

## ALUMNI REGISTRATION & UPDATES

The Department of Civil and Environmental Engineering is always interested in how our alumni are doing. We hope you will take time to send your updates to [jmueller@lsu.edu](mailto:jmueller@lsu.edu) or, if you prefer, you can "snail mail" them to

**Department of Civil and Environmental Engineering  
Louisiana State University  
3418 Patrick Taylor Hall  
Baton Rouge, LA 70803-6405**

Please include basic information such as your full name, year of graduation, degree, mailing address, email address, telephone number, company, and your title/position. For your update, please include information on your recent professional and personal developments, along with a high-quality photo if available. Thanks for staying in touch!



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**LSU**

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## FROM THE DEPARTMENT CHAIR

A letter from George Voyiadjis



In this issue we share with you the myriad of activities in research and education taking place within the Department of Civil and Environmental Engineering since the Fall. Our faculty members continue to conduct cutting-edge research in many fronts and receive national recognition. In student

news, our student organization chapters are, as always, active and growing. The new master's program in coastal and ecological engineering saw its first graduate in the Fall and we welcome you to read more about Andrew Woodroof and the program.

It is my pleasure to introduce to you our latest CEE Hall of Distinction inductees: Dr. Taehyo Park (2012), Paul Fossier Jr. (2013), and Dr. Anand Puppala (2013). The department honored these individuals at our annual banquet, as well as recipients of the 2013 faculty awards. These recent inductees bring our Hall of Distinction to 30 outstanding individuals who have made significant contributions to our profession and to the department through their honorable achievements and support.

Also announced within the pages of this issue is the retirement of Rubicon Endowed Professor Dr. D. Dean Adrian. Dr. Adrian has served the department admirably with 27 years of service. His dedication to teaching, his leadership in the CEE graduate programs, and his mentoring of faculty have contributed greatly to the success of the department. Dr. Adrian's influence and presence will remain with the department for many years to come.

As we say farewell to one, the CEE department welcomes another. Joining our faculty is Dr. Aly Mousaad, Assistant Professor in the structures area. Dr. Aly Mousaad joins us from the University of Western Ontario and his primary research area is wind engineering.

As we come to the close of another academic year the department is currently undergoing annual strategic planning and program assessment, not to mention that the next ABET accreditation visit is around the corner. These endeavors are vital to the future success and growth of the department.

### In This Issue



# ASCE Students Compete at the Deep South Regional Competition



### **LSU ASCE Concrete Canoe Team**

Top row from left to right: Greg Anderson, Emily Weigand, Leslie Cates, Brittany Alexander, Alicia Fortier, Sean Moore, Javier Sanchez, Jabari Landry. Bottom row from left to right: Brendan Copley, James Parker, Adam Catanzaro



### **LSU ASCE Steel Bridge Team**

From left to right: Brittany Alexander, Michele Barbato (Faculty Advisor), Ryan Jeansonne, Ted Reynolds, Clayton Spencer, Regina Viviano, Brad Jacobs, Ian Bizette, Thomas Everett, Jacob Trowbridge, Hector Zuniga, Nelida Herrera, and Chad Roe

In March, the LSU ASCE Student Chapter competed in the 2013 Deep South Regional Competition, which took place at Southern University right here in Baton Rouge. The chapter participated in the steel bridge and concrete canoe competition, with both teams placing fifth overall. The concrete canoe team placed second overall in races, with the male sprint receiving first. The steel bridge placed first in display.

The Deep South Regional Conference is held annually to foster interactions among the student chapters within the states of Arkansas, Louisiana, Mississippi, and Tennessee. The conference aims to further technical, professional, and ethical knowledge of these students as it relates to civil engineering. Annual competitions provide students the opportunity to apply the principles and concepts they have learned in their undergraduate studies. These regional conferences include competitive events such as, concrete canoe, steel bridge, surveying and professional paper or presentation.

The ASCE student chapter would like to thank all sponsors for their support. Sponsors of the steel bridge team include **Linfeild, Hunter, & Junius Inc.; Kiewit; PEC; BASF; and Valve Sealant Supply**. Sponsors of the concrete canoe team include **Forte & Tablada; Aucoin & Associates, Inc.; SJB Group, LLC.; Big River Industries, Inc.; Modjeski and Masters; Gulf Engineers & Consultants; H. Davis Cole & Associates, LLC.; Duplantis Design Group, P.C.; Danny J. Hebert; and the Louisiana Transportation Research Center**. The teams would also like to thank their faculty advisor Dr. Michele Barbato and CEE staff member Dave Robertson for their guidance and support.

For more information about ASCE at LSU, please visit online at <http://lsuasce.weebly.com>. Students are encouraged to join their Facebook group page (ASCE at LSU) to receive updates from the group, including information on upcoming meetings and events.



### CEE Announces Recent Faculty Promotions

The Department of Civil and Environmental Engineering is proud to acknowledge the following faculty promotions: Dr. Michele Barbato to Associate Professor with Tenure, Dr. Murad Abu-Farsakh to Professor-Research, and Dr. Sherif Ishak to Professor.



