The research themes of the Department of Civil, Construction, and Environmental Engineering at Iowa State University are sustainability, intelligent infrastructure systems, and complex construction. These are ideals crucial to the success of global civil and construction engineering industries. Themes are illustrated by the cover through the leaf-like images (sustainability), computer hardware concealed in each image (intelligent infrastructure systems) and a blueprint of Town Engineering Building, home of the Iowa State University civil, construction and environmental engineering programs (complex construction).
WHAT'S INSIDE

IOWA STATE UNIVERSITY
Department of Civil, Construction, and Environmental Engineering

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ANNUAL UPDATE 2011-2012

Interim Department Chair
Terry Wipf

Associate Chair and Director of Graduate Education
Say Kee Ong

Assistant Chair for Undergraduate Affairs
Chris Rehmann

Outreach Manager
Katy Rice

Communications Specialist
Chris Neary

Communications Intern
Brady Rebuhn
Hello, and welcome to the **Iowa State CCEE department**.

In August 2011, I was pleased to be appointed interim chair of the Department of Civil, Construction, and Environmental Engineering (CCEE) at Iowa State University. This is the opportunity of a lifetime...a chance to collaborate with a community of talented students, faculty, technicians, staff, external partners and alumni. This annual update highlights just some of our CCEE community's significant achievements.

On the undergraduate education front, you will see that increasing enrollments continue to stretch our resources; however, students and faculty rise to the challenge and prove that hard work and perseverance breed success! Go to page 11 to see how our students "dream, design and build" in the classroom, as well as through student organization projects and research experiences.

Our graduate students continue to amaze us as they demonstrate their research at conferences worldwide. From pavements...to structures...to vehicle emissions—the students relentlessly work to improve our nation's infrastructure and environment. Examples of some of their efforts can be found on page 12.

At the heart of learning and discovery are our outstanding faculty members. Certainly, CCEE students at Iowa State would not be so highly recruited without the guidance and mentoring of our faculty. Note some of their top achievements on pages 3 and 4. In addition, CCEE faculty pursued groundbreaking research to the tune of $11 million in construction, geotechnical, materials, transportation, structural and environmental/water resources in 2011. Recently, CCEE adopted three interdisciplinary research focus areas: sustainability, intelligent infrastructure, and complex construction. Extraordinary collaborations internally and externally have resulted in a number of advancements in these areas. Learn more about our research on pages 5-10.

We are extremely proud of our alumni! CCEE alums representing academia, industry, entrepreneurial enterprises and the military are highlighted on pages 14-17. Please take some time to read about their outstanding contributions and achievements. In addition, our "Alumni Feature" highlights the efforts of Paul Giroux, who has led the efforts in celebrating the 75th anniversary of the Golden Gate Bridge.

Though we are sad to see them leave, we congratulate Steve Jones and Tom Stout on their recent retirements (see page 4). They will be sorely missed! At the same time, we are very excited to welcome a number of new faculty and staff (see back inside cover) to the CCEE community.

Finally, I continue to be impressed at the commitment to service demonstrated by our students, faculty and staff. From participating in United Way's Day of Caring in the local community...to reconstructing homes in Joplin after the EF5 tornado devastated the town in May 2011...to faculty and students traveling to developing countries to help struggling communities. Again, this makes my job as interim chair an opportunity of a lifetime.

Thank you to all who have supported CCEE in so many ways. I invite you to keep in touch, whether through www.ccee.iastate.edu, its social media pages, or simply mailing a note.

Take good care,

Terry J. Wipf, PhD
Department of Civil, Construction, and Environmental Engineering
Iowa State University
ASCE recognizes Professor James Alleman as Fellow

Less than five percent of American Society of Civil Engineers (ASCE) members claim to be ASCE Fellows, which Professor James Alleman can now claim. Alleman’s service as an environmental engineering officer in the U.S. Army Medical Service Corps, and more than 30 years of academic and research experience in environmental engineering, contributed to the selection.

Before coming to Iowa State in 2005 as professor and CCEE department chair, Alleman held teaching and research positions at Purdue University and University of Maryland. He was a Fulbright Scholar at Technical University of Crete (Greece), and a visiting professor at University of Leeds (United Kingdom).

In terms of research, Alleman currently works on a concrete mix containing titanium oxide, which creates a self-cleaning reaction with the air. He is the first person to test this concrete on full-scale pavement in the U.S. which has been applied to a highway in St. Louis, Mo.

ISU honors Klaiber, the late Hoover for inaugural Faculty-Staff Inspiration Awards

Anson Marston Distinguished Professor Emeritus F. Wayne Klaiber and the late Professor Emeritus James Hoover were each nominated by one of their former students to recognize their significant influence on students’ lives while serving as Iowa State faculty members. They were two of six inaugural recipients of the university award.

