

# Technology Today

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## In this Issue

Louisiana Transportation Conference a Success  
2

LTRC 30th Anniversary: A Look Back  
2-5

Staff Updates and Accomplishments  
6

Recently Published  
7

## Upcoming Events

**National Highway Institute (NHI)  
Course No. 130055 - Safety Inspection  
of In-Service Bridges**

June 13-24, 2016  
TTEC 100

**DOTD ArcGIS I Fundamentals of  
ArcGIS for Transportation**

June 14-16, 2016  
TTEC 179

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

## Louisiana Transportation Conference a Success

Approximately 1,800 people from across the nation attended the 2016 Louisiana Transportation Conference. This year's theme was *Transportation: Making Connections That Matter* and was held February 28-March 2, 2016, at the Baton Rouge River Center. With 72 sessions (including three workshops), transportation professionals, industry partners, and academics exchanged new ideas and methods and discussed changes happening within the industry.

The conference's general session included key speeches by the Honorable John Bel Edwards, Governor, State of Louisiana, and General Richard "Dick" Bursleson, vice president of one of the largest engineering firms in the U.S., Neel-Schaffer. The session also included addresses and welcomes by DOTD Secretary Dr. Shawn Wilson and Frederick "Bud" Wright, AASHTO Executive Director. U.S. Secretary of Transportation Anthony Foxx also conducted a special separate technical session.

Over 200 speakers contributed to the conference as a whole and



led discussions during the four-day conference on a variety of topics from automated vehicles, 3D modeling, to the 2016 DOTD Standard Specifications for Roads and Bridge.

A few technical session topics stood out from among the rest, attracting a couple hundred attendants each. The first and highest attended session was the Construction Roundtable, where a Q&A was held with representatives from DOTD and the industry (AGC, LAPA, and CAAL). The second half of the session served as a Project Engineer/Area Engineer meeting with DOTD HQ construction engineers.

The second popular session featured traffic engineering, which focused on DOTD updating its design guidelines based on the 2011 AASHTO Green Book, context sensitive solutions, and its complete streets policy. The

cont. on pg. 6



# LTRC 30th Anniversary: A Look Back

2



### 1986

LTRC was created by the legislature, housing four labs (asphalt, concrete, geotech, and pavement).



LTAP officially began as a joint undertaking of FHWA, DOTD, and LTRC and LSU and stimulates progressive and cost-effective transfer of high-

way technology and technical assistance to rural and local governments through on-site training, a publications/videotape library, workshops, and newsletters and manuals.

## LSU

The first person from LSU was hired (Dr. Louay Mohammad), giving LTRC the opportunity to establish materials characterization and asphalt research capabilities and skill set.

### 1989

The **Research Problem Identification Committees (RPICs)** accepted the first wave of problem statements, which form the basis for the research program for the next two years. This effort has become essential to the successful development and management of the department's research program.



### 1993

LTRC hosted its first official Louisiana Transportation Engineering Conference.

Organizers later dropped "Engineering" and it now is simply the Louisiana Transportation Conference or LTC.



### 1995

**TIRE reports** were established, giving funding to local professors to explore transformative research ideas. Over the years, TIRE has supported approximately 100 professors.

### 1998

The **LTRC Foundation** was established, providing a unique cooperation among the transportation community (public, private, and academic) who work to improve Louisiana's transportation systems.



The LTRC website was updated to give the center the online presence it needed. Over the years, the site continues to stay

up-to-date with current information and growing capabilities.

### 2004

LTRC began hosting **seminar series**, providing technical leadership through a forum that demonstrates new technologies, publicizes LTRC research, discusses problems, and imports the best practices of others and transportation partners.



## 1987



The Office of Technology Transfer and Training moved from DOTD HR to LTRC to fulfill a core goal of the center. Since its inception, Tech

Transfer and Training continues to evolve and offer more resources than ever before.



LTRC released its first logo as its marketing presence was established.

## 1991



ALF was purchased and started its first experiment in 1994. Since then, LTRC has used ALF for 5-6 projects since, while also adding its new ATLAS device in 2015 to conduct additional research.

**The Engineering Resource Development Program** was developed. It offers entry-level engineers an opportunity to experience several engineering functional areas within the Department and provides a comprehensive view of the Department and its objectives prior to placement.



## 2000

DOTD/LTRC hosted the 59th Annual **Southeastern Association of State Highway and Transportation Officials (SASHTO) Conference** in New Orleans, La. Over 1,000 delegates

attended, including the chief administrative officers and top assistants from the DOTs.

## 2003



**Pavement on the Move (POM)** was created. POM is a multi-use mobile laboratory for collecting data from field construction projects as well as research and training.

## 2006

TTEC opened to the public. The additional LTRC facility is dedicated to the delivery of transportation training, professional development opportunities, continuing education, and technology transfer to engineers, technicians, and other professionals from Louisiana's public and private sectors.



