

THE UNIVERSITY OF NORTH CAROLINA
HIGHWAY SAFETY RESEARCH CENTER

DIRECTIONS

SAFETY • MOBILITY • INFORMATION

INSIDE

Speeding—Culture on the run

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E-marketing transportation safety



Speeding

Culture on the run

Speeding is pervasive in America. We encounter it everyday. Frequently it's five to ten miles over the limit. Sometimes it's more. In an effort to understand this hurry-up phenomenon, researchers at the UNC Highway Safety Research Center recently conducted a study looking at speed-related crashes in rural North Carolina. The definition of "rural" for this study was based on the locality code used by law enforcement on crash report forms. It included areas up to 70 percent developed throughout the state.

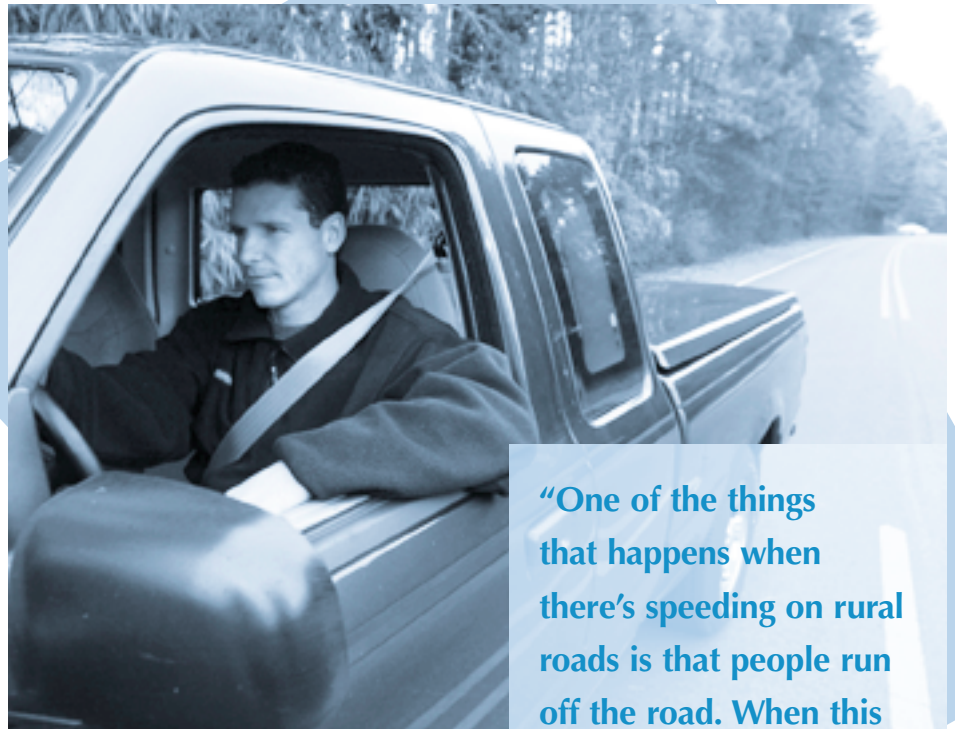
"There's a lot of growth in rural areas now," said William Hunter, the project's principal investigator. "Many people are moving away from high-density, high-traffic areas and this is reflected in the crash data. Because of this, we made a conscious decision to look at mixed development areas as well."

Rural roads

Rural speed crashes carry their own brand of risk, according to Lauren Marchetti, HSRC's Manager of Public Information Programs.

"One of the things that happens when there's speeding on rural roads is that people run off the road," she said. "When this occurs, especially at night, they may not be found that quickly. Rural areas frequently have more risky driving situations because secondary roads have lower roadway design standards," she added. "And urban areas often have lower speed limits."

HSRC's study was funded by the North Carolina Governor's Highway Safety Program and involved analyzing 1994–1999 crash data from the North Carolina Division of Motor Vehicles.



Males, ages 16–25, are involved in more speed-related crashes in North Carolina than any other demographic group.

"One of the things that happens when there's speeding on rural roads is that people run off the road. When this occurs, especially at night, they may not be found that quickly."