Ben Biller (BSCE’81, MSCE’82), a member of the Civil Engineering External Advisory Council and associate vice president of infrastructure at Burns & McDonnell, nominated Klaiber. Klaiber retired as Anson Marston distinguished professor emeritus in 2007, but is now a contract associate for CCEE.

Dr. Craig Denny (BSCE’71, MSCE’73), senior principal engineer at Terracon Consultants and also a member of the Civil Engineering External Advisory Council, posthumously nominated Hoover. Hoover died in 1994.

Professor Charles Jahren accepts ASCE Torrens Award

Having served as editor-in-chief of American Society of Civil Engineers’ (ASCE) Journal of Construction Engineering and Management, W. A. Klinger Teaching Professor Charles Jahren was awarded the Richard R. Torrens Award from the ASCE. The award honors a distinguished volunteer ASCE editor for outstanding contributions to the ASCE publications program.

In his executive role for the Journal of Construction Engineering and Management from 2006-11, Jahren recruited young members to the journal’s editorial board to build mentoring relationships with early and late-career board members. He also created a board executive committee to ensure uninterrupted board leadership during transitions. Also under his command, the number of article submissions to the journal more than doubled.

Jahren currently is chair of the editorial board. At Iowa State he serves as the professor-in-charge for the construction engineering program.
More CCEE faculty achievements

Cormicle named ASC Outstanding Educator

Senior Lecturer Larry Cormicle was named Outstanding Educator by the international Associated Schools of Construction. The honor pays tribute to Cormicle's tremendous leadership of Iowa State construction engineering students. Officially, ASC honored him for his contribution to construction education, excellence in teaching, service to the ASC and dedication to the construction profession.

Cormicle received the award at the 48th Annual ASC International Conference at the Birmingham School of the Built Environment at Birmingham City University in Birmingham, United Kingdom.

Pictured is Cormicle (right) displaying the award with Dr. Richard Bruce, ASC Region IV director. ASC Region IV comprises of Iowa State and 14 other construction engineering schools in Kansas, Minnesota, North Dakota, South Dakota, Missouri and Nebraska.

Cormicle advises the nationally acclaimed Associated General Contractors Iowa State Student Chapter.

CCEE’s Stephen Jones and Tom Stout retired.

Family, colleagues and friends bid “Happy Retirement!” to Stephen Jones, CCEE extension civil engineer for many years. Jones was honored with a retirement reception May 11 in Scheman Building.

As extension civil engineer, he informed the civil engineering professional community about many important environmental engineering topics: biological wastewater treatment systems, municipal water treatment, drinking water treatment and more.

Lecturer Tom Stout retired May 15 after working seven years in academics and 33 years in industry. Co-workers honored him with a department luncheon May 7 in Town Engineering Building.

From 1971 to 2004, Stout was a civil engineer throughout Indiana, Nebraska and in Des Moines, Iowa. In 2004 he devoted himself to academics at Iowa State, where he earned a Ph.D. in civil engineering in 2005.

We welcomed Wendy Robinder, Julie Roseman and Jenny Simba.

Wendy Robinder became a CCEE academic adviser III on June 1, 2012. She plans to simultaneously complete her PhD in educational leadership from Iowa State University within the next year. Robinder brings more than 10 years of student services experience in Wyoming and Minnesota and three years graduate assistantship within the Iowa State University Dean of Students Office. She received her BS in business and marketing at Ferdonia State College (New York) and her MEd, emphasizing in college counseling and student affairs, at University of Buffalo (New York). Originally from Buffalo, N.Y., Robinder resides in Ames.

Julie Roseman became the CCEE fiscal coordinator on December 1, 2011. Before starting her Iowa State position she acquired 20 years of accounting experience in health care and private industries. Roseman earned a Bachelor of Business Administration and Accounting from the University of Iowa in 1991. Originally from Davenport, Iowa, she now lives in Johnston. Roseman is a certified public accountant.

Jenny Simba became a CCEE academic adviser II on July 20, 2012. Simba has acquired more than 12 years teaching and advising experience in Virginia, Florida and Georgia. She earned her MA in applied English linguistics at University of Wisconsin-Madison. She also earned her BS in international relations and Spanish, minoring in Latin American studies, at Minnesota State University-Mankato. Originally from Marshalltown, Iowa, she currently resides in Ames.
Iowa State leads movement on geotechnical infrastructure

Visioned as Integrated Earthwork Operations (IE-Ops), Richard L. Handy Associate Professor David White leads a comprehensive effort to develop, introduce and maintain innovative geotechnical technologies for industry and government agencies. Through collaborations with academia and industry, a research platform for machine-integrated sensors has been established for use in construction equipment. The smart technology is crucial for productive, sustainable and long-lasting development of earth-based infrastructure. From a research standpoint, Iowa State and its collaborators aim to improve performance characterization of earth materials, non-destructive evaluation and sensor development, data analysis/optimization of earth materials, communication systems and geospatial data visualization.