### Adrian Announces Retirement

After 27 years of service, Dr. Donald Dean Adrian, Rubicon Endowed Professor in Civil and Environmental Engineering, has announced his retirement. Dr. Adrian has done an excellent job in guiding our graduate programs while serving as graduate programs coordinator and has been active in encouraging undergraduate students to become active in professional organizations. He has served as a mentor to young faculty. Through his years of service, Dr. Adrian has helped to define the vision of our Department.



### Malone and Mohammad Recognized for Years of Service

Please join the department in congratulating Drs. Ron Malone and Louay Mohammad on their recent recognition by the university for 35 and 25 years of service, respectively. This annual event recognizes LSU employees who have reached 25, 30, 35 or 40 or more years of service. The LSU Employee Recognition Program is hosted by the Chancellor who presents a service award to all honored employees in attendance.



### CEE Instructor Kerry Reed Recognized for Outstanding Instruction

The Department of Civil and Environmental Engineering would like to congratulate instructor Kerry Reed on being a 2013 recipient of the Tiger Athletic Foundation Michael R. Mangham College of

Engineering Memorial Teaching Award, which recognizes faculty who demonstrate excellence in instruction.

The Memorial Scholarship honors the life of Michael Ray "Mickey" Mangham, the former chairman of the Tiger Athletic Foundation and LSU football player. He graduated from LSU in 1962 with a petroleum engineering degree, and he earned a law degree from the LSU Paul M. Hebert Law Center in 1966. Recipients of the award were recognized at the annual LSU Distinguished Faculty Awards Ceremony held on April 30 at the Lod Cook Alumni Center.



### Cai Receives Funding from NSFC

Dr. Steve Cai, Edwin B. and Norma S. McNeil Distinguished professor in the Department of Civil and Environmental Engineering has received funding for a project titled "Performance investigation of large-span composite bridges", ¥2,000,000 (Chinese Yuan), from the National Natural Science Foundation of China (NSFC). This project is in collaborating with Prof. Nie, J.G. at Tsinghua University.



### Tsai Receives Grant from LA Board of Regents

Dr. Frank Tsai, in collaboration with Dr. Krishna Paudel (AgCenter Economics and Business), received a grant (2012-2015) from Louisiana Board of Regents to study risk reduction in groundwater withdrawal under saltwater intrusion for the Sparta aquifer north-central Louisiana. This area has been declared as an area of Ground Water Concerns by the LaDNR Office of Conservation since 2005. The outcome of the project will provide a better understanding on water resources management for the north-central area of Louisiana.



### Zhang Awarded NSF Grant for Research on Sustainable Geopolymers

Dr. Guoping Zhang, in collaboration with Dr. Mingjiang Tao at Worcester Polytechnic Institute, has been awarded an NSF grant entitled "Collaborative Research: An Integrated Experimental and Computational Multiscale Study of Geopolymers for Next Generation Soil Improvement." This award of \$336,308 will enable the two collaborators to create the fundamental knowledge that can lead to the viable application of green geopolymers to soil improvement for sustainability.

### Elseifi Advises Middle School Student Tre Nix in Shingle Recycling for Science Fair Success



Through funding from the National Science Foundation, Dr. Mostafa Elseifi (Lloyd Guillory Distinguished associate professor) advised a Kenilworth Science and Technology Charter School student, Tre Nix (pictured right), in a topic related to shingle recycling into roads. During his science project, Tre came to the laboratory at LSU and witnessed the innovative process developed to recycle scrape roof shingle in asphalt pavements. As part of this program, 23 minority honor roll students in grades 6-8 from Community School for Apprenticeship Learning (CSAL) were introduced to the recycling of asphalt shingles into roads. The objective of the NSF study is to introduce a new approach to recycle asphalt shingles into asphalt paving construction in which Recycled Asphalt Shingle (RAS) is ground to ultra-fine particle sizes and blended with asphalt binder. In the proposed wet process, the ground recycled material is blended with the binder at high temperature prior to mixing with the aggregates. The use of RAS modification through the proposed wet process was successful in the laboratory.

The proposed approach will provide superior performance compared to regular recycling approaches because it is able to control the properties of the binder.

Tre also participated in the Region VII Louisiana Science and Engineering Fair. He took home a first-place in his category. Following his success at the regional competition, Tre then participated in the state fair where he received 3rd place in Engineering – Material and Bioengineering category. He also received a special award for the Most Outstanding Exhibit in Material Science from the ASM Materials Education Foundation. He will apply to the Broadcom Masters competition, which is the national competition for middle school students to be held in Washington, D.C in order to compete with projects from all over the country.

The NSF project is currently conducted at LSU under the supervision of Dr. Elseifi as PI and Dr. Louay Mohammad from CEE and Dr. Hassan from Construction Management at LSU as Co-PIs.



### Chen Presents for the NWRC Seminar Series

The LSU Department of Civil and Environmental Engineering (CEE) has been developing a collaborative relationship with the USGS National Wetlands Research Center (NWRC). Dr. Q. Jim Chen, CSRS Distinguished Professor in Coastal Engineering, visited the NWRC in March. He met with the NWRC director, Mr. Phil Turnipseed, and gave a seminar titled “Measuring and Modeling Storm Surges, Hurricane Waves and Sediment Transport.” Dr. Chen has also held regular research meetings with NWRC scientists stationed on the LSU campus. The goal is to develop a close collaboration between the NWRC ecologists and CEE faculty in the area of coastal and ecological engineering for the planning and implementation of the Louisiana Coastal Master Plan.

