

WISCONSIN TRAFFIC SAFETY REPORTER

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Don't speed ... to the hospital

by Major Dan Lonsdorf
Director, Bureau of
Transportation Safety

Americans love speed—whether it's computer download time or the quickness of a football player. Unfortunately this love of speed extends to our roads too. Speed is a factor in nearly every traffic crash, and the violence of a crash increases exponentially at higher speeds. Countless crashes in Wisconsin would never have happened if drivers simply slowed down. In many others, an occupant who perished might have survived at just a bit lower speed.

However, not all speed-related crashes entail exceeding the speed limit. Often, they occur from driving at an unreasonable speed. To determine what is reasonable, drivers must consider a variety of environmental and road conditions, which are independent of the posted speed limit. These factors include:

Weather Rain, snow, ice and fog reduce visibility and vehicle traction.

Traffic volume Congestion, especially in construction zones, often causes sudden slow-downs and traffic stoppages. Drivers must slow down to be able to react to rapidly changing traffic conditions.

Pedestrians, bicyclists, motorcyclists etc.

When people and vehicles traveling at different speeds share the road, drivers need to adjust their speed accordingly.

Roadway engineering Curves and other dangerous sections of roadways increase the risk of losing control when exceeding a sensible speed.

Rural areas Many collisions with deer or farm machinery in rural areas can be prevented if drivers travel at appropriate speeds.

Wisconsin, like the rest of the nation, has a love affair with speed that results in approximately 250,000 traffic convictions a year in the state. Speeding is a complex problem—not only must we get motorists to obey the speed limits, but we must also persuade them to adjust to conditions. Like other major traffic safety challenges, it takes effective education, engineering and enforcement to reduce the frequency of speed-related crashes.

“Motorcycle helmets work ... there's no question about it.”

So says one of the world's most respected researchers on helmet effectiveness. For decades Professor Harry Hurt led ground-breaking motorcycle crash research at the University of Southern California. From 1976 to 1981, he led a federally-funded study, *Motorcycle Accident Cause Factors and Identification of Countermeasures*, often called simply “The Hurt Report,” which is widely regarded as the benchmark of motorcycle crash research.

In the study, an in-depth, on-scene investigation was performed detailing the use of helmets and other protective gear in 900 motorcycle crashes. Researchers also analyzed 3,600 police crash reports. The study clearly established that helmets save lives by reducing the occurrence of head injuries. It also showed that wearing a helmet does not reduce essential vision or hearing.

Since the Hurt Report came out in 1981, its findings have been corroborated by many other studies worldwide. For example, studies done in Thailand (published in 2003) and in Europe (2004) had findings so similar to the Hurt Report that Professor Hurt says, “It was as if the original report had simply been translated from the English.”

continued on page 2

“Live responsibly—Brewers fans don't let fans drive drunk”

This was the cheer for Brewers fans attending the June 5 game against the Cubs. The Brewers, Miller Brewing Company, WisDOT, DNC – Sportservice, Inc. and TEAM Coalition partnered to educate fans about the importance of designating a driver, buckling up, and demonstrating positive fan behavior as part of the “*Responsibility Has Its Rewards*” campaign. The spokespeople for these important messages were the Brewers fans themselves.

“*Responsibility Has Its Rewards*” is a league-wide campaign rewarding fans for pledging to be a designated driver and ensuring a safe ride home from the game for friends and family. Last season, 300,000 fans—20,000 from Miller Park—participated in the designated driver program. The PSA produced from the June 5 filming also includes Brewers players as well as State Patrol Superintendent David Collins, and it aired on the Miller Park video board throughout the season.



Motorcycle helmets—a life or death issue

CREDIT: NHTSA



Life
(and face)-
saving
protective
gear

CREDIT: JEFF DEAN

A 1.2-million-mile BMW rider crashed in West Virginia but came out of it just fine—thanks to his full-face helmet.



State Patrol Superintendent David Collins tapes a PSA at Miller Park with the message, “Live responsibly, always have a designated driver ... Go Brewers!”