LTRC's External Funding Program was established, where funding opportunities are identified at the national, regional, and state level in the area of transportation engineering, planning, and management. Single or multi-campus faculty teams/clusters are organized, broadening the faculty base involved in transportation related research and LTRC provides guidance to university faculty submitting proposals.

# LTRC 30th Anniversary: A Look Back (continued)

4



LTRC became an NHI regional center, serving as an important educational resource that offers NHI courses and other programs sponsored/offered by NHI.



2008

The LTRC Library at TTEC was established with the goal of supporting researchers at LTRC, DOTD, LSU, and across the nation in their transportation-related research.

A new logo was launched—one that better reflects the center’s drive for research and Louisiana roots. All publications were also redesigned and updated.



LTRC joined social media to share projects, events, and center updates.



The **Transportation Curriculum Council (TCC)** was activated to assist LTRC identify, prioritize, develop, evaluate, and implement transportation related technology transfer, training, work development and educational services for DOTD, and its public and private transportation industry partners.

LTRC became one of the five members of a consortium that recently established a Tier I **University Transportation Center (UTC)** titled “National Center for Intermodal Transportation for Economic Competitiveness” or NCITEC. Since then, LTRC has participated in three other UTCs.



2014

The **Local Road Safety Program (LRSP)** was established under LTAP. The LRSP Team at LTAP conducts outreach to Local Public Agencies (LPA) and facilitates the submission and review of LRSP project applications.



Louisiana’s lead agencies in traffic safety and injury prevention joined together to create the **Louisiana Center for Transportation Safety (LCTS)**, enhancing collaboration between traditional and new partners, promoting road safety research and education, and providing technical assistance and technology transfer to the transportation community and related stakeholders.



2016



LTRC’s YouTube page began actively producing high-quality videos, focusing on subjects and problems important to the Department and center alike.

## 2009



LTRC assisted in establishing the **Southeastern Transportation Consortium (STC)**, creating a way to pool financial, professional, and academic resources to coordinate research and develop improved methods of addressing common problems of transportation systems in participating states.



The LTRC Publications and Electronic Media Department transitioned to electronic publication and distribution of its publications, saving the center thousands of dollars in unnecessary printing costs.

## 2011



The **Intelligent Transportation Systems (ITS) lab** was established, where data is collected, analyzed, and reported as part of the ITS effort in Louisiana. The data is transformed into useful information that is instrumental to procedures and applications that benefit DOTD, the local government, and the general public.

## 2012



The **Project Management and Tracking System (PMTS)** went live, creating a way to better track projects, generate annual work proposals, and give enhanced management abilities to the administration of the research program.

DOTD/LTRC welcomed over 1,270 southeast transportation officials and professionals to the Sheraton in New Orleans, La during the annual **Southeastern Association of State Highway and Transportation Officials (SASHTO) Conference**.



## 2015

LTRC became the first state DOT research center to be certified by NSF to receive major awards.



As you can see, over the last 30 years, the center has evolved from a small state research department into a multi-facility center, boasting over 100 employees, both university and state alike, comprised of numerous state programs, research departments and laboratories, as well as training resources.

## LTC

cont. from pg. 1

presentation focused on the guideline-revision process as well as the direction DOTD will take regarding selection and documentation of geometric and roadway design criteria for future projects. In addition, roundabouts were discussed, highlighting an overview of DOTD's updated design guidance for roundabout projects.



6

And the final high-attending session was *Session 39: Bridge Painting and More*. Presentations discussed the cleaning, repair, and painting of U.S. 190 Mississippi River Bridge as well as a look inside what inspectors look for, issues, and resolutions in terms of painting Louisiana's bridges. The session also included the construction update of the I-49 North, Segment K (I-220 to Martin Luther King Drive) Interchange Project.

And as always, an awards luncheon closed the four-day conference on Wednesday, March 2. There, DOTD officials recognized special achievements in engineering and construction projects, handing out awards to the “best of the best” projects, students, and employees that demonstrate dedication to providing the highest quality in transportation infrastructure.



Visit the 2016 LTC photo gallery at [ltrc.smugmug.com/2016-LTC](http://ltrc.smugmug.com/2016-LTC) to see more images from this year's conference.

Mark your calendars now for the next Louisiana Transportation Conference, which will be held **February 25 - February 28, 2018**, at the Baton Rouge River Center.

## Staff Updates and Accomplishments

LSU Civil Engineering Professor and EMCRF Manager **Louay Mohammad, Ph.D.**, was an invited panelist at the 2016 AAPT Workshop “Debating Cracking Performance Methods—Overview of Current Methods and State of Practice” on March 13, 2016, in Indianapolis, IN.

LTRC welcomes **Angela Rovaris**, LSU Teaching Associate 4. She will begin teaching the DOTD Project Management and Highway Plan Reading classes as well as assisting in updating and developing training courses.

