

# TECHNOLOGY TODAY

VOL 38 ISSUE 1

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## RESEARCH

### LTRC Project Seeks to Design Safer Streets for Louisiana's Pedestrians

Enhancing the safety of Louisiana's roadways is a high priority for LTRC researchers, and this emphasis extends beyond drivers to include the state's pedestrians as well. Alarmed by a 73.5% rise in pedestrian fatalities in the state over the past decade, Hany Hassan, Ph.D., P.E., and his team recently completed an extensive research project seeking to address this growing issue. The project, entitled "Development of Statewide Design Guidelines for Improving Pedestrian Safety on High-Speed Arterials in Louisiana," focused specifically on creating a safer environment for pedestrians on roadways with posted speed limits over 40 miles per hour.

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## TRAINING

### Co-Op & ERDP Alumni: Where Are They Now?

In an effort to engage rising young engineers and encourage them to leverage their knowledge and skills for public service in Louisiana, DOTD facilitates two exciting training programs—the Co-Op Program (organized in partnership with six Louisiana universities) and the Engineering Resource Development Program (ERDP).

While Co-Op is designed for undergraduate students in civil engineering (see an article on our most recent cohort in *Technology Today, Volume 37 Issue 4*), ERDP provides college graduates with entry-level engineering opportunities across DOTD, enabling them to gain a comprehensive view of the department's various functions prior to placement.

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## UPCOMING EVENTS

National Highway Institute SNBI Training  
October 22-24, TTEC 100

2024-25 ATSSA Classes  
October 28-30, TTEC 179

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

Dr. Hassan notes that while there are several existing nationwide recommendations providing pedestrian safety guidelines along low-speed highways, there is a significant gap in guidance for “high-speed arterials.” As one would expect, the risk of severe injury or death in pedestrian-involved crashes on these roadways is significant, so it is paramount that appropriate countermeasures are identified and implemented to reduce such tragedies. This project sought to develop a comprehensive list of such potential safety measures while also uncovering any barriers that may prevent them from being utilized effectively.

The scope of Dr. Hassan and his team’s research spanned both Louisiana and the nation. Within Louisiana, the team categorized and catalogued the state’s network of high-speed arterial roadways, identifying the specific features of sites with a high incidence of pedestrian-involved crashes. Analyzing available crash data from 2007-2021, they found that 63.4% of such crashes occurred at intersections and 36.6% at midblock segments. Specific vulnerabilities included intersections with Stop or Yield signs, roadways lacking appropriate shoulders and sidewalks, and areas without sufficient street lighting. Additionally, the highest proportion of pedestrian-involved crashes occurred on roadways with posted speed limits of 45 miles per hour.

Dr. Hassan also designed and distributed an online survey to DOT professionals in 48 states, aiming to understand how others are working to enhance pedestrian safety in their contexts. The results of the survey revealed that resources provided by the Manual for Uniform Traffic Control Devices (MUTCD) and AASHTO are broadly used to develop safety countermeasures at both intersections and midblock segments. State DOTs used a diverse range of measures, including expanded shoulders and sidewalks, high-visibility crosswalks, “road diets,” and pedestrian countdown signals. While there is no single solution that can eliminate pedestrian injuries and deaths, a combination of research-informed approaches can make a notable difference in reducing these incidents.

Based on the results of both the detailed in-state investigation and extensive nationwide survey, Dr. Hassan and his team developed a matrix of countermeasure recommendations to improve pedestrian safety on high-speed arterials, especially

at high-risk locations. These included: high visibility crosswalks, ADA ramps, pedestrian crossing signs, parking restrictions, signal timing adjustments, Leading Pedestrian Intervals (LPIs), Pedestrian Pushbuttons (PPBs), curb extensions, reduced curb radii, and medians with curb cut.

While additional studies are needed to assess the long-term effectiveness of such measures after implementation, along with other factors contributing to pedestrian injuries and deaths, this project has equipped Louisiana officials with essential information to make strides in this critical area of public wellbeing.

Elisabeta Mitran, Ph.D., Assistant Professor of Research and LTRC’s Safety Research Manager, emphasizes the far-reaching value of Dr. Hassan and his team’s efforts: “This report and guide provide DOTD and other safety stakeholders with essential information to refine their efforts to reduce and prevent pedestrian fatalities and serious injuries in Louisiana. Because information related to pedestrian safety countermeasures on high-speed arterials is scarce, the countermeasure matrices developed by the research team, along with the statewide priority peer groups, will assist not only Louisiana but other states as well in selecting such measures to enhance pedestrian safety.”

