Don’t forget to check out the Department of Civil and Environmental Engineering Web Site! www.cee.lsu.edu

- Find out the latest information about the CEE Department
- Contact faculty and staff
- Get information about graduate and undergraduate programs
- Find out the most up-to-date information about student organizations
- and much more!

Contributions to the newsletter are always welcome. If you have news that would be of interest to other CEEs or your classmates, please send it to us so it can be included in a future edition.

Tel. (225) 578-8442 Fax (225) 578-4945

Please contact Dr. George Z. Voyiadis for more details
The LSU Hurricane Center is a multidisciplinary Center dedicated to research and education on hurricanes and other hazards and their impacts on the natural, built, and human environments. Faculty from seven colleges and dozens of departments, centers, and institutes across the campus collaborate on large interdisciplinary projects. Collaborating units include the Southern Regional Climate Center, the Coastal Studies Institute, Department of Environmental Studies, and LSU Earth Surf Lab. The Center is physically located in Civil Engineering, and more than half of the CEE faculty are actively collaborating with the Center on one or more projects.

Since its inception two and a half years ago, the Center has garnered nearly $5 million in competitive, externally funded research and education programs. Funding sources include the National Science Foundation, Louisiana Board of Regents, Louisiana Sea Grant, and several state and local government agencies (including matching) and pass-through funds from the Federal Emergency Management Agency and Federal Highway Administration. Some of the major projects currently underway in the Center are described below, along with brief biographical sketches of several of the faculty. Additional information is available on the web at www.hurricane.lsu.edu.

A three-year project funded by the National Science Foundation (NSF) will define and create the new discipline of Hurricane Engineering. It addresses planning, analysis, design, response, and recovery of civil engineering systems. Project deliverables include new courses, curriculum materials, and a book. Marc Levenson is the Project Director, and is also leading the structural engineering tasks. Brian Whiticker is leading the transportation engineering tasks with Chester Wilcox and John Metcalf. Bill Moe is leading the environmental component, with Dean Adams, John Sanderson, John Faust, and Danny Ruck (Chevron). Water resources tasks are being led by Vijay Singh, with Joe Scher typed, Iver van Heerden, and Chester Wilcox. Central technical tasks are being led by Dante Fratik, with Roger Sallis.

The LSU Hurricane Center has created a new undergraduate minor in Disaster Science and Management (DSM). This program combines engineering, coastal and environmental sciences, planning, social sciences, and geographic information sciences to bring science and technology to the fields of emergency management and design of sustainable communities. The DSM Minor is housed in the College of Arts and Sciences but available campus-wide. Planning for an interdisciplinary graduate concentration in DSM is underway. John Faust (Environmental Studies) and Marc Levenson are leading the planning efforts, and Iver van Heerden is leading the pilot DSM course this semester, titled “Disasters, Engineering, and the Environment.”

The Department of Civil and Environmental Engineering wants to know where life has taken you. Who are you working for and what is your title? Have you received any recognition for your work? Are you working on an especially challenging project?

Please complete the following information and attach any additional comments you may have. Space permitting, we would like to use photos of you, your family or your latest project.

Please e-mail your information with attached photos to cesal@lsu.edu. Or, you may mail your submission to:
Civil and Environmental Engineering, LSU, 3418 CEBA Building, Baton Rouge, LA 70803-6405.

CEE ALUMNI INFORMATION

Name: ___________________________ Degree: __________________________ Year: __________________________

Home Address: ___________________________

Home Telephone: ___________________________ Email: ___________________________

Position Title: ___________________________

Firm: ___________________________ Business Telephone: ___________________________

Business Address: ___________________________

Your News: ___________________________

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Alumni Corner

Don Jones, PE, CSP, received the American Society of Safety Engineers (ASSE) Edgar Monsanto Queeny National Safety Professional of the Year Award. He was also recently elected as vice-president of Practices and Standards. The ASSE is the oldest and largest safety engineering organization in the world with over 32,000 members.
The Disaster: A Worst-Case Scenario

The map shows the path of the hurricane and the designated escape routes.

ASCE News

During the fall semester, we are hosting a tailgate party on October 3 for the LSU game. We are still looking for guest speakers to present at our Thursday night meetings. A field trip to the Shreveport area is also in the works for this semester.

