

# Technology Today

Volume 27 Issue 4

Summer 2013

A publication of the Louisiana Transportation Research Center



## In this Issue

SASHTO 2014 Plans Moving Along  
3

Local High School Science Student Seeks  
Project Help from LTRC  
3-4

LTRC Service Award Recognition  
5

Staff Updates and Accomplishments  
6

Recently Published  
7

## Upcoming Events

August 19-22  
SIDRA Workshop  
TTEC

September 10-11  
Roundabout Design Workshop  
TTEC

September 19  
LPESA Fall Meeting  
TTEC

To view more events, please visit  
<http://www.ltrc.lsu.edu>.

## LTRC Hosts Roller Integrated Compaction Monitoring Showcase

Over 85 attendees convened for LTRC's latest showcase, which focused on roller integrated compaction monitoring. Transportation officials from eight states met at the Ramada Conference Center in New Iberia, LA, June 4, 2013, to attend the one-day seminar, which provided technical presentations, other states' examples, and information on the software, among other items. The rollers used in the ongoing LTRC research were available for a demo at the demonstration project's location as part of the showcase as well.

"The event was held to showcase the technology being used on the project in New Iberia, while the rollers were onsite," said Senior Geotechnical Research Engineer Gavin Gautreau, P.E. "It was in partnership with the FHWA (Every Day Counts initiative), and SHRP2



[Performance Specifications for Rapid Renewal (R07)] to speed construction times and reduce congestion and delays to the public. Onboard computers in the rollers give real-time feedback to the roller operators to help them obtain consistent layers and target stiffnesses—faster."

The current LTRC research project is entitled "Field Evaluation of Roller Integrated Compaction Monitoring." The researchers intend to demonstrate how intelligent compaction technology can accelerate construction, reduce re-work, and improve uniformity

of pavement layers. They will evaluate the reliability and potential use of data for acceptance and measurements of in-situ stiffness of the constructed earth materials, linking to properties that relate more directly to design (e.g., modulus) and in-service performance. LTRC will document the impact of implementing these technologies and specification approaches. The demo project, located in New Iberia, LA, will be used as long-term monitoring sections. And finally, researchers worked in conjunction with Strategic Highway Research Program (SHRP) 2 R-07 partners to study the benefits of performance specifications for rapid renewal using the technology and mechanistic-based in-situ point measurements on a new pavement section including subgrade, stabilized subgrade, base course, and hot-mix asphalt (HMA) layers.

The research project will evaluate the technology and its potential implementation logistics in hopes of creating quality, consistent layers for current and future DOTD roads. The technology is still new and not mainstream yet, though researchers see many advantages, including consistency of coverage, digital documentation of efforts, visual representation of roller movements, possible alternatives to nuclear gauges, and stiffness measurements with location position.

LTRC would also like to thank the following showcase sponsors: FHWA, LAPA, Gilchrist Construction, and SHRP2. To learn more about intelligent compaction, please contact Gavin Gautreau at [gavin.gautreau@la.gov](mailto:gavin.gautreau@la.gov) or (225) 767-9110.

## ABOUT INTELLIGENT COMPACTION

This new technology equips modern slow rollers with an integrated measuring system that enables engineers to learn more about pavements' subgrade soils, aggregate bases, stabilized materials, and asphalt-paving materials as the roller is operated on the roadway.

Developed over years, this intelligent compaction technology has made great strides in combining old and new technologies. Instrumentation, computer technology, and GPS have transformed the slow roller into one of the smartest devices on a jobsite.



# SASHTO 2014 Plans Moving Along



While many professionals in the transportation industry are gearing up for this year's SASHTO conference in North Carolina, LTRC and DOTD are getting things moving for next year's

SASTHO, where they will be hosting hundreds of transportation professionals in the city of New Orleans on August 23-27, 2014. The conference's theme is "Jazzin' to SASHTO."

The 2014 logo has been unveiled and the website has gone live at <http://www.ltrc.lsu.edu/sashto2014>, where visitors can currently view a save-the-date and sign up to learn more about next year's conference. Visitors to the site will soon be able to get details on SASHTO events, sponsorships, exhibitors, and much more as the conference approaches.

Representatives from the planning committee will also bring a taste of New Orleans to the 2013 SASHTO trade show and will have more details on hand for what attendees can expect at SASHTO 2014.