*This document, and the information contained herein, is prepared for the purpose of identifying, evaluating, and planning safety improvements on public roads, which may be implemented utilizing federal aid highway funds. This information shall not be subject to discovery or admitted into evidence in a Federal or State court pursuant to 23 U.S.C. § 407.*



Read Final Report and Tech Summary 695  
online: [www.ltrc.lsu.edu/publications.html](http://www.ltrc.lsu.edu/publications.html)

## LTRC Director Cooper Celebrates 40 Years of State Service

Since 2015, Sam Cooper, Jr., Ph.D., P.E. (*pictured at right*), has served as the Director of the Louisiana Transportation Research Center, overseeing its continued development as a pioneer in transportation research, technology transfer, and training statewide and beyond. In May 2024, he was recognized and honored for 40 years of distinguished service to the state of Louisiana. Dr. Cooper's career in government service includes an impressive variety of achievements prior to his directorship at LTRC. Cooper recently reflected on his career journey as an engineer, researcher, and public servant...



### How did your career in state government begin?

**SC:** I am a homebody, and an opportunity was available for me to begin my career while being close to my family. In addition, I loved to hunt, fish, and be outdoors, and being at home in Pineville allowed me to do so.

### What roles and responsibilities did you have before coming to LTRC? Which of these responsibilities did you find most enjoyable, and why?

**SC:** Prior to my time at LTRC, I had numerous roles. I started my career in construction as an Engineer-In-Training. After receiving my P.E. license, I was promoted to the role of Project Engineer in DOTD's Leesville office. From there, I transferred to an Alexandria P.E. office, where I oversaw I-49 construction projects. After that, I spent seven years in the construction section at HQ as an area engineer and the bituminous construction engineer. I was also involved in railroad construction projects.

I spent three years in private industry, still involved in construction. I worked as technical support liaison for one year for a Louisiana-based asphalt supplier, then moved to Florida for two years as the northern division asphalt manager for a construction company. Upon returning to state service, I was employed as a Project Engineer in DOTD's District 02 Thibodeaux office. In 2003, I came to LTRC as the Senior Asphalt Research Engineer.

Being a project engineer was enjoyable because I could look back with pride, knowing that I contributed to the construction and completion of infrastructure projects that had an impact on the daily lives of people. In addition, being the bituminous construction engineer was rewarding. I learned a lot about hot mix design, the causes of roadway failures, the importance of roadway preservation, and how to write specifications that improved the sustainability of our infrastructure. Over my entire career, I have always been surrounded by an amazing staff that was very knowledgeable in their area of expertise. This made my jobs enjoyable, and I learned a tremendous amount from these individuals.





*The ERDP Program's First Participants, Fall 1991*

Both of these programs frequently serve as a forerunner to full-time employment in the department, making them invaluable not only for participants' education and careers but for the health of the state's transportation workforce as well. LTRC's Publications Team recently hosted a conversation with four Co-Op/ERDP alumni to learn about their time within the program and how those formative experiences launched their thriving transportation careers.

### **How did you first learn about the Co-Op/ERDP program, and what motivated you to participate?**

**Hadi Shirazi, Traffic Engineering Management, DOTD (Retired):** I was approached by a representative of Mr. Joe Baker in March 1991 as I was finishing my Bachelor of

Science in Civil Engineering at the University of Mississippi. The ERDP program was just beginning, and he explained how it was set up and its potential benefits for a young engineer like me.

**Mathilda Rilovich, Traffic Engineering Development Administrator, DOTD:** I worked for a private engineering firm for a few years, and after leaving, I traveled for a couple years. When I finally returned to the real world, my job opportunities were limited due to the big gap in my resume. I had no idea what I was really signing up for (with ERDP), but it turned out to be a wonderful blessing.

**Justin Schexnayder, Transportation Department Manager, HNTB Gulf Coast:** In 2007, while working in the LSU College of Engineering office, my supervisor, Don Eisenberg, introduced me to the Co-Op Program. Don was working with alumni to build a new asphalt lab in honor of their father, and it was through his foresight and encouragement that I decided to explore the Co-Op opportunity. As I approached graduation in 2009, the economy was facing significant challenges, and most engineering firms had frozen hiring. Fortunately, my involvement in the Co-Op Program provided me with the connections needed to apply for ERDP, which became a critical step in launching my career.

### **What was the most enjoyable and/or rewarding aspect of your time in the Co-Op/ERDP program?**

**Corey Mayeux, Technology Transfer Engineer, LTRC:** The relationships that I built during that time are priceless. Additionally, I learned a ton and felt like I made meaningful contributions to several projects.

**HS:** The opportunity to meet and get to know personnel in different sections of the department, and to learn how each section contributes uniquely to the whole of DOTD. I really enjoyed growing to understand and respect the functionality of each individual unit.