For Thanksgiving, we are planning a big Thanksgiving meal and a food drive. We are gearing up for the Concrete Canoe and Steel Bridge Competition at the Deep South Regional Student Conference. This year's competition will be held at Tulane University in New Orleans, La. We are trying to recruit a surveying team for this year's competition. Like last year, the competition should be a great opportunity for all LSU ASCE members to participate in the competitions and activities.

To raise extra money for the club, we have designed a Civil Engineering Polo Shirt. The design, shown below, is available in white, red yellow, or purple collared shirt. The cost is $25. If you are interested in purchasing one, contact us at laasce@hotmai.com and we will send you an order form.

More information about ASCE activities and officer contact information is located on our web page at www.civil engineering LSU. Employers can also check the website for student resumes or send us information about job openings.
The Center was recently awarded $270,000 by the Board of Regents for “Assessment and Remediation of Public Health Threats Due to Hurricanes and Major Flooding Events.” This multidisciplinary proposal includes over 20 faculty from the main campus and the LSU Medical Center in New Orleans. The Project Director is Ivor van Heerden. Participating CEE faculty include John Pardee, Vijay Singh, Brian Wolshon, Marc Levine, and Joe Subhasis.

Ivor van Heerden is also leading a team of doctoral researchers to develop a “worst case scenario” for a catastrophic hurricane strike on the city of New Orleans. This is the first phase of a larger project to develop a comprehensive response/evacuation plan for the city. CEE team members include Joe Subhasis, Vinh Anh An, Marc Levine, Brian Wolshon, and Chester Waddington.

Jefferson Parish (western half of New Orleans metro area) has contracted with the LSU Hurricane Center to study the survivability of parish hospital facilities and their suitability for use as hurricane shelters for persons who can’t evacuate. This project includes wind tunnel testing and structural analysis of the building along with hurricane flood and wind modeling. Investigators are Marc Levine, Dimitrios Kanioupolous (Mechanical Eng), Ivor van Heerden, Joe Subhasis, and Vinh Anh An. An et al. The project’s goal is to provide recommendations for sheltering persons who can’t evacuate.

The Hurricane Center was also awarded a $2,200 thousand Board of Regents Enhancement Grant to acquire field equipment for disaster assessment teams (Ivor van Heerden, Marc Levine, and John Pardee). Brian Wolshon, Chester Waddington, Sheryl Leich, Steve Cai and Marc Levine have several hurricane evacuation-related proposals pending with the Louisiana Transportation Research Center, Federal Highway Administration, NIST, and the American Red Cross to study evacuation issues facing southeastern Louisiana.

Marc L. Levine, Director, LSU Hurricane Center, Associate Professor of Civil and Environmental Engineering and Charles P. Smith Professor, Dr. Levine’s expertise in wind effects on buildings and structures, including such aspects as assessment and design of hurricane shelters, damage investigations, full-scale wind tunnel testing, and wind loads on industrial and petrochemical facilities.

Ivor van Heerden, Deputy Director, LSU Hurricane Center and Associate Professor (Research), CEE. He has expertise in geology, marine sciences, and coastal landforms and restoration issues. Dr. van Heerden spent two years heading the Coastal Restoration Program for the Louisiana Department of Natural Resources, and has worked with coastal communities to develop resource management plans.

Brian Wolshon, Assistant Professor of Civil and Environmental Engineering. Dr. Wolshon is rapidly becoming one of the leading authorities in the country on transportation engineering issues surrounding hurricane evacuations, such as design and operation of contraflow (reverse lane) strategies and application of ITS to evacuations. The Federal Highway Administration recently ordered 1000 copies of his state-of-the-art training report and distributed them to DOT and emergency management agencies all along the hurricane coast.

Joe Subhasis, Director, Louisiana Water Resources Research Institute and Associate Professor of Civil and Environmental Engineering. When questions arise about storm surge flooding in South Louisiana, Dr. Subhasis is the one everyone approaches for answers. He has done storm surge modeling for federal, state and local agencies for the past 23 years. His work was recently featured in the October Issue of Scientific American Magazine, in an article entitled “Drowning New Orleans.”

