As the population ages, many will remain in suburban and rural communities where the provision of transportation services is not guaranteed. New England Center researchers endeavored to assess 55+ communities in Metro Boston to determine whether older adults can age-in-place and maintain quality of life.

Dr. Lisa D’Ambrosio, Richard Myrick and Philipp Osl investigated whether 55+ communities successfully facilitate aging in place, regardless of the future needs of the individual.

“We found that most of these homes are not really designed with all features that facilitate aging in place—they don’t have universal design,” said D’Ambrosio, “The bigger question is, are they in locations where the community is livable? Where people have easy access to goods and services like transportation?” Osl ran analyses of the data collected and found that most 55+ communities were not particularly well-positioned to access services and transportation.

Please see Making Communities Livable, pg. 6

TECHNOLOGY TRANSFER

Continuing the conversation through social media

New England Center Director Joseph Coughlin was named one of “The 10 Most Creative People on Twitter” by FastCompany.com for his tweets on age demographics and aging and transportation. His twitter name is josephcoughlin.

See the article at: http://www.fastcompany.com/1650139/the-most-creative-people-on-twitter
From the Director

Our well-being is heavily dependent on our access to transportation. Recall that feeling of freedom you gained when first receiving your driver’s license. Imagine the sense of loss from having your license taken away because you can no longer drive safely. How easily we move from our homes to our places of work, to shopping centers or to visit loved ones plays a large role in our quality of life and determines how livable our communities are.

The New England Center takes a multidimensional approach to the relationship between transportation and well-being thanks to a diverse program spanning eight universities. The University of Connecticut is determining what residents are willing to invest in to make a community more livable, such as a safer environment for pedestrians and more public transportation. Researchers at the Massachusetts Institute of Technology distributed surveys, held focus groups and travelled throughout the Greater Boston area to determine whether older adults’ needs are fulfilled through their communities’ transportation offerings. At the University of Vermont, a sophisticated method for discerning and measuring tailpipe emissions allows us to better understand how our driving habits are affecting the air we breathe. And New England Center researchers are studying how in-vehicle technologies may help us safely retain that driver’s license longer.

We rely heavily on transportation systems to keep us moving every day. When it is easier for us to go where we want to go, regardless of health, age or income, our well-being improves immensely. In these pages you will find a small sampling of the work being done at the New England Center, as well as student achievements and visits by key policy-makers. I welcome your insights into how we can continue to keep well-being at the forefront of our transportation research and educational programs.

Joseph F. Coughlin
Center Director & Policy Committee Chair, MIT

AARP Bulletin features New England Center research

The car is the new backseat driver. That’s what Center Director Joe Coughlin told the AARP Bulletin in the February 8 edition of its Car Talk column. Coughlin, interviewed on the future of older drivers, said, “We expect to see them remaining mobile in their cars for a very long time.” He attributes a longer life behind the wheel to in-vehicle technologies that will be more involved in the driving experience, but also more personalized to the individual’s needs. Coughlin described work on active safety systems, the application of ambient intelligence technologies, and the coming convergence of on-board systems that will monitor driver state and modify vehicle performance in real time. The interview is based, in part, on a recent paper, “Driver Wellness, Safety & the Development of an AwareCar” authored by Coughlin, New England Center Associate Director Bryan Reimer and Research Scientist Bruce Mehler.

See the issue of the AARP Bulletin at http://www.aarp.org/home-garden/livable-communities/info-02-2010/car_talk.1.html
**NEWS AND EVENTS**

**Ray LaHood campaigns against distracted driving**

As part of a lecture series on transportation and energy, Secretary of Transportation Ray LaHood gave an inaugural address emphasizing the hazards of distracted driving to the MIT community on May 3.

“During the last few years distracted driving has evolved from a dangerous practice to a deadly dilemma and also a deadly epidemic,” said LaHood. He took the opportunity to challenge MIT researchers and students to create the technology to curb talking on the phone and texting while driving.

“One in every 10 drivers is on his or her phone at any given moment and the resulting distraction or inattention resulted in 6,000 deaths and 500,000 injuries in 2008,” said LaHood. He emphasized that government and law enforcement is only part of the solution and asked, “Can we develop a device that prevents a driver from using a cell phone behind the wheel without also preventing passengers from doing so?”

“We need a new generation of young people to re-imagine, reinvent the field of transportation once more,” said LaHood. He spoke for 20 minutes and then opened the floor to questions from the audience. A few months earlier, LaHood visited the University of Maine to speak and see work being done by the New England Center.