**MR:** I met a lot of great people, and it was interesting to see how diverse the department really is. Most people might think DOTD just builds roads, but there are so many other areas like bridge, safety, environmental, soils/foundations, surveying, even aviation! The most enjoyable moments were two field trips I went on—one to the New Orleans International Airport, where we got a tour of the flight control tower fourteen stories in the air, and another where we flew DOTD's own airplane to take some aerial imagery. The pilot even let me take control of the plane for a few minutes while we were in the air!

**JS:** The most rewarding aspect of my time in the program was the relationships that I built. I had the opportunity to work alongside people from all over the world, gaining insights into their diverse cultures and research perspectives. These connections had endured over the years, and I still enjoy reconnecting with many of them at engineering conferences and events.

## How did your time in the Co-Op/ERDP program prepare you for a long-term career within DOTD?

**CM:** As a student, the Co-Op program was a great opportunity for me to get hands-on engineering experience and make connections with others across the department. These connections also led to my first job out of college within the department.

**HS:** I was one of the first participants in the ERDP program, and I spent 26 months gaining experience in delivering projects within the department. I learned how and with whom to communicate, how to request items and tasks, and how to accomplish and deliver projects throughout the department. This prepared me well for a 34-year career in the department, all the way to my retirement in August 2024.

## What would you say to a student or recent graduate considering applying to participate in the Co-Op/ERDP program?

**CM:** I would say that it is a great opportunity to learn about the department and possibly find yourself a role with the department after graduation. No matter what, it will definitely make a positive contribution to your long-term future as an engineer.

**HS:** Employees who can rotate roles and develop their skills are more motivated in their work, leading to improved performance. A program like ERDP can help people understand their strengths and limitations, maximizing their performance capability and increasing their feeling of value within the department.

**MR:** I would say, “Go for it!” The program allows you to see diversity among the various engineering disciplines. When I was in college, the curriculum ranged from structural, environmental, geotechnical, water, and more—and after graduating, I still wasn’t “in love” with any specific discipline. ERDP allowed me to experience what it would be like working in those fields day in and day out. I quickly realized what type of work I did and did not enjoy doing. Eventually, I ended up in Traffic Engineering, which I didn’t even know existed when I was in school, and it has been an exciting journey for the last nine years.

**JS:** Do it! The Co-Op/ERDP programs offer invaluable hands-on experience, networking opportunities, and exposure to the industry that you simply can’t get from the classroom alone. It is a chance to apply what you’ve learned, build lasting relationships, and set yourself apart in a competitive job market.

## As you look to the future, what do you hope to accomplish in your career?

**CM:** Simply put, I just want to make a positive contribution to the people and the state of Louisiana. If, at the end of my career, I feel I have done that, then I will consider it a success.

**HS:** I want to help organizations identify and develop workforce talent. By exposing new employees to different areas of the department, I am able to identify individuals with a natural aptitude for certain roles or functions and provide them with additional training and development opportunities.

**MR:** I’d like to continue working in Traffic Engineering to uphold and write new SOPs that make our processes more efficient. I also want to ensure that traffic studies are data-driven and meet the critical needs of the public. It is so important to be a good steward of state and federal funds to produce high-quality infrastructure throughout Louisiana. I take pride in my work, and it gives me a sense of fulfillment to know that I am helping the community. Over the next 20 years, who knows... maybe I’ll become the Chief Engineer. Stay tuned!

**JS:** My hope is to contribute to solutions that enhance connectivity, safety, and quality of life for all people. Beyond the technical work, I am passionate about training and mentoring the next generation of engineers. I believe it is important to pass on the knowledge I’ve gained, not just in terms of technical skill but also in fostering emotional intelligence and other soft skills, which are essential for effective leadership and collaboration. As I continue to grow as a leader, I aim to inspire others to approach transportation with an open mindset—one that values both the physical infrastructure we build and the relationships that drive its success.



Hadi Shirazi,  
DOTD (Retired)



Mathilda Rilovich,  
DOTD



Justin Schexnayder,  
HNTB Gulf Coast



Corey Majeux,  
LTRC

## What has been the most rewarding aspect of your time in state service, and why?

**SC:** Being able to have time with my family, making friends, contributing to a sustainable infrastructure, and earning my advanced degrees.

## As its Director, how do you see LTRC contributing to the wellbeing of the state of Louisiana, and to the transportation industry at large?

**SC:** LTRC is at the forefront of innovative technology. We have numerous projects that deal with sustainability, saving Louisiana's taxpayers money while extending the life of our infrastructure system. LTRC is highly regarded worldwide for our research and our advancement of technology and training. In fact, we recently developed a Memorandum of Understanding with the University of San Jose in Recoletos, Philippines.

