Technology Today

Vol 21
No. 1

LTRC

2006

A publication of the Louisiana Transportation Research Center

LTRC Welcomes Paul as New Director

Harold R. "Skip" Paul, P.E., was named Director of LTRC in March 2006. Paul is the fifth director in the center's history, following Ara Armand, P.E. (1986-1989), Lawrence Mann, Jr., Ph.D. (Acting Director, 1990), Peter R. Stopher, Ph.D. (1990-1993), and Joe T. Baker, P.E. (1993-2006).

A graduate of Lehigh University in Bethlehem, Pennsylvania, Paul began his career with DOTD in 1977 as Assistant Bituminous Research Engineer and was promoted to Bituminous Research Engineer in 1982. In 1987, he became the Materials Research Manager at LTRC, and, in 1996, was promoted to Associate Director, Research. Paul has also served in the U.S. Navy Reserve for 39 years. He is currently the Commanding Officer, Naval Criminal Investigative Service HQ 0166, and is a life member of the Naval Reserve Association and the Naval Enlisted Reserve Association. Paul has completed management and leadership training with the U.S. Navy Reserve and at the Government Services Institute in Baton Rouge.

During his career, Paul has had over 40 state/national publications. He is a National Associate Member of the National Academies and is Chair of the AASHTO Research Advisory Committee, Region II. He has also served on the Board of Directors of the Association of Asphalt Paving Technologists (AAPT) and received the 2003 AAPT Award of Recognition. Paul is also an active member of several Transportation Research Board (TRB) committees and National Cooperative Highway Research Program (NCHRP) projects. He is the past chair of the TRB Division A Council, which provides leadership and oversight for over 200 committees involving over 3,500 committee volunteers. He is also the past president of the Louisiana Society of Professional Engineers in Civil Service.

Dates Set for Transportation Engineering Conference

The 2007 LTEC will be held **February 11-14, 2007**, at the River Center in Baton Rouge. As the conference draws closer, program information and online registration will be available on the LTRC web site (www.ltrc.lsu.edu). Mark your calendars, and be sure to check upcoming issues of *Tech Today* for regular conference updates.

Visit our Web site: www.ltrc.lsu.edu

LTRC Sponsors Educational Opportunities

The biennial Transportation Engineering Conference, which was postponed from 2006 to 2007, traditionally helps fulfill PDH requirements for many professionals in the engineering community. In response to its absence this year, LTRC recently sponsored two opportunities for the engineering community to obtain PDHs.

Elevation Seminar

"Elevations in Louisiana: Present Status and Future Challenges," co-sponsored by the LSU Center for GeoInformatics, was presented on March 20 in the DOTD Headquarter Auditorium. One of the speakers, Anthony Cavell, PLS, from the LSU Center for GeoInformatics, emphasized the importance of this topic in the February 2006 issue of *Louisiana Engineer and Surveyor Journal:* "Events of the last few years have highlighted the importance and difficulty of determining accurate heights in Louisiana and the Gulf Coast. The August 2001 Report to Congress by NGS reads, in part, 'Rapid land loss and continuous elevation (height) changes in Louisiana require a well-managed and monitored federal/state geodetic control network to protect the environment, ensure safety of its citizens, and enhance prosperity within the state.' It continues, 'A standard, reliable vertical federal/state geodetic control network does not exist in Louisiana.'"

Along with Cavell, speakers included Dr. Roy K. Dokka, Professor of Civil and Environmental Engineering at LSU, and Denis Riordan, Geodetic Advisor for Louisiana for the NOAA/National Geodetic Survey. Presentations included:

LSU's Dr. Roy K. Dokka speaks about the importance of accurate elevations

Why Accurate Elevations are Essential for the Rebuilding of a Safe and Sustainable South Louisiana (Dokka)

The Status of Vertical Control in Louisiana (Cavell)

Newly Issued Elevations for South Louisiana (Riordan)

Plans to Fix and Maintain the Vertical Control System in Louisiana (Dokka)

The nearly 100 attendees were eligible for two PDHs. You can download these presentations from the LTRC Web site (www.ltrc.lsu.edu/ws_elevations.html).

