

# Technology Today

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## Upcoming Events

November 13-15  
NHI Course No. 380078 Access  
Management, Location and Design  
TTEC

December 4-6  
NHI Course No. 135046 Stream Stability  
and Scour at Highway Bridges  
TTEC

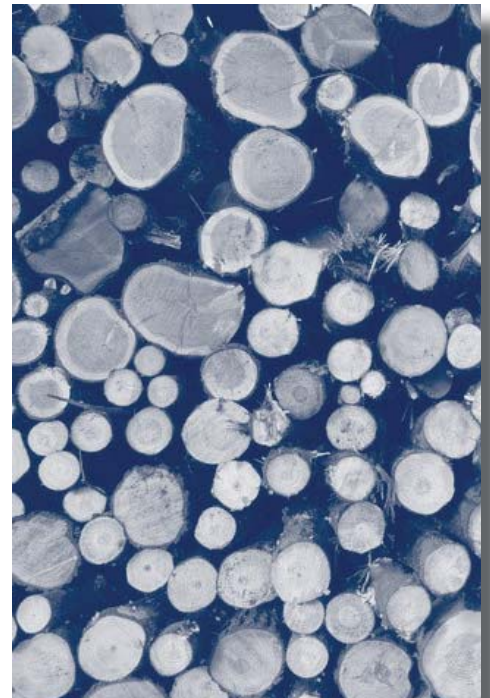
To view more events, please visit  
<http://www.ltrc.lsu.edu>.

## LTRC Taking Southern Lead in National Timber Study

Louisiana maintains and inspects thousands of bridges across the state on a regular basis—most of these bridges are made up of steel or concrete. However, over 2,000 of Louisiana's bridges contain a natural, renewable resource—timber. In fact, this figure recently launched Louisiana to the forefront of an innovative joint FHWA and Forest Products Laboratory (FPL) project entitled "Field Performance of Timber Highway Bridges: A National Study."

Due to a lack of literature on the service life and relative durability of timber bridges, FPL developed this study that will conduct a nation-wide survey to determine the current condition of older timber highway bridges in each of the primary U.S. climate zones.

As the state with second highest number of timber bridges in the nation, the bridge inspection and maintenance teams at DOTD supported by LTRC researchers will lead the Southeast regional study and inspect 15-20 timber bridges across the state. The bridge inspections will be conducted utilizing state-of-the-art NDE inspection tools—the stress wave and resistance micro-drill—and condition coding procedures that comply with the National Bridge Inventory (NBI) requirements. These inspection tools are new to DOTs across the country and provide a quick, thorough, and reliable inspection. The primary focus will be assessing the condition of the timber bridges, forecasting the remaining



service life, and establishing a baseline for long-term monitoring efforts.

Other Southeastern states participating in the study through their respective DOTs are Alabama, Georgia, and North Carolina. In each state, bridge inspection teams will inspect 4-5 selected timber bridges. An engineer from LTRC/FPL will train the bridge inspection teams in each of these participating states in the use of the NDE tools and provide guidance during the inspection.

LTRC Associate Director of External Programs Vijaya (VJ) Gopu, Ph.D., P.E., who is leading the Southeast region study, explained, "This study

will enable FPL to develop an up-to-date publication that focuses on the condition and expected durability of timber highway bridges in the U.S. The study will also provide bridge inspection engineers—who are often not familiar with timber as a bridge material—state-of-the-art tools, methods, and technical guidance to better assess the condition of the timber bridges.”

Participation in this study will not only offer access to the latest NDE tools, but it will allow bridge maintenance/inspection engineers a unique opportunity to contribute to an important national effort that will hopefully educate engineers in this natural resource, so timber may be more utilized in future bridges across the nation.

## 2013 Louisiana Transportation Conference Registration Now Open

Prospective attendees to the next Louisiana Transportation Conference (LTC) can now register online at [http://www.ltrc.lsu.edu/ltc\\_13/reg.html](http://www.ltrc.lsu.edu/ltc_13/reg.html). The upcoming conference’s theme is *Partnerships for Progress in Transportation* and will be held February 17-20, 2013, at the River Center in Baton Rouge, La. Each year the number of attendees grows and is expected to attract over 1500 fellow engineers, researchers, industry partners, and transportation professionals from across the country.