## How would you advise and encourage someone early in his or her career considering a role in state government?

**SC:** I would tell them that they need to make sure this is something they really want to do. Being a state employee is very satisfying. Working in state service affords a unique opportunity for work/home balance and educational pursuits, which you don't necessarily have in private industry.

## PUBLICATIONS

### Recently Published

#### Project Capsule 24-6SS

*Statewide Lane Reconfiguration "Road Diet" Screening for Louisiana*

Ruijie "Rebecca" Bian, Ph.D., P.E.

#### Project Capsule 24-2ST

*Redesign of Innovative Gate Arms (Ramp Closure Gate)- Phase 1*  
Sofokli Cakalli, P.E.

#### Project Capsule 24-4GT

*Geotechnical Asset Management (GAM)- Phase 2*  
Nicholas Ferguson, P.E.

#### Final Report and Technical Summary 685 (Project 19-4B)

*Implementation of Semi-Circular Bend (SCB) Test for QC/QA of Asphalt Mixtures*

Louay Mohammed, Ph.D., P.E. (WY); Jun Liu, Ph.D.;

Wei Cao, Ph.D.; Peyman Barghabany, Ph.D.

#### Final Report and Technical Summary 697 (Project 22-4SS)

*Economic Impact of Access Management Treatments*

Stephen Barnes, Ph.D.; Helmut Schneider, Ph.D.;

Eric Mills

#### Final Report and Technical Summary 698 (Project 23-1SS)

*Safety and Traffic Operations at Cloverleaf Interchanges*

Hany Hassan, Ph.D., P.E.; Nischal Khadka



#### VIEW ONLINE

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



## STAFF NEWS

# Updates and Accomplishments

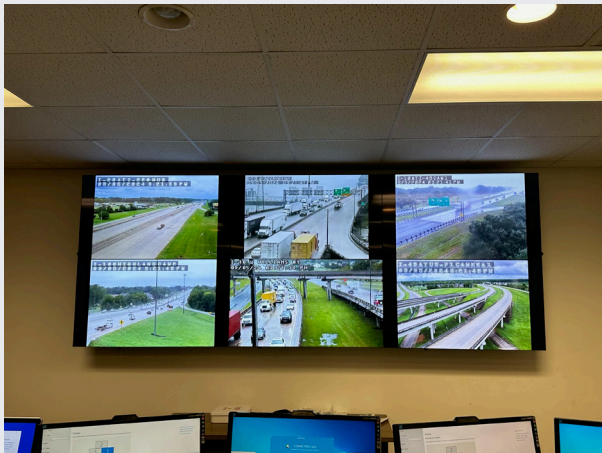
In celebration of the 2024 Paris Olympic Games, Sections 19 and 33 hosted an **LTRC Parade of Nations** in July (*pictured at right*), highlighting the incredible cultural diversity at the center. Representing five continents, team members shared unique aspects and traditions of their native cultures. LTRC is proud to celebrate its multinational heritage, demonstrating that research, training, and tech transfer are truly international missions.



**Ruijie “Rebecca” Bian, Ph.D., P.E.**, was honored by the American Planning Association’s Louisiana Chapter with the Excellence Award for Implementation for LTRC Project 22-5SS, “Analyzing Human Mobility for Active Transportation Planning in Louisiana.”

**Louay Mohammed, Ph.D., P.E.**, was honored by the Louisiana Section of the American Society of Civil Engineers with a Lifetime Achievement Award for his many years of groundbreaking transportation research.

LTRC welcomes **Will Ritter**, Section 33’s new Portland Cement Concrete & Structural Training Program Manager.



Congratulations to **Haley Ortiz** on her promotion to LTAP Innovation and Technology Transfer Manager.

Congratulations to **Melissa Neyland** on her new role as HQ Training/CPTP & Specialized Training Program Manager.

LTRC’s **ITS Lab** was recently revamped to feature a new video wall (*pictured at left*) monitoring transportation systems throughout Louisiana. Special Studies Research Administrator **Julius Codjoe, Ph.D., P.E.**, and his team utilize this lab to explore, develop, and enhance various ITS systems to benefit the state’s drivers.

## SPECIAL EVENTS

# Registration Continues for LTC 2025!

Registration continues for the **Louisiana Transportation Conference 2025**, scheduled for March 16-19 at the Raising Cane’s River Center in Baton Rouge. This year’s theme is “**Pathways to Progress: Shaping the Future of Transportation.**”

We would love to have you join other transportation officials from across the state and beyond to learn from a broad array of industry experts and practitioners. This is a tremendous opportunity to network with others while investing in your personal and professional development. Visit the conference website at [www.ltrc.lsu.edu/ltc\\_25](http://www.ltrc.lsu.edu/ltc_25) to claim your spot today!



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