### Aly Sayed Ahmed Joins CEE

Dr. Aly Mousaad Aly Sayed Ahmed has joined the Department of Civil and Environmental Engineering as assistant professor in the area of structural engineering. He received his PhD from Politecnico di Milano, Italy in 2009. He joins the department by way of the University of Western Ontario where he served as a research fellow carrying out research on wind loads on emerging green infrastructure. He worked at the wind tunnel of Politecnico di Milano where he was involved in many projects related to wind effects on civil structures. Dr. Aly Sayed Ahmed also worked at the International Hurricane Research Center (Florida International University) where he pioneered systematic development of flow management for a new state-of-the-art wind engineering testing facility (Wall of Wind) and developed a simplified technique for determining wind pressures on residential homes. In addition, he has worked on structural control of buildings under wind and earthquake loads. He developed a novel energy-based probabilistic approach to assess the efficacy of smart damping technology which allows semi-active control designs to become more efficient and effective. His research aims at innovating strong and economic building designs in regions where hurricane winds and/or earthquakes are expected.





## CEE Awards the First Coastal and Ecological Engineering MS Degree

**T**he Department of Civil and Environmental Engineering (CEE) awarded its first MS in Coastal and Ecological Engineering degree in Fall 2012 to Andrew Woodroof. The program received the Louisiana Board of Regent's approval of the new MS in Coastal and Ecological Engineering program last summer and the new program was launched in Fall 2012. This program is jointly administered by the Department of Oceanography and Coastal Sciences.

"It is exciting to be the first to graduate in the program. I'm happy to complete the degree, being the first is a bonus," Woodroof said. "It is been fun, and I'm glad that LSU now has a program like this."

A native of LaPlace, La., Woodroof has always been interested in the coast and wetlands. After graduating with a BS in civil engineering from LSU in 2008, Woodroof realized the opportunities related to coastal restoration and decided to pursue a Master's degree.

Working full-time while completing his degree, Woodroof realized the benefits of having both practical and theoretical knowledge of the field. Woodroof noted the strengths of the degree program included exposing engineers to coastal sciences through the LSU Department of Oceanography and Coastal Sciences, which has been beneficial for him to apply in the workplace. In addition, the program has continually pushed him to think "outside of the box."

"Andrew is passionate about coastal and ecological engineering. His dedication, determination and professionalism made him the first graduate of our new Master's program," said Q. Jim Chen, CSRS Distinguished Professor in Coastal Engineering, CEE, and Woodroof's thesis chair. "Andrew's thesis research on the Holly Beach breakwater system sheds light on the performance of the shoreline protection system under hurricane impacts. I

expect that many more students will graduate from our Coastal and Ecological Engineering program to meet the need of coastal protection and restoration in Louisiana and beyond."

Woodroof worked closely with his committee including: Chen, Clint Willson, professor, CEE; Heather Smith, assistant professor, CEE; and Kevin Xu, assistant professor, James P. Morgan Distinguished Professorship, LSU Department of Oceanography and Coastal Sciences, to complete his thesis titled, "Determining the Performance of Breakwaters During High Energy Events: A Case Study of the Holly Beach Breakwater System."

"Dr. Chen opened my eyes to continued learning by asking questions that challenge every step of the coastal engineering process, rather than searching for a simple answer," Woodroof said.

Students participating in the new degree program are required to complete 24 course credits, one seminar credit and six thesis credits. The curriculum ensures that students complete the program with an in-depth understanding of both coastal and ecological engineering.

"I would absolutely recommend the program to other students," Woodroof said. "Coastal and ecological engineering is a particularly interesting field to be in right now. Louisiana has a large and unique challenge ahead in regards to coastal protection and restoration, so there are many topics to explore and real world challenges in the field."

LSU is the only US University to offer a stand-alone degree in Coastal and Ecological Engineering specifically. For more information about the MS in Coastal and Ecological Engineering and/or the Department of Civil and Environmental Engineering, please visit [www.cee.lsu.edu](http://www.cee.lsu.edu).

## The Dartez Family: Making a Significant Impact

**M**onday, January 28, 2013 was a big day for the Dartez family. Part family reunion, part campus visit, but mostly an opportunity to honor their parents and make a huge difference for deserving students for all time to come.

Ralph Dartez, Sr. had on his mind to make a significant gift to LSU to benefit civil engineering students for a couple of years. Changes on federal regulations did not facilitate his intentions, so he decided to pass along some of his estate to his four grown children. The kids decided to take a portion of their proceeds and help Dad achieve what he wanted. At their Christmas gathering in 2012, they told him they were contributing \$100,000 collectively to set up a scholarship in his honor. He was very touched, and details were ironed out to include their late Mother also. Thus, the L. Ralph and Jacqueline L. Dartez Scholarship in Civil Engineering was created.