The lecture can be viewed in full at http://mitworld.mit.edu/video/773.

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**TECHNOLOGY TRANSFER**

**New England Center student Ruben Alonzo named a 2010 Truman Scholar**

Ruben Alonzo, a New England Center junior and MIT UROP, has been named a 2010 Harry S. Truman Scholar. Ruben is the MIT team leader of an Engineering Is Elementary project, which engages MIT undergraduate students and local area high schools students, at the Museum of Science, Boston.

The project’s goal is to promote students’ math and science literacy and to spark their interest in a range of engineering topics. Team members from the New England Center and the Museum of Science are putting together an educational video about the MIT AgeLab driving simulator, “Miss Daisy”, to accompany an Engineering Is Elementary lesson on transportation. The video and content will be developed with inner-city middle and high school students in the Boston area. Ruben’s involvement in and dedication to this project is an embodiment of his passion for public service and education.
RESEARCH PROJECT HIGHLIGHTS

Counting Carbon: University of Vermont field-tests its tailpipe emission measurement system

With roughly 130 million cars on U.S. roads, measuring the exhaust emissions of each model with precision can add up to some powerful statistics. The Transportation Air Quality Lab at the University of Vermont compiled a new system to assess a car’s emissions, which the researchers presented at the Annual TRB Meeting Conference.

TOTEMS, which stands for Total Onboard Tailpipe Emission Measurement System, is a package of instruments that monitor exhaust emissions in conventional and hybrid light-duty vehicles.

The measured emissions include regulated gases (those that are controlled by government standards), such as carbon monoxide, and unregulated gases, such as greenhouse gases.

Not only does the package ensure greater accuracy, but data can be collected on-board as the car is driven, second-by-second, which means researchers can look for differences in emissions as terrain and weather conditions change over the course of a drive, particularly with the hilly terrain and cold climate of Vermont.

The publication can be found at http://www.uvm.edu/~transctr/publications/TRB_2010/10-3023.pdf

NEWS AND EVENTS

RITA Administrator Peter Appel Delivers MIT CTL Distinguished Lecture

Peter H. Appel, Administrator of the USDOT Research and Innovative Technology Administration (RITA) and alumnus of MIT’s Masters of Science in Transportation program, spoke at MIT Center for Transportation and Logistics’ Distinguished Speaker series on April 2. His lecture was entitled, “Laying the Groundwork for the Future Transportation System: The Role of Research, Technology and Professional Development”. CTL holds their speaker series each Friday during the semester with a lecture and lunch followed by a Q&A session.

Appel has worked with Secretary of Transportation Ray LaHood on several projects, including the Distracted Driving Summit, which brought together researchers, advocates and policy makers in an effort to curb dangerous driving habits. Appel also supports and strengthens the USDOT Intelligent Transportation Systems Program to improve safety, efficiency and environmental impact in all areas of transportation.

The CTL lecture series schedule can be found at http://ctl.mit.edu/events
**RESEARCH PROJECT HIGHLIGHTS**

**University of Connecticut asks: How do people envision livable communities?**

Researchers as the Center for Transportation and Livable Systems (CTLS) at the University of Connecticut studied the features people value in environments defined by transportation systems. To begin this two-year study, the team had to assess what makes a community ‘livable’, determining crucial elements to include good lighting, wide sidewalks, narrower streets and on-street parking.

They then placed digital images of areas of the city next to modified images portraying possible enhancements. Images were presented to subjects of the original transit service and two modified transit services that would require a tax increase. Surveys were handed out to 600 potential respondents describing a hypothetical rail service from New Haven, CT to Springfield, MA – a scenario which respondents were familiar with because it is currently under consideration for that corridor.

The findings indicated that people are willing to pay an average of an additional $180 in taxes to incorporate transportation infrastructure investments. Responses varied depending on whether subjects owned or rented their property and how likely they were to use public transportation. Respondents also preferred to see multiple enhancements occur rather than an isolated enhancement, which tended to be viewed negatively.

The results of this research were published in the Transportation Research Record.

To learn more about University of Connecticut’s CTLS, visit [http://www.ctls.uconn.edu](http://www.ctls.uconn.edu)

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**TECHNOLOGY TRANSFER**

**University of Rhode Island hosts middle school students at Summer Transportation Institute**

If there is one thing that’s certain about innovation, it’s that more engineers mean more progress. The Transportation Center at the University of Rhode Island is ensuring a strong future for the field of transportation by taking on 40 middle school students during the summer to encourage early interest in engineering, transportation and technology.

