University Transportation Center (UTC)
Conference for the Southeastern Region

Georgia Tech Global Learning Center
Atlanta, GA

March 24 and 25, 2014

CONFERENCE PROGRAM

Sponsored by:

- Accelerated Bridge Construction University Transportation Center
- Accessibility and Safety for an Aging Population (ASAP)
- Electric Vehicle Transportation Center
- National Center for Intermodal Transportation for Economic Competitiveness
- National Center for Transit Research
- National Center for Transportation Systems Productivity and Management
- Office of the Assistant Secretary for Research and Technology
- Region 4 - University of Florida, Southeastern Transportation, Research Innovation, Development and Education Center (STRIDE), 2012
- Region 4 - University of Tennessee, Southeastern Transportation Center, 2013
University Transportation Center (UTC) Conference for the Southeastern Region

Georgia Tech is pleased to host the 2nd annual Southeast UTC conference. This event brings together a variety of transportation professionals – faculty, students, practitioners, and public officials – to disseminate information about ongoing activities at partner universities and to further enhance collaboration among the academic community and the private and public sector agencies.

This conference showcases research from 8 southeastern UTCs participating in the University Transportation Center (UTC) program, sponsored by the USDOT’s Office of the Assistant Secretary for Research and Technology (OST-R). These UTCs represent more than 20 universities across the United States. For more information on the UTC program, please see http://www.rita.dot.gov/utc/centers.

In attendance are university faculty, staff and graduate students, as well as federal and state agency representatives, MPOs, transit managers, and consultants in the region and around the country.

 Participating UTCs include:

- Accelerated Bridge Construction University Transportation Center (ABC-UTC)
  - Florida International University (lead university)
  - Iowa State University
  - University of Nevada, Reno

- Accessibility and Safety for an Aging Population (ASAP)
  - Florida State University (lead university)
  - Florida A&M University
  - University of North Florida

- Electric Vehicle Transportation Center (EVTC)
  - University of Central Florida (lead university)
  - Tuskegee University (Alabama)
  - University of Hawaii, Honolulu

- National Center for Intermodal Transportation for Economic Competitiveness (NCITEC)
  - Mississippi State University (lead university)
  - University of Denver
  - University of Mississippi
  - Hampton University
  - Louisiana State University

- National Center for Transit Research (NCTR)
  - University of South Florida (lead university)
  - Florida International University
  - North Dakota State University
  - Texas A&M University
  - University of Illinois, Chicago

- National Center for Transportation Systems Productivity and Management (NCTSPM)
  - Georgia Institute of Technology (lead university)
  - University of Alabama at Birmingham
  - Florida International University
  - University of Central Florida

Region 4 - University of Florida, Southeastern Transportation, Research Innovation, Development and Education Center (STRIDE), 2012
- University of Florida (lead university)
- Clemson University (South Carolina)
- North Carolina A&T State University
- University of Alabama, Birmingham
- University of Alabama, Tuscaloosa
- University of Central Florida
- University of Kentucky
- University of North Carolina
- University of South Florida

Region 4 - University of Tennessee, Southeastern Transportation Center, 2013
- University of Florida (lead university)
- Auburn University
- Florida International University
- Georgia Institute of Technology
- Mississippi State University
- North Carolina State University
- University of Alabama at Birmingham
- University of North Carolina at Chapel Hill (UNC)
UTC Conference for the Southeastern Region
Program

Monday, March 24th, 2014

7:30 am to 8:30 am
Breakfast (2nd Floor Food Break Area)
Registration (2nd Floor Registration Desk)

8:30 am to 9:30 am
Welcome and Opening Remarks (Room 236)

  Michael P. Hunter, Director, National Center for
  Transportation Systems Productivity and
  Management (NCTSPM)

  Keith Golden, P.E., Commissioner of Georgia
  Department of Transportation

Introduction of UTC Directors

  Albert Gan, Florida International University (FIU)
  David Block, University of Central Florida (UCF)
  Burak Eksioglu, Mississippi State University (MSU)
  Lily Elefteriadou, University of Florida (UF)
  Stephen H. Richards, University of Tennessee, Knoxville (UTK)
  Michael P. Hunter, Georgia Institute of Technology (GT)
  John Sobanjo, Florida State University (FSU)
  Joel M. Volinski, University of South Florida (USF)

9:30 am to 10:30 am Podium presentations (Including Q&A, each presentation is 20 minutes)