On the big day, family came from far and near, back to their alma mater. From the Dallas, Houston and New Orleans areas, they drove to LSU to celebrate their dad's life, to remember their mom. Ralph Sr. beamed during lunch at the Faculty Club as his kids recounted his holding their feet to the fire to get college degrees. Ralph Dartez, Jr., Denise Faust, Michele Rooney and Ann Schober (accompanied by husband Andy) shared memories of LSU and spoke of the

importance of their degrees to their success. CEE Department Chair Dr. George Z. Voyiadjis thanked the family for establishing this generous scholarship, which will help students for all future generations. Longtime family friend (and now Chemical Engineering Department Chair) Dr. Judy Wornat fondly recalled many times with the Dartez kids, long before two of them would earn engineering degrees and this special day would come.

Following lunch, the family went to Patrick F. Taylor Hall, now "headquarters" for the College of Engineering. They met with Dean Koubek and heard of the importance of support like theirs to help answer the critical need for future engineers in Louisiana. Dr. Voyiadjis led a tour of some of the CEE labs so the family could see how LSU civil engineers gain critical knowledge and skills to help build a better Louisiana, nation and world.

As the Dartez family headed back to their respective homes, they eagerly await the awarding of their scholarship, to hear of the young lives they are investing in for a brighter future. They also know they brought a wonderful smile to their Dad's heart. Thank you, Dartez family, for helping to improve lives, transform Louisiana and change the world!



### Fossier Receives Charles E. Dunbar Jr. Career Service Award

**T**he Louisiana Civil Service League recently honored 12 winners of the Charles E. Dunbar Jr. Career Service Award. Included among these honorees are Paul B. Fossier Jr. (BCE 1979), CEE adjunct instructor and recent Hall of Distinction inductee. Fossier currently serves as the State Bridge Design Engineer for the Louisiana Department of Transportation and Development (LaDOTD).

The award, named for the founder of the League and co-author of the original Civil Service Law in Louisiana, is presented to classified merit system employees who have distinguished themselves through service beyond the call of duty. More than 800 state and local classified civil service employees have been cited for their distinguished service since the award's inception in 1958.



### Graves Appointed Chairman of the CEE External Advisory Board

**T**he Department of Civil and Environmental Engineering (CEE) is pleased to announce the appointment of John A. Graves as Chairman of the CEE External Advisory Board (EAB).

Graves, a long standing member of the EAB as well as a CEE Hall of Distinction inductee, received his bachelor of science in civil engineering from LSU in 1965. He is a Principal of Evans-Graves Engineers, Inc. responsible for plan production and management of all phases of projects undertaken by the firm.

The CEE Department would like to sincerely thank Ronald "Ron" Rodi for his outstanding years of service as Chairman of the EAB. Rodi was recently presented with a recognition award for his visionary leadership and extraordinary support of the CEE EAB. He will continue his membership of on the board and will remain a strong supporter of CEE at LSU.





**"We need to combine LSU's expertise in the coastal, societal and geologic history of the coast and the Mississippi River with our engineering expertise, in order to improve designs and infrastructure for the river in the interest of coastal restoration."  
- Clinton Willson**

consider how we can get people to think about how these different pieces fit together. This is where the Coastal Sustainability Studio comes in.

"For example, in creating visions for the future, Willson and his team, in collaboration with the Coastal Sustainability Studio, consider the regional impacts of various river design and management strategies, including impacts on communities, industries, navigation and wetlands.

"We have to match river hydraulics with the economic and community interests of the people living in these coastal areas," Willson said. "We need to combine LSU's expertise in the coastal, societal and geologic history of the coast and the Mississippi River with our engineering expertise, in order to improve designs and infrastructure for the river in the interest of coastal restoration."

According to Willson, it is important to understand the ancient history of the Mississippi River and River Delta, as well as the more recent history of the river's engineered landscape, to plan for the future of our coast. Willson sees

the story of the Mississippi River as taking place in four main chapters: the first tells the story of an uncontrolled and dynamic river building the eastern half of the Louisiana coast; the second tells the story of humans engineering the river at the cost of natural coastal systems; the third tells the story of decades of very important research and the development of new models and tools for a better understanding of river management strategies. Willson envisions the fourth and latest chapter as a tale of people working together to plan for a sustainable coastal future.

"We are interested in river hydraulics and sediment transport," Willson said. "But we are also interested in using these tools to look into the future to develop a positive vision for our coastal landscapes."

*Article written by LSU Office of Research Communication staff.*



WEST ELEVATION



SOUTH ELEVATION

COASTAL PROTECTION AND RESTORATION AUTHORITY  
**RIVER MODELING CENTER**  
STATE PROJECT # 01-107-12-02, PART 01  
LSU CAMPUS, RIVER ROAD  
BATON ROUGE, LOUISIANA





### **CE Grad Student Trent Key Receives NSF Graduate Research Fellowship**

The Department of Civil and Environmental Engineering would like to congratulate Trent Key on being a recipient of a National Science Foundation Graduate Research Fellowship. Key, currently a PhD student in civil engineering, graduated Summa Cum Laude with a Bachelor of Science in Environmental Engineering in December 2011 from LSU. Key works closely with advisor Dr. William Moe researching isolation and characterization of novel dehalogenating bacterial species for use in bioremediation efforts of contaminated waste sites.



