



Michigan Center for Advancing Safe Transportation throughout the Lifespan

Words from the M-CASTL Director



I'm looking forward to an exciting and informative 2010 with M-CASTL.

As we move into our third year of operation, I look back and am pleased with all that M-CASTL has accomplished. M-CASTL was

founded to increase the understanding of, and address three issues

related to maintaining safe mobility throughout the lifespan: the changing perceptual, cognitive, and psychomotor abilities of older drivers; the transportation needs of young people and older adults when they are unable or choose not to drive themselves; and the elevated crash risk of young drivers. In 2010 and beyond we plan to start expanding our scope. For example, M-

CASTL, in collaboration with the U-M Department of Emergency Medicine and the U-M Child Health Evaluation and Research Unit (CHEAR), will be sponsoring a new faculty member to conduct research on emergency physician knowledge of proper child restraints for children 2-10 years of age. When this research is completed, the results will be available on our website, along with all of the other work M-CASTL has sponsored.

M-CASTL plans to further strengthen our international collaborations. For example, we are working diligently to secure additional sponsorship to publish papers from the Center-sponsored *International Symposium on Teen Driver Safety*. We are also working to coordinate an international session on instrumented vehicle research and cognitively impaired drivers for the upcoming International Conference on Alzheimer's Disease. These activities compliment our strong ties with researchers in Canada and Australia.

Our educational activities are moving into high gear this year. M-CASTL plans to launch the "M-CASTL Channel," which will feature a number of multi-media educational modules on issues related to our theme. We plan to continue to sponsor quality students through our various programs. Keep checking our website for updates. Finally, I would like to congratulate Ms. Jessica Bernard, the 2009 M-CASTL Outstanding Student of the Year.

M-CASTL has been busy with many other activities the past few months and I invite you to read about them in this issue of the *Messenger*.

My best regards,

David W. Eby, PhD

THE PURPOSE OF THE *MESSENGER* IS TO INFORM M-CASTL FACULTY, STUDENTS, SPONSORS, AND FRIENDS ABOUT THE CENTER'S ACTIVITIES.

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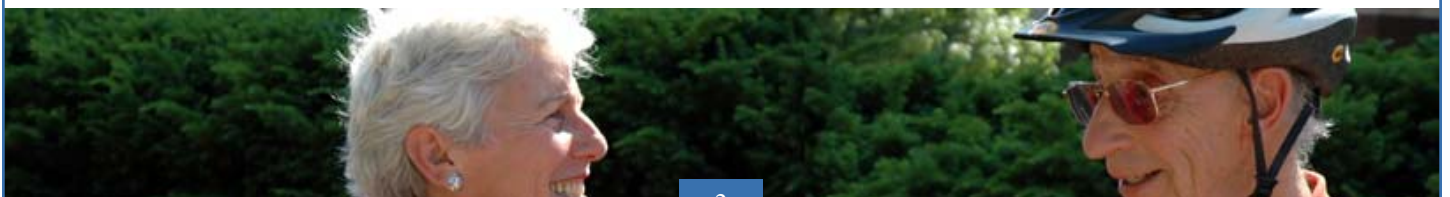
M-CASTL Feature

By 2030, the older population in the United States is expected to double to more than 70 million people, with one in five Americans age 65 or older. This immense growth is primarily the result of the aging of the baby boomer generation, as well as increases in life expectancy. The unprecedented increase in the number of older people will create challenges for many aspects of society. For example, older people are more likely to have multiple chronic illnesses. Thanks to advances in medical technology, many previously fatal conditions are now considered chronic illnesses that older people can live with and manage. The increase in chronic illnesses, and in the number of older people living with these conditions, will result in a dramatic increase in the use of our health care system's resources. In order to properly respond to our country's changing demographics, the US health care system will have to make adjustments. However, the increase in chronic illnesses, and in the older population, will have consequences that reach much further than our health care system. A response to these changing demographics will also be required from other areas, including the field of transportation and community mobility.

