

# Safe Mobility of Older Persons

The National Academies  
2101 Constitution Ave NW  
Washington, DC 20418



Transportation Research Board  
Committee ANB60  
<http://www.crag.uab.edu/safemobility>  
E-mail: safemobility @uab.edu  
June, 2008

Dear Colleagues:

This issue of the Newsletter presents a broad range of articles on subjects ranging from David Shinar's new book (*Traffic Safety and Human Behavior*) to John Eberhard's designation as an Emeritus Committee Member by the Transportation Research Board. John's recognition is certainly well-deserved--he is a former chair of our Committee on Safe Mobility of Older Persons and has been a force for innovation and progress throughout his career.

We present a brief synopsis of the Community Transportation Association of America conference agenda—they meet starting June 1 in New Orleans. Another conference of potential interest is that focusing on Light Rail sponsored by TRB in conjunction with the American Public Transportation Association. That one is April 19-22

Two other names familiar to most of you were subjects of a recent Wall Street Journal article. Kathy Freund, of ITNAmerica, and Joe Coughlin, of the MIT AgeLab, were among 12 Americans which the Journal commended for their leadership in the field of aging services. Congratulations to both Kathy and Joe.

This issue also contains a wealth of research summary material—both from America and from various good neighbors around the globe. Perhaps the most notable observation we can make about our field is that interest in senior safety and mobility is on the rise, and with that increased interest comes additional research and expanding attention to senior needs.

Karlene



## **In This Issue**

CTAA June Conference	Page 2
Eberhard Honored by TRB	Page 3
New and On-Going Research	Page 10
Around the World	Page 17

## **Committee on Safe Mobility of Older Persons Newsletter**

Committee Chair: Karlene Ball  
Newsletter Editors: John Eberhard, Consultant  
Kent Milton, CHP  
Sherrilene Classen, UFL  
Editorial Office: Center for Translational  
Research on Aging & Mobility  
University of Alabama/Birmingham  
TRB Staff: Rick Pain  
E-mail to Editors: [jeberhard2@msn.com](mailto:jeberhard2@msn.com)  
[kentbarb@gmail.com](mailto:kentbarb@gmail.com), [sclassen@PHHP.UFL.EDU](mailto:sclassen@PHHP.UFL.EDU)  
E-mail to TRB Staff: [rpain@nas.edu](mailto:rpain@nas.edu)  
For an electronic version of the newsletter, go to:  
<http://www.crag.uab.edu/safemobility>.

# Transportation Research Board June 2008

## **Panel on Senior Transportation Scheduled at CTAA's Expo '08**

Expo '08, the annual conference of the Community Transportation Association of America, will be held June 1-6 in New Orleans, offering an extensive line-up of topics dealing with transit management and operations, the impact of technology, and related subjects.

Jane Hardin, CTAA's coordinator for senior transportation programs, will moderate a panel discussion on *Senior Transportation: How Providers and Mobility Advocates Can Work Together to Meet Growing Demand*. Panel members include Jon Burkhardt, senior study director for Westat Inc.; Richard Weiner, principal with Nelson Nygaard Consulting Associates; and Frank Carroll, senior project manager-mobility options, AARP safety program/mobility options.

Panelists will identify strategies necessary to meet future senior transportation needs, begin to build an issues platform for carrying out these strategies, and discuss how transportation providers and consumers can work together effectively in advancing community transportation options for older adults.

Hardin said "order adults increasingly want a choice of mobility options. They want these options after they can no longer drive, and they need options even before that point—while they are cutting back on driving." The session is scheduled for Wednesday, June 4, from 8:30 to 10:30 a.m.

A session on mobility management will be held Tuesday, June 3, led by Jim McLary, United We Ride ambassador from Dumfries, Virginia. Transit advocates have been promoting the idea of mobility management for a number of years, and this session will deal with handling mobility management with the customer always the focal point.

As the concept of managing mobility has evolved, details have varied, but the common theme has been that effective transportation, in particular for certain customer groups, can be better achieved if some person or system is commissioned to coordinate or navigate the network of community transport services in a way that helps the customers understand how to use them—and feel comfortable doing it.

McLary will make the point that mobility management works best when the needs and expectations of the

customer serve as the basis for designing, promoting and delivering services, particularly for seniors.

Expo '08 will meet at the Ernest N. Morial Convention Center. .

## **Light Rail Transit Conference Set April 19-22 in Los Angeles**

The 11th joint *Light Rail Transit Conference: Renewal and Growth*, sponsored by the Transportation Research Board and the American Public Transportation Association (APTA), will be held in Los Angeles, California April 19-22, 2009. The Los Angeles County Metropolitan Transportation Authority will be the host system.

Building on the 2006 tenth joint conference, the 2009 event will focus on meeting the demands of rapidly growing light rail systems as well as the needs of older systems in renewal.

Original systems are now reaching an age of maturity and thus require attention to infrastructure renewal and upgrading.

The 2009 conference theme—renewal and growth—captures the essence of the light rail industry status today. Light rail and specifically the streetcar have reappeared as tools to aid downtown circulation and spur urban development, and the 2009 conference will address industry needs related to renewal and growth.

The conference planning committee, chaired by John Wilkins, New Jersey Transit (chair, TRB Committee on Light Rail Transit) and vice-chair, Winston Simmonds, Port Authority of Allegheny County (chair, APTA Light Rail Transit Technical Forum), has issued the conference call for paper abstracts.

Papers are sought on a wide range of topics, including: Streetcar Circulators and the New Urbanism; Light Rail as a Tool: Improving Regional Ridership; Controlling Capital Costs Through Design and Delivery Innovations; Stations, Stops and Art in Transit; Traffic Engineering Issues: What is the Role for Each Mode; Energy, Environment and Transit; Making Systems "Greener" and Energy Efficient; Vehicle Technology, The Next Generation Vehicle; Improved Security; Fare Enforcement and Collection: POP and Smart Media Trend; Operations Planning, Doing More with Less.

Check <http://www.trb.org/conferences/2009/LRT> for information.

# Transportation Research Board June 2008

## **Emeritus Membership Given To Dr. John Eberhard by TRB**

Dr. John Eberhard, a national leader in the field of senior mobility and safety for more than three decades, was presented Emeritus Membership by the Transportation Research Board in recognition of his service, research accomplishments and administrative acumen.

The presentation came at January's meeting of the TRB Committee on Safe Mobility of Older Persons (ANB60). Making the award were Rick Pain, associate director of TRB's Technical Activities Division and long-time liaison to ANB60, and Karlene Ball, current chair of ANB60.

Emeritus Membership on a TRB committee recognizes exceptional individuals who have been active, productive members within the Technical Activities Division committee structure, have shown dedication and innovation in serving that committee, and made sustained leadership contributions over an extended period. Eberhard was instrumental in forming the Committee on Safe Mobility of Older Persons and served as its first chair. Since then he has maintained a strong interest in committee activities and assisted in both the formulation and conduct of annual programs.

The Emeritus status also requires the recipient to have made outstanding technical contributions in his or her field. Eberhard worked as a senior research psychologist with the National Highway Traffic Safety Administration from 1970 to 2003, conducting older driver research and serving as advisor on a large number of research projects carried out by others around the nation and internationally.

He didn't slow down upon retiring from NHTSA, turning to consulting work as well as membership on the Howard County (MD) Commission on Aging, where he chairs the transportation committee.

Election to Emeritus Membership is also intended to encourage the recipient's continued involvement at the committee level, which is the mainstay of the Technical Activities Division. In 2008 he organized two sessions at the TRB annual meeting to commemorate the 20<sup>th</sup> anniversary since the publishing of the TRB report on *Transportation for an Aging Society*.



*John Eberhard (center) received his Emeritus Membership from Karlene Ball (left) and Rick Pain.*

Eberhard has often been an interview subject for national stories on older drivers, and has contributed much to the research literature on the subject. Most recently he has worked with the International Conference on Aging, Disability and Independence and the American Society on Aging in arranging and/or participating in transportation panels and seminars at their conferences. He was on the doctoral committees of three new Ph.D.'s since retiring from NHTSA. He also helped form the transportation peer group associated with the American Society on Aging.

Eberhard says his most satisfying moments have come from the knowledge that a "lot of people became involved with older driver issues after they met me. They come up to me and say 'I got into this because of you. You got me started.' That's important to me, because it means the team is expanding, and we're going to need that as the senior population mushrooms. All the things we talk about in this field are going to become bigger issues as the population of older people grows. We're going to continue to need good people and good programs to insure safe mobility for our aging population."

## **Free Transit for Illinois Seniors**

Illinois citizens age 65 and older became eligible to ride main line and fixed route transit free, as of March 17, 2008.

Approximately 1.3 million seniors live in Illinois communities with transit service available.

# Transportation Research Board June 2008

## **CME Course Should Improve Communications with Seniors**

The National Institute on Aging of the National Institutes of Health has funded development of a web-based Continuing Medical Education (CME) program for primary care providers to improve communication with older patients about driving issues such as safety and driving cessation. *Safe Driving and Your Older Patients* was developed by the New England Research Institutes. The course uses interactive text, case studies, and filmed vignettes to:

1. Enhance knowledge of the epidemiology and predictors of driving accidents involving older adults;
2. Describe the health, legal, social, and emotional factors related to driving cessation in older adults; and
3. Develop effective communication skills that are specific to the needs of older patients and their family members who are concerned about safe driving.

The course is conveniently accessible by internet connection from work or home.

Those taking the course will be asked to evaluate the curriculum to determine if it improves provider knowledge and communication skills. The evaluation consists of two parts and can be done at the participant's convenience. First, to assess knowledge gain, the course will be preceded and followed by a series of questions. The questions after the course comprise the CME test.

Completing these activities may take up to 2 hours. However, because it is available online, it can be viewed in shorter increments; that is, the content can be studied for 10 or 15 minutes, set aside, resumed later, and completed at the participant's chosen speed. Questions then will be asked about the course to complete the evaluation. The course has been approved for a maximum of 2 AMA PRA Category 1 credits by the Boston University School of Medicine Office of Continuing Medical Education.

The second part of the study evaluates the effectiveness of the course in improving communication about driving safety issues. Participants will be asked to take part in a brief telephone interview with a mock patient both before and after course completion. A brief case history will be provided, including medical history,

current medications, and reason for the "visit" as well as 2-3 objectives regarding discussion of driving safety.

