DIRECTIONS

THE UNIVERSITY OF NORTH CAROLINA
HIGHWAY SAFETY RESEARCH CENTER

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New Zealand researcher compares highway safety to U.S. statistics

In 2005, there were more than 6 million traffic crashes in the United States, resulting in 43,443 fatalities. The fatality rate per 100,000 population was 14.66, which remains well above the rates of many developed countries. According to New Zealand highway safety researcher and civil engineer, Dr. Shane Turner, the fatality rate in New Zealand in 2005 was 9.9 per 100,000 population. New Zealand has experienced a 48 percent reduction in roadway fatalities over the past 20 years.

In a lecture sponsored by the UNC Highway Safety Research Center and the UNC Injury Prevention Research Center, Dr. Turner, who recently visited several researchers throughout the U.S. and Canada, addressed the predominant differences in highway safety between the U.S. and New Zealand in relation to, development of policies, implementation of engineering solutions, enforcement of laws and education of the general population.

"A substantial difference that I see is that highway safety and safe driving aren't priorities among officials on all levels of government in the U.S.," said Dr. Turner. "To raise awareness, decision-makers at all levels of government need to raise the profile of highway safety. Grassroot initiatives must continue to not accept the loss of life on roadways."

Dr. Turner outlined a number of suggestions in order for the U.S. to experience the same decline in roadway crashes as New Zealand including:

- Place emphasis on safety auditing of new projects and learn from mistakes
- Encourage officials at all levels of government to be champions of the issue
- Continue to encourage the use of advocacy groups to ensure the topics of highway safety are on their politicians' agendas
- Emphasize the importance of safety management systems and the development of a safety culture
- Develop road safety committees across government agencies
- Conduct safety comparisons of states and local councils

Hospitalizations and medical expenses reduced for young drivers in North Carolina's driver licensing system

When the state adopted the Graduated Driver Licensing (GDL) program in 1997, North Carolina became the second state in the country to utilize this system designed to reduce young driver crashes. A widely-supported venture, GDL is now being credited with a decrease in hospitalizations and medical expenses among young drivers in North Carolina, according to a new study published in the February edition of Traffic Injury Prevention. The article was authored by Dr. Lewis Margolis of the University of North Carolina Department of Maternal and Child Health, in collaboration with Scott V. Masten and Dr. Robert Foss of the University of North Carolina Highway Safety Research Center.

"These findings confirm what was expected, but until now was not documented: that GDL is producing substantial cost savings as well as reducing deaths and injuries," said Dr. Foss. "And these findings only address one small part of crash-related costs. Others like insurance expenses, vehicle repair costs, and health care costs have undoubtedly declined as well since GDL was implemented."

The Effects of Graduated Driver Licensing on Hospitalization Rates and Charges for 16- and 17-year-Olds in North Carolina, sponsored by State Farm Insurance Company and the federal Centers for Disease Control & Prevention, concluded that in the 46 months following the implementation of GDL, hospitalizations of 16-year-old drivers declined by 36 percent, consequently reducing hospital charges by 31 percent, or about $650,000 per year. The study cited some decline in hospitalizations among 17-year-old drivers who had been in the GDL program, but the reductions were not statistically significant.

Through a three-level process, GDL is a program designed to gradually increase a beginning driver's responsibilities, allowing new drivers to become more familiar with common driving situations, as well as the complexities of driving.

GDL programs are currently used in 45 states and the District of Columbia.

Safety analysis tools upgraded for crash data research

For researchers in need of crash data for conducting research, the Highway Safety Information System (HSIS) is a great resource. HSIS, operated by the UNC Highway Safety Research Center for the Federal Highway Administration, is a multi-state database that contains crash, roadway inventory and traffic volume data for a select group of states and urban centers. In addition to the management of the data, HSIS researchers are also involved in the development of analysis tools that make use of crash data. Two specific tools have recently been updated and are available for download through the HSIS web site (www.hsisinfo.org).
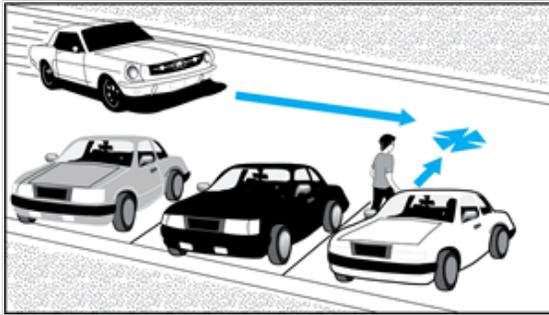
The Pedestrian and Bicycle Crash Analysis Tool (PBCAT) is a crash typing software product intended to assist state and local pedestrian/bicycle coordinators, planners and engineers with improving walking and bicycling safety through the development and analysis of a database containing details associated with crashes between motor vehicles and pedestrians or bicyclists. One of these details is crash type, which describes the pre-crash actions of the involved parties. After developing a database of crash information, PBCAT users can analyze the data, produce reports and select countermeasures to address the problems identified by the software.

PBCAT Version 2.0 includes significant improvements in functionality and has an enhanced design that makes the software easier to use. Some features of PBCAT Version 2.0 include:

User-friendly environment and improved navigation
Operates in a Microsoft® Windows® environment and includes easy-to-use pulldown menus and toolbars.

Form Designer
Users can customize the form for inputting crash data and design it to match the police crash reports used in their community.

Location Data
Users have the option of recording specific location information, such as approach and travel direction, for pedestrian crashes occurring at intersections.