2002 Transportation Engineering Conference Pronounced a Success

More than 1,000 transportation professionals converged on Baton Rouge to attend the 2002 Louisiana Transportation Engineering Conference. Attendees from throughout Louisiana, 24 other states, and two Canadian provinces represented the public, private, and academic sectors of the transportation industry. The fifth meeting since its inception as a biennial event in 1993, this year’s two and a half-day conference was the largest and most successful yet.

The conference represents a premier tech transfer opportunity for the Louisiana Transportation Research Center which is charged with the accountability for planning, coordinating, and managing for conference. LTRC’s Director, Joe Baker, credits the conference’s success to the enormous partnering effort between LADOTD, LRTC staff, and friends in the entire transportation community.

“One of the goals of the conference is to bring together the transportation community and ACMEASCE members to learn about the latest technologies and best practices in the field,” said Baker.

The conference provided an opportunity for transportation professionals to share innovative technologies and discuss transportation policy, practice, and problems. The program focused on a full complement of technical sessions which facilitated the exchange of new information and innovative technologies in the transportation industry, research results and techniques, or strategies developed. The 45 technical sessions offered areas of interest such as ITS, intermodal issues, highway materials and the engines, changes to the LADOTD Standard Specifications, construction issues, and new design concepts. Attendees to the sessions could earn up to 15 professional development hours which were attractive to engineering attendees.

The conference was well attended by university civil engineering staff and students who comprise about 4 percent of the attendees. There were 56 technical presentations made by 26 LTRC personnel or contract researchers for activities supported by LTRC. 221 Dr. Loyd Morier and 87. The influence of Asphalt Turbo-Grade Materials on Interface Shear Strength - and 87. The Application of Microscope Fracture Technology in Fracture Design". Brian Wolshon, "Highway - Structures and Materials"; "Optimizing the Production of Lighter, Stronger, and Safer Material"; "Designing Concrete with High Performance Materials"; "Precast Concrete Bridge Design and Construction"; "Using Advanced Concrete Materials"; "Using Advanced Concrete Materials"; "Using Advanced Concrete Materials"; and 87. High Performance Concrete". Richard Arndt, "New Concrete"

One of the conference highlights included a tour of the city where viewers saw the historic and innovative materials, equipment, and services provided by state DOT transportation-related consultants and vendors. The tour also provided an opportunity for participants to network and discuss transportation issues and solutions.

With the success of each conference, the number of participants has steadily increased from nearly 700 in 1993 to over 1,400 attendees this year. This continued rate of growth represents a challenge for conference administrators in planning and conducting events in the future.

Baker expressed his appreciation for the leadership role that Kurt Clement, conference administrator, and other members of the transportation community played in this conference.

ASCE NEWS

LSU American Society of Civil Engineers has begun a new year, and participation is already up. The first meeting of the Fall semester saw 60 students in attendance. The news officer for the 2002-2003 year is already hard at work to make this year one of the best yet for Civil and Environmental Engineering students. Continued on Page 10...
Testing Soils in Space

Dr. Khalid Bishnati of CEE is serving as the principal scientist for a Microgravity experiment called Mechanics of Granular Materials (MGM) sponsored by NASA Marshall Space Flight Center. The project includes conducting a series of triaxial experiments on silica sand under very low effective stresses aboard the NASA Space Shuttle. MGM is in collaboration with Professor Stan State University of Colorado at Boulder. The team has two successful missions in 1996 and 1997 and planning for another mission in May of 2002. MGM was selected by NASA Headquarters as one of its top three achievements in the Microgravity program in 1999. You can learn more about MGM by visiting (http://bethol.colorado.edu/bishnati/).

1) A cross section of a sand specimen analyzed using computed tomography.
2) NASA Astronaut Jay Apt prepares MGM specimen for testing aboard the Space Shuttle during the STS-79 mission.

Graduate Student gets NASA Fellowship

NASA Marshall Space Flight Center (MSFC) has selected Branda Norott as a 2002 Graduate Student Researchers Program (GSRP) Fellow. Branda is a graduate student in the Geotechnical Engineering Program under the supervision of Dr. Alshibli. She will conduct most of her thesis research at MSFC utilizing the new Computed Tomography (CT) system to study the shear and instability phenomena in Granular materials.