LTC is hosted by DOTD and LTRC and is a wonderful opportunity for professionals from academia, government, and private industry to present ideas and share information important to the continuation of bettering Louisiana’s transportation system. The DOTD Secretary and other DOTD administrative officials will be present to share their goals and expectations as well.

At the conference, attendees can expect to see a number of high-value projects concerning research,

safety, policy, engineering, and education. Innovative ideas and projects that pertain particularly to this year’s theme of progressive partnerships are also a part of the conference program. Also recognized will be the “best of the best” projects over the past couple years—those that show commitment to both the public and behind-the-scenes personnel in keeping roads safe and innovative. Those and other awards will be presented at the Transportation Excellence Awards during the closing luncheon on February 20.

Sponsorships are underway as well. If you have any sponsorship questions or would like to give at any level (bronze, silver, gold, or platinum), please contact Emily Wolfe at [emily.wolfe@la.gov](mailto:emily.wolfe@la.gov) or (225) 767-9145. The final sponsorship deadline is February 6, 2013.

All those attending the conference, including DOTD

employees, are responsible for making their own hotel reservation. When doing so, please identify yourself as part of the LTC.

More information regarding accommodations, the conference itself, awards, and registration can be found on the website: [http://www.ltrc.lsu.edu/ltc\\_13](http://www.ltrc.lsu.edu/ltc_13).

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Visit: [http://www.ltrc.lsu.edu/ltc\\_13](http://www.ltrc.lsu.edu/ltc_13)

# LTRC Awards \$1.2 Million in Projects Sponsored by NCITEC

Through LSU, LTRC is one of the five members of a consortium that recently established a Tier I University Transportation Center titled “National Center for Intermodal Transportation for Economic Competitiveness” or NCITEC. With an NCITEC award of \$600,000, a required 100% match was jointly met by DOTD providing approximately \$250,000 and participating state universities providing the rest. As a result, the Department will be able to carry out \$1.2 million worth of projects that are of interest to Louisiana with minimal investment.

These projects were recently chosen and awarded by DOTD and LTRC and are currently underway. All eight projects were initiated by August 1, 2012— within six months after the notification of the award by RITA:

<p><i>The Impact of Modifying Jones Act on the US Domestic Shipping</i> Asaf Ashar, UNO</p>
<p><i>Improving Freight Crash Incident Management</i> Chester Wilmot, LTRC/LSU</p>
<p><i>Development of a Tool for Documenting, Tracking, Recording and Analyzing Improvements to Intersection Sites and Roadway Departures in Curve Locations</i> Helmut Schneider, LSU</p>
<p><i>Development of Minimum Requirements for Local Growth Management Policies</i> John Renne, UNO</p>
<p><i>Development of Performance Measurement for Freight Management</i> Peter Kelle, LSU</p>
<p><i>Administration</i> Vijaya (VJ) Gopu, LTRC/UNO</p>
<p><i>Economic Impact Analysis of Short Line Railroads</i> Jared Llorens, LSU</p>
<p><i>Developing a Highway Safety Fundamentals Course</i> Xiaoduan Sun, ULL</p>

LTRC also recently learned that another round of projects will be underway next year since NCITEC funding has been extended for fiscal year 2012.

## ABOUT NCITEC

The center, founded in January 2012, was sponsored by the United States Department of Transportation (USDOT) through the Research and Innovative Technology Administration (RITA), which coordinates USDOT’s research and education programs and works to ensure that the nation’s transportation research investments produce results for the American people.

NCITEC’s primary goal is to promote the development of an integrated, economically competitive, efficient, safe, secure, and sustainable national intermodal transportation network by integrating all transportation modes for both freight and passenger mobility.

To learn more about these projects or the NCITEC, please visit: <http://www.ncitec.msstate.edu/> or contact VJ Gopu at [v.gopu@la.gov](mailto:v.gopu@la.gov) or 225-767-9102.