Study results show that approximately 42,500 speed-related crashes take place in rural and mixed-development areas of the state each year, killing an annual average of 575 people and injuring thousands. Crashes were classified as speed-related if one of the drivers in the crash received a citation for exceeding the posted speed limit, exceeding a safe speed, or failing to reduce speed to fit the existing conditions. Just 10 percent of these speed-crashes occurred on interstates, while secondary roads came up as the most dangerous places to speed with 44 percent of speed crashes taking place on them.

"We had a bad one recently where a man was speeding and the road was a little slick," said Tracy Jackson, Iredell

County EMS Director. "It was a secondary road and he came to a bridge, hit the bridge and flipped over in the creek. The car was upside-down in the creek. They were able to get him out after a prolonged extrication. And just as soon as they got him out, he went into cardiac arrest. They did everything they could for him, but he didn't make it."

Study results show that 28 percent of the drivers in these crashes were classified as having a speed-related violation. Young males, ages 16-25 are often the ones speeding. Some 31 percent of speeding drivers involved in these crashes are young males— more than any other demographic group.

Campaign for safety

HSRC's study has now moved into the awareness campaign phase and is focused on Iredell County where speed-related crashes are higher than the state-wide average. Almost half the crashes in rural and mixed development areas of this county (which make up nearly all of it) are speed related.

"We also chose to work with Iredell County because of the eagerness of law enforcement, and city and county officials there to work with us in a campaign to make their roads safer," Hunter said. The campaign will include enforcement personnel from the State Highway Patrol, the Division of Motor Vehicles, the Iredell County Sheriff's Department, and the Statesville,



Law enforcement in Iredell County is uniting with HSRC in sponsoring a county-wide awareness campaign to reduce speeding.

Mooreville, and Troutman Police Departments.

The Iredell campaign is slated for a February kick-off and will involve a

"Many of the young drivers we spoke with in the focus groups said that if their parents got a letter saying that they had been speeding, then they would be in a lot of trouble. They indicated that this might be something that would deter them from speeding."

multi-month media campaign and a test of the use of speed-cameras to photograph vehicles exceeding the limit. A warning letter will be sent to the registered owners of vehicles photographed speeding.

"Many of the young drivers we spoke with in the focus groups said that if their parents got a letter saying that they had been speeding, then they would be in a lot of trouble," Hunter said. "They indicated that this might be something that would deter them from speeding."

For State Highway Patrol Sgt. Gary Tolbert, who patrols the roads of Iredell County, anything that would save lives is worth trying.

"Most officers who are accident investigators would agree that speed largely relates to the severity of accidents and seems to be a problem throughout the state on secondary roads as well as interstate highways," he said. "The motoring public in general is so focused nowadays on traveling from point A to point B and accomplishing their own agenda that they seem to have little regard for the speed limit or for other traffic."



By Emily Smith

ON THE WEB

HSRC's interactive Internet sites provide new avenues for addressing highway safety issues

The UNC Highway Safety Research Center has joined the world of e-marketing.

While public service announcements, posters and printed documents are still important ways of sharing life-saving transportation safety messages, the Web offers an explosion in capabilities for marketing our research and outreach projects.

HSRC's various project-based Web sites are as diverse as the projects themselves.

Promoting an international movement via the Web

Six project-based sites can be reached from our Home Page located at <http://www.hsrc.unc.edu>, or by typing in the direct Internet address of a project-based site.

Two of these project-based sites belong to the Pedestrian and Bicycle Information Center, created and maintained by HSRC staff. Located at www.walkinginfo.org and www.bicyclinginfo.org, these sites are being developed with the goal of providing communities with the resources they need to create safe places for walking and bicycling. The Pedestrian and Bicycle Information Center is primarily funded by a five-year grant from the Federal Highway Administration.

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ON THE WEB



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“With these Web sites, we are trying to address multiple audiences, from professionals such as municipal engineers and local planners, to advocates and citizens who want to make changes in their community,” said David Harkey of HSRC who oversees the technical and engineering aspects of the two sites.

The idea is to develop an interactive information system.

“We are attempting to use the Web to enhance the grass roots movement that is underway to hopefully change the landscape of this country,” said Christian Valiulis, HSRC Internet Manager/Producer.

The sites also feature a response system allowing anyone with Internet access to get questions answered by experts in the field.