Dummy head form with electronic sensors is used to monitor impact forces at the Snell Memorial Foundation.

Motorcycle helmets work

from page 1

Unfortunately, in recent years helmet use rates are down, and since 1997 motorcyclist fatalities have more than doubled. Public policy issues—such as helmet laws—are complicated and sometimes controversial, but one thing about helmets is clear; the research has been done, the science is in . . . helmets work. As Hurt says, “When you buy a \$55 helmet you get \$1 million of protection.”

Let’s take a look at how they work and save lives.

How helmets work

Four basic components work together to provide protection: an outer shell, an impact-absorbing liner, comfort padding, and a good retention system.

The outer shell is usually made from fiber-reinforced composites or thermoplastics like polycarbonate. This tough, lightweight material compresses when it hits anything hard, which disperses energy from the impact to lessen the force reaching your head. Inside the shell is the impact-absorbing liner, usually made of expanded polystyrene (commonly thought of as Styrofoam). This dense layer cushions and absorbs the shock as the helmet stops and your head wants to keep moving. Both the shell and liner compress when hit hard, spreading the impact forces throughout the helmet material. The more impact-energy deflected or absorbed, the less reaches your head.

All protective helmets sold in the US must meet Federal Motor Vehicle Safety Standard (FMVSS) 218. Helmets are tested at labs such as Hurt’s Head Protection Research Laboratory and the Snell Memorial Foundation. Snell’s director of education, Hong Zhang, says that “we test many helmets and recommend the good ones to the public.”

The science is in

Jet planes first took to the skies during World War II and, after the war, researchers needed to develop helmets for pilots dealing with greatly increasing speed and altitude. Modern head protection technology originated in the 1950s at the University of Southern California with the pioneering research of Lombard and Ames, who were developing a new generation of flight helmets for the US Air Force. During their research with many human subjects, important principles of head protection technology were established, including a unique energy-absorbing helmet design that was applied not only to aviation but also motorcycling, car racing, football, etc. Professor Hurt, one of Lombard’s students and an associate of Ames, continued their research.

Over the last 25 years, a tremendous amount of research has confirmed that helmets do indeed work. For example, NHTSA published *Motorcycle Helmet Effectiveness Revisited* in 2004. Using FARS (Fatality Analysis Reporting

System) data from 1993 through 2002, the report found that helmets are estimated to be 37% effective in preventing fatal injuries. This means that for every 100 motorcyclists killed in crashes while not wearing a helmet, 37 could have been saved had all 100 worn helmets. This means that during 1993-2002 helmets saved about 7,800 lives. For 2005 alone, NHTSA estimates that helmets saved 1,546 lives, and that if all motorcyclists had worn helmets, an additional 728 lives could have been saved.

Helmet myths debunked

“Helmets break necks! Helmets block peripheral vision and impair hearing!” These myths have been consistently disproved. For example, a study reported in the *Annals of Emergency Medicine* (1994) analyzed 1,153 motorcycle crashes in four midwestern states and determined that “helmets reduce head injuries without an increased occurrence of spinal injuries.” Professor Hurt collaborated with Thomas Noguchi, renowned former chief medical examiner-coroner for Los Angeles County, on a study of 304 fatal motorcycle crashes. Detailed head and neck autopsies found, as Hurt says, “absolutely no head and neck injuries attributed to helmets, but spectacular benefits in head protection.”

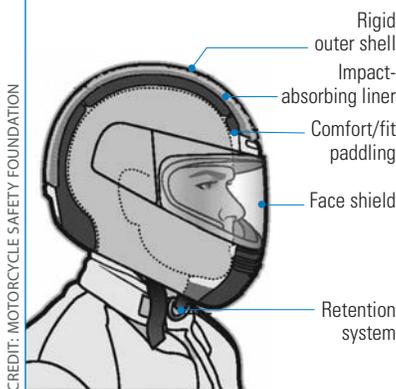
Regarding claims that helmets obstruct vision, studies show full-coverage helmets create only minor restrictions in horizontal peripheral vision. A 1994 study found that wearing helmets restricts neither the ability to hear horn signals nor the likelihood of seeing a vehicle in an adjacent lane prior to initiating a lane change. To compensate for any restrictions in lateral vision, riders increased their head rotation prior to a lane change. There were no differences in hearing thresholds under three helmet conditions: no helmet, partial coverage, and full coverage. Motorcycle noise itself can be so loud that any reduction in hearing capability resulting from wearing a helmet is inconsequential. Sounds that are loud enough to be heard above the engine can be heard when wearing a helmet. (Source: Insurance Institute for Highway Safety)