## A Closer Look: LTRC Structured Training Unit

The DOTD Structured Training Program is a department-sanctioned, progressive training curriculum that requires specific work-related training be completed at each level of an employee's career path. This training can involve professional development, technical skills training, continuing education, as well as hands-on and on-the-job training. The program manages the work force development for those in construction, maintenance, and supervisory/leadership positions. The program also acts as a liaison to headquarters' personnel and district training personnel for policy interpretation and compliance decisions.

DOTD Structured Training Director Cindy Twiner explained, "Every year, we create new classes or self-study courses as well as keep training materials up-to-date for DOTD employees." The program will soon release a number of new offerings, including the *Introduction to Pile Driving Inspection* manual, the "Introduction to PCC Paving" web-based course, and a pocket-sized tack coat field inspection manual that can be easily accessed in the field. In addition, some of the regular classes taught across the state include "Basic Flagging, Traffic Control through Maintenance Work Areas"; "ABC's Work Zone Safety"; "Lockout/Tag Out"; and "Superpave Mix Design and Analysis."

The program also creates courses and programs specific to certain needs that arise within the Department. In an effort to streamline these requests, the LTRC Transportation Curriculum Council (TCC) was developed in 2010. The purpose of the committee and related subcommittees is to advise and assist LTRC in the identification, prioritization, development, evaluation, and implementation of transportation related technology transfer, training, work force development, and educational services for DOTD and its public and private transportation industry partners. The TCC is comprised of a main committee and six subcommittees. The main committee meets quarterly to discuss or recommend new training opportunities and review current structured training programs, materials, and strategies.

An ongoing training effort through the Structured Training Unit has been the coordination for DOTD's transition from the ETRN training tracking system to the LaGov/LSO system. Through the new system, LTRC's training program provides more web-based features that allow employees to manage their course loads and get all the necessary information about classes online. The program has also developed training materials to continue to make the switch to LaGov a smooth one.

Overall, DOTD and LTRC recognize that workforce development through structured training, professional development, continuing education, and on-the-job training is essential to maximize employee potential and provide qualified personnel crucial to the effective management of the transportation system. And to that end, the training program plans to continue to provide employees the necessary tools and training to succeed in their position and prepare the Department as a whole as the transportation community grows and develops over time.

For more information on LTRC's training program, contact Cindy Twiner at [cindy.twiner@la.gov](mailto:cindy.twiner@la.gov) or (225) 767-9125.

### RECENT PROMOTIONS

**Kelvin Stone**, recently training and development specialist 3, has been promoted to maintenance training program manager. Prior to his promotion, he was responsible for writing and developing training. In his new position, he oversees decisions as they pertain to maintenance related training materials and programs as well as ensuring they are appropriate.

Transitioning from training and development specialist 3 to headquarters sections training and development program manager, **Rex Ransome** encounters a list of new responsibilities. Ransome now oversees all of HQ sections structured training programs, works with HQ section training coordinators to monitor employees and keep them up-to-date in their training and testing, holds bi-monthly testing, and conducts monthly employee orientation at headquarters.

The most recent addition to the center, **Richard Black**, worked in various state agencies where he assisted in creating state budgets and spearheaded projects for the secretary of state and several lieutenant governors. At LTRC, Black is the new training and development specialist 3 and hopes to bring a different point of view to the position.

**Karen Cordell** was recently promoted from headquarters training program manager to construction and materials staff manager. She now supervises a staff of three instructional designers. In her new position, she manages the Inspector/Technician Certification Program for DOTD and the Louisiana transportation industry. This program develops and coordinates construction and materials training, testing, authorization, certification, and re-certification of inspectors, and technicians statewide in each area of construction.

## Seminar Series Focuses on Crumb Rubber

LTRC continued its seminar series on Wednesday, September 5, 2012, with hosting *Sustainable Materials for Pavement Infrastructure: Use of Waste Tires in Asphalt Mixtures*. LTRC's seminar series is designed to be a forum for presenting new technology, discussing concerns, and exchanging information on focused topics. Over 150 transportation officials, state administrators, engineers, and academia gathered at Baton Rouge's Marriott for the crumb rubber seminar.

