ENGINEERING MONTHLY NEWS LOUISIANA STATE UNIVERSITY COLLEGE OF ENGINEERING

October 2002

CEE Student Participates in a DOTD Co-op Program

Sarah Paul (CEE) is working with **Louay Mohammad** (CEE), on a project entitled: *Title Measuring Specific Gravity* of Aggregates and Asphalt Mixtures: A Comparison Between the Saturated Surface Dry and Vacuum Sealing Methods.

The LADOTD co-op program is a cooperative endeavor between the Louisiana Department of Transportation and Development (LADOTD) and Louisiana universities, providing practical experience to civil engineering students through employment in public sector transportation engineering work. In addition to receiving university academic credit, participating students earn a salary commensurate with their academic level, experience, and ability. The co-op program is intended to enhance the educational process by providing opportunities for participants to explore their interest in transportation engineering through practical experience.

Project Description

Specific gravity plays an important role in the mix design of hot mix asphalt and portland cement concrete. It is the single most specified parameter in the construction industry. Test specimens are routinely tested by the water displacement method for determination of sample bulk specific gravity. The volume of water displaced by the sample and the weight can be used to calculate the specific gravity of the sample. The Saturated Surface Dry (SSD) technique is used for measuring the samples bulk specific gravity. This method works well for dense graded mixes with minimal to no surface texture. However, there are problems when using the water displacement method on samples with absorptive surfaces and open graded mixes. Due to these deficiencies, a fundamental specific gravity measurement approach was developed using vacuum-sealing method that involves the application of vacuum to seal the test specimens. The purpose of this project is to compare bulk specific gravity measurements of aggregates and asphalt mixtures using a conventional SSD technique and the vacuum-sealing method. project includes the specific gravity The scope of the measurements of fine and coarse aggregates as well as loose and compacted asphalt mixtures. The preliminary results from this work showed that the vacuum sealing approach is highly reproducible and are not dependent on material type and/or sample shape.

Sarah N. Paul is the daughter of Danny and Paula Paul of Monterey, Louisiana. She will be receiving a B.S. in civil engineering this May. Sarah is an alumna of Delta Gamma Sorority, member of the LSU Student Chapter of ASCE, the current President of the LSU Chapter of Chi Epsilon, and a two-time recipient of the Louisiana Asphalt Paving Association's Hot Mix Asphalt Scholarship.





Dr. Mohammad and Sarah Paul in the LTRC lab.

New Faculty

Xue-Bin Liang (ECE), assistant professor, received his Ph.D. in 2002 from the University of Delaware. His areas of specialization include wireless communications, information theory, signal and image processing, artificial neural network, and computation and complexity.

W. Todd Monroe (BAE), assistant professor, has joined the Biological and Agricultural

Engineering faculty. Dr. Monroe received his Ph.D. in biomedical engineering from Vanderbilt University in 2001. His areas of specialization are biophotonics, bio-MEMS, and molecular and cellular engineering.

Faculty News



The Indian Institute of Technology in Dehli, India has awarded **Subhash Kak (ECE)** its 2002 Distinguished Alumnus Award.

Muhammad A. Wahab (ME), presented a keynote address at the International Conference on

Manufacturing (ICM-2002), in Dhaka, Bangladesh on August 10, 2002. The topic presented was: "The Onset of Failure during In-service Welding of Gas Pipelines." Over 150 delegates from North America, Europe and Asia attended the conference.



News from the Counselor's Office

Welcome

Please welcome our new counselor in the Dean's Office, **Sandra Harris.** Sandra is a recent LSU graduate from the Counseling Program and has a master's degree in counseling and a specialist in higher education. Sandra will begin on October 14 and will replace Karen Holden.

College of Engineering Proseminar Series

Due to its overwhelming success last fall, the College of Engineering Proseminar Series has been continued this year for faculty interested in learning the latest research findings and best practices in college teaching. Six seminars, offered through the services of the Center for Excellence in Learning and Teaching (CELT), will be held specifically for faculty members with three or fewer years experience. However, any interested faculty members are invited to attend.

Eight faculty members are currently participating in the Proseminar Series: Steven Hall (BAE), Craig Harvey (IMSE), H. Dwayne Jerro (ME), Xue-Bin Liang (ECE), Chuck McAllister (IMSE), Dorel Moldovan (ME), Todd Monroe (BAE), and Muhammad Wahab (ME). Attendees have been pleased with the seminars and have commented, "The session was useful to begin linking my teaching goals to course content" and "I learned the importance of setting goals for our courses and that many of my concerns are other's concerns."

This semester, two seminars have been held. The following schedule lists the remaining seminars:

Seminar 3: Tuesday, October 1 - Instructional Design Seminar 4: Tuesday, October 8 - Using Active Learning Strategies in the College Classroom Seminar 5: Tuesday, October 22 - Assessing and Evaluating Student Learning

Seminar 6: Tuesday, October 29 - Documenting Teaching Effectiveness through Developing a Teaching Portfolio

All seminars are held 3:00-4:30 p.m. in the Dean's Conference Room, CEBA.

Important Dates

Thursday, October 10—ChE Industrial Advisory Committee Dinner at Oak Lodge
Friday, October 11—ChE Industrial Advisory Committee Meeting
Saturday, October 12—ChE Alumni Reunion
Friday, October 18—Dean's Industry Advisory Board Meeting—3225 CEBA

Dr. Liao Returns from Sabbatical

Warren Liao (IMSE), has finished his one-year sabbatical with the Army Research Laboratory. His research during the past year has focused on genetic fuzzy modeling and its application to battle-space decision-making problems. He delivered a seminar to the ARL scientists at the end of his sabbatical tenure. In addition, he submitted a paper to the Army Science Conference together with the Battleship Decision Making team of the Tactical Collaboration and Data Fusion Brand of the Computational and Information Sciences Directorate. The photo was taken at the Beachtree Golf Course, the site of the farewell luncheon.