So much to save

The national CODES (Crash Outcome Data Evaluation System) project evolved from a 1991 congressional mandate for NHTSA to report on the benefits of safety belts and motorcycle helmets. In 1992, Wisconsin was one of seven states to receive a NHTSA grant to help develop CODES, and now about 20 states are involved.

CODES electronically tracks victims from the crash scene through the healthcare system to determine outcomes in terms of mortality, injury severity and healthcare costs. In great detail, CODES data provides a picture of how helmet use reduces fatalities and traumatic brain injuries and also saves huge costs in medical care.

Basic helmet construction



CREDIT: MOTORCYCLE SAFETY FOUNDATION



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Wisconsin CODES data for 2003-05 (see Tables 1 and 2) show the number of fatalities, traumatic brain injuries (TBI) and also the societal costs associated with riders not wearing helmets. Table 1 shows that of the 8,605 motorcyclists involved in crashes in Wisconsin during this period, about 64% weren't helmeted. Unhelmeted riders were about 80% more likely to die compared to helmeted riders. It can be estimated that not wearing a helmet led to the deaths of an additional 91 persons during this period. Unhelmeted riders were 220% more likely to have a TBI, and not wearing a helmet resulted in about 368 additional TBI cases.

Table 2 shows the average and additional estimated medical and other costs associated with TBI cases and helmet use. ("Other costs" include such things as: property damage, ambulance costs, loss of both wage and household work, insurance administration, and legal/court costs.)

The average medical cost for a TBI case was about \$109,000, while the average "other cost" was about \$228,000. As noted above, riders not wearing helmets resulted in 368 additional TBI cases. Therefore, total additional medical costs due to crash victims not wearing helmets were about \$40 million (368 additional cases x \$109,000 per case), while total additional "other costs" were about \$84 million.

An ounce of prevention—neglected

Unfortunately, helmet use rates nationally have declined dramatically. According to NHTSA, the rate dropped from 71% in 2000 to 48% in 2005.

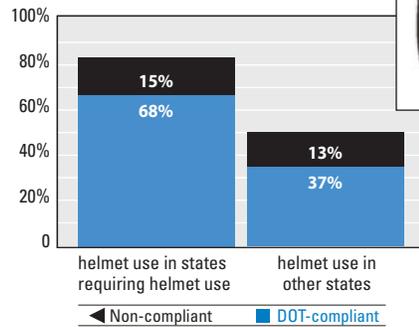
In 1967, the federal government began requiring states to enact motorcycle helmet use laws in order to qualify for certain federal safety program and highway construction funds. By 1975, all but three states mandated helmets for



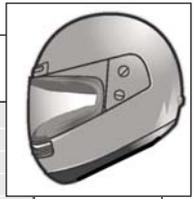
CREDIT: JEFF DEAN

Some helmets aren't worth a darn ... unless you want to look like a German soldier. NHTSA recently published a study of uncertified novelty helmets (DOT HS 810 752).

Motorcycle helmet use (2006)



Source National Occupant Protection Use Survey NHTSA's National Center for Statistics and Analysis



all motorcyclists. But in 1976 Congress revoked federal authority to assess penalties for noncompliance, and in the next two years 20 states weakened their helmet use laws to apply only to young riders, usually younger than 18. Wisconsin's current law covers riders 17-years-old and younger, and operators with learner's permits.

The graph above compares helmet use rates in states with and without universal helmet laws. Last year in Wisconsin 93 motorcyclists were killed, and 65 of these were not wearing a helmet.