  Topic: Operations and Management (Room 236)

  Moderator: Albert Gan, Florida International University

  A Comprehensive Framework for Traffic Incident
  Management Program Planning and Assessment

  Md Sakoat Hossan, Xia Jin
  Presenter: Md Sakoat Hossan (FIU)

  Commute Warrior - Travel Activity Tracking Android Application

  Vetri Venthan Elango, Alper Akanser,
  Yanzhi “Ann” Xu, Randall Guensler
  Presenter: Vetri Venthan Elango (GT)

  Queue Length Estimation Based on Point Traffic Detector
  Data and Automatic Vehicle Identification Data

  Somaye Fakharian Qom, Yan Xiao, Mohammed Hadi
  Presenter: Somaye Fakharian Qom (FIU)

10:30 am to 10:45 am Morning Break (2nd Floor Food Break Area)

10:45 am to 11:45 am Podium presentations (Including Q&A, each presentation is 20 minutes)

  Topic: Bike/Ped (Room 222)

  Moderator: Kari Edison Watkins, Georgia Institute of Technology

  Teaching Schoolchildren Pedestrian Safety: A Pragmatic
  Trial Using Virtual Reality

  David C. Schwebel, Daniel Rodriguez, Virginia Sisiopiku,
  Joan Severson, Tabitha Combs
  Presenter: David C. Schwebel (UAB)

  Pedestrian Safety at Signalized Intersections in Florida

  Alluri, P., Haleem, K., Gan, A., Lavasani, M., and Saha, D.
  Presenter: Priyanka Alluri (FIU)

  Comparing Bicycle LOS with Cyclists’ Perceived Level of Safety

  Jeffrey LaMondia, Nathan Moore, Batoul Damghani
  Presenter: Jeffrey LaMondia (AU)

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11:45 am
Agenda 4

10:30 am to 10:45 am Morning Break (2nd Floor Food Break Area)

10:45 am to 11:45 am Podium presentations (Including Q&A, each presentation is 20 minutes)

  Topic: Operations and Management (Room 236)

  Moderator: Albert Gan, Florida International University

  Electric Vehicles Capture Curtailed Wind and Solar Energy on a
  High Penetration Grid

  Richard Rocheleau, Katherine McKenzie
  Presenter: Katherine McKenzie (UH Mānoa)

  Traffic Management Centers: Challenges, Best Practices, and
  Future Plans

  Xia Jin, Zhaohan Zhang, Albert Gan
  Presenter: Xia Jin (FIU)

  Analysis of Heavy Vehicle Effects on Florida Freeways and
  Multilane Highways using Advanced Vehicle Performance Modeling

  Seckin Ozkul, Scott S. Washburn
  Presenter: Seckin Ozkul (UF)
Topic: Bike/Ped (Room 222)
Moderator: Kari Edison Watkins, Georgia Institute of Technology
Educational Development in Pedestrian Infrastructure Research
Alice Grossman and Yanzhi “Ann” Xu
Presenter: Alice Grossman (GT)
A Technology Overview of the Sidewalk Sentry Application, Evangelos Palinginis
Felipe Castrillon, Alper Akanser, Alice Grossman, Vetri Elango, Randall Guensler
Presenter: Evangelos Palinginis (GT)
Daily Variations in Non-Mandatory Activity Participation: Do Shoulder Days Differ from Mid-week Days
Hamidreza Asgari, Xia Jin
Presenter: Hamidreza Asgari (FIU)

12:00 pm to 1:30 pm
Buffet Lunch (Atrium)
Podium presentations (Including Q&A, each presentation is 20 minutes)

Topic: Transit (Room 236)
Moderator: Kari Edison Watkins, Georgia Institute of Technology
Crashworthiness Evaluation of Paratransit Buses,
Gepner, B., Siervogel, J., Wekezer, J.,
Presenter: Bronislaw Gepner (FSU)
Providing Real-time Information for Transit Riders: In Search of an Equitable Technology
Aditi Misra, Sarah Windmiller, Kari Edison Watkins, Patricia L. Mokhtarian
Presenter: Aditi Misra (GT)
Improving the Cost Effectiveness of Financial Incentives in Managing Transportation Demand Management (TDM)
Chanyoung Lee, Phil Winters
Presenter: Chanyoung Lee (USF)
Quantifying the Impact of Real-Time Vehicle Location Information on Transit Ridership
Candace Brakewood, Kari Edison Watkins
Presenter: Candace Brakewood (GT)
Maintaining Transit Effectiveness Under Major Financial Constraints
Joel Volinski
Presenter: Joel Volinski (USF)
Developing a New Course for Public Transportation Education: Matching Academic Content to Workforce Needs
Jeffrey LaMondia, Kari Watkins, Candace Brakewood, Scott Seidband. Presenter: Jeffrey LaMondia (AU)