With participants' permission, these interviews will be audiotaped for subsequent analysis. Each interview should take about 15 minutes. The interviews will be arranged at each participant's convenience, and \$250 will be paid for completion of each interview, or a total of \$500. Registration: <http://drivingstudyinfo.neriscience.com/>

## **Coughlin and Freund Honored In Wall Street Journal Article**

Two people well-known among those working on senior safety and mobility issues were profiled in a recent Wall Street Journal article that dealt with "12 people who are changing your retirement." The Journal described Joe Coughlin, head of the Massachusetts Institute of Technology AgeLab, and Kathy Freund, creator and head of the Independent Transportation Network (ITN), as being among "pioneers shaping the way Americans will live and play later in life."

Coughlin is depicted as a "man in a hurry," based on his conclusion that "products being designed now won't be there when the (baby) boomers need them" if they aren't coming off drawing boards more rapidly. He was referring to advances in transportation among a variety of new products. Ms. Freund's recognition of the need for seniors to remain mobile—even when they can no longer drive—led to the formation of ITN. Her motivation came in 1988 when a vehicle driven by an 84-year-old woman struck and critically injured her 3-year-old son. She recognized that those who should not be driving need an alternative

ITN headquarters in Portland, Maine, and serves as the model which Ms Freund now exports around the nation through her ITNAmerica organization. ITNs offer rides at any hour, every day, at modest cost, and with built-in mechanisms to allow users and volunteer drivers to build equity which can be converted to rides. While in Portland the program "provides nearly 17,000 rides a year to about 1,000 members age 65 and older, ITNAmerica now has nine affiliates, which provided almost 26,000 rides last year, and expects to have 40 affiliates by 2010," the Journal article said.

Coughlin a decade ago worked for a federal contractor studying how the aging population might affect transportation. A host of other concerns related to aging

# Transportation Research Board June 2008

began to unfold, what Coughlin likened to “unwrapping an onion,” the Journal article noted. That eventually led to creation of the AgeLab where “Prof. Coughlin and his colleagues are designing -- and pushing companies to embrace -- technology that will enhance older adults’ daily lives.”

One of his favorite breakthroughs is a “personal adviser” that helps food shoppers identify products that are healthy for them. The device attaches to grocery carts like a minicomputer with a scanner. “Shoppers insert smart cards that contain their dietary particulars. Then, as they shop, they swipe products past the scanner to get the device’s opinion,” the Journal said.

## Book Review

### **David Shinar’s New Treatise On Safety Seen as Useful Tool**

*Traffic Safety and Human Behavior* is the newest book by David Shinar, noted researcher and educator who serves as the George Shrut professor of human performance management at Ben Gurion University, Beer Sheva, Israel; and chief scientist at Israel’s National Road Safety Authority (the equivalent of NHTSA), located in Jerusalem.

Shinar is also an honorary fellow with the Human Factors Society, recipient of the A.R. Lauer Award for Contributions to Highway Safety Research, and member of the editorial advisory board of *Accident Analysis and Prevention*, *Human Factors*, *Journal of Safety Research*, *Transportation Research Part F*.

John Eberhard, retired NHTSA research psychologist and former chair of the TRB Committee on Safe Mobility of Older Persons, reviewed the work and found it to be a “great resource for safety professionals everywhere, not simply those interested in older Americans but those addressing issues involving all ages. If we can get safety experts to read this, and take advantage of the knowledge gained, safety programs nationwide will be more effective.”

resource for equipping safety professionals at every level—national down through community.

“Even the experienced professionals, those who qualify as experts, can benefit from this work because of its wealth of knowledge,” Eberhard said. He noted that Shinar’s book delved more deeply than any prior volume that Eberhard is aware of. “Shinar captured it all. He

identifies more than 1000 resources. Just the access to this reference resource compilation is worth more than the cost of the book. It is, for example, a superior resource for anyone trying to write grant proposals.”

“Even the experienced professionals, those who qualify as experts, can benefit from this work because of its wealth of knowledge,” Eberhard said. He noted that Shinar’s book delved more deeply than any prior volume that Eberhard is aware of. “Shinar captured it all. He identifies more than 1000 resources. Just the access to this reference resource compilation is worth more than the cost of the book. It is, for example, a superior resource for anyone trying to write grant proposals.”

### **TRB Annual Conference Planning Begins for January 2009 Event**

Plans for the Transportation Research Board annual meeting January 11-15, 2009 in Washington, D.C. are moving through the formulative stage, but some cutoff dates have already been established. Full papers must be submitted by July 28 (non-pdf format) or August 1 (converted to pdf format) for review and possible publication in conjunction with the conference.

All annual meeting announcements will be produced electronically; no preliminary printed version will be mailed out—a TRB first. TRB plans to have the meeting announcement and hotel reservation information on the website during the first week in August.

Again in 2009 the Committee on Safe Mobility of Older Persons plans an older driver Safety/Mobility Video Theater, featuring DVDs and VHS tapes on older driver/pedestrian safety and mobility subjects. Information on the video theater is available from Kent Milton ([kentbarb@gmail.com](mailto:kentbarb@gmail.com)). Annual meeting information is available from Rick Pain ([rpain@nas.edu](mailto:rpain@nas.edu)).

### **CarFit Roll-out Brings Events To Many Seniors in Florida**

Since the national release of the CarFit program in May, 2007, partners in Florida have come together to bring this innovative driving wellness program to communities across the state. AARP, AAASouth, the State Departments of Transportation; Highway Safety-Motor Vehicles; and Elder Affairs, and occupational

# Transportation Research Board June 2008

therapists statewide have collaborated to bring this new program to Florida communities

CarFit was developed by AARP, AAA and the American Occupational Therapy Association as a quick educational check on how a driver (or passenger) is positioned in the vehicle: safety and comfort are the goals. The program utilizes trained volunteers including an occupational therapist to complete a 12-point checklist; make recommendations for adaptive equipment or suggest follow-up actions if appropriate. There is no cost to participants.

Fran Carlin-Rogers of Carlin Rogers Consulting and a CarFit instructor has completed 10 events to date with more to come. Thus far, a total of 156 Florida volunteers have been trained in various capacities; 245 seniors have participated in Florida CarFit events to date. In November, 2007, the University of Florida trained all of its occupational therapy students as CarFit volunteers.

In March of this year, the Florida Department of Transportation awarded a grant to the Senior Resource Alliance (Area Agency on Aging, Orlando) to conduct a total of 15 event-coordinator and/or consumer CarFit programs. Since then, 40 coordinators have been trained to conduct events in their own communities and 77 seniors have participated. More events are being scheduled all the time and the number of Floridians impacted by this program is growing.

The goal of the Florida rollout is to develop a cadre of trained individuals who will be able to conduct or volunteer for CarFit events on an ongoing basis and to create partnerships in the communities to support the program.

The CarFit website at [www.car-fit.org](http://www.car-fit.org) displays a list of upcoming events. Information is available from Fran Carlin-Rogers @ 407 422 0991 or [fcr201@aol.com](mailto:fcr201@aol.com)

## **Partnership Starts Exchange to Promote Supplemental Transport**

In partnership with the Beverly Foundation and the Independent Living Partnership, the AAA Foundation for Traffic Safety has launched the STP Exchange - a first-of-its-kind web site dedicated to the listing and promotion of supplemental transportation programs (STP). The site, <http://www.stpexchange.org/>, offers a forum for emerging and established STP providers to discuss execution of successful programs that provide

transportation options to aging adults and those who no longer can drive.

Technical information and financial development materials are included. Site membership is free. With a goal to connect thousands of STP providers across the country, the site has 50 charter members. Eventually, all members will be indexed at <http://www.seniordrivers.org/notdriving/notdriving.cfm?button=profiles> for individual and public use on the Foundation's [seniordrivers.org](http://www.seniordrivers.org) web site. This online index of STPs will become an excellent resource for organizations whose members seek information on the locations and services provided by STPs in their locality.

Those aware of STPs not yet on the Exchange can refer these potential members to the site. Questions about the Exchange or the website [www.seniordrivers.org](http://www.seniordrivers.org) <<http://www.seniordrivers.org/>> may contact Fairley Mahlum ([fmahlum@aaafoundation.org](mailto:fmahlum@aaafoundation.org)) or Allison Soule ([asoule@aaafoundation.org](mailto:asoule@aaafoundation.org))

## **Langford Will Join Institute**



### **As Visiting Fellow This Fall**

James Langford, senior research fellow from the Accident Research Centre at Monash University, Victoria, Australia, will join the Gerontology Institute of the McCormack Graduate School of Policy

Studies at UMass as a Visiting Fellow this fall. Langford has proposed a transportation research project for his visiting fellowship that would evaluate possible safety benefits associated with restricted licenses for older drivers using a primary data source, a linked licensing/crash database from an Australian jurisdiction. Such a project could be a basis of collaboration with a proposed Institute project involving the Massachusetts Registry of Motor Vehicles.

Issues facing older drivers are currently at the forefront of gerontological research. (See the published works of Professor Nina Silverstein et al. on the Institute's

# Transportation Research Board June 2008

website at <http://www.geront.umb.edu/inst/pubAndStudies.jsp> under Transportation.) Langford has presented papers at various national and international conferences. In 2007 he convened the TRB Workshop, "Licensing authorities' options for managing older driver safety—practical advice from the researchers," and he has numerous peer-reviewed publications in his area of expertise.

Since 1993, Langford's research has focused on road safety themes, specializing in the management of older driver safety. He has been a principal researcher or a senior member of a research team for an extensive number of older driver projects across a range of issues including crash responsibility, assessment of fitness to drive, licensing strategies, highway design for older drivers, and assessment of older drivers' true crash risk. He is also currently researching and preparing policy papers for the Australasian Road Safety Handbook, for which he is the primary editor.

Langford earned his BA in psychology with honors from the University of Tasmania, Tasmania, Australia, and received his MS from the same institution, with concentrations in research methodology, program evaluation, cognitive development, and resource planning.

## **Eldercare Locator and NCST Offer Mobility Options Advice**

Seniors or their families looking for transportation options have two major resource organizations available: Eldercare Locator (at 800 677-1116 or [www.eldercare.gov](http://www.eldercare.gov)), a free national service of the U.S. Administration on Aging administered by the National Association of Area Agencies on Aging (n4a); and the National Center on Senior Transportation (NCST—at 866 582-6278 or [www.seniortransportation.net](http://www.seniortransportation.net)), administered by Easter Seals Inc., in partnership with n4a through a cooperative agreement with three federal agencies.

