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doors



“Both as a director and a spokesperson, Kim Alexander offers a unique combination of leadership and passion to articulate the need and the value of CU-ICAR’s safety component.”

— Chris Przirembel, Clemson vice president for research and economic development

Safety First

by Sandy Woodward
Photo by Patrick Wright

The statistics are sobering: Traffic crashes are the leading cause of injury and death in the United States.

In its vision of becoming the premier automotive and motorsports research and educational facility in the world, the Clemson University International Center for Automotive Research (CU-ICAR) is making safety a focus.

“CU-ICAR is not just about vehicles; ultimately it’s about improving vehicles to improve and save lives,” says Chris Przirembel, Clemson’s vice president for research and economic development.

Improving overall vehicle performance through the application of research and new knowledge generated by Clemson and its partners will undoubtedly save lives. CU-ICAR’s strategy, however, is more direct. It has established the Automotive Safety Research Institute (ASRI) as a research-based interdisciplinary initiative focused on the critical human-vehicle-road interface. The institute — in the College of Engineering and Science’s civil engineering department — provides synergy for interdisciplinary research, education and public service that enhances scholarship with increased opportunities for graduate and undergraduate students.

The University did not have to go far to find the right person to head the institute. Kim Alexander, ASRI executive director and faculty member, has a lifelong passion for automotive safety. She's earned a national reputation for the University's Cruisers Program, an evidence-based K-12 life skills curriculum, which focuses on the issue of youth traffic safety. "The Cruiser curriculum contains the most creative and innovative lesson plans for traffic safety that I've seen in this country," says Terecia Wilson, director of safety for the S.C. Department of Transportation (SCDOT).

Alexander says ASRI's goal is to bring together nationally and internationally recognized researchers, educators and practitioners in a variety of disciplines to improve the safety of the automotive transportation environment and leverage resource support through public and private funding.

"The interdisciplinary approach enables us to perform a comprehensive, systemic analysis of the human-vehicle-road system," she says. "This unique structure is addressing complex and interconnected challenges of the future of automotive transportation safety where it's no longer possible for these issues to be solved in a single discipline or profession." ASRI is already collaborating with Clemson faculty including civil engineering, sociology, public health, psychology, marketing, mechanical engineering and industrial engineering.

Current initiatives include safety and health issues such as vehicle-highway automation and human-machine interface; emerging technologies such as rapid tire deflation and advanced steering systems and in-vehicle information systems; and driver training and evaluation.

In addition to the on-campus collaborators, Alexander has built successful partnerships with state and federal agencies, and private corporations. The institute is currently working on a research project for the SCDOT to assess road users in South Carolina on current understanding, perceptions, attitudes and behaviors regarding key traffic control measures.

Alexander's longtime private partners are Michelin North America Inc. and Michelin Americas Research and Development Corp., and she's enthusiastic about the potential for expanding collaboration with the company as part of the CU-ICAR team.

"Michelin is an outstanding partner," says Alexander. "Their corporate culture is very supportive of mobility safety."

"Our support of the ASRI and Cruisers programs has saved lives, and we look forward to taking our work together to a new level through the synergy of the CU-ICAR research environment," says John Tully, director of community relations for Michelin.

Michelin's Laurens Proving Grounds, where vehicles can be tested for safety and other performance features, will be a key resource for ASRI. One creative project that has grown out of the partnership between Michelin and ASRI is "First Responders' Safety First." This bold new idea utilizes a team of Michelin safety experts and ASRI faculty to train and certify first responders in advanced emergency highway safety procedures.

The institute's comprehensive goals will require significant, long-term funding. In addition, Alexander plans an aggressive sponsored-research component for ASRI.

"Whether it's communication about safety issues, psychological factors in driver impairment, vehicle design or marketing safety programs, we have many opportunities for collaborative research," she says. "We are limited only by our imaginations."

And, for the moment, by space.

ASRI will have a permanent home on the CU-ICAR campus in Greenville, which will place the institute in the center of the research and collaboration neighborhood environment. Until construction is complete, Alexander and her team will work from the Clemson campus.

"We are breaking new ground in transportation safety. It's very exciting to anticipate what the institute will be able to accomplish in CU-ICAR's neighborhood environment." ☉

Kim Alexander '88, M '92

When Kim Alexander was a senior in high school, an automobile crash changed the course of her life. The car in which she was a passenger ran off the road and crashed into a tree. The result was a spinal cord injury that left her paralyzed and confined to a wheelchair.

Where others may see limitations, Alexander found opportunity. While attending Clemson, Alexander used her personal experience as a springboard and created a program called "Keeping in Motion," an inspirational testimony that challenges students and adults to utilize their abilities and seize their opportunities.

She speaks on the state, national and international stage, offering a look at the consequences of one's judgments and shares the importance of smart, healthy and informed decision making. Alexander believes that "in order to survive you have to keep your eyes open and your options alive, and realize that you may not always get a second chance!"

South Carolina historically has had one of the highest traffic-based teen-fatality rates in the country, and, nationally, crashes are the No. 1 killer of teens. "We call these events 'accidents,'" says Alexander, "but crashes are preventable and most often occur due to human error."

To date, she has received over \$2.3 million in sponsored research in the field of transportation safety. ASRI takes Alexander's work to a new level and makes safety a focal point for the international automotive research community. She holds Clemson degrees in marketing and counseling and guidance services, and will receive a doctorate in education degree in August.