Going interactive on the Web

HSRC is also home to the Web sites of International Walk to School Day and National Walk Our Children to School Day. Found at www.iwalktoschool.org and www.walktoschool-usa.org, these two sites provided minute-by-minute

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coverage of the walk-to-school-day event that took place on Oct. 4, 2000. That day, more than 2.5 million children, parents and community leaders from six countries around the world joined forces to celebrate the first ever International Walk to School Day. It was the fourth year that a national walk-to-school event to promote safety, health, physical activity and concern for the environment had been held.

With the help of a “SAS” database created and housed at our Center, walkers participating in the 2000 event were able to post comments about their walk on the two Web sites immediately

following their event “I liked holding my teacher’s hand. She walked with us for the first time today,” posted “Isabel,” a student walking in East Sussex, Great Britain.

HSRC has documented the annual walk events in the United States since 1997.

“When Walk Our Children to School began to grow we realized we couldn’t do it without the Web,” said Lauren Marchetti, manager of public information programs at the Center. “The cost and labor involved to call and write to all the schools and participants across the country would have been astronomical. By having marketing and registration on the Web, it was easy for millions of people to participate.”

Relaying specific project statistics or messages via the web

The “North Carolina Alcohol Facts” Web site, created by HSRC staff, can be found on the Internet by linking from our home page. It contains county-

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HSRC research paving the way for bicyclists

As highways and local roads fill up with motor-vehicle travelers, bicyclists are often left to navigate hazardous circumstances.

The UNC Highway Safety Research Center has been working to change that. Our Center recently completed several studies focusing on making bicycle travel safer. The following is a synopsis of two of them. Additional summaries can be found on our Web site at <http://www.hsrc.unc.edu>.



BLUE BICYCLE LANES

Although many European cities use colored markings to delineate bicycle crossings at intersections, little was known about the safety of these markings in the United States until the completion of a recent HSRC study.

Working with city officials in Portland, Ore., Center researchers recently completed an evaluation of the city's blue bike lanes and accompanying signing system.

"The most significant finding was that in the area of the blue crossing points, motorists yielded significantly more to bicyclists than they had in the 'before' period (87 percent after the bike lanes were put in versus 71 percent before),"

said HSRC Researcher William Hunter, principal investigator of the study, funded by the Federal Highway Administration.

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Hunter cautioned that the study also found a down side to the lanes. "Bicyclists coming through the area seemed to be more comfortable and did not turn their heads to scan for traffic as much," he said.

Overall, the study found that the blue bike lane sections were well received by motorists and bicyclists alike. Still, cautioned Hunter, the lanes need to be evaluated in a variety of locations to learn more about them.

"Part of it could be that Portland is a bicycle-friendly city, so motorists perhaps are more used to accommodating bicyclists," he said. "I would love to see these tried in North Carolina."

BICYCLE LANES VERSUS WIDE CURB LANES


There is a long-standing debate in the bicycle community about which is better—bicycle lanes or wide curb lanes.

A wide curb lane is just as it sounds—a wider traffic lane (usually 14 feet) that provides extra space so that the lane may be shared by both motorists and bicyclists. It provides no bicycle lane markings to delineate bicycle space from motor vehicle space. Bicycle lanes, on the other hand, have a white stripe separating bicyclists from motorists.

"Some serious bicyclists think wide curb lanes are safer than bike lanes because they force the bicycle to be like a motor vehicle and to assume their place in traffic. However, the majority of bicyclists prefer bike lanes because they feel safer—as if the stripe provides a strict boundary between the motor vehicle and their bicycle," said Hunter, the principal investigator of a recent HSRC study exploring the operational and behavioral differences between the two designs.



Funded by the Federal Highway Administration, HSRC researchers used videotape from 48 roadway sites in three states to evaluate the safety effects of bicycle lanes versus wide curb lanes. The primary analysis was based on videotapes of approximately 4,600 bicyclists in Santa Barbara, Calif.; Gainesville, Fla.; and Austin, Texas.

"The bottom line was we didn't see a lot of differences between the two types of facilities," Hunter said. Either could be used as an appropriate facility for bicyclists. The facility the bicyclists normally used primarily depended on where the bicyclists needed to go." 