The Center for Earthworks Engineering (CEER) carries out these activities in various ways. First, the truly unique Geotechnical Mobile Lab tests onsite for engineering properties of soil, literally the base of improving earthwork construction quality. Second, CEER and the Iowa State College of Engineering established K-12 outreach programs at high schools in Iowa and Minnesota to enlighten future engineers to the crucial earth-based infrastructure improvement. In addition, more than 2,000 people representing government agencies, industry and the military have adopted the Iowa State-led geotechnical infrastructure movement.


Driver error tested in simulator to influence roadway design

The Iowa State University Institute for Transportation aims to test various driving situations and road designs without fear of injury to a driver or damage to a vehicle. They have achieved this with a mobile, quarter-cab, mini-driving simulator (MiniCYm). It features a regular vehicle driver’s seat, column gear shifter, acceleration and brake pedals, and concurrent real-time driving simulations. Led by Professor Shauna Hallmark, researchers test innovative highway designs, J-turns at high-speed expressway intersections, and potential roundabout designs — all before the designs are built. The Human Computer Interaction (HCI) program on the driving simulator also supports studies of distracted drivers, including those who drive while texting. Other factors that the program tests are helmets, gears and clothing color on motorcyclists to make them and motorcycles more visible on the road.

While traditional research methods are based on roadways themselves, researchers on the MiniCYm focus on human error while considering the design of roadways. Because the driving simulator is mobile, it can be taken to schools, public meetings and traffic safety workshops for demonstration.

Core External Collaborator: University of Iowa

Researchers utilize 3D spatial visualization for roller-integrated compaction, which illustrates soil strengths when laying asphalt or concrete at a construction site.

Photo by Brady Rebhuhn
Assistant Professor Simon Laflamme’s current research aims at developing the next generation of structural monitoring methods through a patent-pending sensing skin. The skin is made of a nanocomposite material that contains a matrix of capacitance-based strain gauges, which are highly sensitive to cracks. It uniquely both diagnoses and localizes structural damage over large areas of deployment. This technology replaces the traditional visual inspection of structures, allowing a more cost-effective and more high-tech approach to structural health monitoring.

Core External Collaborators: University of Potsdam Institute of Physics and Astronomy (Germany), Heartland Energy Solutions, Iowa Alliance for Wind Innovation and Novel Development (IAWIND)

Our infrastructure is smarter than what you may think.

Because many U.S. bridges are older than their original design life, researchers at the CCEE Bridge Engineering Center have been developing techniques for real-time assessment of behavior/condition information for bridges. Sensors installed in and on bridges use algorithms to autonomously detect damage, which provides insight to building safer and more reliable bridges in the future.

Core External Collaborators: Iowa Department of Transportation, CALTRANS, Illinois Department of Transportation, Wisconsin Department of Transportation, Ohio Department of Transportation, Pennsylvania Department of Transportation, Federal Highway Administration, USDA, Forest Products Laboratory, HNTB, MicronOptics, Jenoptik

Pictured is the test setup for demonstrating the capability of a structural health monitoring sensing skin in detecting small changes in strain, developed by Assistant Professor Dr. Simon Laflamme. With further research, the elastomeric skin can be applied to larger structures to better predict the structural health of buildings, bridges and even wind turbine blades — all at an affordable price.

Brent Phares’ most recent project is studying the structural health of the U.S. Highway 65/Oak Street Bridge near Iowa Falls, Iowa. Real-time assessment data will help him and others assess bridge damage over time, ultimately providing input for damage prevention and better built bridges in the future.
Iowa State leads the charge in geotechnical engineering, particularly through experimental, analytical and computational methods of research and application. Through improved equipment design led by Assistant Professor Jeramy Ashlock, geotechnical practitioners and researchers can test on fewer natural resources and in less time. One such improved design that Iowa State developed is the Automated Borehole Shear Test. The Borehole Shear Test is sought after by the global geotechnical engineering community to measure soil shear strength and assess the factor of safety against landslides, and by the USDA to continually monitor stream-bank stability. The automated version of the Borehole Shear Test develops soil-strength test data in one hour, compared to potentially several days of traditional laboratory testing. A dynamic version is also being developed to improve earthquake engineering design and mitigate earthquake hazards, such as casualties and property damage. Iowa State geotechnical researchers currently focus on testing foundations for bridges, buildings and, most recently, wind turbines.

