IOWA STATE UNIVERSITY

Department of Civil, Construction, and Environmental Engineering

IMPROVING OUR INFRASTRUCTURE

ANNUAL UPDATE 2012-2013

Welcome, CCEE alumni and friends.

Terry Wipf is a longtime faculty member in the Department of Civil, Construction and Environmental Engineering (CCEE) at Iowa State University. His teaching and research focuses on various engineering fields. He has served as the director of the Bridge Engineering Center and director of the National Center for Wood Transportation Structures.

Civil, construction and environmental engineers play an increasingly important role in protecting and building the world's infrastructure. We must prepare our students to solve the structural, transportation, geotechnical, environmental, and construction problems that underlie the human life systems we trust today. Through the lens of education, research and outreach, Iowa State does its part to improve our infrastructure.

Faculty have contributed to breakthrough research in rapid infrastructure construction and sustainability – issues that support National Academy of Engineering's grand engineering challenge of restoring and improving urban infrastructure. We're solving these challenges through 3-D printing technologies, innovative management techniques, more efficient data readiness, use of old ideas for new applications, geographic information systems, and more. Learn about some of our current projects on pages 11-16.

We are humbled by the determination and talent of our students. Student organizations have excelled at national and international competitions – we've achieved 10 top-10 finishes from October 2012 to July 2013. In March 2013 we hosted the American Society of Civil Engineers/American Institute of Steel Construction Midwest Regional Student Conference and Steel Bridge Competition. With Hilton Coliseum as the venue, Iowa State students exercised skill and practice to place second at this event and advance to the National Student Steel Bridge Competition in Seattle. They placed fifth, their best finish yet, at the national event. Our student chapter of the National Electrical Contractors Association placed third in the ELECTRI International/NECA Green Energy Challenge with a first place in the written portion. Senior Ocean Van, who pursues both civil and construction engineering degrees, was the only undergraduate in the nation to be named FIATECH Scholar for construction engineering technology. Learn about Ocean and other student accomplishments on page 8.

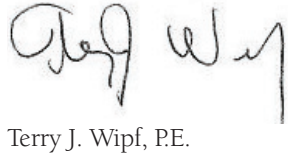
Our graduate students continue to excel in their fields. One student, under the guidance of Assistant Professor Jeramy Ashlock, advanced soil test technology of one of our emeritus faculty, Richard Handy. Another student won the American Society of Civil Engineers Outstanding Civil Engineer Award. Examples like these showcase Iowa State's resolve in advancing "great" to "the best."

I am also proud of CCEE's partnerships with other international universities. On page 17 we recap experiences in Scotland, Italy, and Singapore, to name a few. We also feature hosting a Fulbright grantee from the University of Auckland, New Zealand.

CCEE alumni have been active as well. Pages 13-17 identify more than a dozen CCEE graduates from all over the world who have demonstrated exceptional service to Iowa State, their industries, and society. We feature the story of 1976 civil engineering alumnus Don Greenwood on page 4. In addition, the department has revived "Our Town" alumni receptions, recently held in Minneapolis and Kansas City. We aim to continue these receptions to stay connected and learn what you are doing.

I look forward to my third academic year as department chair. My transition from interim to full department chair has been a happy one as I become more invested in the CCEE department's success. Thank you to all who have generously supported the department in so many ways. I invite you to keep in touch on our website at www.ccee.iastate.edu, through CCEE social media pages, or by sending me a note.

Take good care,



Terry J. Wipf, P.E.
Pitt-Des Moines Professor in Civil Engineering
Chair, Department of Civil, Construction and Environmental Engineering (CCEE)
Iowa State University

This is how IOWA STATE UNIVERSITY works.

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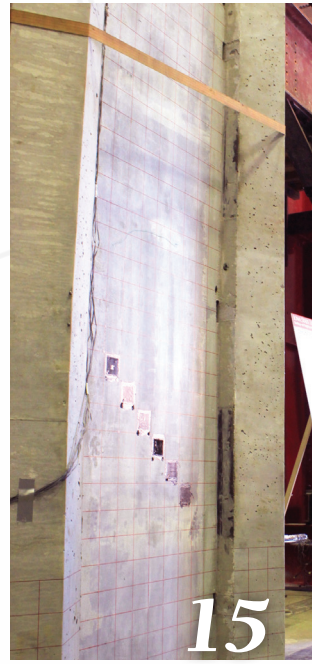

Thank you for your support!
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Hello from ***the CCEE advisory councils.***

Tammy Nicholson, Chair
Director, Office of Rail Transportation
Iowa Department of Transportation
(BSCE'89)

Civil Engineering External Advisory Council

The civil engineering profession builds on strong partnerships and collaboration for successful projects and society advancement. The Civil Engineering External Advisory Council and CCEE follow the principle of partnership when we meet twice each year. In April 2013, our meeting focused on the department's strategic plan, specifically on improving partnerships through engagement. Members of the council provided input to CCEE on how partnerships can be strengthened. A common suggestion was to collaborate with industry to ensure CCEE curriculum meets industry needs and prepares students for fulfilling careers. Reaching out to current employees through mentoring and to prospective students through high school outreach programs was identified as an important way to advance engineering as a profession. One research-related suggestion was to develop opportunities to identify collaborative partnerships with industry and use those partnerships to strengthen the success rate of research proposals. I encourage you to build your own partnership with Iowa State as there are many opportunities to become more involved with its alumni, students and faculty.

Other members of council

William Anderson, The Council of Engineering & Scientific Specialty Boards
Ben Biller, Burns & McDonnell
Robert Crandall, Black & Veatch Corp.
Craig Denny, Terracon Consultants, Inc.
Matt Garber, Clapsaddle-Garber Associates
Paul Giroux, Kiewit Infrastructure West Co.
Mike Helms, Stanley Consultants, Inc.
Les Kempers, Rocky Mountain Prestress
Sandra Larson, Iowa Dept. of Transportation
Jack McGuire, The Boeing Co.
Bob Paulsen, AE Guidance, LLC
Michelle Scherer, University of Iowa
Ron Tekippe, HGM Associates, Inc.
Rick Tollakson, Hubbell Realty
Mike Vander Wert, Calhoun-Burns and Associates, Inc.
Denton 'Red' Voss, Black and Veatch Corp.
Scott Werner, EFCO Corp.

Kent Meyn, Chair
Director of Construction Management
ACI Mechanical, Inc.
(BSConE'85)

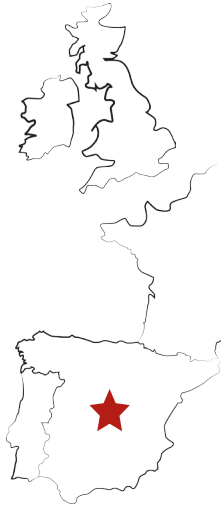
Construction Engineering Industry Advisory Council

It was another fantastic year for the 32-member Construction Engineering Industry Advisory Council. We are proud to celebrate many recent student successes. The construction engineering student teams finished first place in the commercial, design-build, and residential divisions at the Associated Schools of Construction Region IV Student Competition. Forty-five students spent their Spring Break rebuilding homes and changing lives at a Tennessee Appalachia Service Project. The advisory council held its inaugural Greenlee Leadership Lecture Series with entrepreneur Jim Russell (BSConE'83), who addressed over 200 students on leadership and entrepreneurship in March. At our AGC-Construction Engineering Spring Awards Banquet, Gale "Cork" Peterson, Jr. (BSConE'66), of Peterson Contractors, Inc., was inducted into the Construction Engineering Hall of Fame. Many thanks to Cork for his years of service to the construction engineering program and the heavy construction industry.

Other members of council

John Adam, Iowa Dept. of Transportation
Ken Bonus, Bonus Homes, LLC
Sean Brummer, Turner Construction Co.
Douglas Clark, Peterson Contractors, Inc.
Robert Cramer, Cramer & Associates, Inc.
Steve Daxon, Estes Construction
Beth Duyvejonck, Opus Design Build, LLC
Mike Espeset, Story Construction Co.
Paul Francois, Pepper Construction Co. of Ohio
Michael Gawley, Oakview dck, LLC
Richard Greenlee, Engineering Partners Int'l, LLC
Mark Guetzko, Seedorff Masonry, Inc.
Paul Higgins, The Beck Group
Larry Hopp, Kiewit Construction Co.
Stephen Jackson, Cedar Valley Corp.
Chad Layland, Baker Electric
Chris Lindhart, The Beck Group
Dean McCormick, Iowa State University
Mark McDermott, Black & Veatch Corp.
T. J. Meiners, Nelson Electric Company
Dave Miller, The Waldinger Corp.
Josh Miltenberger, Ryan Companies US, Inc.
Cork Peterson, Peterson Contractors, Inc.
Gene Postma, Western States Fire Protection Co.
Matt Ralston, Burns & McDonnell
Dirk Schafer, J. E. Dunn Construction
Rick Schultze, ARCO Design Build
Ken Sorenson, M. A. Mortenson Co.
James Stauch, Kiewit Building Group, Inc.
Mike Tousley, The Weitz Co.
Brian Wessels, Greiner Construction Co.

