



## 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.



Volume 9 Fall Issue November 2009



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# Department of Civil and Environmental Engineering

Volume 9

Fall Issue

November 2009



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## Message from the Chair

It is with great pleasure that we bring you the latest edition of the Department of Civil and Environmental Engineering Newsletter. During the time since our Spring edition there has been some exciting news in our Department. First and foremost, we would like to share with you the most recent developments in our Forever LSU campaign. Walmart has chosen a philanthropic investment opportunity to sponsor two LSU Department of Civil & Environmental Engineering laboratories: the Walmart Laboratory for the Study of Pollution Control and the Sam's Club Laboratory for Environmental Sustainability. These labs will be used for instruction and research in the designated areas of environmental sustainability and pollution control. We are also proud to announce that CSRS, Inc. has established a CSRS Distinguished Professorship, the first gift to support faculty in the Coastal Engineering program. Also, Fugro Consultants, Inc. recently made a gift to the

Department. Please join us in thanking these companies for their dedication to the Department and their outstanding contributions to the campaign. These gifts from alumni and friends will provide the department with the opportunity to use private funds as a strategic investment: to improve academic excellence and to make transformational change.

We are asking that every alumni and friend of the department consider how you can participate. We understand that these challenging economic times are a challenge for all, but each and every contribution is greatly appreciated and assists the department in reaching our goals. Whether it is a monetary donation, networking to make others aware of our campaign or simply sharing your enthusiasm for our program, we thank you! We sincerely appreciate each and every contribution to our department and extend our thanks to all who have brought us to where we

are today and whose continuous support will propel us into an exciting future for CEE.

Adding to an already busy Fall semester, the department is currently in the visitation part of this year's round of the ABET accreditation process. The ABET process requires that we are engaged in the continual improvement of our undergraduate programs in civil and environmental engineering and provide documentation that a process is in place to ensure such a goal is achieved. This continuous process of re-evaluation is vital to the growth and quality of our program.

In closing, myself and the Department would like to wish you and your family a wonderful holiday season.

Best Regards,

**Dr. George Z. Voyiadjis**  
*Boyd Professor, Chair  
And Bingham C. Stewart  
Distinguished Professor*

## Civil Engineering Students Earn Top Starting Salaries

According to a report issued this summer from the National Association of Colleges and Employers (NACE), Engineering graduates receive the best starting salaries, despite the shaky economy. Even better—when comparing the starting salaries of graduates of the LSU College of Engineering to the NACE Average of other starting salaries in the different engineering degree fields, LSU is even above that average! LSU Civil Engineering graduates average \$54,247 in starting salary, as compared to the \$52,048 average starting salary of other Civil Engineering programs.

Student Highlights

**Patel Nachiketa** (MS graduate student) won first place for his presentation titled "Interface Shear Strength Characteristics of Emulsified Tack Coats" at the 2009 Area 2 Highway Engineering Exchange Program (HEEP) conference held in Baton Rouge, June 7-10, 2009. Area 2 includes Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia. Mr. Nachiketa will move on to compete at the International HEEP conference to be held in San Antonio, Texas, September 27 - October 1, 2009



Carl Gaudry, David Craft, Mark Dunn, Danny Rick, Brad Adams (captain), Josh Porter, Steven Schorr

ASCE 2009 Student Chapter Happenings

Over this past spring semester, the ASCE student chapter at LSU actively prepared for and participated in the concrete canoe and steel bridge competitions.

LSU steel bridge team placed 5th in display while receiving 40th overall. Despite the score, the national competition was a great learning opportunity for the young aspiring engineers. Team captain Brad Adams said, "It was tough for us to compete with the more

experienced teams, but we will take what we learned this year to improve and be a stronger competitor next year." Most of the team will be returning to compete again next year, eager to put the knowledge they gained to use. The team would like to

thank all of the sponsors for their support and generous contributions, including the LSU Department of Civil and Environmental Engineering and the Baton Rouge Branch of the ASCE.

The team would like to thank the following sponsors: SJB Group; ABMB Engineers, Inc; CDM; CSRS, Inc; CH2M-Hill; Engensus, LLC; Evans-Graves, Inc.; Fabri-

cated Steel Products; Michael Baker Jr., Inc.; Sigma Consulting Group; URS; FLUOR; Structural Preservation Systems; Pelican Energy Consultants; Manson Construction; Picciola & Associates

This year's concrete canoe team met the challenge of creating a strong, lightweight concrete mix. The team hopes, pending the 2010 rule changes, to keep this mix as a base for next year's canoe. Using this mix design, the team will focus attention on building a more aesthetically pleasing canoe.

This will include the use of a female mold as opposed to the male mold that was used this year. The team may also consider using inlaid designs and stained concrete. Next semester, the concrete canoe team will have the unique challenge of finding a new place on campus to build the canoe, since the old annex will be undergoing renovations for the foreseeable future.

This fall, ASCE student chapter of LSU will be holding meetings at 6:30 pm in the Germano Center. The dates for the meetings include September 3<sup>rd</sup>, September 17<sup>th</sup>, October 8<sup>th</sup>, October 22<sup>nd</sup>, November 5<sup>th</sup>, November 19<sup>th</sup>, and December 4<sup>th</sup> (End of semester party). One meeting during the fall semester is always reserved for our Annual ASCE at LSU career fair. This year's career fair will be held on November 5<sup>th</sup>. We are looking forward to the upcoming semester!



ASCE at LSU's 2009 concrete canoe team at the Regional Competition in Jonesboro, Arkansas From left to right: Jennifer Richmond, Brad Adams, Sarah Laakso, Valerie Mautz, Danny Rick, Ashleigh Williamson, Elise Trappey, Thomas Montz, and Maria George

Vincent A. Forte Coastal and River Engineering Lab



Left: BG Walsh presenting the MVD Commander's coin to Mr. Sultan Alam while Mr. Frank Simoneaux, former Secretary of the Louisiana Department of Natural Resources, looks on.