Core External Collaborators: Purdue University, University of Colorado-Boulder, Colorado School of Mines, University of California-Los Angeles, The Citadel

Anammox system treats wastewater more efficiently

More than 75 percent of U.S. coastal areas and about half of all other U.S. bodies of water contain excess nitrogen and phosphorus caused by surface runoff and wastewater from human activity, according to the U.S. Environmental Protection Agency. In often high amounts, this is lethal to aquatic life. Iowa State researchers, led by Professor Shihwu Sung, engineer treatments for wastewater using an anammox system, an energy efficient method to remove excess nitrogen and phosphorus from sewage and agriculture runoff. Anammox, short for anaerobic ammonia oxidation, bacteria remove unwanted nitrogen and oxygen from wastewater.

Ammonia are digested to yield nitrogen gas, a harmless byproduct that makes up about 80 percent of the earth’s atmosphere. This process is innovative because it is less complex and more environmentally friendly than traditional carbon-based wastewater treatment. Based on ongoing research, 62.5 percent less energy is needed with an anammox wastewater treatment versus a traditional carbon-based treatment. No one in the world has yet integrated the anammox process for commercial organic carbon, phosphorus and nitrogen wastewater treatment.

Core External Collaborator: National Chiao Tung University (Taiwan)
Fundamental research currently focuses on developing new materials that are renewable, cost-effective alternatives to crude petroleum-derived products. Such products include asphalt the styrene-butadiene family of polymers, which are commonly used in asphalt materials. Researchers obtain Iowa grown biomass, like corn stover, switch grass and soybeans. Then they conduct fast pyrolysis to use biomass components for bioasphalt, biopolymers and bioelastomers. These are used in production of asphalts and pavements.

Using biomass reduces fuel and energy consumption, as well as improved air quality, at production plants. And, it ultimately improves the life cycle of asphalt materials and pavements. Biomass components run through fast pyrolysis can be applied to many commercial uses.

With an abundance of biobased materials in Iowa, this process can stimulate the state’s economy and national competitiveness in biorenewable materials.

Core External Collaborators: University of Minnesota, University of Illinois at Urbana-Champaign, University of Wisconsin, Texas A&M University, Michigan Technological University, Oregon State University, Consultant Debra Haugen

Projects prepare transportation systems for sustainable use

Assistant Professor Konstantina “Nadia” Gkritza leads Iowa State civil engineering in two projects that prepare America’s transportation systems for sustainable use.

The first is the National Energy and Transportation Sustainability, Cost and Resiliency (NETSCORE21) Research Project, which studies interdependencies between energy, freight and passenger transportation systems. Gkritza represents Iowa State University on a collaboration that aims to provide a national blueprint and modeling process that will impact energy policy for state and federal research and investment for the next 40 years. It also aims to transform engineering educational programs by creating a new breed of 21st century engineers who will possess multidisciplinary skills.

Core External Collaborators: Iowa Lakes Community College, National Science Foundation Power Systems Engineering Research Center’s Industry & University Cooperative Research Program

The second project considers transportation systems for Iowa’s biofuel and wind power industries. The comprehensive analysis and plan develops the infrastructure needs to build Iowa’s biofuel and wind power industries. Items include traffic and fiscal assessments and predictions for current and future infrastructure needs, vehicle size and load templates, public policy recommendations for adequate infrastructure support, and a plan for technology transfer.

Core External Collaborators: Iowa Department of Transportation, Iowa Highway Research Board

Iowa’s biorenewable additives to be used in asphalt

Assistant Professor Konstantina “Nadia” Gkritza considers the transportation systems required to build Iowa’s biofuel and wind power industries.

Chris Williams
Professor
Materials Engineering

These thermoplastic bioelastomers are between 60-90 percent soybean oil, making them a cleaner, less-expensive element in asphalt pavements and other polymer-based consumer products.
Construction engineering faculty build strong academic-industry network

Iowa State University construction engineering faculty collaborate to develop synergy amongst undergraduate, graduate and research programs, as well as departmental, college and university-level partners. Other collaborations include representatives of industry, government, professional and trade associations, as well as charitable institutions.

The undergraduate program is the base of the department’s complex construction philosophy. Students learn fundamental construction engineering technologies and management techniques — crucial to the development of a well-rounded and well-connected construction engineer.