CCEE ALUMNI ACROSS AMERICA & THE WORLD



Karmyn Babcock — Iowa
Joel Cerwick — Kansas
Milt Dakovich — Iowa
Paul Giroux — California
Don Greenwood — Kansas
Travis Konda — Minnesota
Peter Larson — Texas
Roger Less — Iowa
Thomas Murray — Virginia
J. David Pepper — Illinois
Steve Phillips — Missouri
Cork Peterson — Iowa
Manuel Mateos de Vicente — Madrid, Spain

We recap stories and successes of 13 CCEE alumni in the last year. Read about CCEE alumni year-round at www.ccee.iastate.edu/alumni/alumni-stories.

▶ Don Greenwood (in blue shirt) helps break ground in 2009 on a U.S. Navy jet engine test facility in Meridian, Miss.

DON GREENWOOD

Math major to construction president

Don Greenwood
(BSCE'76)
President, Construction
Burns & McDonnell

"I'll be a math major," said Don Greenwood, 1976 civil engineering alumnus and Cedar Rapids, Iowa, native, upon his first semester at Iowa State in fall 1972. But, after the first semester, Greenwood wanted to study something with "more action." He sifted through the Iowa State catalog and read about other degrees. He came upon one that said "…be good at math and science…civil engineering." "That's me!"

The switch from math to civil engineering led him on a career trajectory as a major builder in the American construction industry.

In his first three years at Iowa State, Greenwood lettered as tight end on the Cyclones football team. However, he thrived in math and science. After choosing civil engineering, he said he didn't want to be an engineer "in a traditional sense, sitting behind a drafting board." So, in two summers interning for Larson & Unzeitig Construction (Cedar Rapids, Iowa), he learned how closely civil engineering was tied to the construction industry in the practical sense. "Working for a small company, I learned how to do most things that are required in a construction project."

After graduating from Iowa State, he worked at Larson & Unzeitig for another 12 years. Greenwood then moved to Kansas City, Missouri, to run Wescon, Inc., for five years.

In 1994, he started at Burns & McDonnell (Kansas City) as the first construction division employee and president. In the nearly 20 years since, Greenwood and the company hired 752 employees and build a revenue of $800 million in the construction division alone. "With about 25 percent of controlled growth every year (since 1994), the construction division of Burns & McDonnell has had a tremendous run," Greenwood said.

The challenge, Greenwood said, came in matching engineering talent with construction expertise on projects. Burns & McDonnell has created jobs for specialists who work in each of the company's 25 construction disciplines i.e. water/wastewater treatment and power generation.

The concept fits the company's typically large-scale "cool, complicated" projects, as Greenwood said. One such project is the Lockheed Martin new-generation fighter jets and multiple manufacturing facilities, built in Marietta, Georgia, and Fort Worth, Texas, in 1998 and 2002, respectively. "This was my most rewarding and most challenging project, given the risky environment we built in as well as the interesting nature of what we were building," he said.

Photo courtesy of Don Greenwood

▲ **FAMILY FIRST: Don Greenwood's family poses for a portrait in November 2012. Pictured from left are Don, wife Sharon, son Dan, daughter Katie Leever and son-in-law John Leever.**

After almost 40 years in the construction industry, Greenwood says he will retire from Burns & McDonnell at the end of 2014 or 2015.

He equals his devotion to the national construction industry with dedication to Iowa State University. He and his wife, Sharon, recently donated $2 million to establish the Greenwood Endowed Department Chair of Civil, Construction and Environmental Engineering. The Greenwoods also have supported the Construction Engineering Endowment for Program Excellence. And, Don and 39 other Burns & McDonnell employees donated to the CCEE department in 2009 to renovate 322 Town Engineering Building. Electrical and mechanical building systems are exposed in this classroom for hands-on learning. Don currently is an Iowa State University Foundation governor and earned College of Engineering's Professional Achievement Citation in Engineering Award in 2003. Sharon is a 1975 alumna of Iowa State's family environment program and works at Midtec Associates in Lenexa, Kansas.

"The Iowa State civil engineering program has allowed me to do what I do today. If my contribution continues to enhance the teaching in the program, then I'm all in," Don said.

Karmyn Babcock *(BSConE'98, MSCE'00)*

Photo retrieved from The Weitz Company

Karmyn Babcock, information technology director for Weitz Company (Des Moines, Iowa), was named in December 2012 to Engineering News Record (ENR) Midwest Top 20 Under 40 professionals. The honor recognizes young design and construction individuals who have made signficant contributions to their professions and their communities. Babcock began working for Weitz in 1997, as an intern, and was hired full-time in 1998. In the last 16 years she has developed real-time integration between Prolog and JD Edwards systems as well as developed a faster evaluation cycle on projects.

Joel Cerwick *(BSCE'66, MSCE'68)*

Photo retrieved from Joel Cerwick

With his wife, Judy, Joel Cerwick, retired board chairman and regional office group president at Burns & McDonnell, established an endowed fund in support of faculty in CCEE. The fund acknowledges the legacy of professors E. Robert Baumann, Cerwick's major professor during his graduate school career, and Jack Cleasby. Cerwicks' gift will provide the department with strategic resources for faculty support. Joel returned to Ames in April 2013 to give the keynote speech at the 31st Annual Civil Engineering Banquet, held April 24.

Milt Dakovich *(BSCE'76, BSConE'77)*

Photo retrieved from the Office of the Governor of Iowa

Iowa Gov. Terry Branstad named Milt Dakovich, president of Aspro, Inc. (Waterloo, Iowa), to the Iowa Board of Regents in June 2013. Gov. Branstad nominated Dakovich to utilize his strong construction background for the future of Iowa's public education institutions. Dakovich is a past president of Associated General Contractors of Iowa and Asphalt Paving Association of Iowa. He has been employed with Aspro, Inc., since 1977, originally hired as an engineer. He fills one of two Iowa Board of Regents vacancies (both serving terms until 2019) — the other went to Larry McKibben, an attorney at Moore, McKibben, Goodman & Lorenz, LLP (Marshalltown, Iowa). The Iowa Board of Regents is the governing body for Iowa State University, University of Iowa, University of Northern Iowa, Iowa School for the Deaf, and Iowa Braille and Sight Saving School.

Paul Giroux *(BSConE'79)*

Photo retrieved from Paul Giroux

The American Society of Civil Engineers (ASCE) awarded Paul Giroux, district deployment manager at Kiewit Infrastructure West Co., the 2013 Civil Engineering History and Heritage Award. This ASCE Award recognizes Giroux "for sharing the history and lessons of great civil engineering projects with engineering students, fellow engineers, and the general public through his outstanding lectures and leadership." Giroux led a national lecture series, including a stop at Iowa State, discussing the civil engineering history of San Francisco's Golden Gate Bridge in 2012 on the occasion of the bridge's 75th anniversary. He talked about the building of the iconic bridge and the engineers involved, including forgotten chief designer Charles Alton Ellis (see 2011-2012 CCEE Annual Update). Giroux receives the award at the ASCE Annual Conference in October 2013.

Travis Konda *(PhDCE'04)*

Photo retrieved from Iowa State Center for Transportation Research and Education (2007 file photo)

Travis Konda, engineer for HNTB Corp. (Golden Valley, Minn.), leads the construction of Highway 61 Hastings Bridge (Hastings, Minn.), the longest free-standing tied-arch bridge in North America. The four-lane bridge will be 545 feet long, connecting northern and southern areas of Hastings across the Mississippi River. The $120 million Minnesota Department of Transportation project is set to complete in spring 2014. Konda has worked for HNTB Corp. since graduating with a doctorate in civil engineering (structural) in 2004.

Photo retrieved from MnDOT website

◄ Hastings Bridge progress, March 2013.

Peter Larson *(BSCE'77)*

Photo retrieved from Raymond L. Goodson

In October 2012 Peter Larson, senior vice president at Raymond L. Goodson, Jr., Inc.(Dallas, Texas), earned the Wilbur C. Schoeller Award from the Structural Engineers Association of Texas. The award recognizes specific achievement or attainment of noteworthy prominence in the structural engineering profession. Two of his projects, the Southfield (Michigan) Public Library in 2003 and the Baylor University's Sammons Collins Cancer Center in 2011, garnered national awards for design and construction. His structural engineering methods also led him to win the American Institute of Steel Construction National Certificate of Recognition for exemplary use of structural steel. Larson is a licensed professional engineer in nine states and is active in his west Dallas community, serving as past Wesley Rankin Community Center board president.

Roger Less *(BSCE'78)*

Video still retrieved from NBC Today Show

Roger Less, engineer for the U.S. Army Corps of Engineers Rock Island District, was chosen to lead the primary unwatering team that pumped New York City subway floodwater in November 2012. Less and his team removed 500 million gallons of post-Hurricane Sandy floodwater from the subway system in only 13 days.

Thomas Murray *(BSCE'62)*

Photo retrieved from American Society of Civil Engineers website

Thomas Murray, professor emeritus at Virginia Polytechnic Institute and State University, was named in October 2012 to the 2012 class of American Society of Civil Engineers (ASCE) Distinguished Members. The status of distinguished member is the highest honor an individual, with the exception of ASCE president, can have in ASCE. Murray pioneered many structural engineering solutions to floor vibrations in buildings and bridges, and was involved in more than 130 research projects, during his academic careers at the University of Oklahoma and Virginia Tech. Murray was elected to the National Academy of Engineering in 2002 — the highest official honor an American engineer can have. In 2006 he received the Iowa State University College of Engineering Professional Achievement Citation in Engineering Award.