Left: LCA Science Board members and staff observe a SSPM experiment

In July 2009, the Vincent A. Forte Coastal and River Engineering Laboratory was the site of two important visits.

The first was by Brigadier General Michael Walsh, Commander of the Mississippi Valley Division, and members of his staff. BG Walsh spent about two hours at the model to learn more about the small-scale physical model

(SSPM) capabilities and studies currently underway to investigate the feasibility of medium- and large-scale river and sediment diversions in the lower Mississippi River.

Later the same week, members of the Louisiana Coastal Area (LCA) Science and Technology Science Board toured the model facility. The Science Board is made up of ten renowned scientists and engineers who are

tasked with ensuring the application of world-class science to the LCA Ecosystem Restoration Plan and providing national perspective and oversight of general scientific processes and structure of the LCA Program. The members received a briefing on the design and technical aspects of the SSPM and then were able to observe the model in action.

National Evacuation Conference

The National Evacuation Conference will be held February 3-5, 2010 in New Orleans, LA. This conference will bring together the fields of transportation and emergency management to discuss evacuation planning to accommodate the needs of all people before, during and after a major disaster.

The purpose of the conference is to foster an interdisciplinary exchange of ideas surrounding a broad range of evacuation issues, particularly mass evacuations prompted by disas-

ters. Special topics of discussion include national evacuation policy development and addressing the challenges faced by special needs populations during disasters. In addition, improvements in evacuation planning and modeling will be discussed.

This conference will be relevant to both academics and professionals with an interest in the development and modeling of comprehensive evacuation plans. The conference will offer a venue for dialogue between the academy and practice, as well as between the private and public sector. Participants will

contribute to an important step towards more efficient and effective evacuation planning.

This conference is organized by the Stephenson Disaster Management Institute and the Gulf Coast Research Center for Evacuation and Transportation Resiliency both at Louisiana State University and the University of New Orleans.

The conference will be held in historic New Orleans, Louisiana at the JW Marriott Hotel, just steps from the French Quarter.



For more information about the conference, [www.nationalevacuationconference.org](http://www.nationalevacuationconference.org).



Dr. Clint Willson is a co-PI on two new projects related to improving the nation's oil-and-gas production.

The first project, funded by Exxon-Mobil at \$677,000 for three years, is directed at better understanding the fundamental processes related to near-well head losses due to high velocity flows. The ability to incorporate these losses into reservoir simulators is critical for optimizing the production of deepwater wells. Other investigators on this project include Dr. Thompson (PI; Cain Department of Chemical Engineering) and Drs. Sears, Tyagi and White (Craft and Hawkins Department of Petroleum Engineering). The Advanced Energy Consortium (AEC) is funding the second project at \$560,000 over three years. The AEC funded research is aimed at relating the transport behavior of nanosensors to rock structure and fluid properties in the hopes of improving our ability to characterize oil-and-gas reservoirs. The AEC project team includes Dr. Thompson (PI; Cain Department of Chemical Engineering) and Dr. Niki-topoulos (Department of Mechanical Engineering). For both projects, Dr. Willson and his research group will be responsible for imaging and characterizing a wide range of oil-and-gas reservoir rocks and other relevant sample using high-resolution synchrotron X-ray tomography. The graduate students will also be performing lab-scale column experiments in order to obtain data for numerical model calibration and validation.



Dr. Steve Cai, Associate Professor, has recently received a fund (\$180k) from the National Science Foundation. The project, titled "Investigation and Damage Mitigation of Low-lying Coastal Bridges under Hurricane-induced Wind and Wave Actions", is to conduct fundamental research on the wind, surge, and wave loads on bridge decks, and to investigate mitigation countermeasures for coastal bridges. Part of this research will be conducted through international collaborations by using the unique wind and wave generating facilities in China.



Dr. Brian Wolshon delivered the summer Distinguished Lecture for the Sandia National Laboratories' Nuclear Energy and Global Security Technologies Distinguished Lecture Series in Albuquerque, New Mexico in June. The Sandia Nuclear Energy and Global Security Technologies Division serves

the nation's security interests through excellence in science, technology, and engineering; continuously improved understanding of complex systems; contributions in arenas where technology and policy intersect; and appropriate global engagement in the areas of nuclear energy and global nuclear /radiological energy threat reduction. Dr. Wolshon's lecture focused on his recent federally-sponsored research to develop and apply innovative evacuation management and modeling techniques to increase the effectiveness of transportation systems during mass evacuations."

Drs. Zhi-Qiang Deng and Kelly A. Rusch received an award of \$400,000 from National Aeronautics and Space Administration for "Development of Sensor Assisted Water Quality Nowcasting and Forecasting Environment for Coastal Beaches." The project will identify bacterial source areas in the watersheds of Cameron Parish beaches and develop water quality nowcasting and forecasting models for the coastal beaches in collaboration with Louisiana Department of Health and Hospitals and Louisiana Department of Environmental Quality. The project will also provide research training opportunities for 3 graduate students and 2 postdoctoral researchers.



Dr. Marc Levitan coauthored a new book, entitled *Health Care and Disaster Planning: Understanding the Impacts of Disasters on the Medical Community*, published by the Louisiana State Medical Society (LSMS). The book and accompanying training materials are the keystones of a planned national campaign geared at educating physicians and other health professionals about disasters, their impacts on the physical infrastructure, and how this translates into impacts on health care. The book and other educational materials were developed for a \$200K joint project between the School of Social Work and the LSU Hurricane Center, coordinated by LSMS, and funded by The Physicians' Foundation for Health Systems Excellence.