These organizations advise people to think ahead about what alternatives can be accessed should driving become impossible. They recommend contacting local organizations for assistance: the community's Area Agency on Aging (AAA), Aging and Disability Resource Center (ADRC), or Indian Tribal Organization Transportation Options

Depending upon destination and physical needs, transportation choices might include buses, vans, taxis, or even volunteer drivers from human service organizations. Listed below are descriptions of transportation resources and services to explore:

- Volunteer Driver Programs: Local faith-based and nonprofit organizations frequently have a network of volunteers who offer flexible transportation for shopping, doctors' appointments, recreation, and other activities. One-way, round-trip, and multi-stop rides are usually available; reservations usually are needed. These programs are provided free, on a donation basis, through membership dues, or for a minimal cost.

- Paratransit Service: Public transit, aging organizations, and private agencies provide door-to-door or curb-to-curb transportation using mini-buses or small vans (vehicles for less than 25 passengers). Paratransit service often requires users to make advance reservations but still offers a degree of flexibility and personalization in scheduling. Curb-to-curb service provides for passenger pick up and delivery at the curb or roadside; door-to-door service offers a higher level of assistance by picking up passengers at the door of their homes and delivering them to the doors of their destinations. Paratransit and van services offer reduced fares for older adults and persons with disabilities, and some providers may operate on a donation basis.

- Door-through-Door (Escort) Service: Private agencies provide drivers or escorts who offer personal, hands-on assistance by helping passengers through the doors of their residences and destinations, as needed. This type of service includes several levels of assistance from opening doors and providing verbal guidance, to physical support. Persons with severe physical or mental disabilities typically use this service.

- Public Transit/Fixed Route Service: Public transit agencies provide bus and rail services along established routes with set schedules on a non-reservation basis — also referred to as "public transportation" or "mass transit". Reduced rate fares and additional transportation services are available for older adults and persons with disabilities. Information about routes, schedules, fares, and special services are available through the transit agency.

- Travel Training: Public transit agencies and local aging organizations provide free, hands-on instruction to help older adults and persons with disabilities learn to

# Transportation Research Board June 2008

travel safely and independently within public transit systems. Topics discussed include the best routes to take to reach various destinations, hours of service, the cost of the trip (including available discounts), and how to pay for services (such as fare cards or tokens). Demonstrations on how to ride public buses and trains also are provided.

- **Taxi Service:** Passengers activate this service by calling a dispatcher to request a ride between locations of their choice. Trips usually can be scheduled in advance or on the spot. Some taxis are wheelchair accessible and meet ADA standards. Fares are charged on a per-mile or per-minute basis on top of a base charge for each trip, and may be payable through a transportation voucher program.

- **Transportation Voucher Programs:** Area Agencies on Aging, Aging and Disability Resource Centers, and other social service organizations often provide fare assistance programs that enable qualified persons (usually economically disadvantaged older adults or persons with disabilities) to purchase vouchers for transportation services at a reduced rate. The vouchers are then used to pay for services from a participating transportation provider.

Some communities have mobility managers who can guide seniors through available transportation resources and services. Mobility managers know the community-wide transportation service network and understand how it operates. Their main focus is to assist consumers in choosing the best options to meet their individual travel needs.

## Key Considerations

Depending upon lifestyle, one or more transportation options can keep people connected. When investigating transportation options, several things should be considered in making confident decisions about which options are best. Among these are eligibility of the individual, assistive devices accommodation, insurance applicability, accessibility, hours and scope of operations, affordability, ease of use, extent of driver aid, and reservations policy.

## Report on International Scan Planned June 4 in Washington

The International Technology Scanning Program will present a 90-minute summary of a recent International

Scan on Older Road Users June 4 in the National Academies Keck Building, 500 5th St, NW, Room 213 Washington DC. The session begins at 10 a.m.

The scan team visited Tokyo, Japan, and three states in Australia: New South Wales, Victoria, and Queensland. Scans are designed to collect information from abroad with the potential to improve roadway safety and mobility for older road users in the United States. The scan focused on the following:

- \* Infrastructure-based international best practices that improve safety and mobility for older road users that could be applied in the near term on US roadways.

- \* Policy approaches to improving infrastructure to better meet the needs and capabilities of older road users.

- \* Transportation planning policy initiatives to address mobility of older citizens in terms of land-use, transit, and other alternatives to driving.

- \* Policy approaches to improving older driver assessment, licensing, and training.

- \* Safety research collaboration opportunities between international and U.S. transportation research centers.

- \* Ways to improve U.S. and international practices for long-term transportation planning for older road users.

The Scanning Program sponsors 3-5 international technology exchanges annually. The exchanges allow U.S. transportation officials to gain insight into innovative policies and technologies of potential benefit in the U.S. Each Scan Team reconvenes shortly after the scan to complete the final report, presentation materials, and a comprehensive implementation plan. The Team ends the reassembly meeting with a formal presentation to DC-based transportation organizations, including FHWA, AASHTO, TRB, NCHRP, and appropriate trade associations. Information is available from Nanda Srinivasin (202-334-1896), [NSrinivasan@nas.edu](mailto:NSrinivasan@nas.edu) <<mailto:NSrinivasan@nas.edu>>

## EPA Will Send Experts to Assist Locals with Smart-Growth Goals

The U.S. Environmental Protection Agency EPA is requesting applications for the Smart Growth Implementation Assistance program. Through this program, a team of multi-disciplinary experts will provide free technical assistance to communities, regions, or states that want to develop in ways that meet

# Transportation Research Board June 2008

environmental and other local or regional goals, including transportation objectives.

While these entities may be interested in building stronger neighborhoods, protecting their environmental resources, enhancing public health, creating more practical transportation systems, and planning for other development needs, they may lack tools, resources, or information to achieve these goals. EPA can help applicants overcome these roadblocks by providing evaluation tools and expert analysis.

EPA solicits applications from communities that want help with policy analysis or public participatory processes. Selected communities will receive assistance in the form of a multi-day visit from a team of experts and national partners to work with local leaders. Applications will be accepted until May 8, 2009. Information is available at [www.epa.gov/smartgrowth/sgia.htm](http://www.epa.gov/smartgrowth/sgia.htm).

## **ITE and AARP Combining to Offer 'Complete Streets' Planning Guide**

The Institute of Transportation Engineers (ITE) is working in cooperation with the AARP Public Policy Institute to develop a research study and guidebook designed to help transportation professionals and citizen advocates plan and design safe "complete streets" for senior drivers and pedestrians. The purposes of the project are threefold:

1. Elevate the importance of incorporating older driver and pedestrian safety into complete streets planning processes.
2. Identify and suggest ways to reconcile potential conflicts between older driver safety and complete streets design measures.
3. Provide stakeholders with clear models for incorporating older driver and pedestrian safety into transportation planning, as well as resources for making design decisions.

Information is available from Ed Stollof: [estollof@ite.org](mailto:estollof@ite.org).

## **TCRP Report Shows How to Build Public Support for Riding Transit**

TRB's Transit Cooperative Research Program (TCRP) Report 122, which deals with *Understanding How to Motivate Communities to Support and Ride Public Transit*, can be viewed at [http://www.trb.org/news/blurb\\_detail.asp?id=8832](http://www.trb.org/news/blurb_detail.asp?id=8832). The material explores methods and

strategies used by Canadian and U.S. transportation agencies to strengthen their public images and motivate support and use of public transportation.

Comparable strategies employed by other industries with some similarity to public transport are described, as are motivational techniques introduced by these businesses. The report also examines perceptions (and misperceptions) about public transit, and the extent to which these affect support and usage. Finally, the report looks at effective communications strategies, campaigns, and platforms for motivating individuals to act favorably in support of public transportation, as well as ways to execute these strategies and campaigns.

## **AAA, University of Florida Join To Offer Car Features Pamphlet**

AAA and the University of Florida's National Older Driver Research and Training Center have partnered to produce a publication called "Smart Features for Mature Drivers," a compendium of information about motor vehicle attributes that can make driving easier and safer for seniors. The material can be viewed and downloaded at the AAA website, [www.aaaexchange.com/main](http://www.aaaexchange.com/main).

The material describes the adverse effects of aging, features to be sought in vehicles (such as side airbags larger wide-angle mirrors, heated seats, etc.) , and a series of recommendations for people experiencing such problems as leg or hip pain, declining range of motion, arthritic hands, shortness of stature, vision loss, and similar physical issues.

The pamphlet compiles all of these in a matrix that lists vehicle makes and models, indicating for each vehicle what compensating features are available to offset particular physical problems. Vehicle retail price ranges are included.

## **UMTRI, AARP Offer Mobility Guide**

The University of Michigan Transportation Research Institute (UMTRI) and AARP recently published *Promising Approaches to Promoting Lifelong Community Mobility*, a guide which expands earlier work on the transitioning process from driving to transportation dependence, and the need for alternative transportation options for seniors who no longer drive. The guide is available through AARP.

# Transportation Research Board June 2008

## Calendar of Events

America Hikes Day, June 2, 2008

<http://www.americanhiking.org/events/ntd/index.html>

Council of State and Territorial Epidemiologists

Annual meeting, June 8-12, Denver, Colorado

<http://www.cste.org/annualconference/index.asp>

National Association of Area Agencies on Aging

Annual meeting, July 20-23, 2008, Nashville, TN

<http://www.n4a.org>

Society for Human Ecology

Annual Conference, Sept. 10-13, 2008. Bellingham, WA

<http://www.societyforhumanecology.org>

American Public Health Association

Annual meeting, October 25-29, 2008, San Diego, CA

<http://apha.org/meetings/>

Grantmakers in Aging

October 29-31, Princeton, New Jersey

<http://www.giaging.org/programs/calendar.asp?theyear=2008>

Gerontological Society of America

November 21-25, 2008, National Harbor, MD

<http://www.agingconference.com>

## News About Research

### What's On-Going and Planned

\*\*\* \*\*

### **M-CASTL Awarded Three New One-Year Research Projects**

The Michigan Center for Advancing Safe Transportation throughout the Lifespan (M-CASTL) has been awarded three one-year projects related to safety and mobility. M-CASTL is a University of Michigan Transportation Center housed at the U.M. Transportation Research Institute (UMTRI), and administered by the Social and Behavioral Analysis Division of UMTRI. The projects and investigators are:

*A Behavioral Model of Driving Reduction and Cessation.* Investigators are Lidia P. Kostyniuk (UMTRI), Cathleen Connely (U-M School of Public Health), and Patricia Carrow (Michigan Office of Highway Safety Planning).

*Youth, Age, and Transportation Accessibility: An Intermetropolitan Comparison.* Investigators are

Jonathan Levine (U-M Urban and Regional Planning), Joseph Grengs (U-M Urban and Regional Planning), Lidia P. Kostyniuk (UMTRI), and Laurie Wargelin (Abt-SRBI, Inc.).