LWRRI New Directors

Dr. John H. Parker, Elizabeth Howell Stewart Endowed Professor, associate chair for research and associate professor, has been named director of Louisiana Water Resources Research Institute (LWRRI).

The Louisiana Land and Exploration Company College of Engineering Endowed Professor and associate professor, Dr. John J. Salsedonia, has been appointed associate director of LWRRI. Parker is replacing Joseph N. Subarya, former director LWRRI, who retired in June 2002. LWRRI is a multidisciplinary center which is federally mandated to perform a statewide function of promoting research, education and training in water resources.

The Civil and Environmental Engineering Department at the University of Louisiana at Lafayette (UL Lafayette) has selected Dr. John H. Parker and Dr. John J. Salsedonia for their new position.

Research Grants

- Dr. Iver van Beekend “Petroleum Chemical Hazards in a Major Hurricane Flood Within the Louisiana System of New Orleans - GHS Analysis of Oil Spill and Public Health Concerns”, Louisiana Oil Spill Research and Development Program, $40,543.
- Dr. Marc Levitan, Dr. Lingjiang Wang, and Dr. John Salsedonia, “Satellite-based Remote Sensing of Flood Impacts for Improved Emergency Response and Recovery”, Louisiana Seed Grant, $147,077.

Faculty News

Dr. JB Magoffin visited the Federal University of Rio Grande do Sul, Porto Alegre, Brazil, where he gave a short course on Construction Quality Control to industry and university delegates. He also presented seminars on Low Volume Roads and on Soil stabilization at the University. He addressed civil engineering students about graduate study at LSU.

Dr. Marc Levitan (CEE and LSU Hurricane Center) was invited to serve on the Scientific Advisory Committee for the 4th European and African Conference on Wind Engineering (E&AWE), to be held in Prague during July 2005.

Dr. Vijay Singh & Associates invited to chair three sessions at the International Conference on Water Resources Planning and Management in Acid Regions held March 23-27, 2002, in Kuwait. The sessions were: Stochastic Modeling, Surface Water and Ground Water Interactions, and Environmental Hydraulics. He also chaired a panel discussion on preparing a Water Statement for the Government of Kuwait. The conference was organized by Kuwait Institute of Scientific Research and was sponsored by a number of international organizations.

Dr. Vijay Singh has been selected by the Environmental & Water Resources Institute as the recipient of the 2002 Acid Lands Hydraulic Engineering Award. The award reads: “In recognition of leadership, with exceptional research contributions related to hydrodynamic modeling of watershed runoff, erosion, and sediment transport in upland watersheds, analysis and modeling of surface and subsurface water transport in semi-arid and arid environments.”

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NSF Research Awards

Dr. R. Richard Avant, Jr., Assistant Professor of Engineering, Dr. A. Aravindan Ramamurthi (ME), professor and Dr. Lingbo Wang (CRT), assistant professor, in collaboration with Dr. David J. Mikos (former with LSD), University of Wyoming, have participated in collaborative research to receive an NSF Research Award of $211,445 for their work titled “Fracture Properties of Heat Treated Steel Ductile.”

Dr. Sheryll Ishak, assistant professor, received a $100,000 NSF Research Award: Information and Communication Systems for Surface Transportation. The title of his research is “Exploring New Traffic Characteristics and Performance Measures Using Feature Extraction and Texture Characterization of Spatially Temporal Traffic Corridor Maps.”

Dr. Clinton S. Wilson, assistant professor, received an NSF Research Award: Hydrological Sciences, totaling $37,396. His research is titled “Collaborative Research: Measurement and Modeling of Flow and Scale Flows.” Wilson submitted a collaborative proposal with Markus Hilpert, Department of Geography and Environmental Engineering, Johns Hopkins University.

Dr. Clinton S. Wilson, assistant professor, and co-principal investigators Richard Kurtz (Physics) and Kyungmin Han (CAMD), have been awarded the NSF Instrumentation for Materials Research Program Award entitled “Acquisition of a Multiple Monochromator for a Synchrotron X-ray Microtomography Station and Education.” Their award totaled $130,000.