WE KNOW THE STEREOTYPE. THE LITTLE OLD LADY HUNCHED BEHIND THE STEERING WHEEL BARELY ABLE TO SEE THE ROAD. THEY ARE THE DRIVERS WHO CAUSE ALL KINDS OF TROUBLE, RIGHT?

"Actually, only a tiny percentage of older drivers are risky drivers," said Dan Roenker, a professor of psychology at Western Kentucky University. "People have this image that the older driver is a hazard on the road. Yes, there are some who are, but the majority are not. Research has shown that easily 80 percent of older drivers drive safely even into their 70s, 80s, and some into their 90s. Age itself is not the cause of risky driving, rather it is what happens to us as we age that makes some risky and others not."

R I S K Y
D R I V I N G

BY BOB SKIPPER

Dr. Dan Roenker

Dr. Roenker and his colleagues have been working on ways to identify older drivers who are more accident-prone and develop a way to keep them from becoming risky older drivers.

"For the last 30 years, researchers have been attempting to discover which factors discriminate between crash prone and crash free older adults, with little success," said Dr. Roenker, who has a doctorate in experimental psychology from Kansas State University.

In 1990, Dr. Roenker and other researchers with the Edward R. Roybal Centers for Research on Applied Gerontology, now housed at the University of Alabama at Birmingham, discovered a way to measure the speed of processing of visual information, called the Useful Field of View, or UFOV.

UFOV measures how much information an individual can extract from a rapidly presented visual display. By 1998, Dr. Roenker and his colleagues published data that showed that people with a poor UFOV, or a slow visual processing speed, were two to seven times more likely to crash in a three-year period than those with a good UFOV.

The test, however, was long and difficult to adapt to use in the field. And prediction is only part of the process. What happens after the higher-risk drivers have been identified? Can anything be done to help them and thus make the roads safer for other drivers?

The test has evolved from its early days of being a DOS-based program that took 40 minutes to administer, to a Windows program (that can run on a personal computer or laptop) that takes 8 to 10 minutes to administer. "It has

moved from a clunky research tool to a much more polished, professional looking test," Roenker said. "It's the same basic test, but it has evolved a long, long way."

The Maryland Department of Motor Vehicles spent the last two years using this version of the UFOV test as a screening tool for identifying potentially dangerous older drivers. DMV personnel administered the test in a "real world" setting at the end of the license renewal process. Dr. Roenker said that preliminary analyses indicate that the UFOV test accurately identified those older drivers who both had a crash history and are likely to crash in the future. People who fail the test, are three to four times more likely to be involved in a crash within one to two years.

"It's one thing to test people in a laboratory setting. Such participants tend to be above average in intelligence, motivation, and general health, particularly in a university setting," he said. "In Maryland we trained MVA staff to give the test instead of employing trained researchers and we recruited participants from those renewing their licenses. Thus we were able to get a more representative sample of the population. Older adult volunteers were given a battery of tests, and then we looked at who was crashing and who was not crashing. It turns out that the UFOV test worked just as well in this practical situation; it's not just a laboratory test."

PHOTO BY SIGDUR O.L. BRAGASON

PHOTO BY LADONNA HARMON

At WKU, Dr. Roenker puts subjects through three to four hours of testing, including memory, hearing, vision, and other tests to measure processing speed. After testing, some receive training on how to use a computer while others receive training designed to boost their processing speed."

While some training has been designed for a lab setting, Dr. Roenker and his colleagues have been developing a series of videotape training aids that can be used at home. Once the series of eight tapes, which are graduated in difficulty, is completed by the individuals, they are re-tested to see if processing speed is increased.

If that works, researchers will then look to see if that transfers to improved mobility, he said. "The whole thrust of the last three or four years has been to get the results of

The next step is to devise some type of intervention to help those who are at risk.

"We've done a number of studies now looking at ways to improve visual processing speed. In these studies, we have trained some older adults and not trained some others, and looked at how the training transfers to driving, to falling, and to other aspects of everyday mobility," Dr. Roenker said. "The results have been very encouraging and served as the basis for an ongoing national clinical trial which is examining the benefits of such training for many aspects of mobility. When older adults lose their mobility, it is often a very rapid decline to the nursing home."

The most commonly accepted theory of aging is cognitive slowing, that there is a general slowing of cognitive process, probably with some neuronal basis. This cognitive slowing manifests itself in all kinds of ways—slower memory retrieval and slower reaction time. Is that theory right? I don't know. We are currently testing some of the predictions of that theory through a longitudinal test. We're testing lots of older adults on a huge battery of tests, following some, training some, and re-testing them periodically."

our research out of the lab to where it may do some good."

He added that the possibility of remediation or rehabilitation training will make UFOV screening more acceptable to older drivers "than a scenario in which drivers are threatened with losing driving privileges altogether. Our goal from the beginning has been to find ways to extend mobility, not limit it."

Another project that is awaiting funding is a training video for physicians.

"Physicians are often asked to make decisions about whether older adults should continue to drive. There are very few tools available to them, especially ones which assess cognitive capabilities, that can help them make this decision," he said. "This video would help them determine which patients would be most at risk and allow them to take appropriate actions, including training."

The UFOV test "has the real potential to change how we treat and how we view older adults," he said, and is part of a larger public policy issue. Not only will results save lives, but they will also lead to better safety features in cars, and will reduce insurance rates.