J. David Pepper *(BSConE'85)*

Photo retrieved from Pepper Construction Group website

J. David Pepper, chief executive officer of Pepper Construction Group, led his company to become Chicago's largest construction contractor in 2011, according to Crain's Chicago Business magazine "Chicago's largest contractors" list that appeared in late June 2012. The Chicago-based contractor attracted $668.1 million in 2011 local revenue — a 32.7 percent increase from 2010 local revenue. Pepper Construction has built and renovated structures for companies like Allstate, Kraft Foods, IKEA, Walgreens, IBM, Apple, and many others. The 86-year-old company recently surpassed the $1 billion revenue mark with sub-companies in Indiana, Texas, and Ohio — the latter is led by 1991 construction engineering alumnus Paul Francois.

Gale "Cork" Peterson *(BSConE'66)*

Photo retrieved from Gale M. "Cork" Peterson

Gale M. "Cork" Peterson, Jr., a longtime supporter and collaborator with the Iowa State construction engineering program, was named to the Iowa State University Construction Engineering Hall of Fame on April 26, 2013. After graduating from Iowa State, Peterson joined his business partner, Cordell Peterson, in 1968 to co-own Peterson Contractors, Inc. (PCI), after serving two years as an officer in the U.S. Army Corps of Engineers. Since then he and Cordell have built PCI as a regional highway construction firm and a national specialty contractor that performs all types of heavy civil construction, except asphalt and concrete paving. His company was instrumental in improving construction efficiencies of the GEOPIER ground improvement system.

Steve Phillips *(BSCE'72)*

Photo taken by Chris Neary

Steve Phillips, vice president and senior project manager for Black & Veatch Corporation's Water Division, established the Phillips Family Civil Engineering Scholarship in March 2013. This scholarship provides civil engineering students, who hold a grade point average within the top 50 percent of their class, one year of partial financial assistance with possibility for renewal. Throughout his 40-year career with Black & Veatch, he has been involved in studies, designs, and construction of water, wastewater, and stormwater systems for municipalities and industry. He has conducted projects in 10 states and U.S. territories (Puerto Rico). Phillips is an active leader in The Water Environment Federation, American Water Works Association and the American Society of Civil Engineers.

Manuel Mateos de Vicente *(MSCE'58, PhDCE'61)*

Photo retrieved from video Valvulas Automaticas Ross

Manuel Mateos de Vicente, based in Madrid, Spain, is an international geotechnical engineering researcher who has contributed literature in many disciplines. His most major books are in soil stabilization: Research on Soil Stabilization for Pavement & House Construction, Research on the Use of Fly Ash from Power Plants, Research on the Use of Soil and Waste as Construction Materials, Research on Soil-Cement Stabilization, Physical and Mineralogical Factors in Stabilization of Soils with Lime and Fly Ash, and Research on Soil-Lime Stabilization. Mateos also is founder and president of Automatic Valces Ross SA, a Spanish engineering company that has provided solutions in optimizing transport of water since 1970.

Undergraduate students dream, design and build.

Steel Bridge Team places fifth nationally, second in Midwest

Photo by Chris Neary

The Iowa State Steel Bridge Team, as part of the American Society of Civil Engineers (ASCE) chapter, celebrated their best place yet at the National Student Steel Bridge Competition. They placed fifth in the 2013 contest, held June 1 at the University of Washington (Seattle).

Iowa State was in good company as a top-five finisher: University of California, Berkeley, placed first; Massachusetts Institute of Technology placed second; University of California, Davis, placed third; and Michigan Technological University placed fourth. The Ames-based team placed highest among teams that competed in the Iowa State-hosted Midwest Regional Steel Bridge Competition in March; 2013 Midwest regional winner Lakehead University placed 10th in the national contest. Iowa State was the Midwest runner-up.

The competition was primarily one of speed. "The construction crew worked extremely fast, posting their fastest run of the year at five minutes," said Andrew Faust, spring 2013 civil engineering graduate and captain of the Iowa State Steel Bridge Team. The crew built their bridge about three minutes faster in the national contest than in the Midwest competition.

Photo retrieved from NECA Iowa State chapter

▲ **Students of the National Electrical Contractors Association Iowa State chapter placed third overall at the 2012 NECA/ELECTRI International Green Energy Challenge. The student group created an energy retrofit plan for Iowa State's Hilton Coliseum; the team placed first in the written portion.**

Photo retrieved from EERI Iowa State chapter

▲ **The Earthquake Engineering Research Institute (EERI) Iowa State chapter placed ninth in the EERI Seismic Design Competition, an international contest held in Seattle in February 2013. Their 5-foot-tall balsa wood structure withstood three earthquake tests to place high among 35 teams.**

Photo retrieved from MCA Iowa State chapter

▲ **Mechanical Contractors Association Iowa State chapter received a $7,500 national Chapter of Excellence Grant in October 2012. Of the funds received, $5,000 went to four student scholarships and $2,500 went to chapter operations. Iowa State was one of only ten chapters to receive the grant.**

Ocean Van

Duong Van, who goes by "Ocean," double majors in civil engineering and construction engineering. He is determined to integrate civil engineering design with construction engineering management in the building industries.

His passion to pursue this career path earned him a Fiatech Scholarship and an opportunity to present research at the Fiatech Technology Conference and Showcase March 25-27 in San Antonio, Texas. The scholarship covers more than $2,000 in conference registration, airfare and hotel costs for the country's leading construction management technology gathering. HAL, Inc., a supply chain company based in Houston, Texas, also sponsored Van to attend the event. Of the few Fiatech Scholars this year, Van was the only undergraduate student in the country to receive the honor.

Van uses innovative 3D printing technology to develop physical 3D models from 3D Building Information Modeling models to analyze construction project areas.

Photo by Chris Neary

12 TOP 10 FINISHES AT NATIONAL AND INTERNATIONAL CONTESTS SINCE OCTOBER 2012

1,054 UNDERGRADS IN CCEE (ALL-TIME HIGH)

13 ACTIVE CCEE STUDENT ORGANIZATIONS

Graduate students build passion in their research.

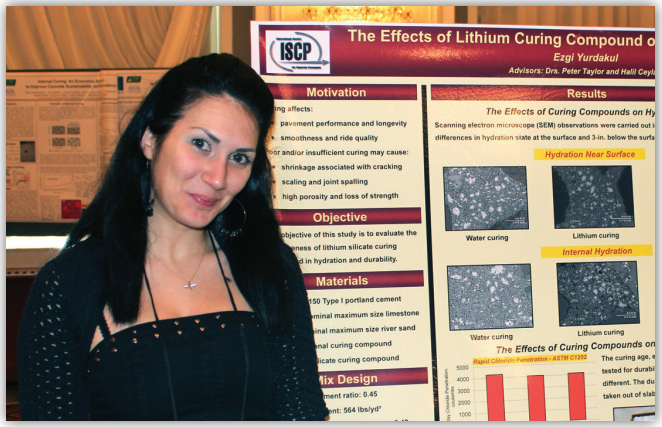


Photo retrieved from Ezgi Yurdakul

▲ **Recent geotechnical doctoral graduate Ezgi Yurdakul presented research at the 10th International Conference on Concrete Pavements, held in Quebec City, Quebec, Canada, in July 2012. She discussed two projects: 1) application of X-ray fluorescence in assessing proportions of fresh concrete and 2) effects of lithium curing compound on concrete pavements. Yurdakul is now a research scientist for W. R. Grace & Co.**

Photo retrieved from Ted Bechtum

▲ **Recent geotechnical master's graduate Ted Bechtum (left) worked with Assistant Professor Jeramy Ashlock and Anson Marston Distinguished Professor Emeritus Richard Handy (right) on improving Handy's borehole shear test. Bechtum helped automate the process, which tests soil strength on site in less time. Bechtum is now a geotechnical engineer at Burns & McDonnell in Kansas City, Mo.**

Photo retrieved from Dimitra Pyrialakou

▲ **A team of Iowa State transportation engineering graduate students won Transportation Research Board's Origin-Destination problem of the 2013 TRB Transportation Data Forecasting Competition. The contest was held in February 2013 in Washington, D.C. Pictured from left are Mohammad Shaheed, Dimitra Pyrialakou, Associate Professor Nadia Gkritza, Dimitrios Bilionis, and Bo Wang. Assistant Professor Jing Dong, who co-advised with Gkritza, is not pictured.**

Photo retrieved from Jason Garder

▲ **Recent environmental engineering master's graduate Jason Garder presented a paper at the 2012 American Society of Agricultural and Biological Engineers Annual International Meeting in Dallas, Texas. He talked about the occurrence and movement of antibiotic-resistant bacteria in tile-drained agricultural fields receiving swine manure. Garder is now an environmental engineer at CDM Smith in Kansas City, Mo.**

Justin Vander Werff

Doctoral candidate Justin Vander Werff won the 2012 Iowa Section American Society of Civil Engineers (ASCE) Award for Outstanding Civil Engineer. The ASCE award honors a practicing engineer in industry or academia in recognition of promotion and advancement of the field of civil engineering in the state of Iowa.