Research has shown that people over age 70 are at an increased risk of crashing (per miles driven), and of sustaining an injury given a crash. However, the increase in crash risk is not due to aging per se, but rather to age-related medical conditions and medications, which in turn affect one's driving abilities. As the baby boomers age, the number of drivers at higher risk of crashing will increase, resulting in important safety, ethical, and policy challenges that must be undertaken. Many researchers have begun to focus on the topic of maintaining safe mobility for older adults. The three main goals of this research can be summarized as: 1) to understand and better manage the effects of medical conditions and medications on skills needed for safe driving; 2) to help those who are able to drive safely continue to do so; and 3) to identify and provide community mobility support to those who are no longer able or choose not to drive.

It is critical to be able to differentiate between safe drivers and those who are potentially unsafe. Recent research has focused on screening for unsafe drivers from the perspective of licensing authorities, family members, and from the drivers themselves. However, very little research has investigated the role of law enforcement and our judicial system in older driver screening and processing. Law enforcement officers are in a unique position to serve as an important screen for potentially unsafe older drivers, but there is little information available to assist them in this role. Courts also recognize that they may be ill-equipped to handle the coming wave of baby boomers and the important role they will play in the mobility options of older drivers. For many people, driving not only provides access to basic items of need (like food and clothing), but also access to friends, family, and recreation.

As we move into the next decade, it is critical that research is conducted to provide information about how law enforcement and the judicial system can best manage the upcoming wave of older adult drivers. The transportation community must address this issue and provide best practices, recommendations, and education, so that older adults can maintain safe mobility for as long as possible.





Meet Nancy G. Love, PhD

Dr. Nancy Love is a professor and chair of the Department of Civil and Environmental Engineering at the University Michigan. Prior to 2008, Dr. Love was an Assistant, Associate and Full Professor of Civil and Environmental Engineering and an Adjunct Professor of Biological Sciences at Virginia Tech. Her research covers a broad range of interdisciplinary topics in the general area of environmental biotechnology and water quality with an emphasis on engineered treatment systems. Her specific interests focus on the fate of toxic chemicals in these systems, and use of technologies to sense and remove these chemicals. Dr. Love has BS and MS degrees in Civil Engineering from the University of Illinois, and a PhD in Environmental Systems Engineering from Clemson University. After completing her MS degree, she worked as a process design engineer for approximately 3 years for CH2M Hill, Inc.

Dr. Love serves on M-CASTL's Executive Committee, and about the Center, she says " M-CASTL continues to do important work on an issue that touches all of us -- safe transportation across the lifespan. I appreciate learning about the Center's activities, and look forward to seeing outcomes from these activities implemented." She has also served or serves as major advisor for 32 MS students, 13 PhD students, 5 post-doctoral research associates and 21 undergraduate research assistants. She has been involved with projects totaling \$12 million in funding as a faculty member, and was responsible for 45 percent of that funding. She has published 55 journal articles, 2 book chapters, 3 peer-reviewed research reports, and approximately 200 conference papers, abstracts, presentations, and research editorials. She is currently completing the third edition of the textbook *Biological Wastewater Treatment* by Grady, Daigger, Love, and Filipe (CRC Press). She is the recipient of a number of awards, including the NSF CAREER Award, the Paul L. Busch Award for Innovation in Applied Water Quality Research, the Harrison Prescott Eddy Medal and the Rudolf's Industrial Waste Management Medal from the Water Environment Federation, and the Civil and Environmental Engineering (Virginia Tech) Alumni Teaching Excellence Award.



PHOTOS THIS PAGE - PORTRAIT: COURTESY OF NANCY LOVE; MIDDLE: UMTRI / AMANDA DALAIRE; BOTTOM: UMTRI / DAVID EBY



Above: RITA Administrator Peter Appel is shown UMTRI's instrumented vehicle fleet. **Left to Right:** David Eby, Jonathon Vivoda, Tim Gordon, Peter Appel





Meet Renée M. St. Louis



Renée St. Louis is a research assistant at the University of Michigan Transportation Research Institute (UMTRI) where she has been working since 2004. Ms. St. Louis' responsibilities at UMTRI include: providing general technical support to research faculty and staff; day to day management of project activities; supervising employees during studies involving field data collection; and co-authoring proposals, technical reports, and papers.

