

UMTRI

RESEARCH REVIEW

• UNIVERSITY OF MICHIGAN TRANSPORTATION RESEARCH INSTITUTE • OCTOBER-DECEMBER 2013 • VOLUME 44, NUMBER 4 •



Dynamic Year

*Significant UMTRI Milestones
Characterize 2013*

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UMTRI's Strategic Intent

To be the leader in transportation systems research integrating vehicles, people, and infrastructure to achieve a highway transportation system where:

- Fatalities and injuries are eliminated
- People and goods flow efficiently
- Reliance on nonrenewable energy is reduced

Dynamic Year

Significant UMTRI Milestones Characterize 2013

A look back on the last twelve months reveals a year marked by significant UMTRI achievements in multiple areas of transportation. As 2013 draws to a close, the groundwork has been laid in several areas—from connected vehicles to safe driving behavior—for dramatic progress in 2014. Among the UMTRI highlights in 2013.

Global Symposium on Connected Vehicles and Infrastructure

More than 200 people took part in the first Global Symposium on Connected Vehicles and Infrastructure, held May 14-16, at the University of Michigan. UMTRI hosted the inaugural event in collaboration with the Michigan Department of Transportation, Texas Transportation Institute, and ITS America. The event was so successful that a date for the next symposium has already been set. Please plan to join us April 21-23, 2014.

Mobility Transformation Center (MTC)

First announced at the symposium in May, the Mobility Transformation Center represents an unprecedented step forward in realizing the full potential of connected and automated vehicles. One of the first milestones came in October when the U-M Board of Regents approved plans to proceed with the design of a unique test facility simulating a dynamic urban environment to be used in research and testing connected and automated vehicles.

UMTRI and Texas Transportation Institute Alliance

An innovative alliance between

UMTRI and the Texas Transportation Institute (TTI) solidified in July when scientists from both institutes met for a day-long summit to outline a research agenda that optimizes the strengths of both organizations.

Center for Advancing Transportation Leadership and Safety (ATLAS)

Exemplifying the UMTRI and TTI collaboration, a \$1.4 million grant from the U.S. Department of Transportation was awarded to UMTRI in October to establish the ATLAS center, a new center to improve transportation safety. The center will sponsor research, education, and technology-transfer activity to find integrated, innovative solutions for transportation safety.

Three of its early projects will focus on alcohol-impaired nighttime driving; child safety in cars; and reducing fatalities, injuries and societal costs of heavy-truck crashes.



Opening remarks at the 2013 Global Symposium on Connected Vehicles and Infrastructure.

UMTRI-Toyota Leadership in Transportation Seminar Series

This popular seminar series featuring conversations with global leaders, which began in 2012 by featuring then NHTSA administrator David Strickland, continued in 2013 and featured Sören Hess, general manager of the CAR 2

CAR Communications Consortium in Europe. Special guests on the calendar in 2014 include Bryant Walker Smith, fellow at the Center for Automotive Research at Stanford, on February 13; and Matthew Rizzo, MD, professor of neurology, engineering and public policy at the University of Iowa, on March 13.

These are just some of the many UMTRI accomplishments in 2013 that took place against a backdrop of daily activity related to the UMTRI-led Safety Pilot Model Deployment, as well as multiple faculty promotions, several prestigious staff awards, and the hiring of new scientists in several disciplines. All combine to create a dynamic environment for transportation activities and milestones in 2014.

“As the Safety Pilot continued very successfully, UMTRI was drawn into many new opportunities, as our national and international reputation increased,” said UMTRI director Peter Sweatman.

“UMTRI is now a highly sought-after partner for today’s larger deployments of transportation innovation.”

“The Michigan Mobility Transformation Center – nurtured and spun off by UMTRI – is building a research-and-deployment partnership with a much broader range of companies than we

have seen in the past,” added Sweatman. “UMTRI’s stellar reputation was the decisive factor in launching and building MTC. We’re extremely proud of the creation of MTC, which will move into full swing in 2014.”

Visit the UMTRI website to learn more about these ongoing initiatives,

www.umtri.umich.edu **RR**

Promoting Safe Driving

Study looks at pediatricians promoting Checkpoints™ safe driving program to parents

Motor-vehicle crashes are the leading cause of death among teens. A study presented October 28, 2013, at the American Academy of Pediatrics (AAP) National Conference and Exhibition in Orlando evaluated a pediatric intervention that directed families to a new web-based Checkpoints™ safe-driving program for parents of teen drivers.

In collaboration with Pediatric Research in Office Settings (PROS), the American Academy of Pediatrics' practice-based research network, the study authors created a brief intervention protocol, training plan, promotional materials, and a Checkpoints™ website, www.youngdriverparenting.org, which will be sustained by the AAP.