Vander Werff says he is "a bit of a non-traditional graduate student." The structural engineering graduate student also is a civil engineering faculty member at Dordt College (Sioux Center, Iowa).

He formed an ASCE student chapter at Dordt College. "The energy and excitement of the students have been the main drivers in the success of the student chapter," Vander Werff said of his ASCE student chapter. "It has been a pleasure to work with them and help them mature as young engineers."

Vander Werff has a master's degree in civil engineering from Iowa State in 2002 and a bachelor's degree from Dordt with a mechanical emphasis, which he earned in 2000.

Photo retrieved from Justin Vander Werff

a sneak peek into

CCEE CENTERS & LABS

View images of all CCEE labs online at www.ccee.iastate.edu/research/facilities.

1) The Advanced Asphalt Materials Laboratory allows testing and development of superior performing asphalt pavements.

2) The Structural Engineering Research Laboratory provides 6,900 square feet of hi-bay space, including a tie-down floor with a million-pound capacity, for testing bridge components and other structures. The photo shows a tour of the facility.

3) The Geotechnical Mobile Lab is America's first on-site soil engineering test facility.

4) The Portland Cement Concrete (PCC) Pavement and Materials Research Lab hosts undergraduate courses and research in concrete processing and manufacturing.

5) The Jellinger Computer Lab exposes students to construction industry connections and team projects — a great conducive environment for the senior-level design course.

6) The Highway Design Classroom gives students real-world practice in highway design projects.

7) The Anderlik Teaching Laboratory exposes environmental engineering students to air, water and wastewater analyses.

highlighted research

construction engineering and management

Turkan, Jahren adopt 'civil' in building information modeling

Charles Jahren
Professor

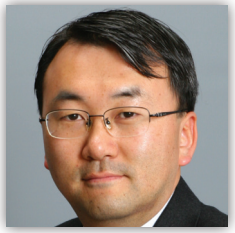
Yelda Turkan
Assistant Professor

W. A. Klinger Teaching Professor Charles Jahren and Assistant Professor Yelda Turkan apply building information modeling (BIM) to more efficient construction management. BIM often is perceived as a software tool that is applicable solely for designing and constructing buildings. However, BIM also aims at enhancing collaboration between project participants through a 3-D intelligent model. BIM can be used effectively for designing, constructing, operating and managing any type of infrastructure project, not just buildings. In order to eliminate the confusion, participants of horizontal infrastructure projects have adopted an acronym different from BIM — civil information modeling (CIM). Using 3-D intelligent models for utility conflict detection, schedule visualization, and automated machine guidance, are good examples. Ongoing research applies the content analysis method on data obtained through interviews conducted with employees of the Iowa and Wisconsin transportation departments. Topics considered include the 1) driving forces; 2) challenges, as well as the benefits, of using 3-D intelligent models throughout the project development process; and 3) the operation and maintenance stages from a state DOT perspective. It also explores the current CIM practices, while providing gap analysis that defines what remains to be done to fully implement CIM.

Fangyu (Denise) Guo, civil engineering doctoral candidate (with an emphasis in construction engineering and management), assists with the research.

▲ **CCEE's Charles Jahren and Yelda Turkan have developed 3-D printed models (like the one above) that engineers can take to worksites for more efficient construction engineering management. Physical models are printed from 3D digital models. 2005 construction engineering alumnus Ben Bunge displays a 3D digital model at a worksite in fall 2012 (right).**

Jeong builds advanced frameworks for asset management, daily work report systems



David Jeong
Associate Professor

Construction engineering Associate Professor Hyung Seok "David" Jeong leads a project in developing an asset management framework for pavements. He and his team evaluate pavement treatment options, ranging from "do nothing" to full replacement of pavements. Jeong's asset management framework includes 1) selecting possible treatment options based on pavement conditions; 2) developing a methodology for return on investment for various Iowa pavement treatment options; and 3) developing, testing, and training Iowa Department of Transportation (Iowa DOT) engineers on a spreadsheet-based decision aid tool. Edward O'Connor and Ahmed Abdelaty are graduate research assistants on the project.

Jeong also leads a project in developing an advanced framework for daily work report systems. This includes a standard data input structure, identification of decisions that can benefit from daily work report data, and effective data analysis methods and algorithms to produce required information and knowledge to support various highway project decisions. Mid-American Transportation Center and Iowa State fund this project. Joseph Shrestha is the graduate research assistant.

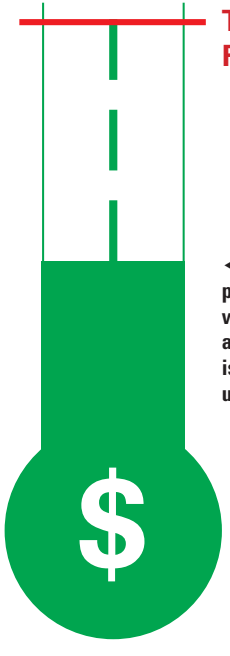
Core collaborators: Doug Gransberg (CCEE), Omar Smadi (InTrans, CCEE), Iowa Department of Transportation

Gransberg develops preconstruction cost estimation book

Doug Gransberg
Professor

Professor Doug Gransberg, Donald F. and Sharon A. Greenwood chair of construction engineering, leads researchers in developing a preconstruction services cost estimation guidebook, that state transportation departments and related agencies will use to estimate costs of preconstruction services related to public transportation projects. These costs pertain to agency planning, programming, budgeting and management functions. Due to tighter budgets, funding limitations and growing emphasis on government accountability, transportation agencies increasingly rely on cost estimates to verify adequate public funding. The goal is for state agencies to maximize available funding for state infrastructure renewal projects. The National Cooperative Highway Research Program, under the Transportation Research Board, funds this 30-month project. Kate Hunter, a civil engineering master's student (with an emphasis in construction engineering and management), provides valuable assistance on this project.

Core collaborator: David Jeong (CCEE)



◄ **Professor Doug Gransberg's preconstruction services guidebook will make it easier for transportation agencies to predict costs. This is especially helpful in times of uncertain public funding.**

Shane adds cost efficiency, environmental benefits to management

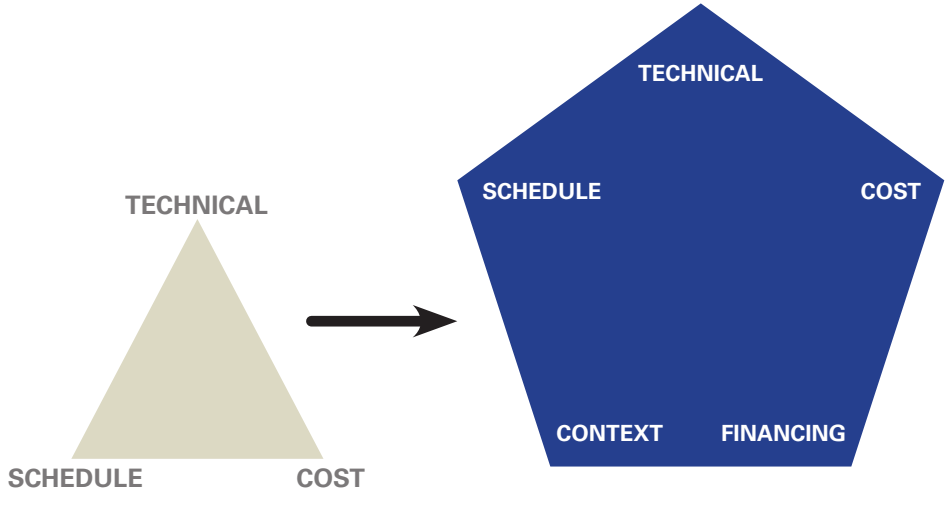
Jennifer Shane
Associate Professor

Associate Professor Jennifer Shane currently looks at project management strategies for complex projects. Her research has evolved the conventional 3-sided iron triangle into a new reformed model utilizing five sides. Normally consisting of cost, schedule, and technical requirements, Shane's research has proven that context and financing must be added to increase efficiency on construction projects. The goal is no longer about how fast something can be built, but also how cost-efficient and environmentally beneficial a project is.

Shane's project is funded by the Strategic Highway Research Program 2 (SHRP2), a program of the Transportation Research Board (TRB). The Federal Highway Administration funds this project. Junyong Ahn, a postdoctoral research associate, provides valuable assistance.

Core collaborators: Doug Gransberg (CCEE), Kelly Strong (Colorado State University)

▼ **Associate Professor Jennifer Shane advanced the conventional 3-sided complex project model to one with five sides, adding context and financing to the mix.**



Alleman studies pavement that chemically removes pollutants

James Alleman
Professor

Professor James Alleman and his research team use titanium oxide to remove automobile-based contaminants from roadways. Tested on Missouri Route 141 in St. Louis, this is the first test of its kind in the U.S. (previous tests were completed by others in France, Italy and Japan). After precipitation on roadways, storm water typically carries automobile oils, greases, suspended solids, nutrients attached to the suspended solids, and metal residue into the environment. Titanium dioxide placed in the concrete acts as a photochemical reactant to produce hydroxyl radicals, which chemically remove environmental contaminants from road surfaces. Nitrogen oxide and sunlight from the atmosphere react with the titanium oxide to produce environmentally friendly nitrates, which run off through storm water. The Federal Highway Administration, Missouri Department of Transportation, National Concrete Pavement Technology Center (Iowa State University), Italcementi Group, and HeidelbergCement Group fund this project.