Crash Reports
Users can produce single-variable and multi-variable tables within the application and export the results to Microsoft Excel® for further customization and graphics production.

Expert System Tools
To help users select appropriate countermeasures, PBCAT Version 2.0 includes links to the Web-based Pedestrian Safety Guide and Countermeasure Selection System (PEDSAFE), and the Bicycle Countermeasure Selection System (BIKESAFE).

The Geographical Information System (GIS) Safety Analysis Tools have been upgraded to operate within the ArcGIS environment. Computerized crash analysis systems in which crash data, roadway inventory data and traffic operations data can be merged are used in many states and municipalities to identify problem locations and assess the effectiveness of implemented countermeasures. By integrating this traditional system with a GIS, which offers spatial referencing capabilities and graphical displays, a more effective crash analysis program can be realized. The crash evaluation tools in Version 4.0 of the software include:

Spot/Intersection Analysis
used to evaluate crashes at a user-designated spot or intersection within a given search radius.

Strip Analysis
used to study crashes along a designated length of roadway as opposed to a spot or intersection.

Cluster Analysis
used to study crashes clustered around a given roadway feature such as a bridge, railroad crossing, or traffic signal.

Sliding-Scale Analysis
used to identify roadway segments with a high crash occurrence. This program differs from the Strip Analysis program in that the analysis segment is not fixed, but rather slides along the route in an incremental fashion.

Corridor Analysis
used to locate high crash concentrations within a corridor. This program allows routes to be linked together in a manner that allows the analyst to assess the overall safety performance within a transportation corridor.

HSRC News Briefs

UNC Highway Safety Research Center seeking applications for $1,000 scholarship

CHAPEL HILL — The UNC Highway Safety Research Center (HSRC) has issued a call for applications for its annual scholarship for graduate students interested in pursuing a career in highway safety.

The $1,000 scholarship is available to a full-time graduate student with a career goal emphasis on transportation safety and who will be enrolled in 2007 at any of the 16 University of North Carolina system campuses.

Candidates will be evaluated on academic performance, career goals, extracurricular and professional activities, work experience and a 1,000-word essay on a current highway safety issue.

The deadline for applying is April 1, and the application can be downloaded at www.hsrc.unc.edu/scholarship/.

Highway Safety Research Center Has Presence at TRB Annual Meeting

CHAPEL HILL — Six researchers from the University of North Carolina Highway Safety Research Center were among the presenters or moderators at the 86th Annual Meeting of the Transportation Research Board (TRB), January 21-25, in Washington, D.C.

The TRB annual meeting covers all transportation modes. Researchers from the Highway Safety Research Center made presentations on a wide range of topics in several subject areas.

Below is a complete list of sessions involving researchers from the Center.

Revised Long-Term Safety Research Plan
  Forrest M. Council, Ph.D.

Estimating Safety Benefits of Shoulder Rumble Strips on Two-Lane Rural Highways in Minnesota: Empirical Bayes Observational Before-and-After Study
  Forrest M. Council, Ph.D.

Factors Contributing to Pedestrian and Bicycle Crashes on Rural Highways
  Daniel L. Carter
  Forrest M. Council, Ph.D.

Effect of Graduated Driver's License on Alcohol-Related Crashes Among Teen Drivers in North Carolina
  Scott Masten

The Evolution of Highway Safety Analysis
  Forrest M. Council, Ph.D.

Bicyclist Intersection Safety Index
  Daniel L. Carter
  William W. Hunter
  Charles V. Zegeer

National Center for Safe Routes Kicks Off First 6 Months of Operation

CHAPEL HILL — The National Center for Safe Routes to School (NCSRTS), housed at the UNC Highway Safety Research Center, kicked off its first year with several key accomplishments. The NCSRTS aimed high in its efforts to build capacity and create demand for Safe Routes to School programs. During only the first six months of establishment, NCSRTS had significant achievements in a number of areas. Among those were the following highlights:

Coordinated the first Safe Routes to School State Coordinators National Meeting
  The NCSRTS organized the first Annual Safe Routes to School State Coordinators National Meeting held in Washington D.C. The purpose of the meeting was to provide information to the newly appointed State Coordinators and a venue for networking. A keynote address was presented by The Honorable James L. Oberstar, U.S. Congressman from the Eighth District of Minnesota and Congressional sponsor of the Federal Safe Routes to School program.

Expanded International Walk to School Day

On October 4, 2006, a record number of communities from all 50 US states participated in International Walk to School Day. Over 2,200 events were registered on the USA Walk to School Web site. Of these registered events, 48 percent reported that their Walk to School event was a part of an ongoing walking and/or biking program and 47 percent reported that their event was part of a Safe Routes to School program.

2006 Safe Routes to School State Coordinators National Meeting Attendees

Formed Partnerships with Outlets to Promote SRTS

The National Center for Safe Routes to School extended its promotional reach through the development of co-promotional partnerships with cataloguer Lands' End and Walk4Life Pedometers. Working with Lands' End, the Center secured 600 high visibility backpacks to use as promotional giveaways during the Pro Walk, Pro Bike conference in Madison, Wisconsin. In addition, the Center secured 1000 backpacks to use for weekly drawings and grand prize winners.

Launched a comprehensive NCSRTS Web site

Through a complete redesign of the site, the NCSRTS enhanced its image on the Web. The comprehensive site now includes areas to access a number of tools to help become familiar with the Safe Routes to School program, such as the Safe Routes to School Guide, online library, "Ask a Question" database, resource station and newsroom.