For more information regarding SASHTO 2014, please contact Jenny Speights at [jenny.speights@la.gov](mailto:jenny.speights@la.gov) or 225-767-9183.



## Local High School Science Student Seeks Project Help from LTRC

What began as a required grade for school, soon evolved into a new love for transportation and resulted in a number of awards for a local high-school junior—including a college scholarship. St. Josephs Academy's Marygrace Duggar conducted research for her science fair project with the help of Tyson Rupnow, Ph.D., P.E., and Patrick Icenogle, P.E. In a two-part experiment, Duggar used LTRC labs to test the durability of concrete containing fly ash compared to the control of



concrete only containing Portland cement. Duggar partnered with fellow student Olivia Guidry as they developed the rest of their project, which was entitled “A Greener Shade of Gray: The Effects of Fly Ash in Concrete.”

Duggar first met Dr. Rupnow and Mr. Icenogle last summer. “We talked about fly ash and planned the experiments. Later they taught me how to mix concrete and helped me to prepare the samples. Then they taught me how to perform compression tests, resistivity tests, and rapid chloride penetration tests,” explained Duggar. “My time at LTRC provided me with new skills and valuable information about fly ash.”

The girls competed locally, regionally, state-wide, and internationally. At regionals, Duggar and Guidry won their category as well as a special award that gave them a spot at I-SWEEEP, which is an international science fair focused on energy, engineering, and environmental projects. The girls won silver in the engineering category as well as two \$2,000 college scholarships.

Regarding plans for their future after graduation, Duggar said, “Both of us aren't exactly sure what we want to study in college but we are seriously considering going into civil engineering.”



From l to r: Olivia Guidry and Marygrace Duggar

## LTRC Service Award Recognition

Many LTRC employees were recently recognized for their service to the Department at the 2013 Service Awards Ceremony held at DOTD Thursday, May 9. Below is a list of employees from the center who received service awards for service earned as of December 31, 2012.

**35 YEARS**—Harold “Skip” Paul and David Jumper

**30 YEARS**—Mitchell Terrell

**25 YEARS**—Kevin Gaspard

**20 YEARS**—Allison Landry

**15 YEARS**—Douglas Hinton

**10 YEARS**—Kristina Blanchard, Kirk Zeringue,  
Gavin Gautreau, and Jenny Speights

**5 YEARS**—Patrick Frazier, Khalil Hanifa, Keith  
Beard, and Richard Black



*From l to r: Khalil Hanifa, Patrick Frazier, Keith Beard, Mitchell Terrell, Gavin Gautreau, Kirk Zeringue, Allison Landry, Harold “Skip” Paul, and Jenny Speights  
Not pictured: David Jumper, Kevin Gaspard, Douglas Hinton, Kristina Blanchard, and Richard Black.*

## Staff Updates and Accomplishments

Associate Director of Research **Mark Morvant, P.E.**, was appointed as co-chair of the AASHTO Research Advisory Committee (RAC) Task Force: Value of Research.

Training and Development Specialist **Melissa Lee** was recently newly elected to a director position in the Society of Government Meeting Professionals (SGMP) Louisiana chapter. She will be serving on the Hospitality Committee and the Communication/Newsletter Committee.

6

**Marty Mumphrey**, audio visual consultant, was recently earned three Digital Media Design and Engineering certifications: DMC-T, DMC-D, and DMC-E—these are certifications in the following levels: technician level, design level and engineering level.

LTRC Training Events Program Manager **Mary Leah Coco, Ph.D.**, has completed a chapter entitled “Learning Through Immersive Virtual Learning Environments: An Organizational Context” for the book Cross-Cultural Online Learning in Higher Education and Corporate Training, which is being published by IGI Global.

**Keith Beard**, engineering technician DCL, was invited to participate in a workshop for NCHRP Project 20-7(309), National Training: Challenges and Opportunities June 24-25, 2013, located in Irvine, California. The purpose of the project is to look into training of highway agency personnel and identify ideas, for consideration by AASHTO and others, to facilitate meeting training needs of state agency personnel.