*A New Approach to Assessing Self-Regulation by Older Drivers: Development and Testing of a Questionnaire Instrument.* Investigators are David W. Eby (UMTRI), Lisa J. Molnar (UMTRI), J. Scott Roberts (U-M School of Public Health), and Gary Bubar (AAA-Michigan).

The project will have international collaboration with Jim Langford (Monash University) and Shawn Marshall (University of Ottawa).

M-CASTL held its first annual Research and Education Conference May 6 in Ann Arbor, Michigan. Three panels dealt with older adult mobility: Technology for improving safe driving among young and older drivers; Safe mobility and dementia; and Transitioning from driving to non-driving options.

Many of the presentations are available at <http://mcastl.org>. M-CASTL has also published its 2008 synthesis report on older adult mobility.

The report, authored by UMTRI's David W. Eby, Lisa J. Molnar, and Renée St. Louis, is available through the M-CASTL website or by contacting the center ([mcastl@umich.edu](mailto:mcastl@umich.edu)).

M-CASTL director David Eby, explaining why the center was formed, said the theme, "Safety and Mobility throughout the Lifespan," explains "our purpose: to advance the safety and mobility of young and older adult users of the transportation system".

M-CASTL is also dedicated to several operating principles: providing top quality education and training to students, professionals, and the community; collaborating with U-M units, other universities, industry, government, and other partners; and making our research and knowledge accessible to a global audience.

Both young and old drivers present unique safety and mobility challenges.

Specific thrusts of the center will focus on understanding and addressing: 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. Information is available at <http://m-castl.org>.

# Transportation Research Board June 2008

## Three Tiers for Traffic Safety? California DMV Seeks Answer

Three tiers for traffic safety?

That's the question California is trying to answer as it compares its 3-Tier Assessment System with existing driver license renewal and referral policies and procedures. Recognizing the need for well-researched, contemporary methods of screening drivers for physical, cognitive, and visual driving-relevant limitations, DMV first had to decide which drivers should be screened for limitations not previously noted on their driving record.

Two groups seeking to renew non-commercial private vehicle driver licenses must do so in a field office and pass a written law test. Drivers 70 years and older, and drivers less than 70 years of age whose driving records indicate a possible driving-related limitation, such as involvement in two or more crashes, a total violation count greater than one, or a DUI,. (A third group, low vision drivers required to pass driving tests and issued limited term licenses, usually for two years, was required to pass a written test and included in the screening every other visit).

The 3-Tier Pilot Program was implemented in a sample of DMV field offices between September 2006 and December 2007, after which the field offices resumed prior procedures.

### Tier 1 Screening

Tier 1 consisted of five screening tests. The first was a memory recall in which customers were asked to correctly confirm personal information (such as their Social Security number) to flag possible basic cognitive limitations. The second was a structured observation of the upper body to document the loss of use of an arm or hand, obvious shaking or stiffness or other upper-body limitations. Only very obvious signs were scored.

The third was for visual acuity using a Snellen chart and, if necessary, an Optec 1000 Vision Tester. Customers not passing were referred to a vision specialist and had to return with a completed vision evaluation form. The fourth screen (not previously utilized) was for limited contrast sensitivity using the *Pelli-Robson* Contrast Sensitivity Chart. Contrast sensitivity is a measure of the ability to see light objects against light backgrounds and dark objects against dark backgrounds.

The fifth screen was a structured observation of the lower body made when customers walked to the Video

Capture Station for a photograph. Observations were made for inability to walk (if not aided), loss of one leg or foot, obvious shaking or stiffness or other lower-body limitations. Again, only very obvious signs of limitations were scored. Renewal customers who had no limitations noted in Tier 1, who then passed the written test on either the first or second attempt, had their licenses renewed.

### Tier 2 Screening

Customers who had one or more limitations noted during Tier 1 went to Tier 2, which had two additional "screens." The first was the Perceptual Response Time (PRT) test, which displayed a stick figure of either a car or a pickup truck in the center of the computer screen for a short duration. Customers were asked to touch the correct icon on the screen. The customer's score was the shortest duration that the stick figure was correctly identified 75% of the time. The test aborted after 2 minutes if an end-point had not been reached. (The PRT was also a new "screen" for cognitive limitations).

The second tier-2 test was the standard 18-question written law exam given to all license renewal applicants who had passed Tier 1, as well as those who took the PRT.

### Tier 3 Screening

Tier 3 included two types of processing, but customers received only one depending on prior screening results. The first was given to those showing only a mild-to-moderate contrast sensitivity or a PRT driving-related limitation, and was called an "Educational Intervention." During this process, customers watched a 4-minute DVD that showed them how their limitation might impact their continued safe driving as well as video pointers about how to compensate. They then had a conference with a specially trained field office manager to discuss their limitations, were given useful printed educational material, and were able to get their license renewed without additional screening.

The "Educational Intervention" was based on a California DMV study by Dave Hennessy and Mary Janke, who surmised that drivers with newer, moderate functional limitations are not generally aware of their behind-the-wheel shortcomings and therefore cannot fully compensate for them. The purpose of the Educational Intervention was to make these customers aware of any limitation and to teach them how to properly compensate for it.

# Transportation Research Board June 2008

The second type of processing in Tier 3 was a driving test. Customers who did poorly on Tiers 1 and 2 screening or failed the written law test three or more times (before passing) were required to take it. Failing three or more times was considered to be a possible indication of a cognitive limitation. Thus, the requirement to take a driving test was based solely on functional criteria. (No renewal or referral applicant was required to take a driving test solely because of age.)

Driving test customers first had a conference with a specially trained field office manager (or Hearing Officer if they had been referred to the Driver Safety Branch) during which they received printed material, were counseled about their driving habits and driving-relevant limitations, informed about the types of driving tests given by DMV and counseled about how to prepare for them. They were also encouraged to get additional behind-the-wheel training or even get a consultation from a driver rehabilitation expert.

The driving test was a more rigorous version of the regular DMV drive test and included additional cognitive elements. Customers were allowed to take area-limited driving tests if they possessed an area-restricted license, or if they had already limited their driving to an area around their home for several months or longer. Customers who failed an initial driving test were revoked or provided counseling with the examiner to review the results, offered advice on preparing for a second driving test and asked to consider getting additional behind-the-wheel training.

Based on customer performance, examiners recommended either another more-rigorous driving test or an area-limited driving test. Customers had the final choice. Regardless, a temporary limited license or instruction permit was issued and the next driving test was scheduled. Customers who failed a second driving test received in-office counseling again and were rescheduled for a third behind-the-wheel exam. However, failing the third driving test resulted in revocation.

It should be noted that those who passed a driving test were licensed per the test—which could involve driving in an unlimited geographical area (with or without freeway driving) or driving only in a specified limited-area. Restrictions, such as no night driving, might also be imposed. It is also important to note that per current California law, customers of *any* age who were referred to the department's Driver Safety Branch by a physician, law

enforcement officer, relative or field office examiner, were also considered for the 3-Tier Assessment System.

## **Evaluation of the 3-Tier Assessment System**

It would seem logical to conclude that upgrading the physical, cognitive and vision screening of in-office license renewal customers would be expected to have beneficial effects. However, many individuals already self-regulate their driving due to their limitations, so in reality, additional DMV screening may have little added positive impact.

And it is even possible that educational efforts that extend driving mobility and a customer's years on the road may actually have a negative impact on traffic safety. Before the 3-Tier Assessment System is implemented in California, its effect on traffic safety/driver mobility, its added cost and its practicality must be evaluated objectively. The 3-Tier Assessment System will be subject to intense process analysis for efficiency, cost-effectiveness and acceptability to both the department and customers. Several outcome reports will also be generated, including a 2-year post-intervention analysis, which is mandated by the California State Legislature.

The traffic safety impact of the 3-Tier Assessment System will be the most important focus of the outcome reports and the ultimate determinant of recommendations made for or against its adoption in whole or part. But also considered in the reports will be other important focuses, such as evaluating the impact of 3-Tier on driver mobility, extending safe driving years. In sum, the pilot will attempt to determine objectively if California should adopt a "3-Tier" assessment system to renew the licenses of millions of drivers and manage tens of thousands of referred drivers.

## **Summary Offered of Research Activity at Florida's NODRTC**

Research programs underway at the National Older Driver Research and Training Center (NODRTC) in Gainesville, Fla., recently were summarized by the center. They include one grant, one demonstration project, and a number of research efforts.

### **Community Participation in Developing a Measure for Safe Older Driver Behaviors**

*Grant awarded by the National Institute on Aging*

# Transportation Research Board June 2008

Sherrilene Classen, principal investigator (PI); PhD, MPH, OTR/L; Co-PIs, Michel Bedard PhD, Craig Velozo PhD, Babette Brumback, PhD

Project period: 2 years-- May 2008-April 2010

Goal: To develop, with partners from the older driver safety community, a self-report Safe Driving Behaviors Measure (SDBM). The SDBM is intended to--1) refine the theoretically derived constructs, domains, and functional items required to measure safe driving behaviors among older adults; 2) determine the psychometrics, 3) quantify the construct validity and concurrent criterion validity of the SDBM to on-the-road performance, and determine the rater reliability among three rater groups (older driver, families/caregiver, and driving evaluators); and (4) perform the foundational work necessary for a multi-site intervention trial. The project will use converging evidence to develop and pilot test, with community participation, a safe driving behaviors measure: one with adequate items, acceptable ecological validity, and high potential for public health applicability.

## **Identifying Critical Driving Errors from the Florida Traffic Crash Records Database to Inform Occupational Therapy Driving Practice,**

*Model Demonstration Project funded by the University of Florida*

PI: Orit Shechtman; Co-PIs, Sherrilene Classen, PhD; Yongsung Joo, PhD; Kezia Awadzi, PhD

Period: 1 year-- 2008-2009

Goal: Using two databases, to determine which driving errors are predictive of crashes and which errors are predictive of failing a driving test. With the 2005 Florida Traffic Crash Records Database, (33,543 drivers 65 years and older), which errors are predictive of crashes will be determined. Then, using the NODRTC's 2005-2007 research database (driving errors of 127 older drivers who completed a road test) it will be determined which errors are predictive of failing a driving test. Assuming there are similarities between errors predictive of crashes and those predictive of failing a road course, it may be possible to suggest recommendations for improving the clinical assessment procedures for older drivers.