Doug Gransberg
Professor
Construction Engineering

Donald F. and Sharon A. Greenwood Chair Doug Gransberg is an expert in improved construction project delivery methods. As principal investigator, his latest project analyzes a Construction Manager-at-Risk (CMR) project delivery system. This method addresses risk management, improves construction schedule delivery, and enables collaboration on project design decisions. He and his research team will develop a guidebook for initiating and implementing a CMR system for highway projects at transportation agencies.

Jennifer Shane
Associate Professor
Construction Engineering

Associate Professor Jennifer Shane developed a five-dimensional project management paradigm, an evolution of the construction industry’s “iron triangle” that includes critical project success factors, contract selection based on project outcomes, an owner-driven project team, an early cost model and finance plan, and a political action plan.
She also is the Iowa State principal investigator for research on project management strategies for complex rapid renewal projects. Here she develops a comprehensive training and development program to enable project partners to work more cooperatively on rapid renewal projects.

Core External Collaborators
University of Oklahoma
Northeastern University
Texas A&M University
University of Canterbury
University of Waterloo
Colorado State University
Kimley Horn
Trauner Consulting
PBS&J
ARA Consulting

Along with the highlighted researchers, Iowa State faculty members who contribute to nationally acclaimed construction engineering student success are (from left) Lecturer Jenny Baker, Senior Lecturer Larry Cormicle, Lecturer Beth Hartmann, Professor-in-Charge Charles Jahren and Senior Lecturer Brad Perkins.

Interlocking components that build upon the undergraduate experience are student organizations (see undergraduates on page 11) and student competition success, including the 2011 sweep of the Associated Schools of Construction Region IV Student Competition and a final spot in the 2012 NECA/ELECTRI International Green Energy Challenge. Extracurricular activities test construction knowledge and communication to complement what is taught in the classroom and improve students’ competitiveness when they look for career jobs and/or research opportunities. Senior Lecturer Larry Cormicle and Lecturer Beth Hartmann are instrumental in preparing students for these accolades.

In addition to traditional program methods, the Iowa State construction engineering online graduate program has a national and international presence. It is only one of a few programs in the world that rigorously address construction process design, especially contractor-designed temporary structures. Graduate programs include a master of science with a specialization in construction engineering, master of engineering with a specialization in construction engineering (no thesis), online master’s degree with a specialization in construction engineering and management, and online construction management graduate certificate.

Recently Professor-in-Charge Charles Jahren received substantial funding to develop a hybrid learning course model. This teaching method efficiently combines classroom and online lessons; stimulating small group class discussions and offering traditional lecture notes online. “This active learning approach reinforces Iowa State University’s land-grant philosophy by providing hands-on, personalized and pragmatic education,” Jahren says.
Iowa State University construction engineering builds synergy.

1) Photo by Chris Neary. 2) Photo retrieved from Lecturer Larry Cormicle. 3) Photo retrieved from Professor Charles Jahren. 4) Photo by Chris Neary.

COMPLEX NETWORK—Iowa State University construction engineering has built, and continues to build, an extensive network of students, faculty and College of Engineering partners. 1) It all revolves around the undergraduate program, where students learn and practice the most up-to-date construction engineering and management concepts. 2) From there students excel in extracurricular competitions, especially the 2011 sweep of the Associated Schools of Construction Region IV competition. 3) and 4) Projects led by talented faculty, and assisted by passionate graduate students and staff, make Iowa State the go-to program for innovative construction engineering and management research. 5) Professor-in-Charge Charles Jahren introduces hybrid teaching and student learning concepts conducive to team building—a quality every construction team desires. Below is an example of undergraduate students going beyond their academic duty. They team with the University of California-Chico to rebuild four homes in tornado-ravaged Joplin, Mo., during 2012 Spring Break.
Undergraduate students dream, design and build.

More BS degrees awarded per faculty member compared to avg. of other land-grant universities

Increased in undergrad enrollment since 2007

Neilia Seda

May 2012 civil engineering BS graduate Neilia Seda was one of four Iowa State University students to receive the Alliant Energy/Erroll B. David Jr. Achievement Award. The Puerto Rico native was recognized for her achievement, leadership and service as a graduating senior in engineering.

Experiences that demonstrate her excellence include undergraduate research at Iowa State and Carnegie Mellon University; chapter secretary and president of Society of Hispanic and Professional Engineers and Mexican-American Engineers and Scientists; chapter vice president of the Puerto Rican Student Association; and mentor and role model for the Women in Science and Engineering learning community.

Her pursuit for a PhD at the University of Connecticut feeds her passion to make safe drinking water plentiful for everyone.
Graduate students build passion in their research.

The determination of concurrent BS/MS environmental engineering student Alexandra Bruns is something to model. Consider her nontraditional role as a full-time student, mother of Aunika, 4, and wife to Raymond.