Waste tires have become an increasing problem throughout the country as tires continue to fill landfills and collect in unwanted areas, violating public health and safety, while wasting energy and space. However, innovative transportation researchers are utilizing new ways to recycle tires—in pavements across the country.

Chairman of the Rubber Pavement Association, George Way kicked off discussion with "Crumb Rubber 101: Background, History, and Usage." Experiments with asphalt rubber began as early as 1960 with inventor Charles H. McDonald. McDonald would experiment with recycled asphalt in his kitchen. Asphalt rubber research extended in the 1970s with chip seals and spreader truck technology. Seventeen states continue to research and now use tire rubber in asphalt. Many benefits have been found using crumb rubber technology including less reflective cracking, less maintenance, good skid resistance, and less noise.

The environmental discussion continued with Doug Carlson of Liberty Tire Recycling, LLC and Gaylon Baumgardner of Paragon Technical Services. Baumgardner explained that, in the U.S., asphalt rubber or rubber modified bitumen/asphalt is the largest single market for recycled tires and consumes an estimated 12 million tires annually. Jay Winford with Prairie Construction followed points made by Baumgardner and explained the advantages of making hot-mix with ground tire rubber. These advantages included:

- Uses 1 tire per ton of hot-mix produced
- Good for environment
- Open graded mixes—no fibers
- Can be done at plant or pre-mixed
- Keeps tires out of landfills/bayous
- Makes for quiet and blacker pavements
- Cheaper than polymer



The afternoon crumb rubber discussion continued with Florida's experience using crumb rubber asphalt mixtures. Jim Warren of Asphalt Contractors Association of Florida, Inc., explained that, in 1988, Florida directed state agencies to increase the use of recycled products and adopted comprehensive solid waste legislation. Florida has continued crumb rubber mixture research and attributes its success to lower rubber percentages with minimal impact on production and paving operations.

Chris Abadie, DOTD material's engineer administrator, followed with discussion of Louisiana's experience with crumb rubber pavement performance and implementation challenges in Louisiana. Abadie explained that, in Louisiana, crumb rubber provides a sustainable choice supporting the recycling of scrap tires. Louisiana has also seen an improvement in pavement performance as measured by the pavement management system. Jason Davis, also with DOTD, continued discussion of Louisiana's experience with a review of the crumb rubber binder specification.

LTRC's Louay Mohammad, Ph.D., closed out presentations with "Laboratory Performance of HMA Mixtures Containing High RAP Content with Crumb Rubber Additives." Sustainability was a key term during his presentation, emphasizing the environmental effect of crumb rubber once again. Dr. Mohammad's research has yielded a positive influence on the asphalt cement binder community. This research demonstrates improvements in moisture susceptibility and intermediate temperature and high temperature properties of the asphalt binder.

The seminar was closed out with a panel discussion led by Bill King, materials research administrator at LTRC.

LTRC would like to extend special thanks to Diamond B Construction and Ergon for hosting lunch for this event. An evaluation survey of the seminar can be found online at [http://www.ltrc.lsu.edu/fr/crumbrubber\\_survey.html](http://www.ltrc.lsu.edu/fr/crumbrubber_survey.html). Upon completion of the evaluation, presentations provided by seminar speakers will be available in PDF format from our website.

## Local Research Paper Wins Prominent Award

Robert N. Bruce, Ph.D., P.E., FPCI; Henry G. Russell, Ph.D., P.E., S.E.; John J. Roller, P.E., S.E.; and Walid R. Alaywan, Ph.D., P.E., were recently awarded the American Society of Civil Engineers (ASCE) 2012 T.Y. Lin Award. Their paper, entitled “Evaluation of Prestress Loss in High-Strength Concrete Bulb-Tee Girders for the Rigolets Pass Bridge,” appeared in the Winter 2011 issue of *PCI Journal*.



The research described in this paper was sponsored by LTRC and describes the monitoring of prestress losses during the construction of the Rigolets Pass Bridge in Louisiana and provides a detailed discussion of the AASHTO LRFD method for estimating prestress losses. This research led to proposed revisions to the AASHTO RFD *Bridge Design Specifications* that would allow more accurate predictions of prestress losses.