Pavement Performance Seminar

LTRC continued its series of focused technical conferences with a Pavement Performance Seminar held in Ruston, Alexandria, and Baton Rouge, on April 10-12. This seminar was part of LTRC's ongoing initiative to provide technical leadership through a forum that demonstrates new technologies, implements and publicizes LTRC research, discusses and resolves problems, imports the best practices of others, and partners with the transportation community.

Statewide, the nearly 200 attendees of the one-day seminar heard presentations from LTRC research engineers, DOTD personnel, and private industry representatives on topics including the Dynamic Cone Penetrometer (DCP); Recent Developments in Soil Stabilization; Measurements, Methods, and Materials; and Pavement Preservation. Six PDHs were available for the entire seminar.

Early feedback on the value of the seminar includes the following comments:

"It provided me with information about the DCP and pavement preservation that I was unaware of and very interested in."

"I enjoyed the range of topics and quality of speakers. Also, the blend of research and practical field applications was excellent."

"Topics were pertinent and timely."

Pavement Performance Presentations

Dynamic Cone Penetrometer
DCP: What Is It, How Does It Work, and How Can It Help You?
Gavin Gautreau, LTRC
Application of DCP in Prediction of Resilient Modulus for Subgrade Soils
Louay Mohammad, LTRC
Case Studies and Forensic Analyses
Kevin Gaspard, LTRC

Recent Developments in Soil Stabilization
Build a Reliable Cement-Stabilized Subgrade Layer
Doc Zhang, LTRC
Use of Stabilized Blended Calcium Sulfate in Pavements
Mingjiang Tao, LTRC
Accelerated Loading Evaluation of Base and Sub-base Layers
Zhong Wu, LTRC

Measurements, Methods, and Materials
IRI and Calibration Methods
Luanna Cambas, DOTD
Influence of Tack Coat Type on the Density of Compacted HMA Mixtures
Sam Cooper, LTRC
Performance of RAP as an Interlayer
Louay Mohammad, LTRC

Pavement Preservation
Crack Sealing and Filling
Tom Kelly, Crafco
Seal Coat Best Practices
Kevin King, TXI

You can download these presentations from the LTRC Web site (www.ltrc.lsu.edu.ws_pavement.html).

TTEC Hosts Performance Measures Workshops

DOTD's 2005-2006 Goal 6, Emphasize Performance Measurements, is essential to establishing accountability of our transportation program and credibility with the public. The Change Management Team 1 has determined the department's 5 dashboard measurements and proposed 28 performance measurements that better define the success of the transportation program. Now, each section must establish meaningful performance measures to institutionalize performance-based management throughout DOTD.

In conjunction with LSU's Public Management staff, the Change Management Team developed a training course/workshop on performance measures designed to facilitate the performance measures phase of the strategic planning process for DOTD. As part of this effort, Dr. Sharon Naquin of LSU delivered an executive summary of the course to DOTD's executive team and facilitated the development of agency goals. DOTD's new goals are:

Continuously **improve** the performance of DOTD

Deliver cost-effective products, projects & services in a timely manner

Improve customer service and public confidence

Effectively **develop** and **manage** our human resources

Efficiently **manage** DOTD's financial resources

DOTD Deputy Secretary Cedric Grant discusses agency goals and performance measures

Thirteen two-day workshops were delivered by Dr. Naquin and other members of her staff. The workshops provided an introduction to the role of performance management in DOTD, an overview of the strategic planning process, and tools to develop methods to measure results. The Transportation Training and Education Center (TTEC) hosted these workshops throughout March, April, and May. After attending the workshop, individual districts and sections delivered their goals and performance measures to the Change Management Review Team. Final approval of district and section performance measures will be made by their respective undersecretaries.

After these organizational performance measures are finalized, individual employee expectations and performance measures will be developed to provide the basis of the Personal Performance Review (PPR) system. In this way, employees will gain a better understanding of how their day-to-day performance directly impacts DOTD's success

Performance measurement is a key tool in redefining and "reinventing" government

in fulfilling its goals. Human Resources is providing training on the development of meaningful PPRs.

Early feedback received on the workshop has been overwhelmingly positive. A sampling of comments follows:

"Under stressful conditions, Dr. Naquin modified her class outline, on-the-fly, to adapt it to the classroom participants, and our special needs. I was very impressed."