### ASCE Student Chapter Habitat for Humanity Build Day



Front row from left to right: Thomas Montz, Aleks Simicevic, Valerie Mautz, Elise Trappey, Jennifer Richmond, Jenen Barillas, Maria George, Danielle Welbourn (BR ASCE Branch Younger Member Chair). Back row from left to right: James Parker, Carl Gaudry, Zachary Perkins

On September 26, 2009, the LSU student chapter of ASCE volunteered for a Habitat for Humanity Build Day. The project was located at the Chinn Street build, near Southern University. First, participating members cut siding to fit the front and sides of the house. The next step was to nail the siding to the house. All who attended were very enthusiastic about the project and enjoyed working on such a practical engineering project. The ASCE group involved in the project (see picture left) were excited to involve freshmen in this service project.

### CEE Graduate Students and Engineers Without Borders

CEE Graduate Students Kimberly Bowman and Martin Chorkey, through the BR Chapter of Engineers Without Borders, worked in The Cambia, West Africa this summer on a water contamination project.



Kimberly Bowman and Martin Chorkey meeting with one of the two main leaders of the village, the Village Chief.

In June, the group spent 10 days in Mbollet, a small village in West Africa, working on a project focused on improving the drinking water quality and sanitation practices. This multi-phase project began with the group spending time observing the village and its practices, taking measurements and documenting their observations. The group hopes that with their effort to improve and expand on the current water supply, that the overall quality of life for this village will greatly improve.

pleted much of their raised funds and therefore more must be raised to send the team of eight people back to the village for the next step of the process.

The top corporate sponsors of this project include ABMB Engineers, CDM and C-K Associates. The group also held fundraisers for the project. But the 10 day trip this summer de-

Engineers Without Borders (EWB) is a non-profit organization dedicated to working with developing communities throughout the world on sustainable engineering projects. For more about the Baton Rouge Chapter of EWB and this project, please visit their website at [www.ewb-brp.org](http://www.ewb-brp.org).



Kimberly Bowman using a hand pump to draw water from the only capped well in the village.

## Graduate Students Study Surge and Waves on Wetlands

Several CEE graduate students are working with Dr. Q. Jim Chen to investigate the interactions of hurricane waves and storm surges with coastal landscapes. Among them are Ranjit Jadhav, a doctoral student in coastal engineering, and James Chatagnier, a MS student co-advised by Drs. Gregg Zhang and Q. Jim Chen.

fense against hurricane surges and wave actions. However, there was a lack of specific research that scientifically relates protection offered by marsh vegetation from waves and surges. Ranjit's research intends to contribute to this area and ultimately provides better frictional parameterization for the computer models. James' research is focused on the biomechanics and soil mechanics of marshlands relevant to wave and surge reduction.

Ranjit's dissertation research is focused on field observations of coastal wave and surge attenuation by marsh vegetation. Numerical models are indispensable tools for planning and managing of our coastline which experiences significant land loss impacting economic and livelihood resources. The coastal marshes have been an important natural de-

Before starting his Ph.D. study at LSU, Ranjit worked for 14 years as a water resources consultant. For the past several years he has been involved in the Louisiana coastal restoration projects for agencies such as the Corps of Engineers, DNR, US Fish and Wildlife Service and EPA. He is a registered Professional Engineer in Louisiana and Diplomate of the



Collecting field data in Breton Sound. Left: James Chatagnier; Center: Dr. Gregg Zhang; Right: Ranjit Jadhav. Photon taken by Q. Jim Chen

American Academy of Water Resources Engineers. James received his B.S. in Civil Engineering at LSU in May, 2009 and continues his graduate study in the CEE department. The number of graduate students in coastal engineering at LSU has increased significantly over the past few years.

## Spring 2009 Commencement

### BS in Civil Engineering

Amanda Rebecca Artique  
Ellen Lee Burke  
Terry Bryce Burkett  
Bradley Thomas Carville  
Michael Lee Center  
James Louis Chatagnier  
Tyler Keith Comeaux  
Adele Elizabeth Cook  
Jason Randall Ellis  
Christopher Aaron Fenner  
David Paul Forester  
Thomas Dylan Gomez  
Kevin Christopher Hanegan

### (University Medal & Summa Cum

Laude)  
Josef Patrick Hoffmann  
Bradley Scott Holleman  
Brian Charles Hundt  
Dennis Michael Hymel Jr.  
Christopher Paul Jacobs  
Michael Serafin Jenks  
Robert Edwin Jewell  
Katie Christine Lambert  
Kate Morgan Landrum  
Jared Paul Lewis  
Luke Mcduff Martin  
Benjamin Charles McArdle

### (Magna Cum Laude)

Brandt Jameson Meyer  
Claire Louise Murray  
Stephanie Lee Phillips  
Holden Robert Wright  
Joshua Phillip Yohoz

### BS in Environmental Eng

Mallorie Beth Albrecht (Magna Cum Laude)  
Joseph Stevenson Black  
Kevin Michael Chenier  
Jason Michael Moore  
Christine Marie Prouty

### MS in Civil Engineering

Dhaval Shirish Shah  
Xiaonan Wang  
PhD in Civil Engineering  
Alsidqi Hasan

Aaron Matthew Austin  
Jason Alexander Braud  
Jason Paul Fennell  
Chaitanya Mamidala  
John Stanley

### PhD in Civil Engineering

Marcio Costa Araujo  
Kimberly Sue Bowman  
Samantha Nicole Danchuk  
Lu Deng  
Carol J. Friedland  
Keegan Lambert Roberts  
Jun Yan  
Haihong Zhao

## Summer 2009 Commencement

### BS in Civil Engineering

Jeffrey Cole Hastings  
MS in Civil Engineering  
Meisam Akbarzadeh

Prathima Alla  
Sukanta Chakraborty  
Ryan Anthony Hearn  
Murat Korkut

Dhaval Shirish Shah  
Xiaonan Wang  
PhD in Civil Engineering  
Alsidqi Hasan

Wakeel Ishola Anthony Idewu  
Marilou M Nabatilan  
Abhijit A. Patil



Drs. Marc Levitan and Ivor van Heerden, Associate Professors, are lead

investigators on a \$52K project, sponsored by industry, to develop hurricane track and intensity models for the northeast United States. These models will be used for assessment of hurricane hazards and risk for coastal facilities.