## RESEARCH PROJECTS:

**Clinical Predictors of Older Driver Performance on a Standardized Road Test** (in collaboration with the Cleveland Clinic, Cleveland, Ohio)

Sherrilene Classen PhD, MPH, OTR/L; Ann Horgas, PhD; Kezia Awadzi, PhD; Barbara Messenger-Rapport, PhD, MD; Orit Shechtman, PhD, OTR; Yongsung Joo, PhD

Objectives: To determine the relationship between clinical variables (demographics, cognitive testing, co-morbidities, and medications) and failing a standardized road test in older adults.

Methods: Analysis of on-the-road studies performed in optimal weather conditions, between January 1, 2005 and May 1, 2007. The standardized testing was held at the NODRTC, Gainesville, Florida and included 127 adults aged 65 and older with current driver licenses. Measurements consist of demographics, medications and medical conditions, cognitive testing (Trail Making Part B), Global rating score (GRS pass/fail), and driver Sum of Maneuver score(SMS) (0-273, with 273 indicating zero errors).

Results: 127 older adults completed the protocol. Mean age was 74.8 years (SD = 6.3); 46.5% females. Mean time for Trail Making Part B was 114.3 seconds (SD of 83). Among the 127 drivers, the mean SMS was 238.9 (SD of 25.0) and 24 (19%) failed the driver test. Odds ratio estimates for failing the test included advanced age (6.7, 95% CI 2.2 to 19.8), presence of a neurological disease (2.8, 95% CI 1.2 to 6.5), and prolonged time to complete the Trail Making Part B cognitive test (2.5, 95% CI 1.0 to 5.9). Conversely, odds ratio estimates lowering the risk of failure included taking a non-diabetic hormonal medication (e.g. thyroid drugs) (0.3, 95% CI .09 to 0.7) and having a musculoskeletal diagnosis (0.3, CI .1 to 0.7). Conclusions: To the researchers' knowledge, this is the first study to examine the medical predictors of failing a standardized road test. Advanced age and prolonged time on Trail Making Part B were the two major predictors of test failure and a lower SMS. The study also found that having a neurological diagnosis (primarily cerebrovascular and Parkinson's Disease) predicted test failure. Medications from the neurological class also predicted a lower SMS. Further study needs to be done to explain the apparent protective effect of musculoskeletal conditions and hormonal medications.

## **Predictability of Clinical Assessments for Driving Performance Among Older Adults**

Stav, W.B., Justiss, M.D., McCarthy, D.P., Mann, W.C., & Lanford, D.N. (2008). *Journal of Safety Research*, 39(1), 1-7.

# Transportation Research Board June 2008

**Objective:** To test the most comprehensive compilation of assessments predictive of real-time driving performance. Consensus Conference participants selected assessment tools considered to be important in the identification of at-risk older drivers and covered the domains of vision, cognition, motor performance and driving knowledge. The regression model included: FACTSTM Contrast sensitivity slide-B, Rapid Pace Walk, UFOV® rating and MMSE total score and accounted for 44% of the variance in driving performance. The domains of vision, cognition and motor performance were represented in the predictive model.

Due to the dynamic nature of the driving task, it is not likely that a single assessment tool will adequately identify at-risk drivers. The cost of the Comprehensive Driving Evaluation (CDE) is often related to the length of time required to administer the various clinical assessments and on-road testing procedures. By standardizing the selection of clinical assessments used during the CDE, practitioners should be able to provide services more efficiently, more objectively, and more accurately to identify at-risk drivers.

## **Parkinson's Disease and Driving Performance: Conclusions from Pilot Studies Conducted in Collaboration with the University of Florida's (UF) Movement Disorder Clinic (MDC).**

PI: Dennis McCarthy, PhD

**Purposes:** The three studies were intended 1) to determine what clinical tests administered by neurologist and driving rehab specialists could help identify drivers with Parkinson's Disease (PD) who were unsafe; 2) to examine the confidence levels of drivers with PD; and 3) to investigate the types of driving errors made by drivers with PD.

**Methods:** Consecutive patients from the MDC were referred to UF's clinical testing site (n=19) for objectives 2 & 3, compared to age-matched control group n=104.

**Results:** For neurologist tests: only the UPDRS Off-Meds was associated with the Global Rating Scale (GRS) (0.618, p=0.011). Several DRS tests were associated, the strongest being UFOV, Trails-B, Contrast sensitivity (B) (-.790, -.623, .759; all <.004)

**Confidence:** PD group rated themselves as good or excellent drivers almost as often as control group (88% vs. 94%) yet had a higher failure rate on the GRS (44% vs 21%); errors: PD drivers had significantly more vehicle

positioning errors and yielding to other vehicle errors (p<.05), maintaining lane positioning and adjustment to traffic stimuli approached sig (p=.08, .06)

**Conclusions:** 1) Neurologists are ill-equipped to make driving decisions based on currently administered tests and should either include validated measures of driving performance/crashes and/or collaborate with DRS. 2) Physicians cannot rely on self-reporting of driving ability to make decisions. PD drivers may be over-confident and, therefore, may not be utilizing appropriate compensatory strategies (e.g., restriction). 3) DRS should be sure to include particular maneuvers in driving tests for those with PD.

## **AAA and UF Recommend Vehicle features**

Thicker steering wheels, wide-angle mirrors, larger dashboard controls and six-way adjustable seats are features seniors should consider when choosing a vehicle. The AAA and the University of Florida's National Older Driver Research and Training Center are making these and other recommendations for addressing the physical, visual and cognitive changes that affect senior drivers as part of the Smart Features for Mature Drivers program. AAA and UF announced the smart features on March 21, 2008 at the New York International Auto Show. Reduced range of motion, arthritic joints, diminished fine motor skills and trouble with night vision and recovery from glare are all common age-related physical changes that can affect driving ability. A recent AAA survey found that 43 percent of drivers over 55 suffered from at least one of nine driving-related difficulties commonly caused by aging. Smart Features for Mature Drivers recommends particular vehicle features based on the driver's needs. For example, thick steering wheels, keyless entry and ignition, power mirrors and larger dashboard controls can make driving easier for seniors with arthritic hands or diminished fine motor skills. The doors on four-door models require less strength to open and close than two-door vehicles. Those with limited range of motion in the back, neck, shoulder or arm should consider large, wide-angle mirrors, tilt steering wheels and comfortable, six-way adjustable seats with lumbar support when choosing a vehicle. Seniors with vision issues may benefit from extendable sun visors and larger dashboard controls with contrasting text. More information about the Smart Features for Mature Drivers program is available at [www.AAA.com/seniors](http://www.AAA.com/seniors)

# Transportation Research Board June 2008

## Dissertations

Sandra Winter MS, OTR/L, Doctoral Candidate in the Rehabilitation Science PhD Program.

This doctoral research will be part of a larger NIH study "Community Participation in Developing a Measure of Safe Older Driver Behaviors" (Dr. Sherrilene Classen-PI) to address the question: "Which domains and constructs inform development and organization and which behavioral items best discern older adults' safe driving (driving performance exceeds driving context demands therefore reducing the risk of crash, near-crash, driving errors, injury or fatality) for a self-report measure?"

Initial domains, constructs and items for the safe driving behavioral measure (SDBM) will be derived from a theoretical framework (i.e., public health, injury prevention, driving behavior modeling), previous research, and existing safe driving measures. Item selection and organization will be further informed by item response theory principles.

Domains, constructs and items will be expanded and refined in a process of item development with community partners including use of interviews and focus groups as well as expert ratings (content validity indices).

Expected results will contribute to establishing the psychometric properties of the SDBM including face and content validity of the items and rater reliability of community experts' ratings. Items will be evaluated in terms of content accuracy, purpose, organization, clarity, appearance, concision, understandability, adequacy and hierarchical organization (behaviors that are less safe to more safe) to establish items comprising a valid and reliable description of safe driving behavior by older adults that can be measured by self-report.

This work will contribute to development of a pilot SDBM to be further tested in comparison to the gold standard for driving, a road test.

Patrícia Belchior, PhD, OT completed her doctoral dissertation: **Cognitive Training with Video Games to Improve Driving Skills and Driving Safety Among Older Adults** in 2007.

She investigated the impact of video game training on older adult's visual attention performance, specifically the Useful Field of View, which has been strongly correlated with driving performance. Fifty-eight participants, 65 years and older and current drivers, took part in this study.

Forty-five participants were assigned to one of the three intervention groups (action video game (Medal of Honor), Useful Field of View (UFOV), placebo control video game (Tetris) and thirteen participants were assigned to a no contact control group.

Before training and immediately after training (about three weeks later) participants from the intervention groups were evaluated in a UFOV test (a measure of visual attention). The intervention was composed of six training sessions, each of 1.5-hours duration. Overall, the results suggest that the UFOV training improved visual attention significantly more than any other group.

It was noted, however, that the two video game conditions experienced (non-significantly) more visual attention gain than the no contact control group; indeed, on one subtask (selective attention), the Tetris group experienced significantly more gain than the no-contact control group, even though Tetris had been construed as a no-contact control. Thus, although more work is needed to establish appropriate dosages, outcome measures, and to identify which games best improve visual attention, this results lend preliminary support that video games can be acceptable and promising intervention tool.

## **Driver License Best Practices Subject of New AAA Research**

A recent driver license policy workshop sponsored by the AAA Foundation for Traffic Safety generated follow-on research to capture the ideal best practices of driver licensing agencies.

In partnership with researcher Jane Stutts, the Foundation expects the just-beginning analysis to synthesize present knowledge regarding driver screening, assessment and license renewal policies, and to develop consensus recommendations for improving driver licensing policy and practice.

The project will create a list of options from which states can select components, such as how to uniformly:

- screen and assess drivers
- implement fair and workable driving restrictions
- make referrals for driver training
- help drivers who are no longer safe transition to other mobility options

It will systematically identify the best approaches in state driver licensing practices and policies as these

# Transportation Research Board June 2008

affect road users who have functional impairments; it will synthesize this information and make it readily available for use by licensing agencies, reporters, AAA, and others.

The workshop which identified the need for the research looked at the nation's range of driver licensing policies, concluding with a vote on recommendations for policy, practice, and research.

Thirty experts formed the panel, which met at the Foundation's Washington headquarters.

Goal of the session was formulation of an improved set of recommendations for policymakers and other stakeholders.

Panelists also identified knowledge gaps and various research needs which will guide the Foundation's research agenda in the long-term focus area of senior safety and mobility.

Workshop proceedings will be published later in 2008, accompanied by a brief summary report.

## **Study Looks at Senior Needs As a Technology Motivation**

The AAA Foundation for Traffic Safety plans a summer 2008 release of *Emerging In-Vehicle Technologies and Driver Age*, a study aiming to provide insight into how the aging population has impacted--or should impact--the development of new in-vehicle technologies.