By Kristin Oguntoyinbo

Emerging Hispanic community faces challenges on North Carolina roadways

Motor vehicle crashes are the leading cause of death for North Carolina's Hispanic citizens.

More than 25 percent of the deaths within this population between 1995 and 1997 were due to motor vehicle crashes, compared to only 2.2 percent for whites and 2.5 percent for African Americans.

The UNC Highway Safety Research Center is working to save lives by joining with members of North Carolina's Hispanic community. In a project funded by the N.C. Governor's Highway Safety Program, HSRC has been exploring the causes of these crashes and deaths and researching the seat belt use of this population. Teaming with the Immigrant Health Initiative of Chatham Hospital in Siler City, N.C. and their lay health advisors, HSRC researchers have been collecting data on seat belt and child restraint use.

Siler City was chosen as a survey site because Hispanics make up nearly half the population there. They are drawn to the quiet, rural Chatham County town of 6,000 by the jobs at Siler City's poultry processing plants and textile mills. The town demographics and layout, and the presence of the Immigrant Health Initiative make it ideal for this project.

"We couldn't have found a better group to work with," said Lauren Marchetti, the project's principal investigator. "The Immigrant Health Initiative's approach of having health professionals work with lay health advisors who are respected members of the Hispanic community is the perfect environment for this project."

Creating effective messages

A second phase of the project involves conducting focus groups with members of the Hispanic population to find out what messages would be effective in



Research shows that Hispanics in North Carolina are at high risk of being injured in motor-vehicle crashes.

increasing motor vehicle safety within this demographic group. These messages will then be tested in the Siler City area. The goal is to create a statewide awareness campaign in Spanish to reach this population.

Creating effective messages for the Hispanic community involves special considerations. Public service announcements directed at the general American population often use law enforcement officials as spokespeople. This doesn't work as well in the Hispanic community.

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A National Highway Traffic Safety Administration study found that family and religion are the most important institutions in these communities and should be incorporated into any campaign with hopes of success. Hispanics, especially recent immigrants, are often distrustful of law enforcement and government agencies this study found.

“These are some of the considerations we will be exploring during our focus group sessions,” Marchetti said.

Defining the problem

In analyzing North Carolina crash data for this project, HSRC researchers found that alcohol is a factor in a higher percentage of crashes involving Hispanic drivers than non-Hispanic drivers (9.3 percent versus 4 percent). Hispanic drivers are also charged with a violation after a crash more often than non-Hispanic drivers (67 percent versus 50 percent). Hispanic drivers involved in crashes were found to operate older cars and to carry more passengers than non-Hispanic drivers. The study also found that among crash-involved drivers identified as being Hispanic, a much larger proportion were males (83%) than for the non-Hispanic drivers (57%).

“This doesn’t necessarily mean that male Hispanic drivers are worse than male non-Hispanic drivers. It might just mean that a much larger proportion of Hispanic drivers are young males,” said HSRC Researcher Bill Hall. “And by the same token, the fact that a much higher percentage of Hispanic drivers are charged with a violation after a crash than non-Hispanic drivers, might just be due to language barriers and difficulties in communicating with the investigating police officers at the site of a crash.”

The project’s seat belt data from Siler City showed Hispanics buckling up at slightly higher rates than other groups. Of those cars observed, 85% of Hispanics were buckled compared to 76% of whites and 79% of blacks. This finding is consistent with surveys from

other parts of the country that have found seat belt use for Hispanics as high or higher than for other subgroups. Trying to determine why, with seat belt use so high, Hispanics are at a high risk of being injured in crashes is one of the major goals of this project.



Juan Ramon Molina (shown here with son Johann Daniel) has been certified to teach proper child safety seat use as part of the HSRC’s outreach project.

In speaking with members of the Hispanic community, several theories have surfaced related to this paradox. Many Hispanics have come to the United States in search of jobs. They work hard to send money back to their families and often spend long hours away from their loved ones. Studies show that they tend to be young males. In some cases this adds up to higher alcohol consumption, which can lead to driving under the influence. Some are intimidated by law enforcement due to fear of deportation, and the language barrier can make it difficult for them to understand this country’s traffic laws.