"Dr. Naquin provided an excellent forum. Her perception of issues in construction allowed good interaction within the group. We accomplished a lot and the two days were enjoyable, even dealing with this subject."

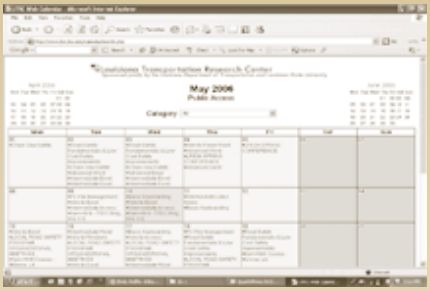
"I have learned more and accomplished more in these two days, then I have in the last two years on this subject matter. Dr. Naquin is very knowledgeable about performance measures and does a great job of communicating and sharing that information with us."

Performance measurement will improve decision making and internal accountability, enhance public accountability, support strategic planning and goal setting, and allow entities to determine the best way to use resources. A key tool in the effort to redefine and "reinvent" government, it allows policy makers, agency directors, program managers, legislators, and the general public to evaluate the effectiveness of government programs.

For more information about the performance measures initiative, contact Mark Morvant, Associate Director, Technology Transfer at (225) 767-9124.

Want to know what's scheduled at LTRC and TTEC? Visit the calendar section of our Web site for the most up-to-date information on PC classes, seminars, continuing education courses, and conferences.

www.ltrc.lsu.edu/calendar/month.php



Correction: In *Tech Today* Volume 20.4, we omitted information from the article "LTRC Represented at TRB Annual Meeting." Chris Abadie, P.E., Materials Research Administrator, participated as a panel member in TRB 2006 Annual Meeting Session 805, Segregation Debate, Method vs. End Result Specifications. We regret the error.

MathCounts News

LTRC's Gavin Gautreau provides instructions

The Louisiana Engineering Society's Baton Rouge Chapter held the 2006 local MathCounts competition in February at the Transportation Training and Education Center (TTEC). MathCounts, a coaching and competition program promoting middle school math achievement, consists of local school teams competing against each other in individual tests, group tests, and an individual speed round.

The event consisted of over 80 students representing 11 middle schools from Baton Rouge and surrounding parishes. The students were tested as individuals and as four-person teams. The top 10 students then proceeded to a countdown round, where word-problems were shown and read, and students buzzed-in, similar to "Jeopardy." The MathCounts event focuses on accuracy and speed. LES and LTRC were proud to support this wonderful event promoting mathematics and engineering in hope to encourage the engineers of tomorrow.

Local "mathletes" compete in the countdown round competition

Defending National Champion, Neal Wu, competed again this year as an 8th grader (his final competition year), and won the local individual title again. Glasgow Elementary School won the team competition, with team members Zesham Ahmed, Devika Balichandran, Luci Li, and Neal Wu. These students and other top finishers participated in the state competition in Alexandria in March. The National Competition was held in Washington, D.C. in May.

Thanks to LTRC, the TTEC Staff, LES Volunteers, Bell South, Grady Crawford Construction, CiCi's Pizza, and participating schools' coaches and parents.

by Gavin Gautreau, P.E.
LTRC Geotechnical Research Manager
Louisiana Engineering Society, Baton Rouge Chapter President

News Briefs

Luanna Cambas Named DOTD Materials Administrator

Effective April 17, 2006, Luanna Cambas was selected as the DOTD Materials Administrator. Previously the Field Quality Assurance Administrator for the Materials and Testing section, she was responsible for administering the department's quality assurance program in the districts.

Before joining the Materials section, Cambas spent four years in the heart of New Orleans in a construction gang as an assistant project engineer inspecting construction of structural bridges, PCCP and asphalt roadways, overlays, embankment, electrical signals and lights, levees, bridge painting work, and a tunnel. For the following eight years, she served as the District 02 laboratory engineer, directing material sampling and testing functions, documenting the district-wide QA/QC program, certifying asphalt and concrete plants, and providing support to construction. She then served as the bituminous construction engineer in the headquarters construction section, providing support to the asphalt community.