Specifically, the report targets the effects of HID (High Intensity Discharge) headlights, navigation systems, backing aids and adaptive cruise control.

Co-sponsored by the National Highway Traffic Safety Administration, interviewers from the Automotive Club of Southern California have queried more than 20 top experts representing the automotive industry, senior service providers, traffic safety researchers, and other key stakeholders.

In addition, thousands of drivers who have experience with selected technologies are being surveyed to gain insight into any age-related differences in their understanding, acceptance, and use of the technologies.

Project goals are to increase expert and public understanding of the safety implications of new in-vehicle technologies and motivate automobile manufacturers to pay attention to what consumers want, need, and should have in their vehicles.

## **Foundation Research to Document License Agency Policies, Practices**

The AAA Foundation for Traffic Safety is launching a major research project to document North American driver's license agency approaches for improving safety for older and medically at-risk drivers. Working in collaboration with researchers Jane Stutts and Jean Wilkins, the Foundation will survey state and provincial licensing officials to compile current information on policies and practices.

Added details will be gathered on promising innovation programs and activities that might be replicated elsewhere. The information will be organized in a searchable database for use by driver licensing officials, policy makers, aging services providers, researchers, media, as well as older adults and their families.

Idea for the research came from an AAA license policy workshop held in December 2007, where more than 30 experts gathered at the Foundation's Washington, D.C. headquarters to discuss licensing policies and how these affect medically at-risk drivers, who tend to be older.

The group looked at driver screening, assessment, and license renewal policies, seeking consensus recommendations for improving both policy and practice.

Also identified were knowledge gaps and the consequent research needs that will guide Foundation research in its long-term focus on senior safety and mobility. (Workshop proceedings and a summary report will be posted soon on the Foundation website: [www.aaafoundation.org/reports](http://www.aaafoundation.org/reports)).

The workshop concluded that no single state or province gets everything right, thus the research now beginning should provide a basis for comparing approaches across North America.

Motor vehicle department officials will be able to identify promising approaches in license renewal requirements, examiner and staff training, driver screening and assessment, driver medical review, reporting of at-risk drivers, assistance with mobility options, and public education.

A key strength will be that database entries and printed reports derived from them can be updated as best practices evolve and contacts change over time.

# Transportation Research Board June 2008

## **Oregon Study Explores Older Adult Travel Patterns, Driving Cessation**

The Oregon Department of Transportation has published a report that explores the travel patterns of older adults in that state. The study deals with driving cessation and mobility, in particular: factors that influence driving cessation, physical and emotional barriers that delay driving cessation, opportunities to take advantage of alternative transportation after driving ceases, and whether drivers make relocation decisions on the basis of driving cessation.

The report also reviews warning signs that lead to cessation and examines whether a crisis situation generally forces someone to quit driving. The report can be downloaded at: [http://trb.org/news/blurbs\\_detail.asp?id=9069](http://trb.org/news/blurbs_detail.asp?id=9069)

## **Two Intervention Studies Reported**

Dr. Richard Marottoli, medical director of the Dorothy Adler Geriatric Assessment Center at Yale-New Haven Hospital, has published results of two recent intervention studies:

A Randomized Trial of a Physical Conditioning Program to Enhance the Driving Performance of Older Persons is summarized in the *Journal of General Internal Medicine* 2007—22:590-7.

A Randomized Trial of an Education Program to Enhance Older Driver Performance, dealing with classroom and on-road training, is subject of an article in the *Journal of Gerontology Medical Sciences* 2007—62A:1113-9. The tested group is still being followed for updated results.

## **Research Briefs--**

SOUTH AUSTRALIA--The Center for Automotive Safety Research, University of Adelaide, South Australia, has published a study on Best Practice Criteria in Practical Driving Tests of Medically Referred Drivers <http://casr.adelaide.edu.au/publications/researchreports>

This study reviewed literature dealing with the best methods of assessing medical fitness to drive, enabling comparisons of South Australian methods with the best practices gleaned from literature. This in turn should lead to the possibility of improving South Australian practice.

Among possible improvements identified: greater use of occupational therapists, interviews and functional testing prior to an on-road evaluation, longer on-road tests, use of dual controlled test vehicles, addition of a third party note taker during on-road tests, and provision of counseling to drivers after they have completed road tests. .

\*\*\* \*\*

TAMPA, FL---The National Center for Transit Research at the University of South Florida has studied the relationship of household spending to the number of vehicles in the household for the purpose of determining the potential savings from eliminating one or more vehicles from a household. The study found that projected savings tend to be lower than typically cited in literature. The potential for increasing transit ridership by reducing the number of vehicles in households appears to be more significantly affected by expanding the number of zero-vehicle households. (*Exploration of a Shift in Household Transportation Spending from Vehicles to Public Transportation*  
[http://www.nctr.usf.edu/list\\_of\\_projects.html](http://www.nctr.usf.edu/list_of_projects.html))

\*\*\* \*\*

WASHINGTON, D.C.---TCRP report 78, *Estimating Benefits and Costs of Public Transit Projects : A Guidebook for Practitioners*. This guidebook summarizes theory on how costs and benefits should be measured, then takes the next step and looks at what it takes for a transit agency to actually do the measurements and make the calculations for a real project. Various aids are included---downloadable Excel spreadsheets; PP slideshows, etc.) See <http://www.national-academies.org/trb/bookstore>.

## *Around the World*

## **News from Other Nations**

\*\*\* \*\*

## **Canada Forum Probes Topics Of Senior Safety and Mobility**

A two-day forum focusing on aging drivers attracted stakeholders from across Canada to take a comprehensive look at the safety, mobility, and transportation challenges of Ontario's growing senior population. Jointly sponsored by the Ontario Ministry of

# Transportation Research Board June 2008

Transportation, Insurance Bureau of Canada, Ontario Seniors Secretariat and the Ontario Safety League, the Aging Driver Mobility Forum took place May 8 and 9 in Toronto.

The forum brought together a wide range of experts from driver licensing authorities and social support agencies, medical reporting experts, senior groups, police services, public health, government and industry to exchange ideas on the safety and mobility of seniors on Ontario roads.

Stakeholders and experts discussed the priorities identified by the Canadian Council of Motor Transport Administrators Aging Driver Task Force in their *Aging Driver Strategy 2006-2010*. The Strategy provides a framework to support jurisdictions in developing plans and programs to facilitate safe mobility for older Canadians, and addresses issues of driver identification, licensing maintenance and cessation, alternative transportation, and infrastructure such as vehicles, road design, and use and community planning.

To continue building the best possible aging driver strategy at community, provincial and national levels, the Forum was developed around three key themes to provide a broad view of the driving experience and transportation needs for aging motorists in Ontario:

Medical reporting, facilitated by Dr. Gary Naglie, Toronto Rehabilitation center; and Mary Anne Henderson, Ontario MTO.

Driver licensing, facilitated by Angela Litrenta, Ontario MTO; and Dr. Leo Tasca, Ontario Ministry of Transportation.

Social issues and mobility, facilitated by Kathy Van Benthem, CAOT; and John Warkentin, Ontario MTO.

Using fictional case studies, a dynamic group discussion facilitated by a panel of experts illustrated the various challenges faced by seniors seeking to remain safely mobile and independent while reducing or retiring from driving. The panel included a medical doctor, a representative from a licensing authority, an insurance industry representative, a police officer, an occupational therapist, an academic researcher, a social worker and a senior.

Each panelist offered unique insights on how to balance the safety and mobility needs of senior drivers and their families. New support opportunities and services were identified to help aging drivers remain connected to their communities and engaged in activities

that contribute positively to their quality of life. Delegates participated in workshop sessions on each of the Forum's three key themes to probe and discuss the issues and develop recommendations. A final report describing the perspectives, new approaches and new ideas for positive changes will be released in the coming year.

\*\*\* \*\*

## **Canadian Abstracts, Presentations, Articles on Senior Driver Subjects**

### Book Chapters:

Dobbs, B., & Strain, L. (May 2008). Staying connected: Issues of mobility of rural seniors. In N. Keating (Ed.). *A good place to grow old? Critical perspectives on rural ageing* (pp. 87-95). Bristol, UK: The Policy Press.

### Journal Articles:

Myers AM, Paradis J, Blanchard RA. (2008). Conceptualizing and measuring driving confidence in older drivers: Development of the Day and Night Driving Comfort Scales. *Archives of Physical Medicine and Rehabilitation*, 89(4), 630-640

Myers AM, \*Blanchard RA, MacDonald L, Porter MM. Process evaluation of the AAA Roadwise Review CD-ROM™: Observed and reported experiences of older drivers. *Topics in Geriatric Rehabilitation (Special Issue: Public Health, Aging and Disability)* in press.

### Published Abstracts:

Dobbs, B.M., Eby, D., & Molnar, L. (2007). Transportation and aging: A cultural comparison. *Proceedings of the 60th annual meeting of the Gerontological Society of America. The Gerontologist*, 47(Spec. Iss. 1), 769.

Myers, A.M., Blanchard, R., & MacDonald, L. (2007). Experiences doing the Roadwise Review as the respondent and the partner. *Proceedings of the 60th annual meeting of the Gerontological Society of America. The Gerontologist*, 47(Spec. Iss. 1), 73.

Myers, A.M., MacDonald, L., Porter, M., & Blanchard, R. (2007). Relationships between older drivers' perceptions, abilities and behaviors. *Proceedings of the 60th annual meeting of the Gerontological Society of America. The Gerontologist*, 47(Spec. Iss. 1), 441.

Porter, M., Tuokko, H., Bedard, M., & Myers, A.M. (2007). Symposia: A multisite evaluation of the AAA Roadwise Review self-assessment tool for older drivers. How do seniors in different settings score? *Proceedings of the*

# Transportation Research Board June 2008

60th annual meeting of the Gerontological Society of America. *The Gerontologist*, 47(Spec. Iss. 1), 73.

## Presentations:

### ICADI - International Conference on Aging, Disability, and Independence (February, 2008)

Bédard, M. (2007). Understanding the difference between clinical and statistical significance in predicting driving abilities. ICADI: International Conference on Aging, Disability, and Independence. February, 22, St. Petersburg, Florida.

Byszewski, A. (2008). The dementia and driving toolkit. ICADI: International Conference on Aging, Disability, and Independence. February, 21, St. Petersburg, Florida.

Dobbs, B.M. (2008). A comprehensive approach to enhancing the safety and mobility of medically at-risk drivers Keynote presentation - ICADI: International Conference on Aging, Disability, and Independence. February, 20, 2008: St. Petersburg, Florida.