Dr. Ivor van Heerden, a geologist and Associate Professor, was featured on the Discovery Channel special series *Raging Planet*, which

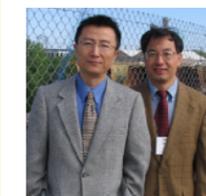
airs this fall. This series was presented in four segments: Tornado, Lightning, Hurricane and Floods in the early fall and are to be followed by four additional segments. Dr. van Heerden assisted on two of the segments, including being featured as an expert narrator on The Hurricane segment, which aired on August 16th at 9pm EST.

Also, Dr. Ivor van Heerden was presented with a "Certificate of Recognition" from the New Orleans Planning Commission. This group is made up of the parish President of New Orleans, Plaquemines, Jefferson and St Tammany Parishes and is responsible for developing plans of the Greater New Orleans. The Commission presented Dr. van Heerden with this certificate in appreciation of his research efforts over the last few years.



Drs. Marc Levitan and Carol Friedland (who recently joined the LSU Construction Management faculty after completing her PhD in CE from LSU ) have a new \$28.5K project, in collaboration

with AIR-Worldwide, to assist the Mississippi Insurance Department in modeling the costs and benefits of hurricane mitigation measures. The ultimate goal is to provide estimates of the amount of expected hurricane damage under different storm scenarios and how much it can be reduced through mitigation measures such as installation of impact-resistant shutters, hurricane straps, improved roof deck attachment, etc. This information can then be used to assist insurers in developing actuarially correct discounts for homes and businesses that have taken steps to improve the wind hazard resistance of their buildings. Several CEE undergraduate and graduate students assisted with field data collection and analysis of building construction types, methods, and materials for coastal Mississippi, including Stuart Adams, Josh Porter, Blain Fuselier, and Alex Herbin.



"Equivalent wheel load approach for slender cable-stayed bridge fatigue assessment under traffic and wind: feasibility study" Journal of Bridge Engineering, ASCE, co-authored by Drs. Suren Chen and

C.S. "Steve" Cai, has been selected for the "Collingwood Prize", by the American Society of Civil Engineers (ASCE). Dr. Chen is Dr. Cai's former Ph.D. student at LSU. Dr. Chen is currently an assistant professor at the Department of Civil and Environmental Engineering, Colorado State University, Fort Collins, Colorado. The certificate will go only to Dr. Chen, 35 years of age or younger junior author, according to the award criteria. The ceremony will be held in the 139<sup>th</sup> ASCE annual conference in October 2009 at Kansas City.

## General Tid Bits

The Baton Rouge Branch of the ASCE held their annual Recognition Luncheon in June. At this luncheon, Professor Emeritus **Roger K. Seals** was presented with the Educator of the Year Award. Also, CEE Hall of Distinction member, the late **Gordon P. Boutwell**, was honored with the Wall of Fame Award. The Department congratulates both gentleman on these worthy recognitions.

## YES, count me in!

Name: \_\_\_\_\_ Graduation Year(s): \_\_\_\_\_

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Daytime Telephone: \_\_\_\_\_ Email: \_\_\_\_\_

Company: \_\_\_\_\_ Title: \_\_\_\_\_

Business Address: \_\_\_\_\_

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 Civil and Environmental Engineering Siess Endowment Fund  
 Other (please designate) \_\_\_\_\_

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 Expires: \_\_\_\_/\_\_\_\_ - \_\_\_\_/\_\_\_\_ - \_\_\_\_/\_\_\_\_  
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 Signature: \_\_\_\_\_

I enclose a matching gift form for my company Please send this completed form to:



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## Reconnect with CEE!

The Department of Civil and Environmental Engineering wants to encourage all alumni to Reconnect with CEE!

Please check out our website at [www.cee.lsu.edu](http://www.cee.lsu.edu) for regular updates and news about the department. Also, on the website, we have an Alumni Guest Book. We encourage all of you to take the time to post your most up-to-date information. Or, if you'd prefer, you can email your updates to [jmueller@lsu.edu](mailto:jmueller@lsu.edu). We'd like to feature more alumni news in our newsletter and website and so we need your help in making this happen. Let us know where you are today, keep us in the loop about your career accomplishments and tell us a little about your experience at LSU and how CEE influenced you. Also, if you are in contact with a fel-

low CEE Alum, please find out if they are on our mailing list. If not, please assist us with getting them re-connected with CEE! Your assistance would be greatly appreciated. We enjoy hearing from our treasured alumni!

We would also like to challenge every one of our alumni and friends to consider making a gift, no matter what size, to make you a part of this vital Forever LSU campaign and help improve our department. You can complete the form above or if you'd like more information, please contact our donor investment advisor Don Eisenberg at (225) 578-2441 or [eisenberg@lsu.edu](mailto:eisenberg@lsu.edu).

## Dr. Voyiadjis to Serve as Founding Editor

The Journal of Nanomechanics and Micromechanics will be initiated in January of 2011 as a new journal in the Engineering Mechanics Institute of ASCE. Dr. George Z. Voyiadjis of Louisiana State University is the founding editor of this new journal.