Ms. St. Louis recently joined the M-CASTL team to assist with all Center activities associated with the three program areas: research, education, and technology transfer. She says, "I am very excited to be a part of the M-CASTL team. Working with the Center provides a great opportunity for me to meet and work with M-CASTL's collaborators from many different U-M departments, other universities around the country, and researchers from around the world.

These professionals bring their unique backgrounds and experiences to the issues of mobility and transportation safety. This innovative, multidisciplinary approach will allow me to view these issues through many different lenses, and having this experience will be a valuable asset to my research career."

Ms. St. Louis received her bachelor's degree in psychology from the University of Michigan in 2004. While at UMTRI, she has worked on a variety of projects related to: instrumented vehicles, older driver safety and mobility, safety belt and booster seat use, and novice driver issues. Ms. St. Louis' research interests include distracted driving issues related to both young and adult drivers, self-regulation of driving by older people, in-vehicle technology, and psychosocial factors that influence driving behavior.

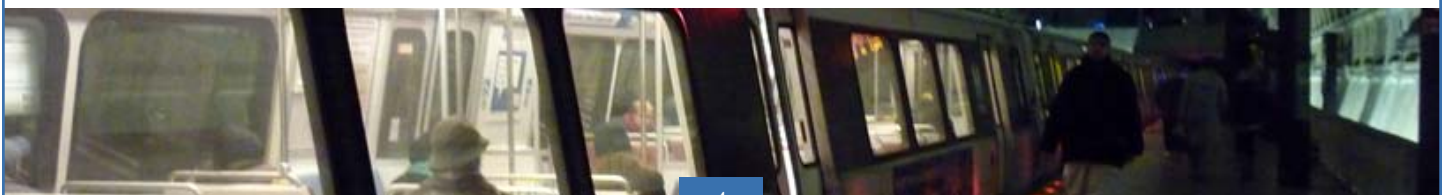
Meet Giselle Kolenic

Giselle Kolenic received her undergraduate degree in Economics and Accounting from Michigan State University in 2006. She is now a second year master's student in Statistics at the University of Michigan. Ms. Kolenic's academic interests include applied multivariate analysis, spatial statistics, geographic information systems (GIS), and qualitative analysis.

About M-CASTL, she says she is "excited to work with such a collaborative and innovative organization that truly impacts how we use, and share, the space around us throughout our lives." Ms. Kolenic will be working with M-CASTL on a project related to older drivers, entitled "Using Vehicle Instrumentation to Better Understand the Transitioning Process: An Exploratory Study."



PHOTOS THIS PAGE—TOP: COURTESY OF RENÉE ST. LOUIS. MIDDLE: COURTESY OF GISSELLE KOLENIC. BOTTOM: UMTRI / RENÉE ST. LOUIS





M-CASTL Activities

M-CASTL would like to welcome Renée St. Louis, the newest member of M-CASTL's team. Ms. St. Louis has been working with the Center since its inception, and is now an official member of M-CASTL's staff. She will serve as a Research Assistant in all areas of the Center's research, education, and technology transfer activities.

On November 4, Dr. David Eby met with Drs. Michelle Macy and Gary Freed of the U-M Child Health Evaluation and Research (CHEAR) Unit to discuss collaborative opportunities between CHEAR and M-CASTL. M-CASTL and U-M Emergency Medicine will be providing funds for a intervention and evaluation project, directed by Dr. Macy, designed to increase vehicular booster seat use by children.

In early November, Lisa Molnar (M-CASTL's Assistant Director) was in Australia to attend the Australasian Road Safety Research, Policing and Education Conference in Sydney. While in Australia, Lisa met with faculty at Monash University to discuss ongoing collaborative activities between M-CASTL and Monash.