Dobbs, B.M. (2008) Support groups to ease the transition from driving. ICADI 2008 Pre-Conference Intensive "Development of transportation and mobility guides for local communities" and "enhancement of mobility programs". ICADI: International Conference on Aging, Disability, and Independence. February, 20, 2008: St. Petersburg, Florida.

Dow, J. (2007). Continuing medical education: Educating physicians on medical aspects of road safety. ICADI: International Conference on Aging, Disability, and Independence. February, 21, St. Petersburg, Florida.

Marshall, S. (2008). Senior driver assessment centres in Ontario: A review of the implementation of policies and procedures. ICADI: International Conference on Aging, Disability, and Independence. February, 21, St. Petersburg, Florida.

### Transportation Research Board (January, 2008)

Bedard, M., & Myers, A.M. (2008, January). Roadwise Review: Congruence with other measures of driving performance and driving comfort. Workshop on The Evaluation of Evidence-based Assessment Tools for Older Drivers: Translating Research to the Roadway. Transportation Research Board, Washington, DC.

Porter, M.M., Myers, A.M., & Sherrets, D. (2008, January). Evaluation of Roadwise Review: Distribution and consumer feedback. Workshop on The Evaluation of Evidence-based Assessment Tools for Older Drivers: Translating Research to the Roadway. Transportation Research Board, Washington, DC.

### Gerontological Society of America (November, 2007)

Dobbs, B.M., Eby, D., & Molnar, L. (2007). Transportation and aging: A cultural comparison. Symposium at the Gerontological Society of America 60th Annual Scientific Meeting, November 16-20, San Francisco, CA.

Myers, A.M., Blanchard, R., & MacDonald, L. (2007, November). Symposia: A multisite evaluation of the AAA Roadwise Review self-assessment tool for older drivers. Experiences doing the Roadwise Review as the respondent and the partner. Presented at the 60th annual meeting of the Gerontological Society of America, November 16-20, San Francisco, CA.

Myers, A.M., MacDonald, L., Porter, M., & Blanchard, R. (2007). Relationships between older drivers' perceptions, abilities and behaviors. Presented at the 60th annual meeting of the Gerontological Society of America, November 16-20, San Francisco, CA.

Porter, M., Tuokko, H., Bedard, M., & Myers, A.M. (2007). Symposia: A multisite evaluation of the AAA Roadwise Review self-assessment tool for older drivers. How do seniors in different settings score? Presented at the 60th annual meeting of the Gerontological Society of America, November 16-20, San Francisco, CA.

### World Organization of Family Doctors (2007, October)

Dobbs, B.M., Dobbs, A.R., & Moores, D. (2007). The medically impaired driver:

Physician strategies for being effective and managing risk. Workshop presented at WONCA, October 19, 2007, Paris, France.

## **CanDRIVE II Enters Ambitious New National Research Effort**

Canada's far-reaching CanDRIVE research program, created five years ago to find ways of improving the safety and quality of life for older drivers, has announced a series of studies under the imprimatur of CanDRIVE II, an agenda that will

- 1) Increase understanding of the natural history of driving in those over 70 years of age
- 2) Measure the impact of medical and functional conditions on crash rates
- 3) Lead to the development of clinical tools that identify older persons who are and are not at risk of future crashes and those who need to undergo further in-depth testing of driving ability

# Transportation Research Board June 2008

- 4) Develop and begin to evaluate the effectiveness of driver retraining and education programs
- 5) Clarify the role of on-road and driving simulator testing in the process of older driver assessment
- 6) Lessen the difficulties associated with the transition to non-driving
- 7) Assist seniors to identify and use automobile technological innovations to their advantage.

Principal investigators for CanDRIVE II are Malcolm Man-Son-Hing and Shawn Marshall. Research is funded by the Canadian Institutes of Health Research and will involve eight projects at eight sites (Victoria, Edmonton, Winnipeg, Thunder Bay, Ottawa, Toronto, Hamilton, Montreal) and five provinces where 1,000 drivers age 70 and older will be recruited into a common prospective cohort that will undergo comprehensive annual assessment. Drivers will be followed for five years. One of the primary outcome measures will be at-fault collisions, which will be used to develop a clinical decision rule to assist health care clinicians with determining fitness to drive.

Major CanDRIVE II component projects include:

**Project One—Common Cohort** Co-leaders: Shawn Marshall and Malcolm Hing

The study of a Common Cohort will have multiple advantages and synergies to allow for success of interrelated projects. This project will allow for the comprehensive, longitudinal study of older drivers and key factors that impact their driving safety.

**Project 2: Development of an evidenced-based driving decision rule for identifying older drivers at increased risk for at-fault crashes** (Decision Rule) Co-leaders: Shawn Marshall and Malcolm Hing

This project will develop an evidenced-based clinical decision rule for health care professionals with a high positive predictive value to identify drivers who are at increased risk for at-fault crashes.

**Project 3: Driving Patterns of Older Canadians** Leader: Michelle Porter

This project will examine driving patterns in a large sample of older drivers from different locations across Canada and track the following; driver factors (underlying abilities, beliefs/attitudes) and factors of the broader environment (e.g., licensing regulations, climate, etc.) - as described in the DEC model. In addition, GPS can be utilized to specifically investigate crash risk as it relates to complex driving patterns (not just distance traveled).

**Project 4: Influence of Psychosocial Factors on Driver Decision-making and Behavior**

Co-leaders: Holly Tuokko and Anita Myers.

This project will examine the relative influence and interaction of various psychosocial factors (perceptions of driving abilities and confidence, beliefs, attitudes and motivations) on driving-related decisions (intentions to restrict and stop driving), functional behavior (driving patterns, including voluntary cessation), and performance (outcomes such as crashes).

**Project 5: Advancements in Automotive Design: Development of a Vehicle Design Rating System (VDRS) That Links Older Drivers' Abilities and Automotive Features**

Co-leaders: Janice Millar-Polgar, Brenda Vrkljan

The goal is to determine key features of the automobile that influence older driver safety and to develop and examine preliminary psychometric evidence of a vehicle design rating system that aids identification of vehicle features congruent with the needs and abilities of seniors.

**Project 6: Assessing the relevance of the simulator as a screening tool for at-risk older drivers.**

Co-leaders: Michel Bédard, Sylvain Gagnon

This project seeks to further validate simulator assessments as applied to older drivers and to translate this knowledge into an application that can be used in a clinical setting.

**Project 7: Driver performance as an outcome measure.**

Co-leaders: Allen Dobbs, Bonnie Dobbs

The goals include: 1) Determining changes in driving performance across five years using a licensing authority -accepted on-road driving evaluation; 2) Correlating longitudinal data from the Common Cohort project (Project 1) with DriveABLE™ on-road performance; and 3) Examining the relationship of driving error types revealed in the testing situation to provincial crash data.

**Project 8: Driver Improvement** Leader: Nicol Korner-Bitensky (NKB)

The objectives are: 1) To explore the perspectives of older drivers regarding driving safety and training programs; and 2) To understand community sites' potential interest in implementing older driver retraining programs as well as identifying facilitators and barriers to implementation. 3) To implement the StaySHARP pilot driver refresher program.

Information is available from [mhing@ohri.ca](mailto:mhing@ohri.ca); or [smarshall@ottawahospital.on.ca](mailto:smarshall@ottawahospital.on.ca).

# Transportation Research Board June 2008

## Europe Information Storehouse Keeps Data on Transportation

The European Transport Research Knowledge Centre (TRKC) is a data storehouse where transportation research results from throughout the European Research Area are compiled, organized, analyzed and eventually disseminated through the TRKC web portal. The intent is stimulation of innovation in transport and a resultant shaping of transport policy to assure sustainable mobility. TRKC provides updated information on transport research together with analysis of the policy implications. It gives information on over 250 European, national and international transport research programs and on almost 6000 research projects. In addition, the latest information on transport events, publications and contacts can be found on the new TRKC website. [www.transport-research.info/web/index.cfm](http://www.transport-research.info/web/index.cfm)

TRKC has published a set of short brochures showing how transport research is contributing to policy-making and transport operations, illustrated by examples of particular achievements. The latest set of eight publications covers a range of new transport issues. The brochures can be downloaded from [www.transport-research.info/web/publications/policy.cfm](http://www.transport-research.info/web/publications/policy.cfm). For example:

### Road Safety (16 pages)

Improving safety in road transport is a policy imperative, given the scale of deaths and injuries caused every year. A global approach is required, involving legislative and other measures. Through its transport research program, the EU is providing the foundation for effective measures and spreading good practice. This brochure highlights some important results and ongoing work.

### Intelligent Transport Systems (20 pages)

Developing a European transport system that is sustainable requires best use to be made of existing infrastructure. Intelligent transport systems (ITS) are vital for this. The potential of ITS has encouraged the EU to make them an integral part of the Common Transport Policy, with the aim of establishing a coordinated infrastructure for ITS in Europe. Therefore, the transport research program has contributed to the development, assessment and demonstration of ITS applications, laying the groundwork for a large deployment of ITS in the

future, supported by the EU. This brochure highlights some significant results.

### Land use and regional planning – Achieving integration between transport and land use (19 pages)

Land use and transport are closely interlinked. Transport policies influence land use by changing accessibility, environmental quality and the image of an area. Land use policies affect journey length and the mode of travel used, and can make it easier to provide effective public transport services and facilities for walking and cycling. This brochure has reviewed these interactions and then recommends directions policy makers might pursue to enable land use policies to support sustainable transport policies more effectively.

## EU Research Agenda Through 2013 Includes Transit Issues

FP7 is the short name for the Seventh Framework Programme for Research and Technological Development in the European Union. This is the EU's main instrument for funding research in Europe and it extends from 2007 to 2013. It supports research in selected priority areas and is made up of four main blocks of activities:

- *Cooperation* – Collaborative research, e.g. on
  - Transport
  - Health
  - Environment (including climate change)
  - Information and Communication Technologies
- *Ideas* – European Research Council
- *People* – Human Potential, Marie Curie actions, e.g. on
  - Initial training of researchers – Marie Curie Networks
  - International dimension – outgoing and incoming fellowships, international cooperation scheme, reintegration grants
  - Excellence Awards
- *Capacities* – Research capacities, e.g. on
  - Research Potential
  - Science in Society
  - Specific activities of international cooperation

# Transportation Research Board June 2008

## Transport Research

During FP7 at least 4 billion euros will be allocated to fund EU research seeking to develop safer, "greener" and "smarter" European transport systems for the benefit of older persons and all citizens. The Transport theme of FP7 takes a holistic "transport systems" approach in addressing the different challenges, by considering the interactions of vehicles or vessels, networks or infrastructures and the use of transport services.