It is commonly accepted that Nanotechnology is the new revolution in the science. Although a precise control of material nanostructure for all materials of interest has not been achieved yet, every day new techniques and sophisticated devices are being developed to be able to manufacture materials with more precise nanostructure and to be able to take more accurate measurements. Thus, the models of material mechanical behavior at nanoscale can be validated using the experimental data obtained using sophisticated instruments and techniques developed recently. This small world is now attracting more interest from the

engineering mechanics community as well as other related fields such as physics, material science, chemistry, and biological sciences because of the opportunities it offers in the development of materials of unprecedented properties. However, today there is too much dilution of work done on this field of mechanics in a variety of journals which prevents the field from developing a cohesion and integrity. This newly born journal aims to fulfill the emergent need of primarily the engineering mechanics community and secondly of the pertinent scientific community to have a coherent, mainstream journal to publish their experimental, theoretical, or numerical contributions that advance the understanding of nano/micromechanical behavior of engineering materials.

The ASCE Journal of Nanomechanics and Micromechanics will report original developments of fundamental concepts of nano/

micromechanics and novel application of various branches of engineering science and in particular the development of new nano-tailored and micro tailored materials that are of interest to the civil engineering community as well as to other broader scientific communities. The journal will cover the experimental and theoretical developments that constitute the state of the art of the field.

Launching a new journal to competitive scientific communities like mechanics community in general and in particular mechanics community of civil engineering is always a challenging task. However, with the sustained dedication of the editorial team and valuable contributions from proactive mechanics communities, it is not a remote possibility but a realistic expectation that this journal will host most important future research work in nano/micromechanics and will become the mainstream journal of nanomechanics and micromechanics.

## Dr. Chen in Local and National News Media



Dr. Q. Jim Chen, Associate professor of civil engineering at LSU, speaks to the NBC reporters about his computer models and the significance of coastal engineering research and education for Louisiana.

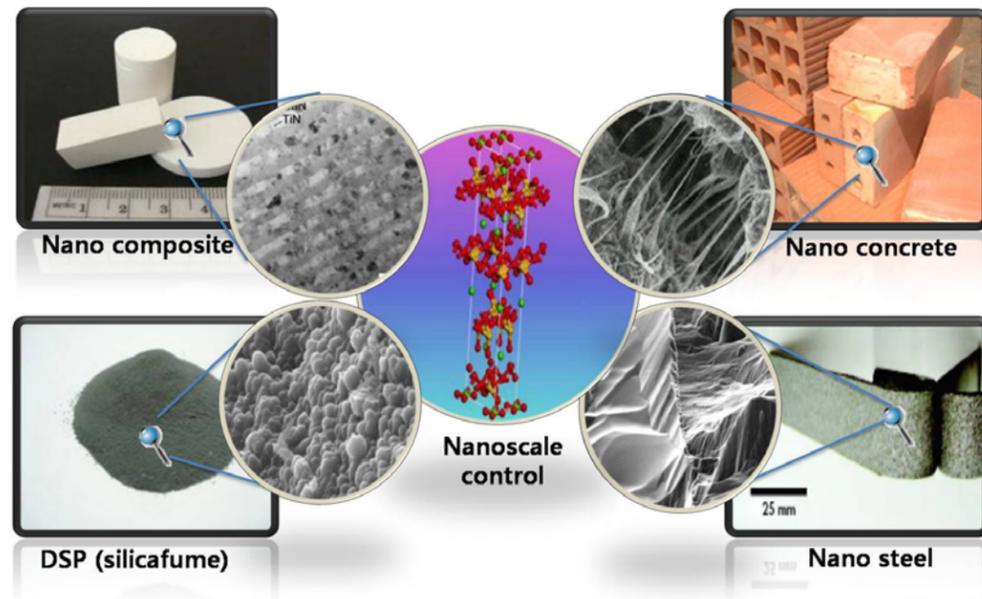
Dr. Q. Jim Chen, an associate professor specializing in nearshore hydrodynamic modeling and coastal

engineering in the Department of Civil and Environmental Engineering at LSU, has recently appeared in the national and local news because his cutting-edge research on computer modeling of hurricane waves and storm surges for Louisiana coastal protection and restoration has attracted the attention of news media.

Funded by the National Science Foundation (NSF), the Department of Defense, the Department of Homeland Security, and the Louisiana Sea Grant Program, Chen and his group have been conducting state-of-the-art

coastal wave and storm surge research using high-performance computing technology available at LSU. They have been focused on the effects of coastal landscapes on surge and waves and the impacts of hurricanes on the natural and built systems by integrating computer models and field observations. Chen group's research accomplishments were reported by the National Science Foundation News, the U.S. News and World Report, the Baton Rouge Business Report, and the NBC Channel 33 Baton Rouge Evening News.

## Dr. Voyiadjis To Participate In a WCU Project, the Largest Grant in Korean History



Dr. Voyiadjis to participate in a World Class University (WCU) Project from KOSEF (Korea), one of the largest grants in the history of Korea. Dr. Voyiadjis will be an honorary visiting professor in Hanyang University during the term of this project.

This is the only WCU project that was funded by Korean government in the area of civil and architectural engineering. This project addresses the challenge of the topic of nano-fusion in civil engineering. He was one of only two individuals who were selected as the only foreign scholars working on this project. This project clearly shows that the international colleagues also regard nanotechnology as an important future direction

in engineering, and Dr. Voyiadjis was already recognized as one of the leaders of his generation in that area.