The website includes teen-driving statistics and resources that help parents keep their teen drivers safe, as well as state-specific teen-driving laws and an interactive component that helps parents create their own parent-teen driving agreement including driving hours, number of teen passengers allowed in the car, and other guidelines that can be modified over time.



From March 2012 to July 2013, 133 pediatricians completed training and participated in the program. Pediatricians delivered a two-minute intervention and distributed key chains imprinted with the Checkpoints™ website address to families with driving-age teens. Nearly 4,000 parents were reached through the program, resulting in more than 2,111 website visits. Website visitors clicked on an average of 4.2 pages and spent an average of 3.5 minutes on the site. The pages viewed most often were those on

teen-driving risks, account registration, and state-specific teen driving laws.

The study was funded by the Centers for Disease Control and Protection's (CDC) National Center for Injury Prevention and Control, and built upon the Checkpoints™ program developed at the National Institutes of Health (NIH) by Bruce Simons-Morton, a coauthor on the study.

"Parents play a key role in limiting and monitoring their teens' early driving," said study author Jean Thatcher Shope, UMTRI research professor emerita. "The parent-directed, evidence-based Checkpoints™ program, adapted to a user-friendly website, can help parents protect their teen drivers, and is available at no cost."

"Promoted through a brief intervention from a teen's doctor, the program encourages parents to use the recommended parent-teen driving agreement and other resource materials to help their teen drivers stay safe," Shope said.

C. Raymond Bingham and Jennifer Zakrajsek of UMTRI were among the study's coauthors.

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UMTRI-Toyota Leadership in Transportation Seminar Series

UMTRI-Toyota Leadership in Transportation Seminar Series features lectures and conversations with global leaders that explore the future of transportation, from safety, mobility, and environment to connected and automated technology. Upcoming seminars at the University of Michigan will feature the following speakers:



February 13
Bryant Walker Smith

Smith is a fellow at the Center for Internet and Society at Stanford Law School; a fellow at the Center for Automotive Research at Stanford (CARS), and a lecturer in law at Stanford Law School. He writes, speaks, and teaches on the legal and policy aspects of increasing automation. He also chairs the Emerging Technology Law Committee of the Transportation Research Board of the National Academies. He is a member of the New York Bar and a former transportation engineer who has worked on infrastructure issues in the United States and throughout Europe.

Smith will speak at 3 p.m. at the University of Michigan North Campus Research Complex, building 10, Research Auditorium. He will give a legal perspective on misconceptions in vehicle automation.



March 13
Matthew Rizzo, MD

Rizzo is a professor of neurology, engineering and public policy at the University of Iowa. He is director of the provost's university-wide Aging Mind and Brain Initiative; vice chair for Translational Research in Neurology; director of the Division of Neuroergonomics (including instrumented vehicles and driving simulators), and senior attending physician in the Memory Disorders Clinic. He has conducted research in driver attention and fitness to drive for two decades funded by the NIH, CDC, and industry. Dr. Rizzo was the first to integrate high fidelity simulators into clinical settings and has developed some of the most advanced instrumented vehicles in experimental and naturalistic settings to study driver performance research.

To attend either of these events, reply to UMTRI-ToyotaRSVP@umich.edu.

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UMTRI BRIEFS

Most UMTRI reports are available in full text online. See the website address at the end of the citation. Please contact the UMTRI Library at 734-764-2171 or umtridocs@umich.edu to inquire about the availability of other publications listed here.

Journal Articles

Connell, C.M.; Harmon, A.; Janevic, M.R.; Kostyniuk, L.P. 2013. "Older Adults' Driving Reduction and Cessation: Perspectives of Adult Children." *Journal of Applied Gerontology*, vol. 32, no. 8, pp. 975 - 996.

Ehsani, J.P.; Bingham, C.R.; Shope, J.T. 2013. "The Effect of the Learner License Graduated Driver Licensing Components on Teen Drivers' Crashes." *Accident Analysis and Prevention*, vol. 59, October, pp. 327-336.
DOI: 10.1016/j.aap.2013.06.001

Hu, J.; Wu, J.; Klinich, K.D.; Reed, M.P.; Rupp, J.D.; Cao, L. 2013. "Optimizing the Rear Seat Environment for Older Children, Adults, and Infants." *Traffic Injury Prevention*, vol. 14, suppl. 1, 2013, pp. S13-S22.
DOI:10.1080/15389588.2013.796043

Hu, J.; Wu, J.; Reed, M.P.; Klinich, K.D.; Cao, C. 2013. "Rear Seat Restraint System Optimization for Older Children in Frontal Crashes." *Traffic Injury Prevention*, vol. 14, no. 6, pp. 614-622.
DOI:10.1080/15389588.2012.743123

Miller, C.S.; Madura, N.H.; Schneider, L.W.; Klinich, K.D.; Reed, M.P.; Rupp, J.D. 2013. "PMHS Impact Response in 3-m/s and 8-m/s Nearside Impacts with Abdomen Offset." *Stapp Car Crash Journal*, vol. 57, pp. 387-425.