3:30 pm to 4:00 pm

4:00 pm to 5:00 pm
ITE/WTS Student Chapters Meeting (Room 222)
State DOT panel: How can universities better assist State Highways Agencis (SHA) with deployment of research results? A discussion between university and SHA representatives. (Room 236)

Panelists:
William (Bill) Barstis, P.E., Pavement Research Engineer Mississippi Department of Transportation
Jeffrey W. Brown, Bureau Chief, Research and Development Alabama Department of Transportation
J. Darryll Dockstader, Manager, Research Center Florida Department of Transportation
Georgene M. Geary, P.E., State Research Engineer Georgia Department of Transportation

5:00 pm to 7:00 pm
Reception and Poster Session (2nd Floor Atrium)
See page 9 for a full listing of posters
Tuesday, March 25th, 2014

8:00 am to 9:00 am
Breakfast (2nd Floor Food Break Area)

Podium presentations (Each presentation including Q&A is 20 min)

**Topic: Safety (Room 236)**

**Moderator:** Stephen H. Richards, University of Tennessee, Knoxville

**Traffic Safety Impacts of Digital Roadside Advertising in Alabama and Florida**
V.P. Sisiopiku, K. Haleem, M. Islam, A. Gan, P. Alluri, A. Sullivan, D. Stavrinos
Presenter: Virginia P. Sisiopiku (UAB)

**Investigation of the effect of drivers’ body motion on traffic safety**
Alexandra Kondyli, Angelos Barmoutsis, Virginia Sisiopiku
Presenter: Alexandra Kondyli (UF)

**Factors Influencing Visual Search in Complex Driving Environments**
Michael Hunter, Gregory Corso, Michael Rodgers, Yanzhi "Ann" Xu, Aaron Greenwood, James Bae
Presenter: Aaron Greenwood (GT)

**How are Driver Characteristics Related to Safety at Railroad-Crossings? The Case of Passive Railroad Grade Crossings**
Jun Liu, Bryan Bartnik, Stephen H. Richards, Asad J. Khattak
Presenter: Asad J. Khattak (UT)

**Evaluating Safety Performance of Bridges on Major Highways in Alabama**
Jing Li, Gaurav Mehta, Steven Jones
Presenter: Jing Li (UA)

**Evaluation and Calibration of SPF for Two Way Two Lane Rural roads**
Steven Jones, Gaurav Mehta
Presenter: Steven Jones Jr (UA)

**Topic: Infrastructure (Room 222)**

**Moderator:** Fouad H. Fouad, University of Alabama-Birmingham

**Simulation of Bridge Responses to Heavy Vehicles**
Rahul Kalyankar, Nasim Uddin
Presenter: Rahul Kalyankar (UAB)

**Prototype Evidence-Based Database for Transportation Asset Management**
M. Akofio-Sowah, J. Smith-Colin, J. M. Fischer, A. Amekudzi Kennedy
Presenter: Adjo Amekudzi Kennedy (GT)

**A Next-Generation Wireless Sensing System for Civil Structures**
Xinjun Dong, Dapeng Zhu, Shuo Chen, Yang Wang
Presenter: Yang Wang (GT)

**Innovative Modular High Performance Lightweight Decks for Accelerated Bridge Construction**
Sahar Ghasemi, Pedram Zohrevand, Amir Mirmiran, Kevin Mackie, Fouad H. Fouad
Presenter: Sahar Ghasemi (FIU)

**Utilizing Acoustic Emission for Monitoring Safety of Highway Bridges**
Vitali Khaikeine, Vadivel Jagasivamani, Eric Sheppard
Presenter: Vitali Khaikeine (Hampton U)

**Mitigating Fatigue of Cantilevered Overhead Sign Structures Due to Natural and Truck-Induced Wind Gusts**
Mohamed S. Gallow, Fouad H. Fouad, Ian E. Hosch. Presenter: Mohamed Salah Gallow (UAB)

11:15 am to 11:30 am
Morning Break (2nd Floor Food Break Area)