This proposal is a five year project for \$3.5 million and is on the "Development of multiscale simulation methods for nano fusion technologies in construction materials for sustainable infrastructures." The funding agency is the Korean Science Engineering Foundation (KOSEF) and is the only proposal funded in Korea in Civil and Architectural Engineering. It is a unique opportunity for LSU to create ties with Hanyang University and Korea in general.

**PROJECT GOAL** Currently, many scientists have studied nano-technology and tried to extensively apply nano-fusion technology to construction materials and civil-infrastructures because of a variety of advantages in terms of economic efficiency, energy reduction, saving cost, and sustainable maintenance. In spite of these challengeable researches performed in the advanced counties, there is little experience and trial to introduce this promising nano-technology in domestic civil engineering fields. In addition, one faces a situation that researches for the multi-scale simulation in association with nano-micro-macro structure are severely insufficient. Therefore, one takes advantage of this human resources and foreign networks which are able to perform and develop these research topics related to the application of nano fusion technology. Through the project supported by the world class university (WCU), this research group dedicates to developing R&D nano-technology in the civil engineering field, distributing the research bases, and raising human resource with high-quality research potentials in this research field.

## CSRS, Inc. Cont.

of professional engineering services to local, state and federal governments, educational and healthcare institutions, and industrial clients. For more information on CSRS, visit [www.csronline.com](http://www.csronline.com).

Support for LSU CEE, like that shown by CSRS, helps the College of Engineering move closer to its Forever LSU Campaign goal of attaining \$100 million in support for the college. Forever LSU has an overall goal of at-

taining more than \$750 million for the university by the end of 2010. To find out how you can become involved with the campaign for LSU's future, visit [www.eng.lsu.edu/alumni/contribute.html](http://www.eng.lsu.edu/alumni/contribute.html) or [www.foreverlsu.org](http://www.foreverlsu.org).

Article by Mimi LaValle, College of Engineering, 225-578-5706, [mlavall@lsu.edu](mailto:mlavall@lsu.edu) and Scott Madere, LSU Foundation Public Relations Director, 225-578-3826, [smadere@lsufoundation.org](mailto:smadere@lsufoundation.org)

## ASCE Donation to Coastal Engineering



Left to Right: Billy Wall, President of the ASCE Baton Rouge Branch; Ron Rodi, Chair of the CEE External Advisory Board and CEE Department for Forever LSU campaign; George Voyiadjis, Chair of the LSU Department of Civil and Environmental Engineering; and Don Eisenberg, Associate Director of Development.

The American Society of Civil Engineers (ASCE) supported the LSU College of Engineering's Coastal Engineering program, presenting a check to the LSU Foundation for \$20,000 in support of the program. LSU's Coastal Engineering program in the Department of Civil Engineering at was created to supply new coastal scientists/engineers that Louisiana will need to care for the coastline.

Over the last few years, there has been a heavier focus placed on the increased risks of the Gulf Coast's unique environment, which has given Louisiana an increased need for qualified scientists to find protection solutions. LSU hopes to combine engineers with scientists to ad-

dress problems that are not only specific to the Gulf Coast, but that can be applied to deltaic regions around the world. By creating the Coastal Engineering program, LSU looks to supply Louisiana with the knowledge to create engineering structures needed to protect the coast and sustain the natural processes critical to resilient delta landscapes.

ASCE is a professional organization representing more than 146,000 civil engineers. The oldest national engineering society in the United States, ASCE was founded in 1852. ASCE's goal is to facilitate the advancement of technology to enhance quality, knowledge, competitiveness, sustainability, and environmental stewardship, as well as to encourage and provide the tools for lifelong learning to aid members' continued growth throughout their careers. ASCE also aims to promote professionalism and the profession throughout society, to enhance the stature of civil engineers and to influence public policy. ASCE looks to develop and support civil engineer leaders to broaden members' perspectives, enhance their career growth, and promote the public interest. ASCE advocates infrastructure and environmental stewardship to protect the public health and safety and improve quality of life.

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## Engineering Alumni Reunion

The College of Engineering will hold its Seventh Annual Engineering Alumni Reunion on Friday, November 13, 2009, from 6:30 - 8:30pm, in the West Entrance of Patrick F. Taylor Hall (formerly CEBA). Mark your calendar to take a walk down memory lane and visit with engineering alumni and faculty. For more information about the reunion, visit the College of Engineering website <http://www.eng.lsu.edu/> or contact Brenda Tate at [enrdrdel@lsu.edu](mailto:enrdrdel@lsu.edu).



Top: Dr. Michael V. Martin, LSU Chancellor; Dr. George Z. Voyiadjis, LSU Boyd Professor and CEE Department Chair; Dr. Astrid Merget, LSU Executive Vice Chancellor and Provost; Mr. Garret Graves, Director of Coastal Activities, Office of the Governor; Mr. Ron Rodi, Principal, CSRS; Mr. Michael Songy, Principal, CSRS; Mr. Chris Pellegrim, Principal, CSRS; Mr. Curt Soderberg, Principal, CSRS; Dr. Richard Koubek, Dean, LSU College of Engineering; Maj. Gen. William Bowdon, USMC (retired), President and CEO of LSU Foundation

### CSRS, Inc. Pledges \$180,000 to Benefit Civil & Environmental Engineering

The Forever LSU campaign and the LSU College of Engineering recently announced a pledge of \$180,000 from CSRS, Inc., a Baton Rouge-based engineering, architectural, and program management firm, to establish and fund an endowed distinguished professorship in Coastal Engineering in the LSU Department of Civil & Environmental Engineering (CEE).

The CSRS Distinguished Professorship in Coastal Engineering is the first gift established to support faculty for the new Coastal Engineering program at LSU. Coastal engineering is an essential component of efforts to preserve and restore the coastal areas of Louisiana and beyond.