"Do it for the ones you love."

Looking back over decades of research and efforts to promote the benefits of helmet use, Professor Hurt laments that promoting safety is a difficult sell. This same message is conveyed by *Countermeasures That Work: A Highway Safety Countermeasure Guide For State Highway Safety Offices (2007)*, published by NHTSA. "The most important objectives for improving motorcycle safety are to increase helmet use, reduce alcohol impairment, and increase proper licensing and training. These all are difficult to accomplish. State helmet use laws are extremely effective in assuring virtually universal helmet use, but they also are politically difficult to enact and retain. Strategies using only communications and outreach to promote helmet use, reduce impaired motorcycling, and increase licensing and training appear to have been no more successful with motorcyclists than with other drivers."

Ron Thompson, the long-time Wisconsin Motorcycle Safety Program manager in the Bureau of Transportation Safety, has also devoted decades to promoting motorcycle safety. He makes a point to include the following in his message, "Even if you don't want to wear a helmet to save your own life, then do it for the ones you love, for your family and friends. And so you can ride again!"

From the most reliable sources ...

Some of the nation's top experts provided information for this article. Ron Thompson put our reporter in touch with experts at NHTSA, the National Center for Statistics and Analysis, American Motorcyclist Association, and crash test labs such as the Snell Memorial Foundation.



Gear up!

Every rider and passenger should wear over-the-ankle footwear, long pants, a long-sleeved jacket, full-fingered motorcycle gloves, and a helmet that meets USDOT standards (FMVSS 218).

Gear Up brochures (HS508) and posters (HS509) are available from WisDOT Maps and Publications.

Contact Ron at (608) 266-7855 or ron.thompson@dot.state.wi.us

Motorcycle crashes in Wisconsin (2003-2005)

Table 1: Victims with traumatic brain injury (TBI)

	Not helmeted	Helmeted
All cases	5,497	3,108
%	63.9%	36.1%
Fatalities	204	64
Fatalities (%)	3.7%	2.1%
Additional fatalities (due to not wearing helmet)	91	
TBI cases	785	201
TBI cases (%)	14.3%	6.5%
Additional TBI cases (due to not wearing helmet)	368	

Table 2: Traumatic brain injury cases

	Average cost for TBI case	Additional cost for 368 more TBI cases due to no helmet
Medical cost (estimated)	\$108,524	\$39,936,832
Other cost (estimated)	\$227,509	\$83,723,312
Total	\$336,033	\$123,660,144

Keeping 'em honest

New truck SWEF opens south of Madison



On June 4, Wisconsin's newest truck Safety and Weight Enforcement Facility (SWEF) opened just south of Madison on the east-bound side of I-39/90. The \$4.7 million facility includes modern safety and enforcement features, including: weigh-in-motion scales along the Interstate and on SWEF ramps; PrePass, an automatic vehicle identification system that can allow pre-approved vehicles to bypass the station; 24-hr truck parking for drivers who need to meet their mandated rest requirements; and a triple-deck static scale.

Wisconsin Motor Carriers Association participated in the opening by enlisting one of their association members, W and A Distribution Services of Fort Atkinson, to drive the first commercial motor vehicle onto the truck scale.

The new building opened just in time for *Roadcheck 2007*, a 72-hour intensive inspection campaign throughout the U.S., Canada and Mexico.

Calming down the showoffs

Each year in May, the Automotion car show draws large crowds to Wisconsin Dells. During the 2006 event, officers from the Lake Delton Police Department became concerned about dangerous driving along "the strip" in the lower Dells. Drivers were burning rubber, recklessly showing off, while unruly crowds along the road egged them on. Video of the mayhem was being posted on YouTube.

Officers are well aware that such situations can lead to tragedy. For example, on June 16 in Selmer, Tennessee, during a "parade" of hot rodders burning rubber that was a regular part of the Cars for Kids charity car show, the driver of a super-charged 1993 Corvette lost control and killed six people in the crowd.