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*Established in 1968, the T.Y. Lin Award honors outstanding engineers and their contributions in the field of prestressed concrete and is bestowed on authors of meaningful papers that advance the field. The award is presented each year to the best paper written or coauthored by members of ASCE in the various publications of ASCE, PCI, and the American Concrete Institute (ACI) during a 12-month period.*

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### FIND OUT MORE

To learn more about the LTRC report *Structural Monitoring of Rigolets Pass Bridge*, visit [http://www.ltrc.lsu.edu/pdf/2009/fr\\_437.pdf](http://www.ltrc.lsu.edu/pdf/2009/fr_437.pdf) on LTRC's website.

## Staff Updates and Accomplishments

LTRC Director **Harold “Skip” Paul, P.E.**, has accepted the appointment to become AASHTO RAC Vice-Chair. Paul’s duties began with the publication of his appointment in the *AASHTO Journal* on September 28, 2012.

TTEC Administrator **Glynn Cavin, Ph.D.**, LTRC Training Events Program Manager, **Mary Leah Coco, Ph.D.**, and Teaching Associate **Gisele Landry** recently completed Phase I of the DOTD course entitled “Foundations of Effective Leadership.” Over 275 participants are scheduled to attend the course, which delves into multiple facets of leadership to improve the way leaders interact with team members for success in the workplace.

LSU Civil Engineering Professor and EMCRF Manager **Louay N. Mohammad, Ph.D.**, was appointed as an expert on the panel overseeing the effort of the National Cooperative Highway Research Program (NCHRP) Synthesis Study 44-07 on thin asphalt concrete overlays.

LTRC congratulates **Mark Martinez, P.E.**, who was promoted to pavement research manager from pavement research engineer on June 11, 2012.

# Recently Published

## Final Report and Technical Summary 435

*Evaluation of the Traffic Safety Benefits of a Lower Speed Limit and Restriction of Trucks to Use of Right Lane Only on I-10 Over the Atchafalaya Basin*

Sherif Ishak, Ph.D.; Brian Wolshon, Ph.D., P.E.; Murat Korkut, MSCE; Yan Qi, Ph.D.; and Xiaoduan Sun, Ph.D., P.E.

## Final Report and Technical Summary 492

*Implementation of Rolling Wheel Deflectometer (RWD) in PMS and Pavement Preservation*

Mostafa A. Elseifi, Ph.D., P.E.; Ahmed M. Abdel-Khalek, MSCE; and Karthik Dasari

## Technical Assistance Report 12-01TA-C

*Evaluation of Girder Cores from the US 90 Bayou Ramos Bridge*

Tyson Rupnow, Ph.D., P.E.

## Technical Summary 484

*Design of Lane Merges at Rural Freeway Construction Work Zones*

Brian Wolshon, Ph.D., P.E., PTOE; Sherif Ishak, Ph.D.; and Wakeel Idewu, Ph.D.

## Project Capsule 10-2GT

*Geotechnical Information Database – Phase II*

Scott L. Deaton, Ph.D.

## Project Capsule 12-5PF

*STC Synthesis of Research Results for Water Quality Management at Construction Sites*

Richard H. Sheffield, P.E.

## Project Capsule 12-11P

*Field Validation of Equivalent Modulus for Stabilized Subgrade Layer*

Mark Martinez, P.E.

## Project Capsule 12-3C

*Investigation of Best Practices for Maintenance of Concrete Bridge Railings*

Marwa M. Hassan, Ph.D.

## Project Capsule 12-7P

*Roller Compacted Concrete over Soil Cement under Accelerated Loading*

Zhong Wu, Ph.D., P.E.

## Project Capsule 12-3PF

*STC Synthesis of Best Practices for Determining Value of Research Results*

Baabak Ashuri, Ph.D.

## Project Capsule 06-3GT

*Field Evaluation of Roller Integrated Compaction Monitoring*

Gavin P. Gautreau, P.E.



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

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## Technology Today Publication Statement

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For additional information on material included in this newsletter, contact the public information director at 225.767.9183.



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