**Murad Abu-Farsakh, Ph.D., P.E.**, was recently promoted from associate professor-research to professor-research.

**Louay N. Mohammad, Ph.D.**, LSU civil engineering professor and EMCRF manager, was invited to present at the 14th Annual Association of Modified Asphalt Producers Conference and Workshop on March 20, 2013, in San Antonio, Texas on the “Development of Louisiana’s Balanced Asphalt Mixture Design Methodology.” Mohammad was also invited to present at the 2013 AAPT annual meeting “Leading Edge Workshop: A Practical Look at Tests for Cracking at Intermediate Temperatures” on April 7, 2013, Denver, Colorado, and at the Third International Workshop on “Moisture Induced Damage of Asphalt Mixtures: Characterization, Visualization and Simulation of the Fundamental Process,” April 22-24, 2013, in Doha, Qatar (see photo).



# Recently Published

## Project Capsule 12-3P

*Minimizing Shrinkage Cracking in Cement-Stabilized Bases Through the Use of Micro-cracking*

Zhong Wu, Ph.D., P.E., and Kevin Gaspard, P.E

## Project Capsule 11-1GT

*In-situ Evaluation of Design Parameters and Procedures for Cementitiously Treated Weak Subgrades using Cyclic Plate Load Tests*

Murad Y. Abu-Farsakh, Ph.D., P.E

## Project Capsule 13-9GT

*CORS 911: Continuously Operating Reference Stations for the Bayou Corne Sinkhole*

Joshua D. Kent, Ph.D.

## Project Capsule 13-1C

*Evaluation of MIT-SCAN-T2 for Thickness Quality Control for PCC and HMA Pavements*

Patrick Icenogle, P.E.

## Final Report and Technical Summary 504

*Investigation into the Impact of Privatizing Civil Engineering Operations in Louisiana DOTD*

Chester Wilmot, P.E., Ph.D.

## Final Report and Technical Summary 498

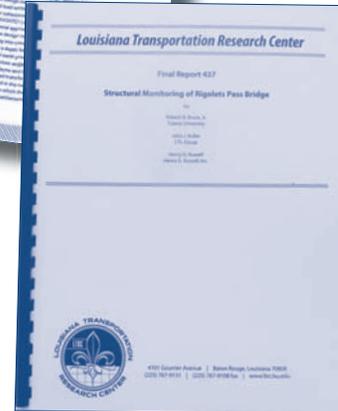
*Geotechnical Information Database – Phase 2*

Scott Deaton, Ph.D.

## Final Report and Technical Summary 465

*Characterization of HMA Mixtures Containing High Reclaimed Asphalt Pavement Content with Crumb Rubber Additives*

Louay Mohammad, Ph.D.



**FIND OUT MORE**  
To view a complete list of LTRC publications, visit the website at [www.ltrc.lsu.edu](http://www.ltrc.lsu.edu).



## Louisiana Transportation Research Center

4101 Gourrier Avenue  
Baton Rouge, LA 70808-4443  
DOTD Section 33

Pre-Sort Standard  
U.S. Postage  
PAID  
Permit No. 936  
Baton Rouge, LA

[www.ltrc.lsu.edu](http://www.ltrc.lsu.edu)

### 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 public information director at 225.767.9183.



Follow us at [www.twitter.com/LTRC\\_Updates](http://www.twitter.com/LTRC_Updates),  
and search for us at [www.facebook.com](http://www.facebook.com).

### LTRC Administration and Publications Staff

**Harold "Skip" Paul, P.E.**, Director  
**Mark Morvant, P.E.**, Associate Director, Research  
**Sam Cooper, MSCE, P.E.**, Associate Director, Tech Transfer and Training  
**Vijaya (VJ) Gopu, Ph.D., P.E.**, Associate Director, External Programs  
**Glynn Cavin, Ph.D.**, Technology Transfer and Training Administrator

**Jenny Speights**, Public Information Director  
**Nick Champion**, Photographer  
**Emily Wolfe**, Multi-Media Specialist  
**Jenny Gilbert**, Editor/Technical Writer  
**Laura Williams**, Editorial Assistant

This public document is published at a total cost of \$553.40. One thousand and one hundred copies of the public document were published in this first printing at a cost of \$553.40. The total cost of all printings of this document, including reprints, is \$553.40. This document was published by Printing Tech, 11930 South Harrell's Ferry 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.