To nip this problem in the bud, the Lake Delton Village Board increased the fines for unruly behavior and traffic offenses during this year's event. Police officers encouraged hotel management to keep their employees from adding to the crowd. Flyers were distributed during the weekend detailing the fines for reckless driving, open intoxicants in a vehicle, disorderly conduct, etc., and

explaining that these laws would be "vigorously enforced." Neighboring police departments pitched in so there were more squad cars and foot patrols.

The results: officers handled 97 calls for 101 offenses, but none were serious and no one was hurt.



CREDIT: ZEEBOLD

Stunts like burning rubber can attract a crowd ... and can be a dangerous nuisance.

Get to know ...

Blinda Beason



Youth Alcohol Program Manager & OJJDP (Office of Juvenile Justice Delinquent Program) State Coordinator, DOT Bureau of Transportation Safety

"As the twig is bent, so grows the tree."

Getting kids off to a good start in life is a hugely important challenge, and Blinda's work focuses on one part of it. She works with communities and organizations all around the state that are striving to reduce underage drinking and the dangers that it can lead to as young people start driving.

Blinda came to this position in 2000 after 14 years as a program and planning analyst with the State Patrol. She grew up in St. Louis, started out working as a teacher, and earned a master's degree in business administration from Edgewood College.

Her work involves collaboration with a wide variety of organizations that work with young people: for example, the Wisconsin Clearinghouse for Prevention Resources, Wisconsin Positive Youth Development, and the Alliance for Wisconsin Youth, a program of Wisconsin DHFS. Alliance members include more than 100 community coalitions that focus on helping young people thrive, with efforts such as youth summits on underage drinking.

She points with pride to the success of programs such as the LaCrosse Police Department's compliance checks (see page 5). Other success stories include groups such as the St. Croix Underage Drinking Coalition. With funding support from BOTS, the Coalition has grown to include all police departments in the county, and it promotes compliance checks and other enforcement activities such as Party Patrols, along with educational programs.

To have a positive influence, parents, young people, teachers and their communities need to develop strong partnerships. Blinda says, "I'm always trying to convey to community organizations that it's time to bring groups such as law enforcement to the table to discuss what the community wants to offer its young people and how to build community support."

Contact Blinda at (608) 264-7337 or blinda.beason@dot.state.wi.us.

StreetShare fosters pedestrian safety

StreetShare is a program that educates and encourages motorists, pedestrians and bicyclists to share the road. Children walking or bicycling to school, people with disabilities out shopping, motorists driving to work . . . all share the same streets.

Thriving programs are being led, for example, by the City of Milwaukee and the Safe Communities Coalition in Dane County. Both have recruited partners, including large employers and neighborhood associations, that encourage

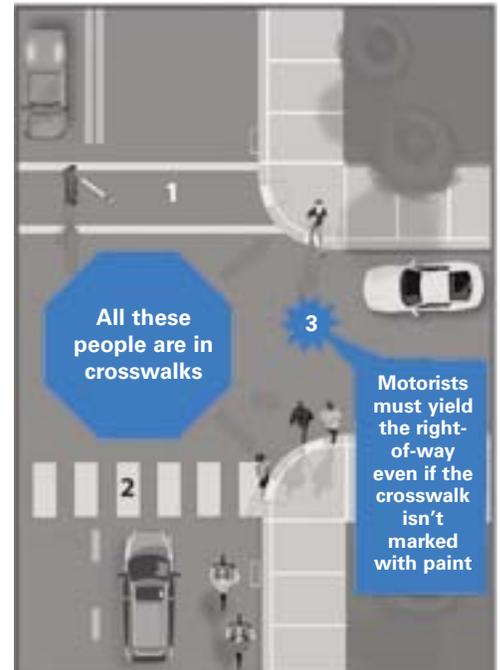


their members to take the *StreetShare* pledge: yield to pedestrians in crosswalks, take care when passing cyclists, and treat other motorists with courtesy.

Dave Schlabowske, Milwaukee Bike/Ped Coordinator, believes the program can and should be implemented in all communities in Wisconsin. He encourages all the neighborhood programs he works with to get involved.