### **Engineering Science Student Receives Dissertation Year Fellowship**

Xiaoling Tan, an engineering science doctoral student, was selected for the prestigious 2013-2014 Dissertation Year Fellowship. Tan, originally from Hubei province, China, joined the LSU Engineering Science program in Fall of 2009 under the advisement of CEE faculty member Dr. Guoping Zhang. Prior to joining LSU, she received her bachelor's degree in biomedical engineering from Huazhong University of Science and Technology (Wuhan, China) in June 2009.

Tan's dissertation topic is "Microstructure and Physics-Based Structural Models for Suspended Clay-Exopolymer Flocs". Her research focus is on uncovering and understanding the nanoscale interaction mechanisms between suspended clays and extracellular polymeric substances (EPS or exopolymers), via designing/developing a multiscale characterization program to probe the properties and microstructure of the flocs generated from clay-EPS flocculation process in coastal and estuarine environments. Research findings and relative basic knowledge will significantly contribute to multidisciplinary research, development, and applications, which can be grouped into four main topics: cohesive sediment transport, soil classification and dispersion technique development, stabilization of soft soil in wetlands, and inorganic-organic biomimetic materials for sustainable construction.

### **BASF Scholarship Awarded to CE Student Laura Iverson**

Laura Iverson, civil engineering undergraduate student, was one of four LSU College of Engineering students selected for a scholarship from the BASF's Team Chemistry Scholarship Fund. The winning students, who each received a \$2,500 scholarship from BASF, have displayed academic success in their fields of study and are active members on the LSU campus and in the community.

Iverson is a member of the American Society of Civil Engineers (ASCE) at LSU and the ASCE Steel Bridge Team, Society of Women Engineers, and Engineers Without Borders. She loves engaging children and especially young girls in engineering through events such as Sally Ride Science Day. Her awards include the Alumni Global Leaders Awards, the Flagship Scholar's Resident Award, Dean's List twice (fall 2011 and 2012), Alpha Lambda Delta Honor Society and most recently the Erin Krielow Memorial Scholarship. Laura also enjoys playing LSU intramural softball in her spare time.

### **EVEG Graduate Ashley Barker Earns Distinguished Communicator Honor**

At the LSU's 280th commencement exercises, 32 graduates were honored with the LSU's Distinguished Communicator Award. Among those selected was environmental engineering student Ashley Barker.

Barker, who received her bachelor of science in environmental engineering, was a member of the Louisiana Water Environment Association where she served as the LSU vice president in 2012, the National Society of Black Engineers where she served as the LSU financial chairman in 2009 and the Air and Waste Management Association. She was also a mentor for STEM students and was involved in several community service activities. Barker studied abroad in the Republic of Tanzania during the summer 2010. She received several LSU and national scholarships. With her LSU degree in hand, Barker will assume a position as an environmental engineer with the New York City Department of Environmental Protection in the Bureau of Design and Construction and pursue her master's degree in civil and environmental engineering.



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### CE Senior Design Class Visits Army Corp of Engineers



Civil engineering Senior Design students visited the New Orleans Hurricane and Storm Damage Risk Reduction Systems in April this year. The U.S. Army Corps of Engineers hosted the event with a directed tour by Mike Park, Chief of Task Force Hope, and Mark Spillers who coordinated the event. Visits were made to the Seabrook Floodgate Complex, the Inner Harbor Canal Lake Borgne Surge Barrier, and the West Closure Complex where the world's largest pumping station is housed. Nine 5,500 hp pumps make sure the West Bank has 100-year flood protection while the facility protects the area from storm surge at the same time. With over \$14 billion dollars invested in developing the Storm Damage Risk Reduction System in New Orleans since Hurricane Katrina, this is one of the largest Civil Engineering projects conducted in the country in recent years. An inspiration to our aspiring young engineers!



LWEA Fall 2012 Semi-Annual Lake Cleanup Project, sponsored by Environmental Resources Management (ERM).

### Environmental Engineering Seniors Participate in Local and National Competitions



LSU environmental engineering seniors participate in the WERC Design Contest

In February 2013, environmental engineering seniors participated in the 2013 Louisiana Transportation Conference hosted by the Louisiana Department of Transportation and Development. The team won first place, which included a \$1,000 prize that was used for competing in the WERC Design Contest to be held in April at New Mexico State University.

The team of environmental engineering seniors participating in the DOTD conference included Dwayne Belello, Jeremy Beasley, Lucian Hill and Benjamin Pfeifer. Team members who did not participate at the conference but contributed research on the design project include Robyn Jones and Julian Moore.

The team's project is entitled "Hydrocarbon Fouling of Reverse Osmosis Membranes." The goal of the project is to clean waste water and to use the byproduct to create energy as a sustainable approach to the waste water treatment process. The team explored different methods for doing this and selected a method of utilizing rice hulls. The rice hulls (the protective covering on grains of rice) are burned to create rice ash, which is then used to absorb hydrocarbons from the waste water. Once this process is repeated several times, it is then burned as an energy source.

After the success of the state competition, the team was tasked with creating an actual prototype, which was presented at the national WERC Design Contest. The students did an excellent job and won the Judges Choice Sustainability Award. Congratulations to the EVEG students for your hard work and excellent representation of LSU.



