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UPCOMING EVENTS

National Highway Institute (NHI) Course
No. 134006V—Utility Coordination for Highway
Projects (*Virtual Delivery*)
June 15-17

National Highway Institute (NHI) Course
No. 130078—Fracture Critical Inspection Techniques
for Steel Bridges (*TTEC 100*)
July 13-16

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

TRAINING

New Class Explores How Generations Influence Work Environments

Baby boomers, millennials, and generation Z are just some of the labels used to describe the different generations of all the people we live and work around. These terms are probably familiar to most, but unfortunately some people may not be aware these terms also come with a set of stereotypes and misconceptions that can be tricky to unlearn. This is where LTRC's new class "Managing Across Generations" comes in. Strategic Statewide Program Manager Garrett Wheat, Ph.D., created this class not just to educate others about the differences and similarities between the generations but also to foster understanding and connection in the workplace.

After years of taking workshops centered around the subject of multi-generational workplaces, Dr. Wheat decided to create a class offered to DOTD staff that would generate insightful class conversations and give a unique in-depth understanding of each generation. "Discussing multiple generations can seem polarizing on the face of it, so the class tries to address this—as well as typical stereotypes around the topic," he explains. "Issues in the workplace may arise when there are misunderstandings because of different values, attitudes, experiences, opinions,

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habits, behavior, interests, and communication styles. Regardless of the differences between generations, there are also commonalities.”

Developed with the use of multiple webinars, workshops, books, blogs, and news sites, the class focuses on the possible issues and views each generation has when it comes to technology, social media, work-related matters, inter-personal relationships, and leadership. Information presented in the class also incorporates research done by the Pew Research Center and the US Census and includes a 43-page class manual filled with valuable insights. DOTD staff who are curious about the world around them or are interested in learning practical advice for effective communication and teamwork with a diverse array of people will certainly enjoy this class.



Millennial

“The class gives a fun overview of generational changes while pointing out the generational cycle: each generation feels the same about the next generation as the generation before them felt about them.”

—Rebecca Rizzutto, Education Outreach Program Manager



Baby Boomer

“It’s interesting to see some of the things talked about across the various generations that were influences or differences for some of the older generations are circling back among the younger generations.”

—Angela Rovaris, DOTD External Training Director

LTRC hopes the class will soon be placed into LEO and made accessible to anyone who wants to sign up. Through the “Managing Across Generations” class, Dr. Wheat encourages others to be aware of any unconscious biases they may have towards people of different generations. The most important thing to focus on will always be how employees treat and work with others, differences aside.

Meet the Instructor

There are currently no prerequisites or other requirements needed to enroll in “Managing Across Generations,”

and one of LTRC’s newest employees,

Marcus Sylvas, LTRC Leadership Development Program Manager, will be teaching the class. Sylvas joins LTRC from LSU’s Office of Human Resource Management, where he served as a talent acquisition specialist. Familiar with working alongside a wide range of individuals with different ages, job titles, and educational backgrounds, he is looking forward to guiding participants beyond generational perceptions and pushing them to engage in conversations with coworkers and family members about what they learn.

“I would like to continue to grow the great curriculum Dr. Wheat has built over the years. Based on my background, I have different perspectives and ideas that can bolster the materials and resources that are currently available,” Sylvas explained. “My experiences involve interacting with a lot of people from all over the world who have made me look at certain aspects of life differently. I hope to use those experiences to be relatable to my audience, to educate, and to challenge everyone to consider different perspectives and dig deeper within themselves.”

To learn more about the class and future offerings, please contact Marcus Sylvas at 225-767-9112 or marcus.sylvas2@la.gov.



RESEARCH

Researchers Study the Effects of Increased Asphalt Pavement Density

In-place density is essential to measuring the durability and long-term performance of asphalt pavement. If pavement doesn't have satisfactory in-place density, the effectiveness of the pavement can be reduced. This may lead to shortened service-life, including reduction in fatigue performance and rut resistance. Researchers Louay Mohammad, Ph.D., P.E., and Moses Akentuna, Ph.D., P.E., explored how to prevent such negative effects by testing the initial increase of in-place density during pavement design and construction. This is reflected in their report, "Demonstration Project for Enhanced Durability of Asphalt Pavements through Increased In-Place Pavement Density."

"There have been significant advancements in technology and techniques for pavement design and construction. These advancements have the potential to increase asphalt pavement density and improve both durability and cost-effectiveness," explained Dr. Mohammad. "Many of these advancements are already being employed; however, in many instances, standards for in-place density have remained unchanged."

Using already adopted practices, researchers sought to identify a cost-effective, safe method for increasing in-place density of asphalt pavements by partnering with FHWA in a demonstration project conducted in Louisiana. The project took place on Route US 190 near the city of Walker in Livingston Parish.

Dr. Mohammad said, "The rehabilitation project consisted of milling off approximately 4-in. of existing asphalt pavement and replacing it with a 2-in.



Top: All paving activities were conducted at night; Left: Project location

Level 2 binder course mixture followed by a 2-in. Level 2 wearing course mixture meeting the 2016 DOTD Standard Specifications for Roads and Bridges."