As of September 24, there were 43 pedestrian fatalities in Wisconsin, nine more than at this date last year. Larry Corsi, BOTS Bike/Ped Safety Program Manager, welcomes all communities to get involved and help make our streets safer.

Visit www.streetshare.org or contact Larry at (608) 267-3154 or larry.corsi@dot.state.wi.us.



Underage? Sorry, no alcohol for you.

Sustained enforcement is paying off for LaCrosse police officers in their efforts to reduce underage drinking.

As in many communities, binge drinking has been a problem, and in recent years several intoxicated young people have drowned in the nearby Mississippi River. The Mayor's Alcohol Task Force developed a plan that includes compliance checks at all establishments where alcohol is sold. During these checks, partly funded by a DOT CARD (Comprehensive Alcohol Risk Reduction) grant, an underage person tries to buy alcohol, observed by a plain clothes officer. If alcohol is sold, the officer issues citations to both the seller and the establishment's license holder.

Persistence with these checks is clearly paying off. During the first round in 2005, the compliance rate was only 64%. The next year it was up to 71%, and this year it was 79% (118 of 149 establishments). Captain Robert Abraham, director of the department's community services bureau, notes that "Servers are now paying more attention to their community responsibilities."

During this last year, about 500 servers and others involved in alcohol sales have attended free trainings where they learn to spot fake IDs (see example) and people borrowing IDs, avoid over-serving, and keep in mind the city's "Sober Server" ordinance prohibiting servers from drinking.

Contact Captain Abraham at Abrahamr@cityoflacrore.org.

Fake ID?

Examples of what to look for ...

Compare DOB and DID to see if Date of Birth has been altered.

Red photo border on IDs issued when person is under 21 (green when over 21).

Feel high-gloss glaze on ID for needle holes caused while altering ID.

Holograms (barely visible here) of four small State Seals and a line repeating the word "Wisconsin".

Sometimes people get a duplicate because the original will be ruined during alteration.



Alexander Drakopoulos

Associate Professor
Civil and Environmental
Engineering
Marquette University

Highway Safety Partners

This section profiles people who are helping improve traffic safety in Wisconsin.



Laura Liddicoat

Chemist Supervisor
Forensic Toxicology Program
Wisconsin State Laboratory
of Hygiene (WSLH)

Alex's research centers on highway safety, a topic he has been involved with since his days as a grad student at Michigan State University.

A few years ago, Wisconsin State Patrol worked with DOT engineers and the AAA Foundation for Traffic Safety to install "converging chevron" pavement markings ahead of a dangerous freeway curve. The markings, previously used in Japan, were used for the first time in the US by special FHWA permission. Their design makes drivers think they are speeding up, causing them to instinctively apply the brakes. Using data from detectors in the pavement, Alex found that drivers entered the curve at much lower speeds.

Another device warned drivers to slow down if they approached a dangerous freeway curve too fast. After collecting data on half a million vehicles,



Chevron pavement markings help prevent truck tip-overs on a ramp of the Mitchell Interchange in Milwaukee.

Besides alcohol, many other drugs can impair driving. These include marijuana, hallucinogens, inhalants, stimulants, sedatives, narcotics, prescription and over-the-counter drugs, and combinations of all the above.

WSLH's Toxicology Section provides alcohol and drug testing to law enforcement agencies in support of Wisconsin's impaired driving laws. Laura's work involves serving as technical expert for alcohol and drug chemists, reviewing and reporting alcohol and drug results, and providing interpretation and testimony regarding lab results and effects on human performance. She testifies in courts statewide as an expert witness on the pharmacokinetics and effects of alcohol and other drugs. She notes that it is sometimes challenging to convey complicated science to a lay jury.

With a BS degree in medical technology from UW-Madison, Laura worked in the Clinical Chemistry Department at University Hospital in Madison, and then came to the WSLH Toxicology Section where she performed alcohol and drug analyses, trained chemists and provided expert witness testimony for 11 years prior to promotion to supervisor in 1997.

