsletter and helped manage social media platforms, while also serving as office manager. She also wrote for McClatchy news service in Brazil, worked as a freelance writer for the *Centre Daily Times* and interned as a science writer for the Office of Strategic Communications at Penn State.

She earned two bachelor’s degrees from Penn State in journalism and English. In her free time, Swales enjoys reading and photography. She is thrilled to return to Penn State and join the CEE staff.

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# We'd Love to Hear from You!

We want to know where life has taken you since you left Penn State. Please complete the form below, including any additional comments. You are welcome to send us an update on your personal stationery, or via e-mail.

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First Name	Middle Initial	Last Name
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Degree(s)	Graduation Year(s)
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Home Address

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Position Title

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Firm Address

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Business Phone	Fax No.	E-mail
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## Alumni Updates:

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Also, please send the address of any Civil and Environmental Engineering alumni you know who are not receiving the newsletter.

**Please send to:**  
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SCAN THIS CODE with your smart phone to visit our web site, or enter [www.engr.psu.edu/ce/](http://www.engr.psu.edu/ce/) in your browser.





Penn State chapter of Bridges to Prosperity in Panama (see story on page 9). *Clockwise from upper left:* Matt teaching kids from the community English; Approach walls for the bridge almost fully finished; Encouraging international Panamanian's to attend Penn State; Daniel and Nicolai measuring the dimensions of the anchor on the Penenome side; Zach and Eric sawing a tire rim in half to use on the towers of our bridge; The view from one of the tiers to the other during construction; The local mason Daniel inside of our rebar cage while we were preparing for the anchor; Some of the team members on our daily walk to the bridge site; Travel Team members on the anchor of the bridge.