Two approaches for increasing in-place density were explored: (1) the addition of an Evotherm warm mix asphalt (WMA) additive at a dosage rate of 0.6% by the weight of mix, and (2) the addition of 0.2% asphalt binder (Plus AC) to the design optimum asphalt binder content of standard dense-graded mixtures. The field component of the research involved three 4,000-ft. long test sections representing control hot-mix asphalt mixtures (HMA), Evotherm WMA mixtures, and the Plus AC HMA mixtures. Each test section included a binder and wearing course for a total of six mixtures. Test sections were constructed to meet current requirements for in-place density (control) as well as a test section that had a 1.5 percent in-place density increase (WMA, Plus AC).

After this, an array of tests, such as the Hamburg loaded wheel tracking and semi-circular bending tests, were used to accurately gauge performance and density measurements.

LTAP Creates Training Video, Holds Virtual Showcases

Amidst COVID-19 times, the Louisiana Local Technical Assistance Program (LTAP) center continues to innovate ways to deliver training to parish engineers, public works personnel, and local transportation workers across the state.

LTAP teamed up with LTRC's Multimedia staff to produce an instructional video to use in their "Work Zone Safety with Basic Flagging" class. This course covers standards and guidelines for traffic controls during road construction, maintenance, utility, and incident management operations. The 24-minute video highlights how a flagger operates to ensure the safety of the motoring public at work zones and during incident management events.

"This video is a great tool we can use for both in-person and virtual work zone safety classes. We'd typically offer this class in person, but now we have the option to offer it virtually. I'm back to teaching it again in person but with limited seating. We couldn't do all of our field exercise considering the

health protocols, so this video should help bridge that gap. Our plan is to also make the course available virtually, so having this video comes in handy," said LTAP Director Steve Strength, who also teaches the course.

You may view the Basic Work Zone Flagger Exercise video at www.ltrc.lsu.edu/ltap/training.html.

Back on the Road—Partly

LTAP is excited to be back on the road teaching Work Zone Safety classes as well as Roads Scholar (RS) classes. Despite limited seating and health protocols that now come with in-person learning, participants have steadily resumed classes as normal in Baton Rouge, West Monroe, Alexandria, Lafayette, and Shreveport since January. Classes have included topics on safety for public works first responders, the importance of proper drainage for lasting roads, and ways to improve signage.

The next class is the beginning of a two-part course titled "Inspection of Local Bridges" (RS #13) and is scheduled for this summer.

In addition, LTAP's ever-popular chainsaw safety classes have been scheduled to be taught in person this year with more information forthcoming. To learn more about LTAP's Roads Scholar Program, visit www.ltrc.lsu.edu/ltap/roads-scholar.html.

LPESA Launches Virtual Showcases

LTAP serves as the communication and membership arm for the Louisiana Parish Engineers and Supervisors Association (LPESA). After the cancellation of LPESA's semi-annual conferences in 2020 due to COVID-19, LTAP piloted the LPESA Virtual Showcases as a monthly eLearning opportunity for the LPESA members and associate members.

Each month since December 2020, an associate member or any of LPESA's partners has shared valuable information on relevant programs, products, tools, and services that may be of interest to the LPESA group and local communities across Louisiana.

The showcases have proven to be successful in continuing collaboration between industry partners and educating members on a variety of topics. Participants earn 1 PDH credit for each session, and they will continue monthly until December 2021. For more information or to sign-up for the next class, please visit www.lpesa.org.



Save the Date

Be on the lookout for these future LTAP offerings and sign-up today:

- LPA Core Training | **July 7, 2021** | Baton Rouge
- LPA CE&I | **July 8, 2021** | Baton Rouge

RESEARCH

Field Trips Resume with Brusly Middle as First Participants

With COVID-19 restrictions being eased at the end of the unusual 2020-20201 school year, LTRC was able to host its first field-trip group of students since the beginning of the pandemic. Mrs. Alvarez, from Brusly Middle School, brought 10 of her students to tour the LTRC labs April 26, 2021, to learn more about the field of civil engineering and research. After attending the RIDES workshop in December, she requested a tour of the labs and for her students to be able to speak engineers in transportation. The field trip began with Dr. Tyson Rupnow giving the students an overview of civil engineering. Students then had the opportunity to tour the ITS, asphalt, concrete, and soils/geotech labs as well as witness demonstrations of the pavement lab machines. The students were able to ask questions as well as participate in staff-led hands-on activities. Brusly Middle was thankful to have the opportunity for students to be exposed to civil engineering and research and for all the engineers that volunteered their time.



RESEARCH

Local Researcher's Citation Impact Attracts National Attention

EMCRF Manager and Civil & Environmental Engineering Professor Louay Mohammad was among the 20 LSU College of Engineering faculty listed as some of the world's leading academics in their fields by Stanford University scholars. The study was published in the PLOS Biology Journal and evaluated scholars' academic performance, using a total of six citation-related criteria, which were combined to determine a single measure, the "composite citation index." LSU reports that overall, 159,684 of the top scholars—representing the top 2 percent globally—from the natural sciences and medicine; as well as social sciences such as psychology, education, and economics; were ranked. All ratings reflect the scholars' career-long citation impact; only citations in refereed journals are considered.