## CEE Professor Studies Mississippi River History, Changes

Once upon a time, the Mississippi River ran wild and uncontrolled from its source in Minnesota to the Gulf of Mexico. The river experienced massive shifts in its course half a dozen times over the last 10,000 years, gradually contributing upstream soil and sediments to what we know today as the Mississippi River Delta and coastal wetlands.

The Mississippi River was historically a meandering and dynamic river, providing resources for the growth of coastal wetlands in Louisiana. However, points out Clint Willson, LSU professor of civil and environmental engineering and director of the university's Vincent A. Forte River and Coastal Hydraulics Lab, over the past 200 years or so, humans have significantly molded the course and history of the Mississippi River.

"The Mississippi River used to swing back and forth across the eastern half of the Louisiana coast," Willson said, pointing to the historic river maps that line the walls of his office at LSU. "That is, until we settled along the river and wanted to start making it reliable and safe. What we built over time, for the good of the U.S., was a highly engineered massive river system lined with levees and other control structures."

While systems of levees and dams have controlled the river and made it more safe and reliable for navigation and commerce, the highly engineered river system that we have today has important consequences for the sustainability of our coast. Through his work on physical and numerical modeling of water and sediment in the river and river delta, Willson understands the importance of river engineering and planning projects to the maintenance of our natural coastal system.

"The natural Mississippi River delta would still be growing parts of our coast today, if we hadn't engineered the river to the point where we no longer have a natural delta," Willson said. "So what does all of this mean, and what do

we do going forward to maintain our coast? What is a realistic vision for the future?"

Willson, an expert in Mississippi River hydraulics and sediment transfer, has been studying the path sediment takes – or could take – over the lower 84 miles of the Mississippi River for years. His team at the Vincent A. Forte River and Coastal Hydraulics Lab, with the support of the Louisiana Office of Coastal Protection and Restoration, has used a small-scale physical model of the river to study the potential for large-scale river and sediment diversions in coastal restoration. Using physical modeling tools, Willson's team is trying to look into the future and develop realistic goals for maintaining and restoring natural deltaic processes and sediment deposition in key areas. In developing these goals,



Willson works with LSU's Coastal Sustainability Studio, or CSS, to take navigational, community, industrial and agricultural infrastructures into account. Willson and his research group have made significant progress toward figuring out better ways to utilize the Mississippi River and its resources to help sustain working coastal systems.

"Looking into the future, we have to consider how we will ensure safe, reliable and economically feasible infrastructures in coastal areas," Willson said. "We have to consider many different pieces of the overall picture, such as flood control, navigation and coastal restoration. We have to



(Left to Right) Dr. Anand Puppala, Dr. Mehmet Tümay, and Dr. George Z. Voyiadjis

including the UTA College of Engineering's "Research Excellence" Award in 2004-2005, the UTA College of Engineering's "Outstanding Young Faculty" Award in 2000-2001, the 2008 University Award for Outstanding Advisor and 2013 UTA Distinguished Researcher award.

Dr. Puppala also served as president of United States Universities Council on Geotechnical Education and Research (USUCGER) from 2007-2009. He was also a past Chair of American Society of Civil Engineers (ASCE)'s Geotechnical Institute's "Engineering Geology and Site Characterization" committee from 2003-2006. Dr. Puppala is extensively involved with the National Academy of Science's Transportation Research Board (TRB) since 1992. He recently served as the chairman of TRB committee on "Soil and Rock Instrumentation (AFS 20) (2006-2012)."



(Left to Right) Dr. Anand Puppala, Dr. Mehmet Tümay, and Recep Yilmaz

Research conducted by Dr. Puppala include stabilization of expansive soils, sustainable utilization of recycled materials, dams and embankments, in situ intrusive methods for site characterization, and pavement material characterization studies. His research is highly regarded by the professional community, as evidenced by his scholarly record of 6 book chapters, 125 journal and geotechnical special publications, 30 refereed conference papers, 48 non-refereed conference papers and 30 technical reports. Dr. Puppala has supervised 14 doctoral and 40 masters

students. He was an invited keynote speaker at several major conferences world-wide.

Dr. Puppala is a current editorial member for several journals including American Society of Testing Materials' Geotechnical Testing Journal, American Society of Civil Engineers' Journals of Materials and ASCE Journal of Geotechnical and Geoenvironmental Engineering and a chief editor of Thomas Telford's Ground Improvement Journal (UK). He also edited several books including ASCE's Geotechnical Special Publication on Site Characterization.



Faculty award recipients pictured with CEE Professor Dr. Brian Wolshon (left) and Department Chair Dr. George Z. Voyiadjis (Right): (top) Dr. Mostafa Elseifi, (middle) Dr. John Pardue, and (bottom) Dr. Bill Moe



Department of Civil and Environmental Engineering

Hall of Distinction Banquet

In May 2013, the Department of Civil and Environmental Engineering (CEE) held its annual Hall of Distinction Banquet at the Lod Cook Alumni Center to honor its latest inductees: Dr. Taehyo Park (2012), Paul Fossier Jr. (2013), and Dr. Anand Puppala (2013). In addition to the inductees and their guests, also in attendance were current CEE Hall of Distinction members, members of the CEE External Advisory Board, and CEE faculty and staff.