At the Summer Transportation Institute, students attend two-week sessions packed with hands-on learning in bridge design, road construction and maintenance, cargo transportation and more. Activities include field trips to T.F. Green Airport and boat rides on Narragansett Bay. Sponsored by the Rhode Island Department of Transportation and the Federal Highway Administration, the Institute has proven to encourage participants to turn their passions into careers, with several returning to URI years later as undergraduate students studying related fields.

Visit the Institute’s page at: [http://www.uri.edu/uritc/outreach_programs/summer_transportation_institute.shtml](http://www.uri.edu/uritc/outreach_programs/summer_transportation_institute.shtml)
In driver’s ed, most of us learned to keep a distance of three to five seconds between cars. But in practice an individual has a unique perception of what is ‘safe’ and that difference in allocated distance may even be based on the age and gender of the driver.

New England Center researchers are looking at tangible evidence of behavioral differences between elderly and younger drivers. The Universities of Connecticut and Maine collaborated on “Gap Acceptance of Elderly Drivers Making Left Turns at Unsignalized Intersections,” which was presented at the 89th Annual Meeting of the Transportation Research Board (TRB) this January.

The study, authored by Hongmei Zhou, Nicholas Lownes, John Ivan and Nalini Ravishanker of the University of Connecticut; and Per Garder of the University of Maine, observed how elderly drivers may allow a larger amount of room between their car and the car proceeding them when making left turns at unsignalized intersections.

Findings suggested that drivers over 70 were less likely to accept shorter gaps because they were compensating for diminished perception reaction ability. A difference in gaps between male and female drivers was also observed, with female drivers more conservative than male drivers. Speed also played a role, with shorter gaps accepted in high speed scenarios. Traffic simulations were run in CORSIM, a microscopic traffic simulator, to determine how these observed differences affect traffic.

An abstract of the publication can be found at http://tris.trb.org/view.aspx?id=910089

New England Center researchers are looking at tangible evidence of behavioral differences between elderly and younger drivers.
Former New England Center UROP Shannon Roberts presents joint New England Center—University of Wisconsin-Madison research at CHIME

In collaboration with New England Center research scientist Bryan Reimer and post-doctoral associate Ying Wang, former New England Center UROP Shannon Roberts and John Lee from University of Wisconsin-Madison Cognitive Systems Laboratory are investigating driving and visual attention metrics for the development of algorithms to detect driver distraction and help guide drivers’ attention back to the road. The effort draws upon data from the New England University Transportation Center field-driving repository.

Early research results were presented as a poster entitled, “Evaluating eye movements in an on-road study to detect driver distraction” at the Computer Human Interaction Mentoring (CHIME) Workshop. 

The full poster is available at utc.mit.edu, keyword CHIME.
About the New England University Transportation Center

The New England University Transportation Center employs research and innovative technology to improve transportation system management. Its research and technology transfer serve as groundwork for progressive safety measures and for increasing the efficiency of the nation’s roads and mass transit systems.

The center’s research investigates how changes in the age distribution of the nation’s population and changes in technology, infrastructure, global climate, economics and politics affect transportation systems. The New England Center will use this research to educate future transportation professionals and leaders responsible for tackling transportation challenges of today and tomorrow.

In addition to these education goals, the New England Center has a mission to influence the transportation agenda and develop and disseminate new methodology and tactics for strategic change. The New England Center is part of the national UTC program. Massachusetts Institute of Technology is the lead university in the consortium, which also includes Harvard University, and the state universities of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

The New England Center will use this research to educate future transportation professionals and leaders responsible for tackling transportation challenges of today and tomorrow.

About MIT’s Center for Transportation and Logistics

MIT’s Center for Transportation and Logistics is part of the Engineering Systems Division in the School of Engineering. The center is widely recognized as an international leader in the field of transportation and logistics.

The CTL facilitates a basic understanding of transportation systems planning, operations and management, and the center makes significant contributions to logistics modeling and supply-chain management for shippers, to technology and policy analysis for government, and to management, planning and operations for trucking, railroad, air and ocean carriers.

In addition to administering the Master of Engineering in Logistics program, the center helps coordinate the extensive transportation and logistics research conducted throughout MIT. At any given time, research initiatives typically number more than 100 and range from modest projects involving a single faculty member and a few students to large-scale international programs involving scores of people and a full-time research staff.

The New England Center will use this research to educate future transportation professionals and leaders responsible for tackling transportation challenges of today and tomorrow.

At any given time, research initiatives typically number more than 100.