She gives numerous presentations on drugs and driving at state, national and international seminars.

he found the device had the intended effect, and, along with the BOTS regional program manager, he presented these findings to municipal government officials.

His most challenging and rewarding work involves analyzing large databases to support statewide decision making. For example, one project used police and ambulance records to document response, on-scene and victim transportation times in relation to crash characteristics. Findings were useful in optimizing emergency response strategies, equipment stationing, and enforcement locations and times.

Another project related crash occurrence and severity with roadway shape (curve, degree of banking, hill, etc.) Findings were useful in targeting highway segments for safety improvements. Crashes can be mapped in a Geographic Information System (GIS) which can be superimposed on aerial photography, and pictures taken at ground level every 1/100th of a mile by WisDOT's photologging unit can be extracted and viewed for a comprehensive review of any highway segment.

A recently completed project compared the safety performance of two pavement surface types: one is "quieter" but it wasn't known if it was as safe in rainy conditions. Using large crash and weather databases, it was concluded that they are equally safe.

An ongoing effort is looking into freeway work zones to determine how many vehicles can fit through when lanes are closed, how queues form and how fast they grow.

Visit www.eng.mu.edu/drakopoa/.

For example, she often participates in seminars coordinated by the UW Law School's Resource Center on Impaired Driving, and partners with them on trainings for police officers and prosecutors.

She provided advice on the "Baby Luke Law" (2003 Wisconsin Act 97) which prohibits driving with any detectable amount of a controlled substance. Now officers only have to prove that drivers have an illegal drug in their system—such as marijuana, cocaine or methamphetamine—rather than having to prove actual impairment.

In February 2006, Laura gave a presentation at a meeting of the American Academy of Forensic Sciences on six instances of sleeping pill-impaired driving. She appeared on programs such as CBS's Good Morning America, and the New York Times quoted her as saying, "These cases are just extremely bizarre, with extreme impairment."

Currently Laura is the Wisconsin site coordinator for the ROSITA2 study. Conducted in the US and Western Europe by scientists working with local police, the study will determine the accuracy and utility of commercially available drug detection devices for drivers' saliva when used by trained police personnel.

Contact Laura at (608) 224-6245 or ll@mail.slh.wisc.edu.

High-tension cables from page 8

Reducing cross-median crashes is among the top 10 priorities in Wisconsin's 2006-08 Strategic Highway Safety Plan (available on the DOT website). This article looks at some of the efforts underway to reduce such crashes, and subsequent issues will cover work in the other priority areas.

To help reduce cross-median crashes, WisDOT teamed up with the Wisconsin TOPS (Traffic Operations and Safety) Lab at UW-Madison to study these crashes on the 1,483 miles of Wisconsin's divided highways. For the years 2001-03, 631 such crashes were identified, and they resulted in 53 fatalities and more than 600 injuries. Five hotspots were identified: I-39/I-90/I-94 in Columbia and Dane Counties, I-94 in Dunn County, US 41 in Fond du Lac, Winnebago and Brown Counties, US 53 in La Crosse County, and US 151 in Dane and Dodge Counties.

Traditionally, concrete and metal beam barriers have been used to prevent these crashes, but they are expensive and also difficult to install on sloped terrain where their performance is often suboptimal. Recent research shows that cable median barriers are more forgiving than traditional barriers and can be effective on sloping terrain. Collision forces are deflected laterally, thereby reducing the forces transmitted to vehicle occupants.

The TOPS Lab is now evaluating the effectiveness of the newly-installed cable median barrier systems along US 41 in Fond du Lac and Winnebago counties. This research will also evaluate costs for both low-tension and the newer high-tension cable median barriers in Wisconsin. Costs include installation, maintenance and repair, along with traffic control.

Data will be collected on the traditional, low-tension cables, and also on two high-tension systems with three or four cables that are pre-tensioned. Pre-tensioning reduces the amount the cables flex when struck by a vehicle, and therefore such systems can be used in narrower medians. Some crashes involve tremendous force and cause considerable flex. For example, the truck shown here caused a flex of 22 feet.