11:30 am to 12:00 pm
Lunch (Georgia Tech Hotel Ballroom)

Panel Discussion

"Sector intersections: State agencies and the private sector discuss transportation challenges" – Panelists from industry and government will engage in a dialogue on challenges they face and how university research can address these challenges

**Moderator:** Catherine L. Ross, Georgia Institute of Technology

**Panelists:**
Toby Carr, Director of Planning, Georgia Department of Transportation
Todd Long, P.E., Deputy Commissioner, Georgia Department of Transportation
Randy Stashick, Global Vice President of Engineering, UPS


Evaluation of the Cost Effectiveness of Illumination as a Safety Treatment at Rural Intersections. Frank Gologogah, Ashghuman Guin, Michael Rodgers, Roger Purcell. Presenter: Frank Gologogah (GT)


Efficient Control of Autonomous Vehicles at Freeway Merge Segments. Clark Letter. Presenter: Clark Letter (UF)

Dynamic Traffic Control Interventions for Enhanced Mobility. Nagui M. Routhal, Behzad Aghdashi, Mohammed Hadi, Yan Xiao, Samehan Khazraeian. Presenter: Nagui M. Routhal (NCU)

Signal Timing Optimization with Consideration of Environmental and Safety Impacts. Mohammed Hadi, Yan Xiao, Xuanswu Chen, Lilet Eleriadou, David Hale. Presenter: Xuanswu Chen (FIU)

Modeling ATMs strategies in a macroscopic traffic environment. Mohammed Hadi, Nagui M. Routhal, Samehan Khazraeian, Yan Xiao, Behzad Aghdashi. Presenter: Mohammed Hadi (FIU)

HOT Lane Decision Making: Operational and Demographic Factors. Adrian Sheikh, Randall Guensler. Presenter: Adrian Sheikh (GT)

Reducing the Magnitude of Negative Left-Turn Lane Offset Reduces Risky Turning Behavior of Younger, Middle-Aged, and Older Drivers: A Driving Simulator Study. Ainsley Mitchum, Walter Booth, Neil Charness, Cary Stothart, Mark Fox, Heather Lupton. Presenter: Ainsley Mitchum (FSU)


The Effects of Billboard Content on the Distractibility of Drivers Across the Lifespan. Shannon Wittig, Haley Johnson, Erick Caamano, Virginia Sisiopiku, Despina Stavnice. Presenter: Shannon Wittig (UAB)

Cycle Atlanta: Understanding Cyclists and Cycling in Atlanta. Adrii Mira, Kari E. Watkins, Chris LaDantec. Presenter: Adrii Mira (GT)

An optimal holding policy to minimize bus headway variance. Simon Berrebi, Kari Edison Watkins, Jorge Laval. Presenter: Simon Berrebi (GT)


Determining Value of Transportation Research. Mohsen Shahnadashi, Babak Ashuri, Mehdi Tavakolan. Presenter: Mohsen Shahnadashi (GT)

MAP -21. Catherine Ross, Michael Hunter, Timothy Welch. Presenter: Catherine L. Ross (GT)

Canal expansion, Port activities, and Regional economy. David Jung-Hwi Lee. Presenter: David Jung-Hwi Lee (GT)


Bi-Objective Inventory Replenishment Models for Perishable Products with Fixed Shelf Life. Sandra D. Eksioglu, Zahra Azadi. Presenter: Zahra Azadi (MSU)


Designing a Reliable and Dynamic Intermodal Hub and Spoke Supply Chain for Biomass. Mohammad Marufuzzaman, Sandra Duni Eksioglu. Presenter: Mohammad Marufuzzaman (MSU)


A Multivariate Conway-Maxwell-Poisson Distribution for Fitting Over and Under-Dispersed Crash Data: Bayesian Perspective. Gaurav Mehta, Jing Li, Steven Jones. Presenter: Gaurav Mehta (UA)

Do we need more data to get better short-term traffic prediction accuracy? Jianjiang Yang, Liang Li, Han Phillip B. Freeze. Presenter: Jianjiang Yang (UT)

Driver Yielding Models for Midblock Pedestrian Crossings. Elizabeth Hunter, Bastian Schroeder, Katy Salamati, Nagui Routhal. Presenter: Elizabeth Hunter (NCSU)

Uber and its Extensions to Changing Urban Transportation. Steve Dickerson. Presenter: Steve Dickerson (GT)