Core collaborators: Fred Weber, Inc., Missouri Department of Natural Resources, Iowa Department of Transportation, Portland Cement Association, Iowa Concrete Paving Association, U.S. Environmental Protection Agency, 2B Technologies, Inc.

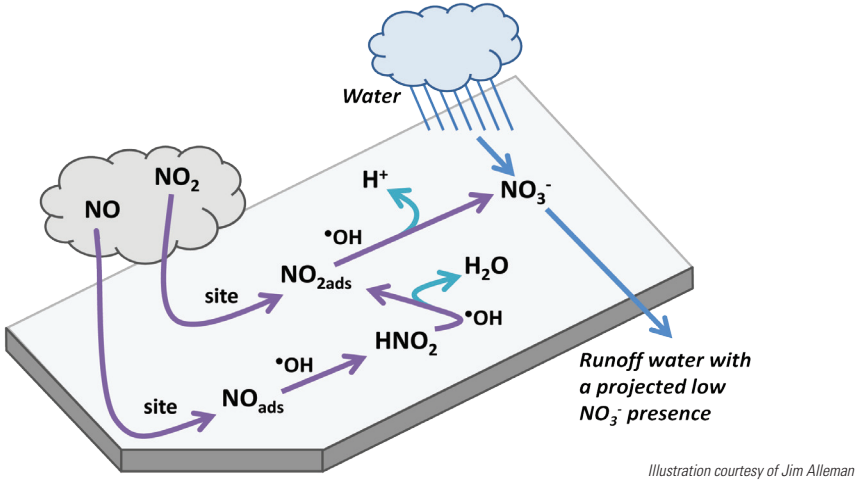


Illustration courtesy of Jim Alleman

▲ **A drawing shows the photocatalytic oxidation of nitrogen oxide and nitrogen dioxide by concrete pavement containing titanium oxide.**

Sung to eliminate energy consumption in wastewater treatment

Shihwu Sung
Professor

Due to human activity, our waterways are flooded with excess organics, nitrogen and phosphorous from sewage and agriculture run-off. The negative impacts can result in anoxia, which can harm aquatic life and create reductions in our water quality and supply. To reduce environmental impact, municipal wastewaters are treated with aerobic treatment processes, which consume a lot of energy. Professor Shihwu Sung investigates ways to transform the aerobic treatment processes (organic carbon and nutrient removals in the wastewater industry) into solely anaerobic processes to completely eliminate energy consumption in aeration for biorenewable methane energy production. He created an anaerobic membrane bioreactor to remove organics followed by anaerobic ammonia oxidation (anammox), a new process where ammonium oxidizes directly into nitrogen gas. The anaerobic membrane bioreactor includes a completely mixed anaerobic tank and an external membrane module that retains a high biomass essential to the low temperature sewage application. Sung's research could eliminate aeration energy consumption, produce much less sludge, and generate biorenewable energy. The goal is to shift the wastewater industry from a mega energy consumer to an energy-gain enterprise. The U.S. Department of Agriculture and National Science Foundation fund this project.

Photo by Shihwu Sung

◄ **A lab-scale annamox bioreactor tests anaerobic wastewater treatments. Shihwu Sung conducts experiments in the Joseph C. and Elizabeth A. Anderlik Teaching Laboratory in Town Engineering Building.**

White improves soil compaction technology for roads, levees

David White
Associate Professor

Richard L. Handy Associate Professor David White uses machine-integrated sensors and GPS technology to advance the accuracy of soil strength tests on roads and levees. The technology involves sensors placed directly on intelligent soil compactors on a work site, where data are collected and construction work is done simultaneously. With GPS satellite technology, soil condition data are accurate within one square foot. Data are then transferred to a secure website, where engineers can analyze readings and determine if the project meets specifications in real time. With traditional soil compaction tests, an engineer or technician would test random areas with a nuclear density gauge, a small, handheld device that limits quality control inspection of a work site. With the new technology, construction crews can detect all weak soil areas such as levee breaks or other pavement breakdowns and repair them before major problems occur. For engineers interested in reviewing the soil compaction data for this project, go to www.myvisionlink.com/Visionlink.aspx, contact David White directly at 515 294-1463, djwhite@iastate.edu, or visit www.ceer.iastate.edu.

Core Collaborators: Iowa Department of Transportation, Caterpillar, Inc., McAninch Corp., Technology Transfer Intelligent Compaction Consortium (TTICC)

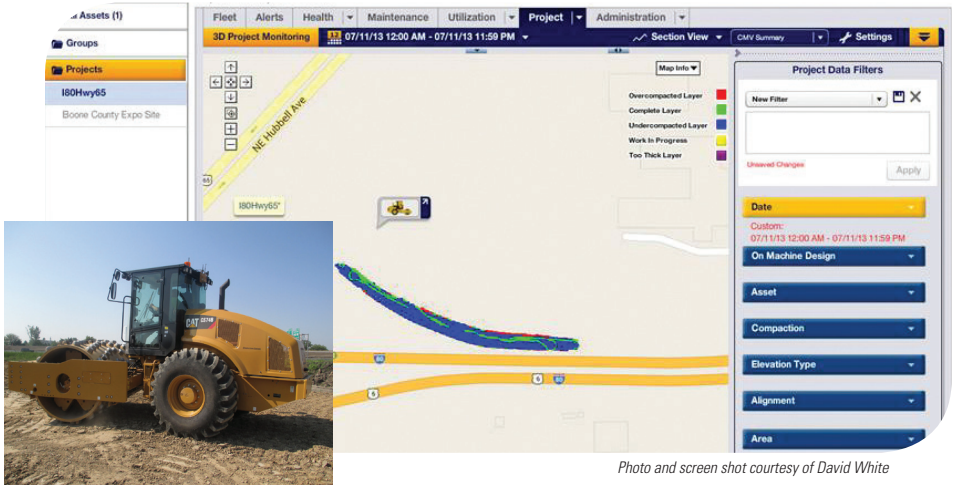


Photo and screen shot courtesy of David White

▲ **Sensors placed on a soil compactor transmit soil strength data immediately to a secure website (above) using GPS technology.**

Schaefer constructs website that provides geotechnical guidance

Vernon Schaefer
Professor

Geotechnical engineering Professor Vern Schaefer led an intercollegiate team in creating a free web-based information and guidance system called GeoTechTools. The website was developed as part of the Strategic Highway Research 2 program project titled Geotechnical Solutions for Transportation Infrastructure, a five-year effort. It was developed for engineers, project managers, and associated personnel to access critical information on geoconstruction technologies for transportation infrastructure. The system provides assistance through 46 geoconstruction and ground improvement techniques in four areas: 1) construction of new embankments and roadways over unstable soils, 2) widening and expansion of existing roadways and embankments, 3) stabilization of geotechnical pavement components and 4) stabilization of working platforms. Register today for the free service at www.geotechtools.org. More than 30 graduate students, researchers and web support personnel at Iowa State University, the University of Kansas and Virginia Tech participated in the project.

Core collaborators: Ryan Berg (Ryan R. Berg & Associates, Inc.); Donald Bruce (Geosystems, LP); Barry Christopher (consultant), Jim Collin (The Colling Group, Ltd); George Filz, Jim Mitchell, and Linbing Wang (Virginia Polytechnic Institute and State University); Gary Flick (Trinity Construction); Jie Han (University of Kansas); Dennis Turner (consultant); and David White (CCEE)

▲ **Pictured is the current main webpage of www.geotechtools.org.**

Laflamme applies car brake technology to structural damping

Simon Laflamme
Assistant Professor

Assistant Professor Simon Laflamme uses car brake technology to ensure the structural integrity of buildings. Laflamme does this by integrating electronically controlled mechanical systems that reduce building movements due to wind and earthquakes hazards. The goal is to advance the technology of damping systems to reduce building damage during earthquakes in a cost-effective manner, and ensure building serviceability during moderate and strong wind events.

For example, when winds blow against a building, the damping system detects building motion, triggering electrical signals to drum brakes installed in building floors to dampen movement in the building's structure. Adding electrical control is what transforms passive technology, like viscous dampers, into semi-active damping systems, allowing a substantially greater mitigation performance. "Much like drum brakes enable cars to decelerate, this semi-active damping system dissipates energy in movement through friction," Laflamme said.

The semi-active damping technology would run on a building's electrical power. In case of a power outage, a battery would provide high, robust and reliable damping. The National Science Foundation funds this research.