Cable barriers are the easiest and least expensive systems to erect, with installation

costs ranging from \$44,000 to \$55,000 per mile. Also, such barriers are popular because they cause the least damage to vehicles. But cable barriers also require the most maintenance; when struck by a vehicle, the cables sometimes need to be reattached to the posts. The newer, high-tension cables do better at staying up after a hit.

Recently installed cable median barriers have proved to be effective. In November 2006, cable median barriers were installed along a stretch of I-43. By August, the Ozaukee County Sheriff's Department reported that the cables already had been hit at least 22 times, with no fatal crashes. During the year before installation, four fatal cross-median crashes on this stretch resulted in six fatalities.

Contact David Noyce, TOPS Lab, at noyce@engr.wisc.edu.



"We caught another one!" This is how a Colorado DOT engineer described this crash on I-25 north of Denver. The high-tension cables flexed 22 feet before dragging the semi back diagonally about 8 feet.

Click It or Ticket awards



Melissa Winterfeldt, chief of the Fountain City Police Department, receives her department's award for participating as an unfunded agency in the Click It or Ticket Mobilization, May 21 through June 3. State Patrol Superintendent David Collins presented the award at the summer conference of the Wisconsin Chiefs of Police Association in Madison. Fountain City was one of 198 participating unfunded agencies. Overall, officers from these agencies made nearly 13,000 traffic stops, and issued 8,369 traffic citations, including 2,738 for safety belt and child restraint violations.



Officer Andrew Lundin, Sheboygan Police Department, receives the Officer Recognition Award from WisDOT for his "maximum effort" during the mobilization. Presenting the award is his supervisor, Sergeant Thomas Tuszyński.



CREDIT: BILL ANDREWS/AMERICAN MOTORCYCLIST ASSOCIATION

BOTS grant boosts enforcement during Superbike weekend in Elkhart Lake

Again this year, a Bureau of Transportation Safety grant to the Sheboygan County Sheriff's Department (SCSD) helped provide high-visibility, aggressive traffic law enforcement at this motorcycle event, May 31 to June 3. The Department collaborated with Plymouth Police Department and the State Patrol, and the grant helped with officer overtime. SCSD's Captain Cory Roeseler says, "The main thing is to not try to deal with a big event like this alone, but rather with collaboration, especially in this era of tight budgets."

Of course all sorts of motorcyclists attend this event, but many are riders of so-called "café racers", or, as Captain Roeseler observes, "what

less civilized people call crotch rockets." Such motorcycles emerged as part of a 1960s subculture in the U.S. and Europe in which safety wasn't a big focus.

In past years speeding and impaired riders were a problem, with several fatal motorcycle crashes. Last year though, with stepped-up enforcement, there were no motorcycle crashes in the area, and this year there were only a few minor incidents with no fatalities.

Mike Panosh, BOTS Regional Program Manager for north-east Wisconsin, helped coordinate the grant and he notes, "Our goal is not to write tickets, but rather to ensure that everyone enjoys the racing on the track . . . not on the road." He also says Road America provided excellent hospitality and a high-traffic site for the BOTS booth. This grant is similar to ones provided for HOG rallies and the Fall Color Ride.



Contact Mike at (920) 492-5671 or michael.panosh@dot.state.wi.us.

BOTS booth inside the track. (l-r) Ron Thompson, manager of the Wisconsin Motorcycle Safety Program, Mike Panosh, and Terry Askey and Al Bishop, both BOTS law enforcement liaisons.

High-tension cables

Reducing cross-median crashes

When you're driving down the Interstate or some other divided highway, it's easy to feel confident that you won't be hit by an oncoming vehicle. But cross-median crashes are actually a serious hazard. A North Carolina DOT study found that such crashes are three times more deadly than other highway crashes. Only 2.4% of all Interstate crashes in Iowa during the 1990's were cross-median, but these crashes resulted in 32.7% of all Interstate fatalities there.

continued on page 7

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