Reed, M.P. 2013. "Driver Preference for Fore-Aft Steering Wheel Location." *SAE International Journal of Passenger Cars: Mechanical Systems*, vol. 6, no. 2, pp. 629-635.
DOI:10.4271/2013-01-0453

Reed, M.P.; Ebert, S.M.; Hallman, J.J. 2013. "Effects of Driver Characteristics on Seat Belt Fit." *Stapp Car Crash Journal*, vol. 57, pp. 43-57.

Taylor, T.; Pradhan, A.K.; Divekar, G.; Romoser, M.; Muttart, J.; Gomez, R.; Pollarsek, A.; Fisher, D.L. 2013. "The View from the Road: The Contribution of On-Road Glance-Monitoring Technologies to Understanding Driver Behavior." *Accident Analysis & Prevention*, vol. 58, September, pp. 175-186.
DOI:10.1016/j.aap.2013.02.008

Technical Reports

Schoettle, B.; Sivak, M. 2013. A Comparison of CAFE Standards and Actual CAFE Performance of New Light-Duty Vehicles. Report no. UMTRI-2013-35.
<http://hdl.handle.net/2027.42/100179>

The research documented in this report was sponsored by UMTRI's Sustainable Worldwide Transportation program.

Sivak, M. 2013. Has Motorization in the U.S. Peaked? Part 3: Fuel Consumed by Light-Duty Vehicles. Report no. UMTRI-2013-40.
<http://hdl.handle.net/2027.42/100360>

The research documented in this report was sponsored by UMTRI's Sustainable Worldwide Transportation program.

Sivak, M.; Schoettle, B. 2013. Road Safety in 170 Low-, Middle-, and High-Income Countries. Report no. UMTRI-2013-37.
<http://hdl.handle.net/2027.42/100256>

The research documented in this report was sponsored by UMTRI's Sustainable Worldwide Transportation program.

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January 2014

TRB 93rd Annual Meeting
January 12-16; Washington, D.C.
www.trb.org/AnnualMeeting2014/

North American International Auto Show
January 13-26; Detroit, Michigan
www.naias.com

CDR Summit
January 27-29; Houston, Texas
www.cdrsummit.com/

February 2014

National Asphalt Pavement Association
(NAPA) annual meeting
February 2-5; Boca Raton, Florida
www.asphaltpavement.org

Connected World Conference— 2014 Chicago
Auto Show
February 6-17; Chicago, Illinois
<http://connectedworldmag.com/conference/>

UMTRI-Toyota Leadership in Transportation
Seminar Series
February 13; Ann Arbor, Michigan
UMTRI-ToyotaRSVP@umich.edu

NARC National Conference of Regions
February 9-11; Washington, D.C.
www.narc.org

March 2014

Transportation Planning, Land Use and Air
Quality Conference
March 3-4; Charlotte, North Carolina
www.ucs.iastate.edu/mnet/tpluaq/home.html

Aging in America Conference
March 11-15; San Diego, California
www.asaging.org/aia

UMTRI-Toyota Leadership in Transportation
Seminar Series
March 13; Ann Arbor, Michigan
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Michigan Traffic Safety Summit
March 25-27; East Lansing, Michigan
www.michigan.gov/msp

April 2014

SAE World Congress & Exhibition
April 8-10; Detroit, Michigan
www.sae.org/congress/

Global Symposium on Connected Vehicles and
Infrastructure
April 21-23; Ann Arbor, Michigan
www.umtri.umich.edu/

Lifesavers National Conference on Highway
Safety Priorities
April 27-29; Nashville, Tennessee
www.lifesaversconference.org/

May - September 2014

GIS for Transportation (GIS-T) Symposium
May 5-8; Burlington, Vermont
www.gis-t.org/

RESNA Annual Conference
June 11-15; Indianapolis, Indiana
www.resna.org/conference/

National Rural ITS Conference
August 24-27; Branson, Missouri
www.nritsconference.org/

ITS World Congress on Intelligent Transport
Systems
September 7-11; Detroit, Michigan
www.itsa.org/events/2014-world-congress

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