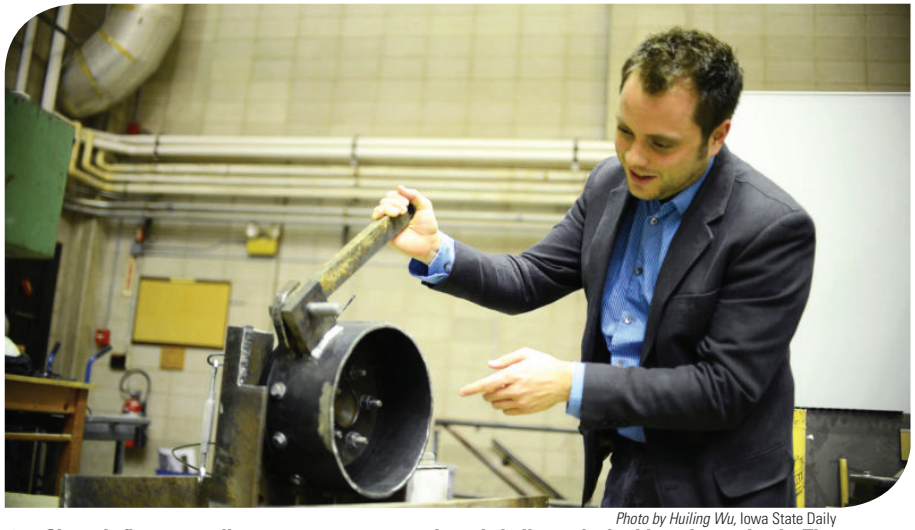


Photo by Huiling Wu, Iowa State Daily

▲ **Simon Laflamme applies pressure to structural steel similar to the braking of car wheels. The ultimate goal is to reduce building movement in high winds or other natural hazards.**

Sritharan leads future design of earthquake-resilient structures

Sri Sritharan
Professor

After an earthquake, it can be a long road back to economic and societal recovery. After the 2011 earthquake in Christchurch, New Zealand, nearly 80 percent of the city's central business district infrastructure had been destroyed. Inspired by these events, Wilson Engineering Professor Sri Sritharan develops design of earthquake resilient structures through his research at Iowa State. This research focuses on designing and testing structures that can withstand high stress areas, and are more resilient during seismic activity. Sritharan also investigates the rebuilding of infrastructure at a faster rate after seismic damage has taken place. These future designs must be able to allow for a high rate of construction and implementation.

On another project, his team currently builds half-size versions of structural bridge support systems in order to find new ways of increasing structural performance and efficiency. The California Department of Transportation funds this research, and Iowa State is one of the selected few universities in the nation working on this project. His research has attracted a new and talented group of students to Iowa State, who focus on the seismic design of buildings and bridges.

Core Collaborators: University of Minnesota, University of Nevada-Reno

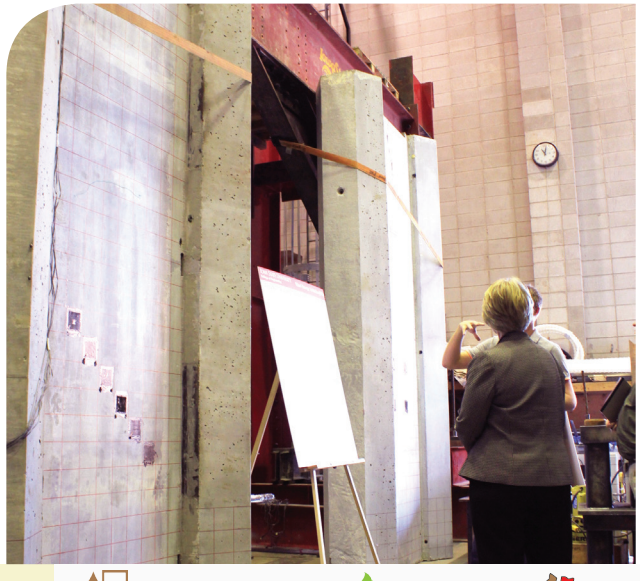
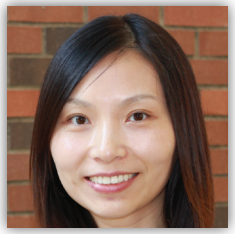


Photo by Chris Neary

◄ **Two concrete bridge supports, built at the Iowa State Structural Engineering Research Laboratory, provide a place for Sritharan's earthquake engineering structural tests.**

Dong's research to improve winter highway travel



Jing Dong
Assistant Professor

Assistant Professor Jing Dong's current research looks at ways of improving network traffic flow and reliability on Iowa's roadways during the winter months. She gains insight as to how resources can be used more effectively by winter snow removal vehicles. Dong completed phase one of this research study at the end of June 2013.

Using geographic information systems and data analysis models, she is able to look at the number of snowplows on the road, and use this data to predict how they can perform more efficiently to remove snow off the road. Over time, this research could generate new methods of efficiently moving snow off the roads. In return, this could increase the overall safety and efficiency of winter travel in Iowa. The Iowa Department of Transportation, in collaboration with the Iowa Highway Research Board, funds this research.

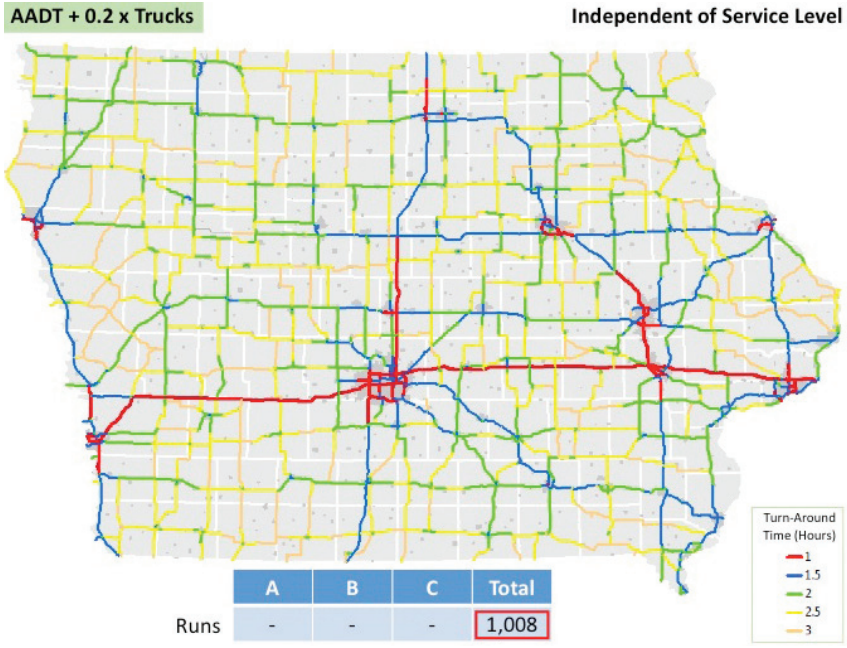


Illustration provided by Jing Dong

▲ **A graph indicates the most recent levels of turnaround times for snow trucks on Iowa roadways. Dong's goal is to reduce these turnaround times.**

Gkritza uses GPS, spatial data to predict freight infrastructure

Nadia Gkritza
Associate Professor

Associate Professor Konstantina "Nadia" Gkritza's research progresses Iowa into a renewable energy future through her focus on bioeconomy and transportation infrastructure. Gkritza and her research team utilize geographic information tools and spatial data analysis to measure the efficiency of current truck patterns on Iowa's roadway network and predict their impact on the infrastructure. Her research work will help Iowa use and transport biofuels more efficiently through the transportation infrastructure.

ConocoPhillips, ADM, Hawkeye Renewables and the Iowa Department of Transportation fund this research.

Gkritza also investigates the regulatory issues that may affect or limit freight movement in Iowa and other Midwestern states, as well as potential efficiencies that can improve freight movement. The ultimate goal of this study is to facilitate improved freight movement and the free flow of goods in Iowa and surrounding states. Gkritza's research will allow for a better use of highway systems in relation to geographic resources. Her research will create a more sustainable biofuel transportation system in Iowa.

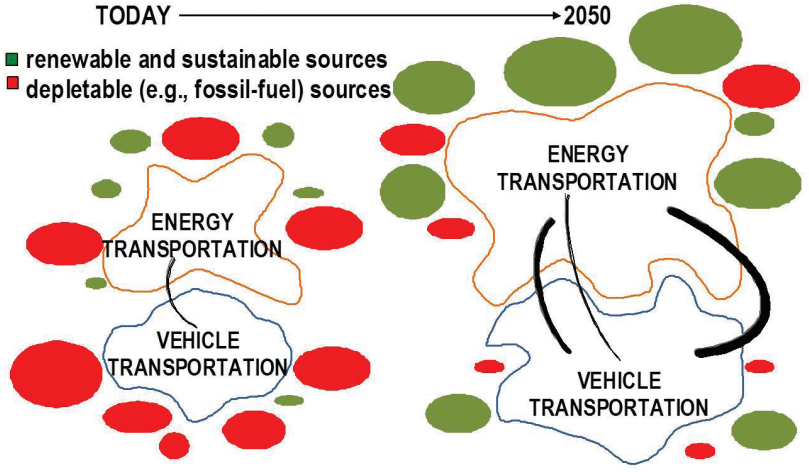


Illustration provided by Nadia Gkritza

▲ **A graphic illustrates the increased U.S. energy transportation demand, associated with the loss of fossil fuels and gain of renewable energy sources, now and in 2050.**

*We are **internationally engaged**.*

Study abroad and international exchanges continue to be critical to the success of our students and programs.

▲ Brent Phares, director II at Institute for Transportation (third from left), and Wendy Robinder, CCEE academic adviser (sixth from left), visited the University of Edinburgh, Scotland, in spring 2013. The goal of Iowa State College of Engineering representatives was to strengthen partnerships with the Scottish university and enhance student exchange efforts.