“Young drivers in general are more likely to be involved in alcohol-related crashes than other age groups, but when you compare young Hispanic males with other young males it appears that for young Hispanic males, the problem is even greater,” Marchetti said. HSRC analysis of North Carolina crash data

found that in crashes involving male drivers under the age of 25, alcohol was involved in 10.8 percent of the crashes with Hispanic drivers and 5.4 percent of the crashes with non-Hispanic drivers.

“It is apparent that the young, Hispanic male in particular is an audience we have to find a message for. We tell everybody else in clear terms how bad it is to drink and drive, and if we don’t do the same for the Hispanic community, then we have done them a disservice,” Marchetti said. “Education about how little alcohol it takes to become an unsafe driver could help bring down the rates of driving under the influence within this population.”

The project also seeks to relay information about child safety seat use to members of the Hispanic population. Because this is a complicated topic due to the variety of car seats and cars, two Hispanic lay health advisors have been trained as nationally certified Child Passenger Safety Technicians as part of this project. Byron Barrera and Juan Ramon Molina of Siler City recently completed the “Standardized Child Passenger Safety Technical Training.” This makes them one of the few Hispanics in North Carolina to have completed this intensive, 32+ hour course funded by the N.C. Governor’s Highway Safety Program and coordinated by the N.C. Department of Insurance Office of the State Fire Marshall. Barrera and Molina are now teaching others in their community proper child safety seat use.

By teaming highway safety experts with leaders of the Hispanic community, HSRC researchers hope to reduce traffic-related deaths and injuries in this quickly-growing population. It is hoped that strong messages tailored to the concerns and culture of this unique population can make the difference between life and death. **D**

By Kristin Oguntoyinbo

Newly formed School Transportation Group to explore transportation safety issues for school-age children

How do North Carolina's children and youth get to school and just how safe is it?

That's a question that the newly formed "School Transportation Group" hopes to answer. Made up of researchers from the UNC Highway Safety Research Center and the Institute for Transportation Research and Education (ITRE) at North Carolina State University, the new research group hopes to break ground in areas now lacking information.

To date, North Carolina has no figures on the relative safety of the various ways that children travel to and from school. There are no national figures either. That is one of the reasons the U.S. Congress recently mandated that the National Research Council investigate the issue. HSRC Director Dr. Doug Robertson currently chairs the national committee appointed to study the subject on a national level. Robertson and others who are part of the newly formed group will be exploring the issue on the state level in North Carolina.

The idea for the School Transportation Group originated at ITRE, which has decades of experience in school bus transportation routing and operations. Last spring, they invited HSRC to join them in forming the group, with HSRC providing safety expertise. The N.C. Governor's Highway Safety Program has provided \$55,000 in funding for the new group, and the N.C. Department of Public Instruction has given \$10,000 as well as "in-kind services" such as staffing to help as needed.


"The funding that we have right now is designated as seed money to get the group organized, to identify problem areas, and to have the means to go out and seek additional funds to

undertake projects," said Jeff Tsai, Program Director at ITRE and the first director of the new group.

An advisory committee to the group includes representatives from the N.C. Public School System, the N.C. Governor's Highway Safety Program, and other transportation safety experts.

"Over the last few years, we have seen a decline in bus ridership and a commensurate increase in parents driving children to and from school. Because of this, we now find a lot of congestion around schools."

Last year, North Carolina public schools operated 13,000 buses and transported 700,000 students to school each day. These bus riders, however, account for less than 60 percent of the students attending public schools in North Carolina.

"Over the last few years, we have seen a decline in bus ridership and a commensurate increase in parents driving children to and from school," Robertson said. "Because of this, we now find a lot of congestion around schools. We have also seen a huge increase in the number of teenagers driving to school. While school bus transportation is one of the safest modes of surface transportation in the U.S. today, there are certainly signs on the horizon that if you look at the broader issue of getting children to and from school, there is a looming potential for this to become much more of a safety problem than it currently is." 

By Emily Smith




North Carolina's Secretary of Transportation takes part in HSRC-sponsored walk-to-school event

"The best part was walking with all of the wonderful smiling and happy children and their parents," said North Carolina Secretary of Transportation David McCoy after walking to school with youngsters from Estes Hills Elementary School in Chapel Hill, N.C., on Oct. 4, 2000, as part of International Walk to



School Day. The event was sponsored by HSRC and the Estes Hills PTA.