"This professorship marks a progressive step of paramount importance for the LSU Coastal Engineering program and our efforts to provide research and development of engineering systems and processes for estuarine-based coastlines," said College of Engineering Dean Richard Koubek. "I commend CSRS for its gracious financial contribution to the enhancement of our university and the quality of education our students will experience."

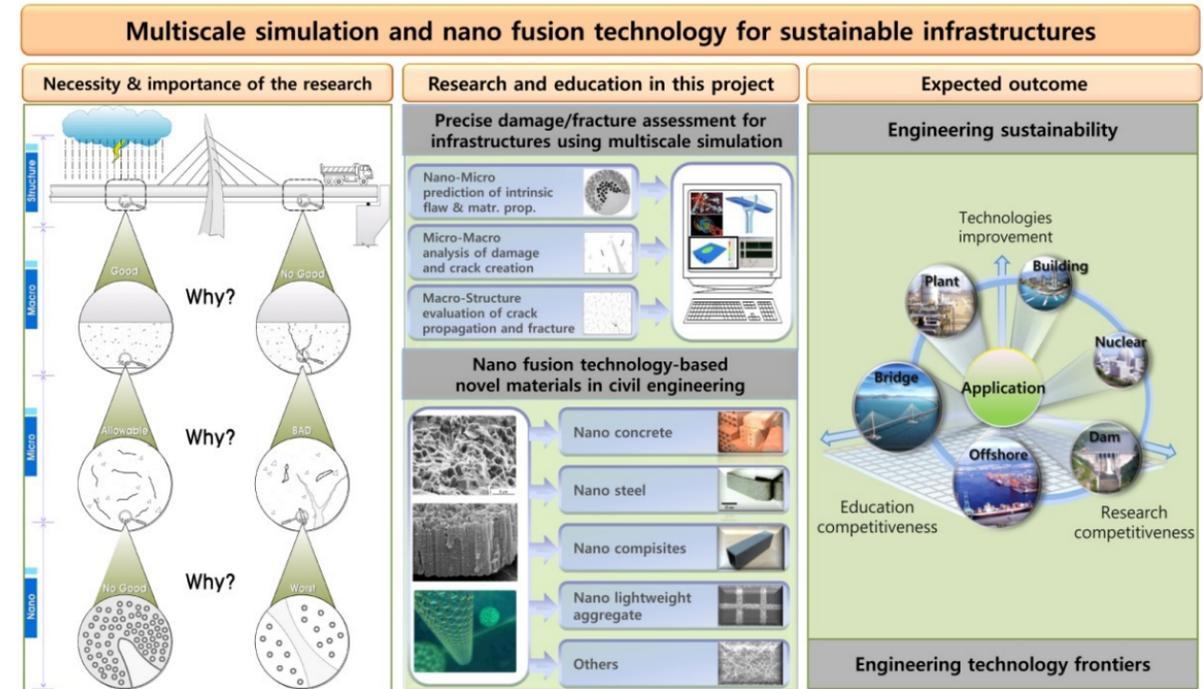
With an expected match of \$120,000 from the Louisiana Board of Regents, this professorship will help LSU faculty address the continuous threat of coastal flooding, the erosion of Louisiana's barrier islands and the loss of coastal wetlands.

"As first-hand observers to the very real challenge of protecting and restoring Louisiana's coastline, CSRS is committed to helping LSU initiate this unique and promising program aimed at the development of engineering systems and processes for coastal restoration," said CSRS principal Ronald Rodi, P.E. "While this gift is the first of its kind, it is our hope that our gift will encourage others in the community to similarly show their support for this program."

The Coastal Engineering program at LSU was developed in response to the increased emphasis placed statewide on addressing the crisis of Louisiana's deteriorating coastline. The program provides a unique opportunity for those choosing to pursue a career in coastal protection and restoration engineering.

"This gift will be a tremendous asset in helping us to retain top quality faculty for our new Coastal Engineering program," stated George Z. Voyiadjis, Boyd Professor and CEE Department Chair. "We are very appreciative to the CSRS partners, including LSU Engineering alumni Michael Songy and Ron Rodi for their generous support of this vital effort. We also applaud Mr. Rodi for his continued leadership as Chairman of our Civil & Environmental Engineering External Advisory Board as well as our Forever LSU Campaign Steering Committee."

Founded in 1978, CSRS, Inc. is a Louisiana corporation wholly owned by Curtis D. Soderberg, AIA, Michael B. Songy, P.E., P.L.S., Ronald J. Rodi, P.E., and Christopher J. Pellegrin, AIA. CSRS provides a full range



#### PROJECT CONTENTS

This project consists of two main parts which are education activity and collaboration research.

**Education Activity:** Scholars in the quantum/nano/micro/macro mechanics, foreign professors who were invited through the WCU project will open the lectures closely associated with the project topic at Hanyang University. Lectures on the introduction of nano-materials and the basic concept of nano-mechanics will be held at Hanyang University. Also, including periodic seminars, those for multi-scale simulations, nano composite materials, and applications of nano fusion technologies to construction materials. In addition, advanced education system will be introduced by the joint-lecture and academic advices from invited great scholars.

**Collaboration Research:** In order to develop multi-scale simulation methods and new materials for civil-infrastructures, the accuracy for analysis methodology should be verified firstly with established research data and experience. For total 3 years, this project will proceed with two steps: (1) the development of new analytical simulation methods (i.e. Multi-scale simulation) and (2) the development of new construction materials based on the prediction and verification of proposed methods.