Including the three recent inductees, the CEE Hall of Distinction now includes 30 members. Initiated in 2001, CEE established the Hall of Distinction to recognize individuals who have made stalwart contributions to the profession. Candidates are carefully selected based on distinguished professional achievement and service in civil and environmental engineering. In honoring these individuals, the department intends, through them, to recognize all those who have contributed to engineering excellence.

Also recognized were recipients of the 2013 faculty awards. Dr. John Pardue was selected for a Departmental Service Award for his outstanding contributions to the undergraduate environmental engineering program. Receiving Research Achievement Awards were Drs. Mostafa Elseifi and William Moe.

For a complete list and profiles of all members of the CEE Hall of Distinction, visit [www.cee.lsu.edu/alumni/hod](http://www.cee.lsu.edu/alumni/hod)



**Dr. Taehyo Park (2012)**

Taehyo Park was born on June 22 1957, in a small town in South Korea. He graduated with a BS in Civil Engineering from Hanyang University in 1985. Park came to U.S. in 1987 to pursue his graduate studies, receiving his MS in Civil and Environmental Engineering from the University of Iowa in 1989 and his

PhD from Louisiana State University in 1994. After obtaining his PhD, Dr. Park remained at Louisiana LSU to further his research. In 1997, he returned to Korea to assume an assistant professorship at Korea Maritime University. Then in 2000, Dr. Park moved to Seoul to become an associate professor at Hanyang University Department of Civil and Environmental Engineering. He was a visiting professor in the LSU Department of Civil and Environmen-

**CHARTER MEMBERS**

- Ara Arman
- Dr. Elvin Dantin\*
- L. Lane Grigsby
- Dr. Chester P. Siess\*
- Bingham C. Stewart\*

**2002**

- Verdi Adam
- Dr. Dipak Roy\*
- Wm. Clifford Smith

**2003**

- Dr. James M. Coleman
- Ann Forte Trappey

**2004**

- Dr. George Munfakh
- Dr. Kam K. Movassaghi

**2005**

- Dr. Kenneth L. McManis
- Larry A. McKee

**2006**

- John "Jack" Donahue, Jr.
- Ronald "Ron" Rodi

**2007**

- Dr. J. Tinsley Oden
- Recep Yilmaz

**2008**

- Robert A. "Bob" Deason
- Frank J. Germano\*

**2009**

- John A. Graves
- Dr. Mehmet T. Tümay

**2010**

- Dr. Shahram Sarkani
- Sherri Hammond LeBas

**2011**

- Dr. Song-Kai Yan\*
- Dr. Rodolfo J. Aguilar

**2012**

- Lloyd Guillory
- Dr. Taehyo Park

**2013**

- Paul Fossier, Jr.
- Dr. Anand Puppala

\* Deceased

tal Engineering from 2007 to 2011. During that time, at Hanyang University, Dr. Park was promoted to full professor and in 2012 he became the chairman of the Hanyang's Department of Civil and Environmental Engineering.

From 2000 to 2012, Dr. Park has conducted over 40 research projects sponsored by the industry and by the Korea Research Foundation (KRF). Furthermore, he was selected as a principal investigator and project leader of a



CEE Department Chair Dr. George Z. Voyiadjis (left) and 2012 CEE HOD Inductee Dr. Taehyo Park

prestigious World Class University (WCU) project sponsored by the Korean Ministry of Education, Science and Technology in 2009. The first one in the civil engineering discipline, this project grant amounts to over \$3 million for 5 years and one of the biggest projects of the KRF. Through this project, Dr. Park promoted the dual degree program between Department of Civil and Environmental Engineering of Hanyang University and Department of Civil and Environmental Engineering of LSU.

Dr. Park's primary research areas include mechanics of materials and computational mechanics. He has conducted extensive studies on multiscale methods of composite materials and related researches. Dr. Park's current research interests include computational multiscale simulations using multiphysics and parallel algorithms. In addition to research, he also administrated the international mini symposium related to computational multiscale (held in Hanyang University in 2012). Dr. Park has published over 70 international journal papers and he owns 3 Korean patents to his credit. He has also received the best paper awards from Computational Structural Engineering Institute of Korea (COSEIK), Korea Concrete Institute (KCI), Korean Society of Civil Engineers (KSCE).

Dr. Park is currently the vice president of the Korean Society of Civil Engineers and the vice president of the Computational Structural Engineering Institute of Korea. He has been serving on the editorial boards of Korea Concrete Institute (2003-2004), Korean Society of Steel Construction

(2004-2006), Korean Society of Civil Engineers (2005-2006), and a trustee at Korean Society of Civil Engineers (2006-2007). Dr. Park has produced 27 graduate students (6 PhD. and 21 M.S.) under his direction and has supervised 6 postdoctoral research fellows. He and his wife Hyesook Jung reside in Seoul, Korea with their daughter Noel.