Before she started on the BS civil engineering track in 2009, she spent more than a decade working in elderly and mentally disabled assistance in-home care. Three of those years she lived in a hunting shack in rural Proctor, Minn.

Although she had nursing-like experience, Bruns favored engineering. She grew up with an environmentally conscious household that often took trips to wind turbines in Iowa and Minnesota. Her curiosity of the environment and what she can do to make it better, and the fact that her grandparents attended Iowa State, led her to CCEE.

After graduating with a BS in civil engineering in December 2011, she pursues an MS that focuses on environmental engineering. She enjoys geographic information systems and surveying. “I just love learning. After all, three lives are directly affected by my decisions.”

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Sasha Jo Weir, pictured middle in front row, and Caitlin O’Loughlin, pictured at far right, are the first civil engineering students to participate in the Zheijang Summer Program in China. As a part of the program, students go to a university in China for one month and are required to take a Chinese culture class in addition to one mechanical engineering course. In the Chinese culture class, students are able to visit museums, see performances and engulf themselves in the Chinese culture.

Christine Yee (second from right) participated in the Spring 2011 program in Singapore, after having already studied in Spain to support her second major, Spanish. Yee was able to meet people from all over the world and take various trips to travel around the area. Because Singapore is a large city, as seen in the skyline pictured, it was especially exciting for Yee to study there as a civil engineering student.

Rebecca Tow (second from left) is also working on Spanish as her second major and participated in a study abroad program in Caceres, Spain, to merge Spanish with her first major, civil engineering. She previously had an internship with civil engineering firm Intranac. Here, she got to do some translation work as well as engineering. Tow has an interest in sustainability and international development. She currently is a student officer in the Iowa State chapter of Engineers Without Borders.

Associate Professor Tim Ellis went to the Democratic Republic of Congo (DRC) last February to help build a water/wastewater treatment plant for the Bilingual Christian University of Congo (UCBC). Ellis joined ten engineers and architects, all unpaid for this project, from the U.S. and Canada to develop various parts of UCBC. Launched in 2007, the university is part of the Congo Initiative, which promotes higher education, Christian leadership development, and community transformation to the formerly oppressed people in the DRC. With approximately 400 students enrolled, UCBC is looking at an expansion to accommodate 3,000.

We are **internationally engaged.**

⭐️ **Here’s where and how Iowa State CCEE students study abroad.**

**Sasha Jo Weir, pictured middle in front row, and Caitlin O’Loughlin, pictured at far right, are the first civil engineering students to participate in the Zheijang Summer Program in China. As a part of the program, students go to a university in China for one month and are required to take a Chinese culture class in addition to one mechanical engineering course. In the Chinese culture class, students are able to visit museums, see performances and engulf themselves in the Chinese culture.**

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[www.engineering.iastate.edu/studyabroad](http://www.engineering.iastate.edu/studyabroad)
Within the next few pages, the CCEE department notes recent major achievements of 15 of its civil engineering and construction engineering graduates. While Ames, Iowa, was their student home, they now reside in areas across the United States.

Elizabeth Anderlik (honorary alumna) — Minnesota
James Cable — Iowa
Jeffrey Coleman — Minnesota
Milt Dakovich — Iowa
Craig Denny — Kansas
W. Samuel Easterling — Virginia
Bret Farmer — Minnesota
Willie Hennings — Iowa
Steve Lavrenz — Indiana
Michael Manatt (posthumous) — Iowa
Krista Morris — Iowa
Wendell Nedderman — Texas
Robert Paulsen — Tennessee
Len Rodman — Kansas
T. Leslie Youd — Utah
May 2012 civil engineering graduates Willie Hennings and Krista Morris will soon begin the U.S. Navy Civil Engineer Corps program. They train 12 weeks in Officer Candidate School, 13 weeks in Civil Engineer Corps Officer School, and serve at least four years in various civil engineering roles in the U.S. Navy.
Dr. Wendell Nedderman (BSCE’43, PhDCE’51), former University of Texas at Arlington president, saw the completion of a $78 million campus arena, College Park Center, which he pioneered. The Center’s roots go back to Nedderman’s 20-year reign as president of UT-Arlington.

Steve Lavrenz, a fall 2011 graduate with a master’s degree in civil engineering and a minor in statistics, was awarded both the fall 2011 Iowa State Research Excellence Award and a prestigious doctoral fellowship at Purdue University.

Iowa State Geotechnical/Materials Engineering Professor Emeritus Dr. James Cable (BSCE’64, MSCE’76) awarded a $5,000 graduate fellowship in his name to environmental engineering PhD candidate Joel Sikkema, pictured at right.