"I am proud of the collaboration with the city officials, the city police and the school administrators," McCoy added. 

HSRC Director Dr. Doug Robertson (left) and N.C. Secretary of Transportation David McCoy (center) attend an assembly at Estes Hills Elementary School in Chapel Hill, N.C., on International Walk to School Day.



HSRC and IPRC co-sponsor seminar

Dr. Jonathan Howland of Boston University guest-lectured at the University of North Carolina at Chapel Hill last fall in a seminar co-sponsored by HSRC and the UNC Injury Prevention Research Center. Howland spoke about his research on the effects of low doses of alcohol on the job performance of commercial sailors. For more information on this seminar visit our Web site at <http://www.hsrc.unc.edu>

HSRC director promoted to major general in the U.S. Army Reserve

On October 6, 2000, the U.S. Senate confirmed the nomination of President Clinton to promote HSRC Director Dr. H. Douglas Robertson to major general in the U.S. Army Reserve. Robertson currently serves as the commanding general of the 108th Division, a unit of over 3,400 soldiers with subordinate units located in the two Carolinas, Georgia, Florida, and Puerto Rico. Robertson is responsible for the division's mission to train over 20,000 soldiers annually. He has served in the military for over 34 years.



HSRC researchers take part in pedestrian & bicycle safety summit

Pedestrians and bicyclists watch out! Researchers at the UNC Highway Safety Research Center are working with local, state and national organizations and leaders to make roads safer for you.

One recent collaboration took place in Greensboro at the Pedestrian & Bicycle Safety Summit 2000 sponsored by the N.C. Department of Transportation in Greensboro in October. HSRC's Associate Director Charlie Zegeer spoke at the conference. Bill Hunter and Lauren Marchetti of HSRC participated in workshops to develop solutions for reducing pedestrian and bicyclist crashes.

"HSRC was asked to be involved largely because of our work in this area over the last decade, as well as our role in heading up the national Pedestrian and Bicycle Information Center for the US DOT," said Zegeer who spoke on the

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safety problems related to walking and bicycling on college campuses.

Other speakers lectured on the costs of physical inactivity, bicycle and pedestrian safety education, planning and designing facilities for non-motorized travel, creating bicycle and pedestrian friendly communities, increasing helmet use, and designing safe routes to school.

N.C. Secretary of Transportation David McCoy was the opening speaker.

Chapel Hill, N.C. Mayor Rosemary Waldorf and N.C. State Health Director A. Dennis McBryde also spoke. Other participating organizations included the N.C. Governor's Highway Safety Program, the N.C. Governor's Council on Physical Fitness and Health, the N.C. State Highway Patrol, the N.C. Bicycle Committee, the N.C. Helmet Coalition, and the Federal Highway Administration.

By Emily Smith



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specific and statewide data about alcohol use and its effects in North Carolina.

Funded by the N.C. Governor's Highway Safety Program, users can search by county for information on DWI convictions, and injuries and deaths from alcohol-related motor-vehicle crashes.

Another HSRC Web site plays an integral part in a college "norms campaign" being conducted by HSRC researchers at the University of North Carolina at Chapel Hill.

This campaign uses hard data to change student perceptions of how much college

students drink. More than 4,300 UNC students blew into a breathalyzer in the fall of 1997 and 1999 as part of a campus survey. Results showed that 2 out of 3 returned home on Thursday, Friday, and Saturday nights with no alcohol in their blood streams.

The campaign uses the Web site—found at www.2outof3unc.org—to promote these research results and publicize the winners of its cash giveaways and weekly contests.

HSRC invites you to log on regularly for timely information on important travel and safety issues. **D**

By Kristin Oguntoyinbo

PRIVATE CONTRIBUTIONS WELCOMED

The UNC Highway Safety Research Center depends on grants and private donations to further its research and public service outreach. Some of our current projects are spotlighted in this edition of Directions. To find out about other areas of research at the Center and ways you can become a contributor, please contact Center Director Dr. Doug Robertson via phone at (919) 962-8703 or e-mail him at doug_robertson@unc.edu. He can also be reached by FAX at (919) 962-8710 or by snail mail at 730 Airport Road, Suite 300, Campus Box 3430, Chapel Hill, N.C. 27599-3430.



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