Pavement density continued

Results showed the two techniques to improve in-place density were successful, and other observations were noted as well—one being that the two approaches for increasing in-place density also resulted in better expected resistance to cracking and rutting.

As a result, researchers recommend that DOTD adopt these two technologies (Evotherm WMA and Plus AC HMA) in order to improve in-place density of asphalt pavements in Louisiana. They also recommended long-term monitoring of the pavement test sections to further validate increased in-place density. Researchers anticipate the results from this study will be used as guidance for DOTD in updating current density requirements for asphalt pavements. This study may also be used by the FHWA to provide guidance for improving asphalt pavement durability at a minimal cost.

For more information

For questions relating to this project, please visit LTRC's publications page and select Final Report 628 (18-4B) to read more or contact Dr. Mohammad at (225) 767-9126 or louaym@lsu.edu.



STAFF NEWS

Staff Updates and Accomplishments

Congratulations on the promotion of **Austin Gueho**, **Angela LeMay**, and **Hannah Boggs** to Engineering Technician 5 and the promotion of **Kristina Kleinpeter** to Accountant 3.

Pavement Research Manager **Qiming Chen** was recently appointed for a three-year term to the Transportation Research Board (TRB) AKG 80 Standing Committee on Geosynthetics.

Congratulations to Concrete Research Engineer **Jose Milla** on passing his P.E. exam.

Peyman Barghabany, LSU CEE, Ph.D. candidate and LTRC graduate research assistant, was the recipient of first place award for his presentation titled “Development of Cracking Resistance Prediction Model of Long-term Aged Asphalt Mixtures” at the 2021 Civil Engineering Graduate Conference held on this past spring.

Congratulations to two staff members from the Special Studies group who were recently promoted to Assistant Research Professors: **Raju Thapa**, Ph.D., and **Ruijie “Rebecca” Bian**, Ph.D.

LTRC would like to welcome **Marcus Sylvas** who is the new Leadership Development Program Manager. Sylvas joins us from LSU in the Office of Human Resources. Prior to that, he spent time with the Division of Administration.

Recently Published

Project Capsule 21-2GT

Geotechnical Database, Phase IV

Gavin Gautreau, P.E.

Project Capsule 21-2SS

Evaluate the Impacts of Complete Streets Policy in Louisiana

Ruijie “Rebecca” Bian, Ph.D.

Project Capsule 21-5B

Improvement of Open-Graded Friction Course (OGFC) Performance and Durability through Materials, Design, and Maintenance

Corey Mayeux, P.E.

Final Report and Technical Summary 602 (17-4SS)

Dredging Louisiana’s Navigable Waterways: A Statewide Systematic Approach to Meeting Dredging Needs

Mohan Menon, Ph.D., PMP, PG, and Christopher Fetters, P.E.

Final Report and Technical Summary 631 (18-6C)

Influence of Internal Curing on Measured Resistivity

Jose Milla, Ph.D., P.E.; Tyson Rupnow, Ph.D., P.E.; William J. Saunders, E.I.; and Samuel Cooper, III, Ph.D., P.E.

Final Report and Technical Summary 636 (16-1PF)

Development of a Guidebook for Determining the Value of Research Results

Yoojung Yoon, Ph.D.; Fei Dai, Ph.D.; Charles Wong; and Tse-Huai Liu

Final Report and Technical Summary 641 (18-5SA)

Evaluating Pedestrian Crossings on High-Speed Urban Arterials

Julius Codjoe, Ph.D., P.E.; Elisabeta Mitran, Ph.D.; Paul Eyram Kornyoh; and Kwabena Abedi

Final Report and Technical Summary 644 (15-2SS)

Cost and Time Benefits for Using Subsurface Utility Engineering in Louisiana

Allen Mutoni, Kirk Zeringue, P.E., and Chester Wilmot, Ph.D., P.E.

Final Report and Technical Summary 646 (18-4SS)

ITE Trip Generation Modification Factors for Louisiana

Chester Wilmot, Ph.D., P.E.; Ravindra Gudishala, Ph.D., P.E.; Saba Doulabi, Mishuk Majumder, Peter Stopher, Ph.D., Angela Antipova, Ph.D.

Final Report and Technical Summary 647 (17-3SS)

Hurricane Evacuation Modeling Package

Chester Wilmot Ph.D., P.E.; Ravindra Gudishala, Ph.D., P.E.; Ruijie “Rebecca” Bian, Ph.D.; Divya Kolasani; Srishti Adhakaree; and Haggai Davis, III

Final Report and Technical Summary 648 (19-4SA)

Impact of Centerline Rumble Strips and Shoulder Rumble Strips on all Roadway Departure Crashes in Louisiana Two-lane Highways

Xiaoduan Sun, Ph.D., P.E.; and M. Ashifur Rahman

VIEW ONLINE



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