### Paul Fossier, Jr. (2013)

Paul B. Fossier, Jr. currently serves as the State Bridge Design Engineer for the Louisiana Department of Transportation and Development (LA DOTD). A native and lifelong resident of Baton Rouge, Paul received a BS in Civil Engineering in 1979 from Louisiana State University, a Masters

in Civil Engineering in 2006 from Tulane University, and is licensed Professional Engineer in Civil and Environmental Engineering.

Fossier has been employed with the LA DOTD for 30 years in the Bridge and Structural Design Section as an engineer intern, senior engineer, engineer supervisor, Assistant Bridge Design Administrator and currently as the State Bridge Design Engineer. He was also employed as a consulting engineer with Forte and Tablada, Inc. and Rayner and Mckenzie, Inc. in Baton Rouge.



Paul Fossier, Jr. (third from the left) pictured with Sherri LaBas (fourth from the left) and the Fossier family.

Fossier has been the design engineer-of-record and/or project manager for numerous fixed and movable bridge replacement, rehabilitation and repair projects throughout Louisiana. He served as the DOTD project manager for the new John James Audubon Mississippi River cable stay bridge near St. Francisville - New Roads, the first Design-Build Project ever completed by DOTD and the longest cable stay main span in North America when completed in 2011. Fossier also served as the DOTD project manager for the replacement of the cable stays for the Hale Boggs Mississippi River Bridge in Luling, LA, which was the first project of its kind in the United States. He was the lead design engineer for the emergency repairs for the I-10 Lake



(Left to Right) Dr. George Z. Voyiadjis, Paul Fossier, Jr., and Sherri LaBas, Secretary of LA DOTD.

Pontchartrain Twin span bridges following Hurricane Katrina to reestablish the important transportation link to New Orleans following the hurricane. Fossier was a member and a leader for the Louisiana Transportation Research Committee research panel for the implementation of High Performance Concrete (HPC) in Louisiana and was the engineer-of-record for the Charenton Canal Bridge, the first HPC Bridge constructed in Louisiana which established standards for long term durability and high strength bridge components in Louisiana that now have been adopted by LA DOTD. A significant part of Fossier's DOTD career was also devoted to developing the roadside safety hardware standards for roadway barriers that have directly influenced highway safety in Louisiana.

Fossier has served as a leader and a primary voting member of the AASHTO Subcommittee on Bridges and Structures (SCOBs) that is responsible for the AASHTO LRFD Bridge Design Specifications. He is currently serving as chairman of the AASHTO SCOBs T-8 movable bridge technical committee that is responsible for the AASHTO LRFD Movable Bridge Design Specifications and is a member of the AASHTO SCOBs T-7 technical committee for guardrail and bridge barriers. Fossier also serves as a member of the AASHTO Technical Committee for Roadside Safety which is responsible for the AASHTO Roadside Design Guide. He is the lead technical representative for LA DOTD for the national highway safety pooled fund committee that develops research projects to update guardrail and roadway barrier safety hardware standards. Fossier has served on several NCHRP TRB research panels investigating both bridge design and highway safety initiatives.



*CEE faculty members and guest.*

Fossier has been an active member of the American Society of Civil Engineers (ASCE), serving as the ASCE Baton Rouge Branch President in 1989 and the ASCE Louisiana Section President in 1994. He was the first editor for the ASCE Louisiana Section Magazine in 1994. Fossier is also a member of Chi Epsilon National Civil Engineering Honor Society and the Louisiana Professional Engineers in Civil Service. Fossier was awarded the 2009 Outstanding Government Engineer of the Year by the ASCE Baton



*(Left to right) CEE Professor Dr. Ronald Malone and wife Sandy Malone*

Rouge Branch and the Louisiana Section of ASCE. He received the Charles E. Dunbar, Jr. Career Service Award in 2012 from the Louisiana Civil Service League, the highest honor given to classified state employees serving the citizens of Louisiana.

For several years, Fossier has served the LSU Department of Civil and Environmental Engineering as a volunteer instructor and an adjunct instructor in teaching the senior conceptual design course and the bridge design course. He has also served as a guest volunteer instructor for the LANAMME structural research center for the University of Costa Rica to assist its country's efforts in advancing Bridge Engineering. He has also been a volunteer mentor and speaker concerning civil engineering for numerous high school and university students and has led the LA DOTD efforts to recruit and employ many LSU civil engineering graduates.

Mr. Fossier is active with St. George Catholic Church in Baton Rouge for over 30 years where he serves as a Eucharistic Minister and a past Boy Scout leader. Paul and his wife Anne have a daughter Katherine and son Brad, all are LSU graduates.



### **Dr. Anand Puppala (2013)**

Dr. Anand Puppala (PE) is a distinguished teaching professor in Civil Engineering and Coordinator of Geotechnical Engineering program at the University of Texas (UTA at Arlington). He joined UTA as an assistant professor in 1996, was promoted to associate professor in 2001, and then to professor in 2005. Dr. Puppala received his BE, MTech and PhD from GITAM, IIT Chennai and Louisiana State University, respectively.

Dr. Puppala received the University of Texas system's Regents Teaching Award in 2010 and was the first engineering professor from UT Arlington to receive this highest teaching honor in Texas. He was also inducted to the honorable UT Arlington's Academy of Distinguished Teachers. Dr. Puppala has received several awards