**Md. Nafiul Haque, Ph.D.**, was recently selected as the 2016 LSU Department of Civil and Environmental Engineering Graduate Student of the Year.

We would like to welcome **Paul Hendricks**, the new IT Manager at LTRC.

**Zhong Wu, Ph.D., P.E.**, was recently selected to serve on TRB Standing Committee on Full-Scale Accelerated Pavement Testing—AFD40.

# Recently Published



## **Project Capsule 16-6P**

*Quality Management of Cracking Distress Survey in Flexible Pavements using LTRC Digital Highway Data Vehicle*  
Zhong Wu, Ph.D., P.E.

## **Project Capsule 13-5GT**

*Monitoring of In-Service Geosynthetic Reinforced Soil (GRS) Bridge Abutments in Louisiana*  
Murad Abu-Farsakh, Ph.D., P.E.

## **Project Capsule 15-2SA**

*Development of a Simulation Test Bed for Connected Vehicles using the LSU Driving Simulator*  
Sherif Ishak, Ph.D., P.E.

## **Project Capsule 14-3SS**

*Development of a Mode Choice Model to Estimate Evacuation Transit Demand*  
Chester G. Wilmot, Ph.D., P.E.

## **Project Capsule 15-2SS**

*Cost and Time Benefits for Using Subsurface Utility Engineering in Louisiana*  
Kirk Zeringue, P.E.

## **Project Capsule 13-3GT**

*Finite Element Analysis of the Lateral Load Test on Battered Pile Group at I-10 Twin Span Bridge*  
Murad Abu-Farsakh, Ph.D., P.E.

## **Project Capsule 16-5GT**

*Corrosion Map for Metal Pipes in Coastal Louisiana*  
Sanjay Tewari, Ph.D.

## **Project Capsule 15-3ST**

*Rehabilitation of Deteriorated Timber Piles using Fiber Reinforced Polymer (FRP) Composites*  
Hota GangaRao, Ph.D.

## **Project Capsule 16-5SS**

*Diverted Traffic Measurement*  
Ravindra Gudishala, Ph.D., P.E.

## **Project Capsule 16-1PF**

*Development of a Guidebook for Determining the Value of Research Results*  
Yoojung Yoon, Ph.D.

## **Project Capsule 15-1PF**

*Prep-ME Software Implementation and Enhancement*  
Joshua (Qiang) Li, Ph.D.

## **Final Report and Technical Summary 561**

*Calibration of Region-Specific Gates Pile Driving Formula for LRFD*  
Eduardo A. Tavera, P.E.; Gabriel H. Burnworth; Glenn J. Rix, Ph.D.; and Jongwon Jung, Ph.D.

## **Final Report and Technical Summary 555**

*Field Evaluation of Roller Integrated Intelligent Compaction Monitoring*  
Gavin P. Gautreau, P.E.; Murad Abu-Farsakh, Ph.D., P.E.; and Samuel B. Cooper, III, Ph.D., P.E.

## **Final Report and Technical Summary 410**

*Performance Evaluation of Louisiana Superpave Mixtures*  
Louay N. Mohammad, Ph.D.; Zhong Wu, Ph.D., P.E.; and Amar Raghavendra, P.E.

## **Final Report and Technical Summary 536**

*Testing and Analysis of LWT and SCB Properties of Asphalt Concrete Mixtures*  
Samuel B. Cooper, III, Ph.D., P.E.; William "Bill" King, P.E.; and Md Sharear Kabir, P.E.

## **Final Report and Technical Summary 500**

*Laboratory Evaluation of the Performance of HMA Mixtures Containing Thiopave Additives*  
Louay Mohammad, Ph.D., Samuel B. Cooper, III, Ph.D., P.E.; and Mostafa Elseifi, Ph.D., P.E.

## **Final Report and Technical Summary 552**

*Repair of Morganza Spillway Bridge Bent Pile Cap Using Carbon Fiber Reinforcement (CFR)*  
Perumalsamy N. Balaguru, Ph.D., and Vijaya (V.J.) Gopu, Ph.D., P.E.

## **Final Report and Technical Summary 559**

*Evaluation of the Fatigue and Toughness of Fiber Reinforced Concrete for use as a New Highway Pavement Design*  
John Kevern, Ph.D., P.E.; Tyson Rupnow, Ph.D., P.E.; Matt Mulheron, E.I.; Zachary Collier, E.I.; and Patrick Icenogle, P.E.



## Louisiana Transportation Research Center

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

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### LTRC Administration and Publications Staff

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**Tyson Rupnow, Ph.D., P.E.**, Associate Director, Research  
**Vijaya (VJ) Gopu, Ph.D., P.E.**, Associate Director, External Programs

**Jenny Speights**, Public Information Director  
**Emily Wolfe**, Multi-Media Specialist  
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**Laura Williams**, Editorial Assistant

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