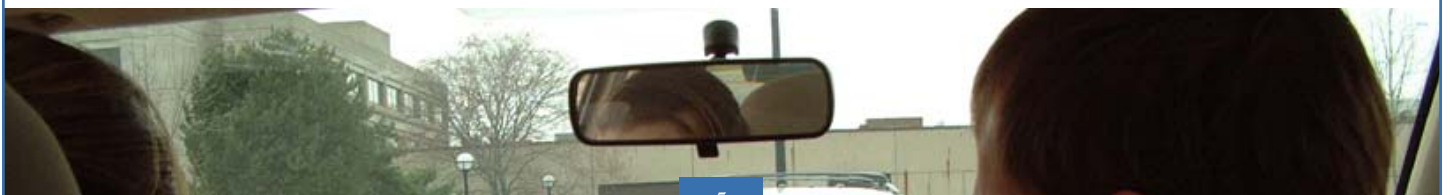
On November 10, Peter Appel, the Administrator of the Research and Innovative Technology Administration (RITA; M-CASTL's sponsor) visited M-CASTL, met with faculty and staff from M-CASTL and UMTRI, and toured UMTRI's facilities. M-CASTL was very pleased to have the opportunity to host Administrator Appel, tell him about the Center's activities, and hear about his vision for the future of the UTC program.

From November 18-22, several M-CASTL faculty, staff, and M-CASTL collaborators were in Atlanta, GA for the 62nd Annual Meeting of the Gerontological Society of America (GSA). David Eby, Lisa Molnar, and David LeBlanc (from UMTRI) attended and held a symposium, along with Nina Silverstein (UMass-Boston) and Michelle Porter (U. of Manitoba), about Alzheimer's Disease and an UMTRI Instrumented Vehicle study. Dr. Eby also gave a talk at the GSA Transportation and Aging interest group meeting, as well during GSA's presidential symposium, where he spoke about the process of transitioning from driving. Dr. Eby and Ms. Molnar presented at the business meeting for the Transportation and Aging interest group, and Dr. Cathleen Connell, an M-CASTL collaborator from the U-M School of Public Health, was appointed as a co-convenor of the group.

On December 11, Dr. Eby participated as an external reviewer for the dissertation defense of Wendy Lindstrom-Forneri, a PhD student from the University of Victoria in British Columbia, Canada.

Between January 10-14, David Eby, Lisa Molnar, Renée St. Louis (M-CASTL's Research Assistant), and Jessica Bernard (M-CASTL's Student of the Year; SOY) attended the 89th Annual Meeting of the Transportation Research Board (TRB). During a session on part-time safety belt use, Dr. Eby gave a presentation entitled "Potential Mechanisms Underlying Part-Time Safety Belt Use." Dr. Eby, Ms. Molnar, Ms. Bernard, and Amanda Dallaire (M-CASTL's Administrative Assistant) also attended the annual awards banquet hosted by the Council of University Transportation Centers, where Ms. Bernard received her SOY award. During TRB, Dr. Eby was also appointed to the "Committee on Safe Mobility of Older Persons." After the conference, Dr. Eby and Ms. Molnar traveled to the Maryland Research Consortium in Baltimore to present results from a research project entitled "Fitness to Drive in Early-Stage Dementia: An Instrumented Vehicle Study."

On March 30, Dr. Eby will present the keynote address at the Michigan Traffic Safety Summit in East Lansing. His presentation will focus on issues related to distracted driving, and he will give an update from his participation in the national Distracted Driving Summit hosted by US-DOT last Fall.





Technology Transfer News

As mentioned in the "Research News" section, active work is winding down on the second round of M-CASTL funded research projects. Look for the 5-minute "web briefing" videos from those second round projects to be added to our website in the near future. The video from the project entitled "A New Approach to Assessing Self-Regulation by Older Drivers: Development and Testing of a Questionnaire Instrument" will also be posted there soon.

M-CASTL faculty and staff are currently working on a new synthesis report for 2010. This report will consist of two volumes that review the recent literature related to the mobility and safety of older adults and young people. This report is intended to provide a brief update on the current state of research in the field, and also identify possible future research needs. Upon completion, these reports will be posted on our website.