Call for Technician Certification Renewal

Beginning January 1, 2006, all technicians wishing to renew their certifications upon expiration will be required to successfully complete a written examination. This requirement is in response to Federal Regulation 23 CFR 637, requiring that all states have a "requalification" program in place, including an evaluation process to ensure that there continues to be qualified personnel on DOTD projects. The five year certification program was implemented in January, 2001, to comply with the regulation.

Anyone with a DOTD certification that expires in 2006 should contact the DOTD District Training Office in their area for information on recertifying. Contacts for these offices and further information can be found on the Certification Web page at http://www.ltrc.lsu.edu/certification.html .

Staff Accomplishments

Chris Abadie, P.E., Materials Research Administrator, has been selected to serve on the FHWA Expert Task Group (ETG) for Superpave Binders.

John Eggers, P.E., Senior Concrete Research Engineer, participated in the Mix and Construction Optimization Pooled Fund Study Group Meeting in St. Louis this April.

Louay Mohammad, Ph.D., EMCRF Manager, was the invited guest speaker at the third Gulf Conference on Roads held on March 6-8 in Muscat, Oman. His presentation was titled "Optimization of Asphalt Concrete Mixture Design."

Dr. Mohammad also received the 2005 Achievement Award from LSU's Department of Civil and Environmental Engineering. He received the award for his development of a recognized research program, numerous publications and presentations, his work to obtain undergraduate student scholarships, and high teaching evaluations.

Walid Alaywan, P.E., Senior Structures Research Engineer, presented "Structures Research at LTRC: Proposal Solicitation; Completed and Ongoing Projects" at the ASCE Acadiana branch in Lafayette.

John B. Metcalf, Freeport-McMoran Chaired Professor of Engineering in the Department of Civil and Environmental Engineering, was awarded the James M. Todd Technological Accomplishment Medal by the Baton Rouge Chapter of the Louisiana Engineering Society.

cont. on p. 8

Recently Published at LTRC

Research Reports

The following can be viewed at www.ltrc.lsu.edu/pubs_final_reports.html

Report 401: Optimization of Subsurface Flow and Associated Treatment Processes
D.M. Griffin, Jr., Ph.D., P.E.

Report 411: Evaluation of Narrow Transverse Contraction Joints in Jointed Plain Concrete Pavements
Masood Rasoulian, P.E.; Hani Titi, Ph.D., P.E.; Mark Martinez, E.I.

Report 415: Evaluation of Capping Systems for High-Strength Concrete Cylinders
John Eggers, P.E.; Sadí Torres, P.E.

Project Capsules

The following can be viewed at www.ltrc.lsu.edu/pubs_projectcapsules.html

Capsule 04-4GT: Effect of Drainage in Unbound Aggregate Bases on Flexible Pavement Performance

News Briefs

(cont. from p. 7)

Metcalf received the award in recognition of his central role in the development of an accelerated loading facility for the testing of road pavements and for his work in the area of low-volume roads and construction quality control. Accelerated loading facilities are used in Australia, China, by the Federal Highway Administration in Washington, D.C., and at LTRC.

The award was presented at a recent LES banquet in Baton Rouge.

Technology Today Publication Statement

Technology Today is a quarterly publication of the Louisiana Transportation Research Center, administered jointly by the Louisiana Department of Transportation and Development and Louisiana State University. For additional information on material included in this newsletter, contact the editor, (225) 767-9145, Louisiana Transportation Research Center, 4101 Gourrier Ave., Baton Rouge, LA 70808-4443.

Harold "Skip" Paul, P.E.
Director, LTRC
Mark Morvant, P.E.
Assoc. Director,
Technology Transfer

Sher Creel
Executive Editor
Emily Wolfe
Editor
Nick Champion
Photographer
Jenny Speights
Webmaster

This public document is published at a total cost of $1192.00. Seventeen hundred copies of the public document were published in this first printing at a cost of $920.00. The total cost of all printings of this document including reprints is $1192.00 This document was published by Louisiana State University, Graphic Services, 3555 River Road, Baton Rouge, to report on the research and training of the Louisiana Transportation Research Center as required in R.S. 48:105. This material was duplicated in accordance with standards for printing by state agencies established pursuant to R.S. 43:31. Printing of this material was purchased in accordance with the provisions of Title 43 of the Louisiana Revised Statutes.