Dr. W. Samuel Easterling (PhDCE’87), professor and department head of civil and environmental engineering at Virginia Polytechnic Institute and State University, was given the Educator Special Achievement Award of the American Institute of Steel Construction.

Dr. T. Leslie Youd (PhDCE’67), professor emeritus in the Department of Civil and Environmental Engineering at Brigham Young University, earned an Iowa State Professional Achievement Citation in Engineering (PACE) Award.
Alumni Successes

Jeffrey Coleman (BSCE'76, MSCE'77), professional engineer and Principal Partner in the law firm Coleman, Hull & van Vliet, PLLP, Minneapolis, Minn., was elected to serve on the American Concrete Institute Board of Direction for a 3-year term beginning at the Spring 2012 Convention.

Craig Denny (BSCE’71, MSCE’73) chose Dr. Craig Denny (BSCE’71, MSCE’73) for the 2011 Citizen Engineer Award, an honor designated to only four civil engineers in the U.S. this year. Denny also is a current member of the Iowa State Civil Engineering External Advisory Council.

Elizabeth Anderlik, wife of the late Joseph Anderlik (BSCE’54), received the ISU Alumni Association Honorary Alumni Award. Although not an alumna, she and her late husband invested in Iowa State in many ways, including the Anderlik Teaching Laboratory for environmental engineering.

Bret Farmer

Bret Farmer, (BSCE’91, BSConE’92), vice president for rail at TKDA, received the 2012 President’s Award from the American Council of Engineering Companies of Minnesota (ACEC/MN). He was recognized for his significant contributions and time for the benefit of ACEC/M and the engineering profession.

Michael Manatt, Milt Dakovich

Milt Dakovich (BSCE’76, BSConE’77) and the late Michael Manatt (BSCE’75) were inducted into the Associated General Contractors of Iowa (AGC of Iowa) Hall of Fame. The AGC of Iowa Hall of Fame inducts only those who have “exhibited extraordinary leadership and commitment to the betterment of the highway, bridge and municipal and utility construction industry” in Iowa.

For more CCEE alumni stories, go to www.ccee.iastate.edu/alumni/alumni-stories
May 2012 marked the 75th anniversary of the completion of San Francisco’s magnificent Golden Gate Bridge. During the recent celebrations surrounding the event, Raymond “Paul” Giroux (BSConE’79) told a gathering of assembled dignitaries: “We are standing here today because the Golden Gate Bridge represents one of the most important chapters in the history of civil engineering.”

Giroux is the American Society of Civil Engineers (ASCE) Chair of the Golden Gate Bridge 75th Anniversary.

On a sunny afternoon on May 25, 2012, following remarks by ASCE President Andy Herrmann, Giroux told the remarkable story of the bridge’s principal designer Charles Alton Ellis.

Historical records indicate that Ellis was the engineering genius and technical brains behind the design of the bridge. He worked tirelessly during 1930 and 1931 to complete Golden Gate Bridge design and construction documents. However, the professional relationship between Ellis and Chief Engineer Joseph Strauss strained, and for reasons that are still unclear, Strauss fired Ellis in late 1931. Giroux explained that through the efforts of the bridge’s Resident Engineer Russell G. Cone, and later his son, Russ Cone, the true story resurfaced in the 1980s.

Giroux told the crowd, “Sometimes the wheels of justice turn slowly.” Through the efforts of Giroux and others, Ellis’ contributions were finally recognized 75 years after the bridge’s 1937 opening. Giroux began his efforts in late 2008 and was instrumental in organizing the plaque dedication at Golden Gate Plaza to ensure that Ellis’ engineering legacy would be cast in a bronze plaque in his honor.

The Charles Ellis dedication was one of 75 tributes made by national, California and San Francisco area organizations in honor of the bridge’s 75th anniversary. Giroux led several other activities in honor of the bridge’s anniversary including organizing an ASCE bridge history docent corps.

Also on May 25, Giroux presented “Building Golden Gate Bridge,” a detailed engineering history of the bridge utilizing dynamic animation and historic photographs. The talk was presented to a large enthusiastic crowd at an ASCE San Francisco Section dinner held at the Delancey Street Foundation in San Francisco.

On May 24, Giroux spoke on a panel at the Commonwealth Club of California in San Francisco regarding the bridge’s history. California State Librarian Emeritus Dr. Kevin Starr, Chief Historian of Chevron Corporation John Harper, and he discussed the political, aesthetic and scientific history of the Golden Gate Bridge. The panel session video can be viewed at www.ccee.iastate.edu/alumni/alumni-stories.