Planning continues for the 2010 Transportation Research and Education Conference. This year's conference will be held Wednesday, April 7 at the Michigan League. Proposed session topics include: gender differences, access & disparities, law enforcement, emergency department interventions, medical conditions, mobility limitations, mobility management and transitions, and technology.



Research News

Research projects awarded during M-CASTL's second round of funding have now ended. The topics investigated by these research teams include understanding the characteristics of young unlicensed drivers, and using cognitive training as an intervention to improve driving in older adults. Faculty, staff, and students who worked on these projects are now finishing up final data analysis and report writing. Reports from these projects will be added to our website (<http://m-castl.org/>) as soon as they are available.

M-CASTL's most recent funding cycle awarded four new research projects for the coming year, and work is continuing to progress on all of those projects. To read more about what these projects are investigating, see the "Research" section of our website at <http://m-castl.org/node/2>. The report from the project entitled "Youth, Age, and Transportation Accessibility: An Intermetropolitan Comparison," a first-round project,

will also be available on our website shortly.

Save the Date

M-CASTL's annual Transportation Research and Education Conference will be held April 7, 2010 at the Michigan League.

Detailed information will be available at <http://m-castl.org>





Education News

In November, M-CASTL solicited applications from all students who have worked with the Center over the past year, for the Outstanding Student of the Year Award. Members of M-CASTL's Education Subcommittee evaluated the students on the basis of their 1) research and technical merit, 2) academic performance, and 3) professionalism and leadership. Each student also gave a brief presentation to the Subcommittee and answered questions from the faculty members. M-CASTL was pleased to announce that Jessica Bernard was chosen as the 2009 M-CASTL Outstanding Student of the Year (SOY). Ms. Bernard is a doctoral candidate in Cognition & Cognitive Neuroscience in Psychology at the University of Michigan. Her work focuses on motor learning and performance, as well as both cognitive and neural plasticity. As the SOY, Ms. Bernard received \$1,000; the cost of attendance at the Annual Meeting of the Transportation Research Board (TRB) in Washington, DC; and was honored, along with the other University Transportation Center (UTC) students of the year, at a banquet held during TRB.

M-CASTL's professional education program provided funding for several faculty and staff to travel to GSA and TRB. See the "M-CASTL Activities" for more information.



Above: Jessica Bernard with her US-DOT certificate as M-CASTL's 2009 Outstanding Student of the Year

M-CASTL Staff

Director:

David W. Eby eby@umich.edu

Assistant Director:

Lisa J. Molnar ljmolnar@umich.edu

Program Coordinator:

Jonathon M. Vivoda jviv@umich.edu

Administrative Assistant:

Amanda V. Dallaire dallaire@umich.edu

Research Assistant:

Renée M. St. Louis rsloui@umich.edu

PHOTOS THIS PAGE- MIDDLE: UMTRI / AMANDA DALLAIRE; BOTTOM: UMTRI / RENEE ST. LOUIS





Upcoming Events

Michigan Traffic Safety Summit

March 30-April 1, 2010; East Lansing, MI
<http://www.michigan.gov/ohsp>

M-CASTL Transportation Research and Education Conference

April 7, 2010; Ann Arbor, MI
<http://m-castl.org/>

Lifesavers Annual Conference on Highway Safety Priorities

April 11-13, 2010; Philadelphia, PA
<http://www.lifesaversconference.org/registration.html>

Council of University Transportation Centers (CUTC) Summer Meeting

June 7-9, 2010; College Station, TX
<http://cutc.tamu.edu/index.html>



At Right: The UTC Students of the Year pose together at the Council of University Transportation Centers (CUTC) Awards Banquet in Washington, DC

Contact M-CASTL

Michigan Center for Advancing
Safe Transportation throughout the Lifespan
University of Michigan
Transportation Research Institute
2901 Baxter Rd / Rm 111
Ann Arbor, MI 49109-2150

734-764-6240
m-castl@umich.edu
<http://m-castl.org>