#### EXPECTED PROJECT OUTPUTS

Many ideal benefits in terms of academic, engineering, and economic fields can be accompanied with expected project outputs. Expected research effects by completing this research projects are summarized as below (1 to 3 for academic fields and 4 to 6 for economic filed):

- 1 Achievement of creative R&D through the application of the nano-fusion technology to construction.
- 2 Training of human resources to lead the innovative research in the sustainable construction field.
- 3 Formation of research collaboration in the field of nano fusion and multi-scale analysis.
- 4 Energy saving effects for Green-Growth Expectation.
- 5 Obtaining of advanced source skill with cost reduction.
- 6 Expectation of brilliant growth of new construction material research.



Hamilton, Vice President of Construction for Walmart and a 1984 LSU Civil Engineering Alumnus

### Pollution Control and Environmental Sustainability Laboratories

The LSU College of Engineering is committed to transforming lives through research and education in the areas of environmental sustainability and pollution control. To partner in this effort, Walmart has chosen a philanthropic investment opportunity through the LSU Forever LSU Campaign to sponsor two LSU Department of Civil & Environmental Engineering (CEE) laboratories and physically improve these laboratories, giving LSU students and faculty the tools they need to excel.

Recently approved by the LSU Board of Supervisors, the Walmart Laboratory for the Study of Pollution Control and the Sam's Club Laboratory for Environmental Sustainability will be used for instruction and research in the designated areas of environmental sustainability and pollution control.

"These laboratories offer the College of Engineering the mechanism to engage students and faculty in discovering new approaches toward environmental protection and preservation of natural resources," said College of Engineering Dean Richard Koubek. "In addition, LSU engineering students will have an opportunity to investigate more options for renewable energy and zero waste capabilities."

Mr. Patrick Hamilton, a 1984 LSU Civil Engineering alumnus and Vice President of Construction for Walmart is responsible for the construction of Walmart and Sam's Club facilities throughout the United States. Hamilton is a staunch advocate of LSU and particularly the CEE Department.

According to Hamilton, "The Walmart Construction and Stormwater Compliance Divisions have recently made several donations to organizations and projects related to the improvement of water quality. In evaluating opportunities to donate, we consider the project's impact on such things as education, diversity, water quality and benefit to the communities that we serve through our Wal-Mart stores and Sam's Clubs. We were excited about the opportunity to work with LSU on these projects as they satisfied several of these criteria. We look forward to hearing about the learning experiences of LSU students in the Walmart Laboratory for the Study of Pollution Control and the Sam's Club Laboratory for Environmental Sustainability."

George Z. Voyiadjis, Boyd Professor and CEE Department Chair explained the importance of this gift, "The laboratory, housed within LSU's Department of Civil and Environmental Engineering, will be used for undergraduate and graduate classroom demonstrations and laboratory classes. When not used for classes, the laboratory will be used for stu-

Below: Maj. Gen. William Bowdon, USMC (retired), President and CEO LSU Foundation; Patrick Hamilton, Vice President of Construction for Walmart and a 1984 LSU Civil Engineering Alumnus; Dr. George Z. Voyiadjis, LSU Boyd Professor and CEE Department Chair; and Dr. Richard Koubek, Dean of the LSU College of Engineering



Above: Dr. Richard Koubek, Dean of the LSU College of Engineering; Patrick Hamilton, Vice President of Construction for Walmart and a 1984 LSU Civil Engineering Alumnus; Dr. George Z. Voyiadjis, LSU Boyd Professor and CEE Department Chair; Dr. Astrid Merget, LSU Executive Vice Chancellor and Provost; and Maj. Gen. William Bowdon, USMC (retired), President and CEO LSU Foundation

dent and faculty research involving control of environmental pollutants. The equipment will markedly expand the Department's capacity for students to perform hands-on experiments as an important part of their formal coursework. The infrastructure will also allow students and faculty to perform meaningful research in the area of pollution control and environmental sustainability."

In 2008, Walmart and its Foundation gave more than \$66 million to fund continued support of students and opportunities in post-secondary education. Through its scholarship programs alone, the Walmart Foundation awarded more than \$8 million in scholarship funding in 2008. By supporting education, the Walmart Foundation ensures that the leaders of

tomorrow have access to the quality education opportunities they need to be successful today.

Support for LSU CEE, like that shown by Walmart and Sam's Club, helps the College of Engineering move closer to its Forever LSU campaign goal of attaining \$100 million in support for the college. Forever LSU has an overall goal of attaining more than \$750 million for the university by the end of 2010. To find out how to become involved with the campaign for LSU's future, visit [www.eng.lsu.edu/alumni/contribute.html](http://www.eng.lsu.edu/alumni/contribute.html) or [www.foreverlsu.org](http://www.foreverlsu.org).

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### Fugro Consultants, Inc. Makes Donation to CEE

The Department of Civil and Environmental Engineering would like to thank Fugro Consultants, Inc. for their recent contribution to the departmental campaign.

"LSU has a large and strong civil engineering program with an academic emphasis on Cone Penetration Testing (CPT). Our CPT services have provided significantly to Fugro Consultants' success," said Joseph Cibor, President of Fugro Consultants, Inc. "LSU has long been a source of technical talent and leadership

through top-flight academia and service. Many of our employees received their education at LSU and, we are honored to recognize the institution's heritage and to invest in its future."

Fugro Consultants represents one of the strongest geotechnical and materials engineering and testing resources in the industry. With a staff of engineers, geologists, scientists, and technicians, Fugro works through a network of offices and technical centers to service projects throughout the United States, Latin America, and abroad.



Above: Dr. George Z. Voyiadjis, CEE Department Chair; Joseph Cibor, President of Fugro Consultants, Inc.; Recep Yilmaz, Senior Vice President of Fugro Consultants, Inc. and a member of the CEE Hall of Distinction; Don Eisenberg, Associate Director of Development for the College of Engineering