In addition to his Golden Gate Bridge Anniversary roles, Giroux has similarly represented ASCE at the Brooklyn Bridge 125th Anniversary (2008) and Hoover Dam 75th Anniversary (2010). Giroux has been employed with Kiewit for the past 32 years and is currently the district quality manager for Kiewit Infrastructure West Co., based in Fairfield, Calif.
Hello from the CCEE advisory councils.

Civil Engineering External Advisory Council

The members of the Civil Engineering External Advisory Council and I are honored to provide service to the Iowa State CCEE department by providing a connection between the university and industry professionals. During our fall 2011 meeting, we participated in a review of the fall 2012 ABET accreditation preparations and met with students in the American Society of Civil Engineers, Chi Epsilon and the new Civil Ladies group. During our spring 2012 meeting we held student interviews with all levels of students to gain an understanding of the strengths and challenges faced by the department based on the students’ perspectives. Each interaction with Iowa State civil engineering students reinforces to the council the tremendous achievements of Iowa State students and CCEE department.

It was a great year for Iowa State University construction engineering. Students won the commercial, design-build, heavy/civil and residential divisions at the Associated Schools of Construction Region IV Student Competition. In March, 26 ConfE students spent their spring break rebuilding homes devastated by tornadoes in Joplin, Mo. Rear Adm. Katherine Gregory of the U.S. Navy visited campus in February to talk about the roles today’s engineers play in the U.S. military’s peacekeeping and humanitarian efforts. And, we added two members to the Iowa State University Construction Engineering Hall of Fame: Ken Gethmann (posthumously) and Jack Gethmann (BSConfE’63).

Other members of council

Benjamin Biller, Burns & McDonnell
Robert Crandall, Black & Veatch Corp.
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Construction Engineering Industry Advisory Council

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Other members of council

John Adam, Iowa Dept. of Transportation
Ken Bonus, Bonus Homes, LLC
Sean Brummer, Turner Construction Co.
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Beth Duyvejonck, Opus Design Build, LLC
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Thank you to those who recently gave to CCEE.

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Harry (1981) Allender
Steven (1978) Amonte
Larry (1962) Anderson
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Carol (1978) Becker
Jerry (1958) and Leona Bergren
Marianne Berhow
Richard Berndt
Marianne Berhow
Jerry (1958) and Leona Bergren
Carol (1978) Becker
Brent (1974) and Jean Bean
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Susan Barkhurst
Bruce (1974) Banister
Roger (1982) Anderson
Larry (1962) Anderson
Steven (1978) Amento
Alexander
Richard (1978) and Corinne

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All listed donors reflect the records of the Iowa State University Foundation for those who gave to the Iowa State CCEE department between October 16, 2011, and July 15, 2012. Thank you!
CCEE welcomes three faculty members to the department.

Dr. Dong recently was a research staff member at Oak Ridge National Laboratory in Tennessee before accepting an assistant professor position at CCEE. She earned a PhD in civil and environmental engineering at Northwestern University, an MS in systems engineering at Tsinghua University (China) and a BS in automation at Tsinghua University.

Dr. Jeong earned a PhD in civil engineering and MS in civil engineering at Purdue University. He earned a BS in civil engineering at Seoul National University (South Korea). He was an associate professor in the School of Civil and Environmental Engineering before taking his Iowa State position.

Dr. Turkan recently graduated from University of Waterloo with a PhD in civil engineering, studying automation in construction progress tracking using 3D imaging technologies. She also attended Istanbul Technical University (Turkey), where she earned an MS in civil engineering, as well double majored in civil engineering and geomatics engineering.

Mission, Vision, and Objectives
The Department of Civil, Construction and Environmental Engineering at Iowa State University promotes intellectual, social, and ethical development of civil and construction engineers, as well as creates and communicates engineering concepts and technology. The vision of Iowa State University’s CCEE department is to be a world-class source of civil, construction engineers and their concepts and technologies. By three to five years after graduation, graduates of the civil engineering program will have: 1) established themselves in successful careers in civil engineering or a related field, 2) collaborated effectively on multi-disciplinary teams to address the needs of society and the environment, and 3) pursued lifelong learning, professional development, and registration as appropriate for their employers.

Degree tracks offered
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Bachelor of Science in Civil Engineering - Environmental Emphasis
Bachelor of Science in Construction Engineering
Concurrent Bachelor of Science, Master of Science
Concurrent Bachelor of Science, Master of Business Administration
Master of Science in Civil Engineering - Emphases in Construction, Environmental, Geotechnical/Materials, Structural or Transportation
Master of Engineering in Civil Engineering (no specialization, coursework only)
Master of Engineering in Civil Engineering - Specialization in Materials, Construction, Environmental, Geotechnical, Structural or Transportation (coursework only)
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