

UTC Spotlight

University Transportation Centers Program

This month: Louisiana State University | July 2010

National Evacuation Conference Features State-of-the-Art Evacuation Modeling and Analysis

Many recent advancements in the theory and practice of mass evacuation transportation planning, operations, and management spawned the need for a forum where practitioners, academics, and students could discuss current evacuation problems and share state-of-the-art solutions. Building on one of the priorities of the University Transportation Centers (UTC) program—technology transfer—the *Gulf Coast Research Center for Evacuation and Transportation Resiliency*, a UTC jointly administered by Louisiana State

University (LSU) and the University of New Orleans (UNO), led the creation of the inaugural *National Evacuation Conference* (NEC).

The conference, held in February 2010, in New Orleans, LA, brought together hundreds of experts from government, private industry, academia, national laboratories, and non-profit organizations in the fields of emergency management, engineering, law, sociological and behavioral sciences, human and

animal medicine, and law enforcement to foster an interdisciplinary exchange of ideas. The NEC included more than 70 speakers from around the United States and several foreign countries presenting on topics that ranged from the challenges faced by special needs populations during disasters to national evacuation policy development.

Recent Disasters Spawn Developments

Many developments in evacuation procedures are a direct result of lessons learned from recent high-profile disasters that focused attention on the need to better prepare for and

carry out emergency evacuations. The Center is at the forefront of research in evacuation planning and operations.

Much of the Center's research is motivated by the needs of transportation and emergency management officials along the Gulf Coast. However, the UTC is also active in areas of the country where threats exist from hazards such as wildfires, chemical and radiological releases, tsunamis, and terrorist attacks. The recognition of the growing importance of evacuation and transportation resiliency and the need to connect the fields of transportation and emergency management has also led agencies like the U.S. Department of Homeland Security, U.S. Department of Transportation, National Cooperative Highway Research Program, and the National Science Foundation to support the Center's research projects. The Center seeks to develop and analyze new techniques that will create a better understanding of factors that impact the effectiveness and efficiency of transportation systems during emergency evacuations and seek to find ways to create a more resilient transportation system.

National Evacuation Conference

The NEC featured significant involvement from students at LSU and UNO, providing them the opportunity to learn and interact directly with experts in the field. Perhaps most exciting were the keynote speakers that made up a Who's Who of emergency preparedness and evacuation transportation experts from around the United States. They included General Russel Honore', who coordinated military efforts in the aftermath of Hurricane Katrina and delivered the message that: "We as a society and as individuals must be prepared for future disasters." Other speakers included Rear Admiral Mary Landry of the U.S. Coast Guard, the emergency management directors from all the Gulf States, the City of New Orleans, and the Federal Emergency Management Administration (FEMA) as well as the directors of the National Council on Disability, the American Planning Association, and officials from the Nuclear Regulatory Commission and the Sandia National Laboratories who spoke on the development of new guidance for evacuation time estimates for nuclear power plants.



National Evacuation Conference

John Renne speaking at the opening reception for the 2010 National Evacuation Conference

Among the best-represented groups were researchers working in the fields of evacuation and transportation modeling and travel demand estimation. Their discussions included the results of studies from across the United States and Canada on the latest modeling techniques and their application for the analysis of evacuation processes, particularly those that seek to provide answers to some of the most fundamental – yet most difficult to answer – questions of emergency evacuation planners, including:

- How long will it take to evacuate an area?
- If conditions change and the evacuation must end, how many people may be trapped?
- When is the best time to initiate and terminate special management techniques like contraflow?
- What would happen if a key road segment or bridge is lost or if an accident blocks a lane of traffic?
- How many busses are required to evacuate people without their own vehicles?

Researchers showcased projects that used laboratory simulation to forecast evacuation demand and to conduct table-top training exercises. There were also simulation studies that are the first to introduce transit into evacuation simulations to evaluate evacuations of carless populations. Others examined rural transportation infrastructure as a critical component of evacuation plans revealing key features of these facilities that needs to be incorporated into evacuation planning.

Journal Issues

To more widely disseminate the emerging knowledge from the conference, the Center also partnered with the Southeastern Transportation Center at the University of Tennessee to develop a Special Issue of the *Journal of Transportation Safety & Security*, focusing specifically on the latest advancements in evacuation modeling and analysis techniques. Six papers presented at the conference were published in the June 2010 issue, and several more will appear in later issues of the journal. The conference organizers also developed a special issue of the journal *Risk, Hazards and Crisis in Public Policy*. This special issue is scheduled to appear in print in August 2010 and will include six additional papers focusing on evacuation policy making and analyses. ♻️



Satellite Photo of Hurricane Katrina – August 28, 2005

About This Project

Collaborating on this project were Brian Wolshon, Ph.D., P.E., Professor in LSU's Department of Civil and Environmental Engineering and Dr. John Renne, Early Research Professor in UNO's Department of Planning and Urban Studies are the Director and Associate Director, respectively, of the *Gulf Coast Research Center for Evacuation and Transportation Resiliency*. The conference was supported by numerous sponsors including the Association for the Advancement of Retired Persons, U.S. Department of Transportation, and the Louisiana Governor's Office of Homeland Security and Emergency Preparedness. Educational partners included the Stephenson Disaster Management Institute at Louisiana State University, the Southeastern Regional UTS at the University of Tennessee and the University of California Transportation Center. Additional information about the conference, including a list of presenters and dates of future meetings, can be found on the conference website at: www.nationalevacuationconference.org/index.html. For additional information about the *Gulf Coast Research Center for Evacuation and Transportation Resiliency*, visit the website at: www.evaccenter.lsu.edu, or contact Brian Wolshon at: brian@rsip.lsu.edu or John Renne at: jrenne@uno.edu

This newsletter highlights some recent accomplishments and products from one University Transportation Center (UTC). The views presented are those of the authors and not necessarily the views of the Research and Innovative Technology Administration or the U.S. Department of Transportation, which administers the UTC program.



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