Scotland

England

Germany

Italy

Spain

Turkey

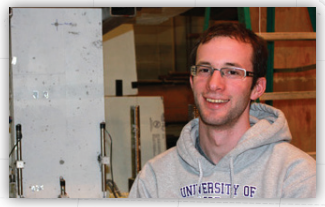
China

Cuba

◄ Conrad Brendel, civil engineering senior pictured at middle of back row, joins Iowa State engineering's first sustainability and statistics program, held at Politecnico di Torino in Turin, Italy. Faculty from both Iowa State and Politecnico di Torino teach Iowa State students in this program.

▲ Civil engineering junior Ryan Betters (inset top left) and senior Ryan Francois participated in Red Bull Flugtag, a human-powered flight competition in Singapore. Betters and Francois studied abroad at National University of Singapore and Nanyang Technological University, respectively. Cartoon sketches show the dental hygiene inspiration they used to create "Flight of Fluoride Man."

Singapore



▲ Jonathan Watkins, Fulbright grantee from The University of Auckland, New Zealand, chose Iowa State to pursue earthquake engineering research.

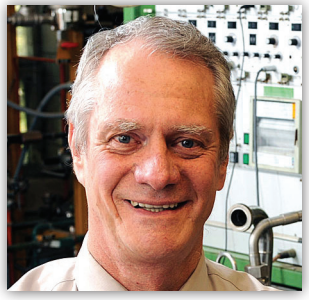
Australia

New Zealand →

Faculty and staff were recently honored.

Timothy Ellis

Associate Professor Timothy Ellis earned the **Fulbright Teaching Award from the International Council for International Exchange of Scholars**. The award temporarily places Ellis at the Malta College of Arts, Science and Technology (MCAST) as part of the Republic of Malta Fulbright Scholar Program. MCAST is located in Rahal Gdid, Malta. Ellis has been a CCEE faculty member since 1995, specializing in environmental engineering. He has lent his expertise in African, European and Asian countries, in addition to locations throughout North America.



Hans van Leeuwen

Vlasta Klima Balloun Professor Hans van Leeuwen led an international research team that garnered the **2012 Global Award for Applied Research from the International Water Association**. The winning project involves water reclamation from ethanol production leftovers and animal feed production using a fungal process. The goal is to make the production of ethanol from corn more economical. Van Leeuwen has served on the CCEE faculty since 2000.

Fouad Fanous

Professor Fouad Fanous received the **Iowa Regents Award for Faculty Excellence**. Known as a staunch advocate of quality in the classroom, he relentlessly pursues the highest achievement from students. Fanous has served as a CCEE faculty member since 1982 and a senior structural engineer for the Department of Energy Ames Laboratory from 1996 to 2012. For 19 years he investigated the strength within the containment structure of several existing U.S. nuclear power plants.

Jennifer Shane

Associate Professor Jennifer Shane was honored with the **Iowa State University College of Engineering Early Career Engineering Faculty Research Award**. Shane has secured highly competitive projects totaling more than $2.4 million in areas of project management and highway work zone safety. Impacts of her projects include guidebooks, training courses, policy changes, and improved industry practices. Shane currently serves as a Black & Veatch "Building a World of Difference" Faculty Fellow and has been a member of the CCEE faculty since 2006.

Shauna Hallmark

Transportation Research Board (TRB) honored Professor Shauna Hallmark with the **Patricia F. Waller Award** for an outstanding paper on transportation safety and system users. She shares the award with 2011 civil engineering doctoral graduate Hillary Isebrands. The paper discusses statistical analysis and development of a crash prediction model for roundabouts on high-speed rural roadways. Hallmark has been a CCEE faculty member since 2000 and currently is the interim director of Iowa State University's Institute for Transportation.

Kejin Wang

The American Concrete Institute honored Professor Kejin Wang as an **American Concrete Institute (ACI) Fellow**. ACI recognized Wang for her many outstanding contributions to the production or use of concrete materials, products and structures in the areas of education, research and development. She specializes in Portland cement concrete materials and pavements. Wang has served as a CCEE faculty member since 2000.

Nancy Qvale

CCEE Administrative Specialist III Nancy Qvale earned the **2012 Iowa State University Carroll Ringgenberg Award**. The award honors Nancy for her longstanding dedication, loyalty, and passion for the CCEE department, College of Engineering and Iowa State University community. Since January 2000, she has greatly expanded her administrative duties. Hired as an office coordinator, Nancy now administers human resources, facilities and information resources within the CCEE department. She also contributes to the Iowa State community as editor of 'Toons, a 10,000 circulation cartoon newspaper distributed free to the Iowa State campus as well as surrounding communities.

The Carroll Ringgenberg Award honors a long-term professional and scientific staff member who was instrumental in the development of facilities planning and space utilization on campus. Carroll Ringgenberg was an Iowa State employee, initially for the Purchasing Department and then the Facilities Planning and Management Division, from 1952 to 1992. By the end of his career, Carroll coordinated classroom scheduling and maintained the computerized inventory of all campus space. He died in 1993. Two years later, university employees established the award in his memory.

Emeritus Professor Wallace Sanders earns AISC Lifetime Achievement Award

Wallace Sanders

Professor Emeritus Wallace Sanders received the **2013 Lifetime Achievement Award from the American Institute of Steel Construction (AISC)**. AISC recognizes Sanders for his passionate and compassionate advocacy for engineering education, particularly steel bridge design. Sanders taught structural engineering in the CCEE department from 1964 to 1998. He also served as associate dean for the College of Engineering. Throughout his tenure his research in steel bridge load distribution, strengthening and fatigue inspired state-of-the-art construction techniques frequently used in the American structural steel industry. In 2006, CCEE opened the Wallace W. and Julia B. Sanders Structural Engineering Laboratory in the Town Engineering Building on campus. The space continues to serve graduate and undergraduate students in structural engineering building, research and design.

Although Sanders retired from CCEE in 1998, he remains active as secretary of The American Railway Engineering and Maintenance-of-Way Association steel bridge committee.

One faculty member and one staff member joined us this year.

Adjunct Assistant Professor **Qun Wang** began his appointment Aug. 16, 2012. With research interests in biomedical and environmental engineering, Dr. Wang has a joint position with the chemical and biological engineering department. He received a PhD in chemical and petroleum engineering at the University of Kansas and a PhD in environmental science and engineering at Wuhan University.

CCEE hired Academic Adviser II **Traci Goldberg** on Nov. 12, 2012. She began advising current and prospective civil engineering students in the Spring 2013 Semester. Goldberg received a MEd in curriculum and instruction in secondary science at University of Nevada-Las Vegas and a BS in environmental studies and biology at Central Michigan University, where she ran cross country and track.

Thank you to those who recently gave to CCEE.

All listed donors reflect the records of the Iowa State University Foundation for those who gave to the Iowa State CCEE department between July 16, 2012, and June 30, 2013. Thank you!