Such an approach necessitates the integration of new concepts, knowledge and technologies within a socio-economic and policy context. It is imperative to address the different political, technological and socio-economic challenges in a cost-effective manner on issues such as the "clean and safe vehicle" of the future, interoperability and intermodality especially with respect to waterborne and rail transport.

The activities envisaged to be addressed during the lifetime of FP7, all with an effect on senior travelers, will be :

1. Sustainable surface transport (rail, road and waterborne) - development of clean and efficient engines and power trains, reducing the impact of transport on climate change, intermodal regional and national transport, clean and safe vehicles, infrastructure construction and maintenance, and integrative architectures ; urban transport research will include the continuation of the CIVITAS initiative on clean urban transport strategies, innovative mobility concepts, and high quality public transport systems
2. Aeronautics and air transport
3. Instruments for the development and evaluation of policies
4. Support to the European global satellite navigation system

## **ITS Action Plan Workshop Held March 26 in Brussels, Belgium**

As part of its public consultation on preparation of the Action Plan on Intelligent Transport Systems (ITS) for Road Transport, the European Commission organized an Open Workshop in Brussels March 26, where stakeholders were invited to assist in the discussion and provide feedback. The four major topics were :

- Action Plan : State of play

- Outcome of the first round of stakeholders' consultations
- Identified potential actions
- Statement on Intell Speed management

Information on all four including ramifications for seniors can be downloaded from [http://ec.europa.eu/transport/road/consultations/its\\_en.htm](http://ec.europa.eu/transport/road/consultations/its_en.htm)

## **EU Study Shows Car Safety Not Just About Engineering**

Car safety is high on the European Union agenda. Over the years, carmakers primarily have developed engineering systems with an array of gadgets and features to make driving a safer and more enjoyable experience. Now, with 2.6 million euros in EU funding, a project known as DIPLECS (Dynamic Interactive Perception-action LEarning in Cognitive Systems) will bring together researchers from the Czech Republic, France, Sweden and the UK to develop a cognitive system that protects both drivers and pedestrians.

Many new cars rolling off today's production lines are equipped with various driver-assisting automations, such as collision detection systems, anti-lock brakes (ABS) and traction control. Given the complexity of real driving environments and the key role that drivers play in the pre-crash phase, many experts believe that engineering adaptations alone are not enough.

DIPLECS will create an artificial cognitive system (ACS) capable of 'learning' and adapting to situations faced by drivers, building models of real driver behavior and eventually producing a flexible cognitive tool that functions as a form of safety net for the driver, offering assistance and advice.

To achieve these goals, the DIPLECS architecture must allow for learning and adaptation in dynamic, real-time and real-world scenarios. Starting from a basic, rudimentary capability, it must constantly refine and improve by observing a human driver, the car data and the surrounding environment. Learning occurs in two ways, either by analyzing human-car-environment interaction or by improving its own capabilities.

The project partners will assess the architecture and its components in three different settings: offline with data recorded in a real vehicle; online in the real vehicle; and online for a model car. These different settings will enable them to analyze different assistance capabilities, including

# Transportation Research Board June 2008

general, passive real-time and active real-time, in a safe environment. DIPLECS runs until November 2010. Further information is available at [www.diplecs.eu](http://www.diplecs.eu)

## Europe Commission Hears Public's Thoughts on Urban Mobility Issues

Four challenges were listed by responders to a European Commission public consultation on mobility conducted in 2006-2007. These were:

1. Improving urban mobility - a sustainable mobility that benefits all Europeans, particularly older people and those with disabilities.
2. Dealing with the constant increase in freight and passenger transport movements faced by European cities. 'Smart' charging, intelligent public transport ticketing and better traveler information may be part of the solution.
3. Assuring that people can move around cities at minimum personal risk. A particular problem is the frequency of road crashes in urban areas, a situation that must be addressed by looking at issues related to people's behavior, the vehicles and the infrastructure. Strict enforcement of traffic rules is imperative. Meanwhile, if people do not feel safe on public transport, they may refrain from using it, leading to unnecessary car use.
4. Making urban transport more accessible for all. Society is changing---getting older as one example---and people expect mobility solutions that are flexible, affordable and comfortable. Citizens want seamless, safe and efficient transport both for freight and passengers. This calls for good inter-connections between transport modes and for good links between urban and suburban transport, such as 'park and ride' sites outside cities.

The European Commission will publish an *Action Plan* by early autumn 2008, which will include possible actions at the EU, national, regional, and local levels, as well as ideas for citizens and industry. Information is available at [http://ec.europa.eu/transport/clean/index\\_en.htm](http://ec.europa.eu/transport/clean/index_en.htm)

## European Traffic Death Figures For 2007 Define Risk for Seniors

The European Road Safety Observatory has published its Traffic Safety Basic Facts 2007 on its

website <http://www.erso.eu>. This includes statistics on the evolution of road fatalities of older people (aged 64 and up). Due to their greater frailty, older people are more likely to be seriously injured in any given crash than younger people. Fatalities of older people in traffic crashes reduced by one-third between 1996 and 2005, although nearly one in five road traffic fatalities is age 65 or over.

Some EU countries with the best overall road safety records – such as Sweden, Finland, the Netherlands and Denmark – have rather high proportions of elderly fatalities. In most EU countries, older people are at greater risk of being killed in a road collision than the overall population. About two-thirds (64%) of senior fatalities are men. Eleven percent of all elderly fatalities are aged 85+. Elderly people between 75 and 84 years have the highest death risk of any senior age bracket. More than one-third of older people dying in road collisions were pedestrians (37.5%).

Older people are proportionately more likely than middle-aged people to be killed in an accident on a non-motorway urban road. Senior fatality numbers peak in mornings and in afternoons. Three-quarters of elderly fatalities occur between Monday and Friday. The peak season for senior fatalities is winter.

Reports and graphics showing road safety evolution in the EU and road safety evolution in the EU by population can be downloaded from [http://ec.europa.eu/transport/roadsafety/road\\_safety\\_observatory/care\\_reports\\_en.htm](http://ec.europa.eu/transport/roadsafety/road_safety_observatory/care_reports_en.htm)

## Long-Term Care in Europe Includes Concern about Transportation Needs

Two recent European reports focus on long-term care, acknowledging the impact which the growing numbers of older people will have on the provision of such care, including the importance of considering transportation needs and mobility consequences.

An April report indicated that care requirements will spiral upward through 2050 and beyond. Nine of 10 Europeans surveyed favor home- or community-based care rather than care in an institution. This suggests a greater range of transportation needs.

A second survey, dubbed Eurobarometer and conducted late last year, presents statistical breakdowns about caregivers. About four in ten Europeans are close to someone who needs care, and about half of that 40

# Transportation Research Board June 2008

percent regularly visits the person needing care. And one of the primary caregivers' assists is with mobility needs. Information on the Eurobarometer study can be obtained at

[http://ec.europa.eu/public\\_opinion/archives/ebs/ebs\\_283\\_en.pdf](http://ec.europa.eu/public_opinion/archives/ebs/ebs_283_en.pdf). Information about the April report is available at: [http://ec.europa.eu/employment\\_social/news/2008/apr/long\\_term\\_care\\_en.pdf](http://ec.europa.eu/employment_social/news/2008/apr/long_term_care_en.pdf)

## Four European Cities Host Summer Course That Focuses on Transport

The cities of Genoa, Burgos, Krakow and Stuttgart, their public transport operators, industrial partners, and research institutions have joined to sponsor a four-unit summer university program focused on transportation services. Each city will host one unit of the course, known as CIVITAS CARAVEL. Students and young professionals from around the world are invited to the free instruction.

The second unit was held in Stuttgart, Germany, May 28-30, and concentrated on soft measures in transportation planning. The third unit will consider demand-responsive transport services. Genoa, Italy, will host that session June 25-28, 2008. Further information is available at [www.civitas-caravel.org](http://www.civitas-caravel.org)

## Ambient Assisted Living Program Helps Seniors Remain Independent

Improving the quality of life for older people is the goal of the European Commission's Ambient Assisted Living (AAL) program, which helps seniors live independently for added years through use of Information and Communication Technologies (ICTs). ICTs are being developed to help counter many of the problems associated with old age, such as **lack of mobility**, memory loss, vision and hearing difficulties, and loss of independence. ICTs can also help older people remain active at work and in the community.

In their report on the proposed AAL initiative, members of the European Parliament stated that ICTs developed to help older people stay healthy longer should be cost-effective and respect seniors' privacy and dignity. Ensuring that technologies are adapted to the needs of older people is a high priority for the parliamentarians.

The report also highlights the importance of keeping the costs of new technologies down and it recommends

that older people be included in the design phase from the very beginning. The report also makes the point that the needs of those aged 65 to 75 are very different from those of the 75-85 age group and the 85+ group.

## European Road Safety Day Set

The Second Annual European Road Safety Day will be held in Paris October 13, 2008, emphasizing 'Road Safety in Our Cities.' European Road Safety Days are intended to raise awareness, give visibility to best local practices and European policies, and offer the opportunity to advance the cause of road safety in Europe and around the globe. The first such day in April last year focused on alcohol and drugs in traffic, training and education, and offered young people the opportunity to share experiences. The 2008 event is looking at cities because about two-thirds of the crashes and one-third of the road fatalities occur in urban areas, affecting the most vulnerable road users, including older drivers and passengers.

## Key Web Sites Help Lookers Find EU Research Material Quickly, Easily

To find out about European research, check these sites:

*On the Internet*: everything you need to know about European research and the European Research Area; complete keyword index and search facilities make it easy to find what you are looking for: [www.ec.europa.eu/research](http://www.ec.europa.eu/research), [www.ec.europa.eu/research/fp7](http://www.ec.europa.eu/research/fp7), [www.ec.europa.eu/research/enquiries](http://www.ec.europa.eu/research/enquiries)

*RTDinfo*: the magazine for European research, published every two months by the Directorate-General for Research: [www.ec.europa.eu/research/rtdinfo](http://www.ec.europa.eu/research/rtdinfo)

*CORDIS*: the information and tools for participants in EU-funded R & D programmes, including the Seventh Framework Programme: [www.cordis.europa.eu](http://www.cordis.europa.eu), [www.cordis.europa.eu/fp7](http://www.cordis.europa.eu/fp7)

*European research in action*: a collection of leaflets on a variety of themes, from the environment to nanotechnologies, diabetes, etc: [www.ec.europa.eu/research/leaflets](http://www.ec.europa.eu/research/leaflets)