We had another very productive, exciting, and rewarding six months! The Public Transit Certificate Program was initiated in collaboration with UMass Transit and First Transit, a private transit management company. The program is being led by Mr. Allan Byam, Director, UMass Transportation Services. The Certificate Program is funded by the Federal Transit Administration and has been designed to serve as a model for other college town based transit agencies to make young people aware of career opportunities in the U.S. transit industry.

Other spectacular news is that Andrew Berthaume and Radhameris Gomez, Ph.D. candidates in the UMass transportation engineering program, received U.S.DOT Outstanding Student Awards.

In addition, the CEE James L. Tighe Distinguished Teaching Award was presented to Dr. Michael Knodler and I had the honor of receiving the CEE Distinguished Research Award.

Congratulations to all for a job well done!
Berthaume Named the UMTC 2011 Outstanding Student of the Year

Andrew Berthaume was named the University of Massachusetts Transportation Center 2011 Outstanding Student of the Year awarded by the U.S. Department of Transportation. This award was presented to him at the Transportation Research Board’s (TRB) 91st Annual Meeting held in Washington, DC.

Gomez Named the N.E. UTC 2011 Outstanding Student of the Year

Radhameris Gomez was named the New England University of Center Transportation Center 2011 Outstanding Student of the Year awarded by the U.S. Department of Transportation. This award was presented to her at the Transportation Research Board’s (TRB) 91st Annual Meeting held in Washington, DC.
Public Transit Certificate Program

Allan Byam as Principal Investigator worked in collaboration with Dr. John Collura from the UMass Transportation Center to develop a new program “Certificate in Transit Management and Operations” for undergraduate and graduate students. This program, sponsored by the Federal Transit Administration, combines both formal course work (Civil Engineering and the School of Management) and internships with UMass Transit and CTTransit. It will include a summer workshop with transit professionals and hands-on experience. Participants will gain valuable hands-on, real world experience plus the educational background needed to become a successful leader in the transit industry.

Knodler Awarded Distinguished Teaching Award

Associate Professor Michael Knodler was awarded the CEE James L. Tighe Distinguished Teaching Award, based on classroom instruction, student mentoring, preparation of students for the profession and lifelong learning, teaching infrastructure development via research and equipment grants, service to student organizations and advising, and leadership.

Collura Awarded Distinguished Research Award

John Collura, Professor and Director of the UMass Transportation Center, was awarded the CEE Distinguished Research Award in recognition of his work with the Transportation Research Center, and in particular in his efforts to mentor young faculty members. He has created a research center and a research environment that is second to none, in which outstanding research is being conducted, that federal, state, and local relationships are being nurtured, and that the level of sponsorship research is outstanding.
Evaluating Real-Time Traveler Information Benefits for the Pioneer Valley Region

Dr. Song Gao
UMass/Amherst

Abstract

The Regional Traveler Information Center (RTIC) is a cooperative venture between the U.S. Department of Transportation (USDOT), the Highway Division of the Massachusetts DOT (formerly the Massachusetts Highway Department) and the University of Massachusetts for the purpose of providing real-time traveler information for the Pioneer Valley region. Existing evaluations of RTIC focus on passive monitoring of the website usage and lack observations of users’ attitudinal or behavioral responses to such information. The objective of this study is to evaluate RTIC in terms of 1) the awareness and usage among existing and potential users, and 2) benefits in improving bus and/or auto travel qualities. The evaluation will be conducted in two stages. In the first stage, web-based questionnaires will be distributed to the University of Massachusetts community regarding their awareness and usage of RTIC services and perceived benefits, combined with stated preferences questions to solicit their responses to information disseminated by RTIC under hypothetical scenarios. In the second stage, a field experiment will be conducted to observe travelers’ actual behavioral responses to real-time traffic information. A group of subjects will be observed over two periods, each of two weeks long, regarding their choices from two competing alternatives (bus routes, auto routes or departure times). In one period, the group receives no real-time information, while in the other it does. Differences in route or departure time choices and/or experienced travel qualities between the two periods could show the effect and benefits of real-time information. The detailed longitudinal data also enable the analysis of travelers’ day-to-day learning behavior under real-time information.
Consistent Modeling of Traffic Flow

Dr. Daiheng Ni
UMass/Amherst

Abstract

Analyzing complex and interdependent transportation systems frequently involves translating traffic flow representation among multiple scales. For example, a low-level event can escalate into a high-level representation and a global problem can be boiled down to one or more local deficiencies. While existing models can successfully address questions at some scales, only a full spectrum of models with inherent consistency is adequate for full analysis. The objective of this research is to explore strategies to represent traffic flow at a spectrum of multiple modeling scales with inherent consistency between these scales. The term consistency here concerns the coupling among models at different scales, i.e. how less detailed models are derived from more detailed models and, conversely, how more detailed models are aggregated to less detailed models. The result of this research can help improve understanding of how transportation systems operate, the onset and development of congestion, and why traffic accidents occur. Results of this research will be particularly useful for developing powerful tools to analyze transportation systems, as well as to develop innovative safety and mobility solutions to improve the efficiency of these systems.
An Evaluation of Traffic Operations and Safety Impacts Related to Gap Acceptance

Dr. Michael A. Knodler, Jr.
UMass/Amherst

Abstract

The heightened focus on transportation safety by agencies worldwide underscores the need for an improved understanding of the relationships between drivers and roadways with regards to both traffic operations and safety. Given that “driver error” is cited as a contributing factor in 93 percent of all crashes, understanding driver behavior is an essential element in mitigating the crash problem. Among the more dangerous elements of the roadway system are unsignalized intersections and driveways where driver behavior is directly related to operational and safety performance. More specifically, drivers’ gap acceptance decisions have serious consequences. Although measuring the gaps that exist within traffic streams is a fundamental element of traffic operations, the manner in which drivers make use of these gaps is equally important, and unfortunately more dynamic. Although an existing body of literature exists predicting gap acceptance rates and values under a myriad of conditions and vehicle maneuvers, there remains a need to better understand the manner in which selected variables influence gap acceptance. This research effort will create a data collection program for capturing large quantities of reliable gap acceptance data in the field, which will in turn be used to complete a comprehensive analysis of driver gap acceptance. The data collection will include all applicable maneuver types and significant variables. In addition, the program will provide a means to record every rejected gap each individual vehicle is exposed to as well as the gap finally accepted. Other variables to be quantified include, but are not limited to, intersection geometry, presence and number of queued vehicles, vehicle type, and driver and passenger demographics. This research study will provide a resource to both researchers and professionals responsible for intersection and/or site design, including incorporation into and/or modification of existing access management practices.
Research Papers Presented


Research Papers Published

About the Center

Improving Transportation Mobility and Safety with Innovative Technologies and Strategies

The Center's operations are supported by University funds and through contracts with state and federal agencies as well as with industry partnerships. Historically, the majority of the Center's activities have involved faculty and staff on the Amherst Campus, although more recently faculty and staff from other university and state college campuses have become involved. The current focus of the Center's research, education, and training efforts encompasses the following major programs: US DOT University Transportation Center Initiative; UMTC/Massachusetts Department of Transportation (MassDOT) Cooperative Transportation Research Program; Regional Traveler Information Center (RTIC); Baystate Roads Programs (Local Technical Assistance Program LTAP); Massachusetts Technical Assistance Program (MTAP); UMass Traffic Research Safety Program (UMassSafe)