INDIVIDUALS

John (ConE'80) and Penny Adam
Richard (ConE'78) and Corinne Alexander
Harry Allender (CE'61)
Steven (ConE'78) and Betsy Amento
Thomas Anderson and Vicki Black
Tyler Anderson (CE'11)
Randall Andrews (ConE'08)
Benjamin Antons (CE'10)
Steve and Janet Augustine
Bruce Banister (CE'74)
Gary (ConE'81) and Susan Barkhurst
E. Robert and Mary Baumann
Dennis and Carol Becker
Charles (CE'74) and Laura Belgarde
Kathryn Bennett
Marianne (Berhow) Meyer
Thomas (ConE'97) and Kirsten Binder
Douglas (ConE'73) and Monti Lynn Black
James Blessum (CE'83)
Harry (CE'51) and Phyllis Blizzard
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David Bosshart (ConE'80) and Kari Montrose
Clark Bowden (ConE'10)
James (CE'56) and Marian Bowman
Norbert (CE'67) and Karen Box
Steven (ConE'77) and Letha Braesch
Michael (ConE'79) and Susan Brandt
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Krista Brown (CE'75,'78) and Malcolm Dymkoski
Jason (ConE'97) and Jean Brown
Craig (CE'76) and Ellen Buhr
Jay Burgess (CE'98)
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Paul (ConE'74) and Elaine Campbell
Charles (CE'64) and Judy Carl
James (ConE'80) and Julie Carlson
Robert (CE'80) and Maggie Carson
Bill (CE'75,'77) and Yvonne Cary
Joel (CE'66,'68) and Judy Cerwick
Arnold (CE'52) and Elizabeth Chantland
Gerald (CE'83) and Sara Chase
Dean Chaussee (CE'62)
Louis Circeo (CE'61,'63)
Eric Claussen (CE'03)
Ronald (CE'60) and Jane Coene
Michael (ConE'84) and Margaret Coluccy
David (CE'45) and Nadeen Comann
Michael (CE'76,'78) and Valerie Conzett
Daniel (CE'09,'10) and Ashley Cook
Brent (ConE'91) and Tammy Cooper
Larry Cormicle (ConE'78,'10) and Mary Oostenburg
Alan (CE'61) and Joane Cosper
Roger (ConE'75) and Jill Cousins
Robert (ConE'90) and Lori Cramer
Wayne (CE'62) and Carmen Craney
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Robert (CE'57) and Lucy Crosby
Mark (CE'07,'09) and Angela Currie
Christopher and Sue Dailey
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William (ConE'79) and Anita Heston
Jack (CE'67) and Helen Hogan
Eugene Hohenshell (ConE'62)
David Howd and Savanna Borne
Bruce (CE'81) and Beverly Hucker
Cornie Hulsbos (CE'41,'49,'53)
Mary Hurd (CE'47)
Brian (ConE'01) and Angela Irlbeck
Thomas and Sally Jacob
John and Karen Jahlas
Richard and Elaine Jarvis
Edward Jaselskis
Kimberly (Johnson) Jensen (CE'82) and John Jensen
Douglas Jensen (CE'74)
Ronald (ConE'73) and Carol Jochimsen
Michael Johnson (CE'71)
William (ConE'82) and Gail Johnson
Steven Johnson (ConE'79)
David (ConE'70) and Donna Johnson
Brent (ConE'88) and Suzanne Johnston
Jennifer (Cheever) Jungmann (CE'05,'06)
Matz Jungmann (CE'04,'07)
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Becky Kaser
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Sarah (Craiger) Kerr (ConE'82) and Renny Kerr
Herbert Ketelsen (CE'48)
George (CE'56) and Evelyn Keyes
Richard (CE'73) and Nancy Klatt
David (CE'59) and Sherry Kleveter
William and Mary Kline
Harold (ConE'86) and Robin Koenigs
Daniel (CE'94) and Jill Konczak
Travis Konda (CE'04) and Ursula Deza (CE'11
Kenneth and Cheryl Korth
George Kotlers (CE'88)
Wayne (ConE'92) and Donna Kraft
Gary (CE'89) and Teresa Krage
Rose Marie (Gockel) Kuehni (CE'96,ConE'96) and Anthony Kuehni
Joakim (CE'55,'62) and Vivian Laguros
Jeanne Lander*
John Lander (ConE'66)
Oscar Larsen (CE'52)
Jami Larson and Teresa Beer Larson
Philip (CE'82) and Rachelle Larson
John (CE'75) and Catherine Lauterbach
Joe Leahy (CE'88)
James (ConE'80) and Belinda Leavitt
Ti-Ta (CE'58) and Shun-Jong Lee
Dolores Lee
Dustin Leo (CE'10)
Gene and Pat Leonhart
Roger (CE'54) and Louise Lewis
Brett (CE'02) and Erin Lewis
Michael (CE'68) and Jane Lindebak
Christopher (ConE'82) and Carol Lindhart
A. (ConE'99) and Kristine Loss
Gerald (CE'49,'56) and Mildred Love
John Lundberg (CE'10)
Bill Mack (ConE'71)
Richard (CE'88) and Michele Madson
Tarek Mahfouz (CE'09)
Charles (ConE'71) and Vicki Major
Henry (CE'63) and Rita Mann
Russell (ConE'72) and Rhonda Manning
Richard (CE'58) and Evelyn Marr
George (ConE'81) and Linda Martens
Don (ConE'77) and Tami Martin
Manuel Mateos (CE'58,'61) and Brigitte Baugas
John (CE'78) and Cindy McClannahan
Thomas (CE'64) and Judy McDonald
Kevin McLain (ConE'10)
Matthew McLaughlin (CE'12)
David and Stacy McWhorte
John and Barbara Meyer (CE'73)
Kenneth (CE'57) and Betty Milford
W. Owen and Karen Miller
Douglas and Diann Miller
Scott and Natalie Miller
James (CE'76) and Janice Mino
Roger (CE'64) and Sharon Mohror
Carl (CE'72) and Margaret Moon
Dale (CE'70,'71) and Cheryl Moore
Shahzad (CE'83,'86) and Shahrzad Moosa
Todd (CE'93) and Rebeccah Moss
James Moyer (CE'51)
Diane (Viise) Mueller (CE'83) and William Mueller
George (CE'86) and Ginny Mulholland
Dennis and Janice Murphy
Jeffrey (CE'75) and M. Jayne Myhre
Cassandra Naber (ConE'12)
Mark (CE'84) and Linda Nahra
Steven (ConE'87) and Stephanie Nelson
Gregory Nelson (CE'76)
James (CE'63) and Judith Nelson
Richard (CE'73,'77) and Kathleen Netley
Philip (ConE'83) and Elizabeth Neumann
Eugene (CE'50) and Helen Niebuhr
Robert (CE'77) and Terri Nielsen
Hooshmand Nikoui-Ghamsari (CE'79,'82)
James (ConE'81) and Rhonda Nissen
Tom (ConE'76) and Barbara Noonan
Thomas Novak (ConE'81) and Debra Johannes-Novak
Robert and Loretta Obradovic
C. Theodore (CE'61) and Carolyn Ogren
Richard Olin (CE'60)
Gerald (CE'58) and Audrey Olson
Paul Ombruni (CE'50) and Joanne Hartman-Ombruni*
Jason (CE'96) and Jodi Omundson
Robert (CE'63) and Cheryl Ooten
Douglas (ConE'75) and Marcia Otte
Swarna Padmanabhuni (CE'11)
Lester and Mary Paul
David (CE'72) and Linda Paulson
Jerry (CE'74) and Judith Penland
David (CE'89,'91) and Jolyn Petermeier
Robert (CE'60) and Barbara Petersen
Gale "Cork" (ConE'66) and Becky Peterson
Albert (CE'52) and Patsey Peterson
Bradley Phillips (ConE'79)
Stephanie (Buss) Poro (CE'91) and Gabriel Poro
Howard Preston (CE'72) and Laurie McGinnis
Richard (CE'47) and Dorothy Pride
Roger (CE'97) and Tricia Protzman
Daniel and Amy Quartell
James Quarve (ConE'89)
Kelli Quinn (ConE'93)
Victor (CE'64) and Lorraine Randecker
Terry (CE'85) and Timie Rasmussen
Jeffrey (CE'94,'97) and Cynthia Reid
Michael and Lori Reilly
Maurice (CE'57) and Mary Jean Reimers
William Reinhardt (CE'48) and Helen Fleming
Dennis Rollins and Cynthia Ustrud
Arthur (CE'49) and Margaret Rosen
Michael (CE'68) and Chris Roth
Leonard* and Dorothy Rotolo
Brian (ConE'88) and Lori Rumpf
Eugene (CE'65) and Mary Russell
Robert (CE'61) and Patricia Ryken
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Flora Schmidt
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James (CE'83) and Julie Schnoebelen
Russell (CE'87) and Pamela Schroeder
Richard (ConE'82) and Suzanne Schultze
Dwight (CE'70) and Claudia Schwertley
Kirsta Scranton (ConE'96)
Tim (ConE'81) and Cynthia Seibert
Neil Shatek (CE'04)
Craig (CE'56) and Nancy Shirey
Tim (CE'95,'97) and Terri Simodynes
Steven (CE'95) and Colleen Sincox
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Scott (ConE'80) and Terri Smiley
Russell (ConE'04) and Leanne Smith
Donavan Smith (ConE'04)
Gust (ConE'81) and Rita Soteropulos
Reg and Rosemary Souleyrette
Scott (CE'99) and Kiera Sovers
Russell (CE'79,'81) and Janet Stammer
Robert (CE'79) and Joan Stanley
Andrew (ConE'95) and Lorri Stapleton
Ione Stevenson
Charles Stone (CE'64)
Douglas (ConE'83) and Carol Struss
Kenneth and Marjory Stumpenhorst
Donald Swanson (ConE'02)

INDIVIDUALS (cont'd)

Elmer (CE'68) and Mary Swanson
Michelle Sweeney (CE'07)
Robert and Shirley Templeton
Dennis (CE'70) and Margaret Tripp
Mike Truckenmiller
David (CE'73) and Peggy Upmeyer
Lowell (CE'48) and Helen Vander Hamm
David (CE'51,'56,'59) and Barbara VanHorn
John and Anne Veenstra
Henry (CE'71,'73) and Molly Veenstra
Richard (CE'77) and Sandra Von Langen
Edward (ConE'69) and Claire Voss
Craig (ConE'80) and Jackie Wallace
Allen (CE'64,'66) and Carol Wassenaar
Barbara (VanCleve) Watkins
Dennis (CE'75,'76) and Barbara Waugh
Stephen (CE'76) and Judy Weber
Herbert (CE'75) and Kathryn Wehrmann
David (CE'57) and Carol Weiss
Lynn (ConE'78) and Wendy Wenger
John Whisler (CE'66)
Scott and Tami Wilcox
Robert Wilde (CE'49)
Noel and Jane Willis (CE'46)

(Only Iowa State civil engineering and construction engineering degree credentials are noted)

*recently deceased

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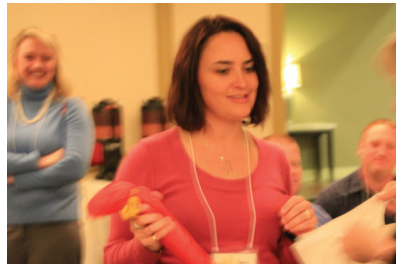


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