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PRE-DRIVER'S EDUCATION DRIVER TRAINING IN FIRST GRADE?

All indicators tell us
we need to start young

BY J.P. VETTRAINO PHOTOS BY TAMI KELLY-POPE AND JARED C. TILTON

Common sense and research concur: The younger you start, the better your chops. > Racers know that the most competitive up-and-comers started in their single-digit years, learning car control in karts long before they were of legal driving age for the road. If early learning yields an advantage for competitive driving, why wouldn't the same hold true on the road, where the stakes are much higher for all? > Apparently, it does. The cabal of insurers, regulators and self-appointed safety gurus finally may be starting to recognize a position this publication has long advocated: Skills training should be the norm for new

drivers. Yet a growing movement among academics, researchers and other advocates suggests that skills-based training is only one educational prong in a rational approach to reducing carnage on our highways. Another is starting them young, giving them experience in thinking about driving and behavior long before they take the wheel.

As this thinking goes, in a society as mobile as ours, mobility-safety training should start almost as soon as formal education does. Clemson University's Cruisers curriculum, introduced in South Carolina's public schools, is becoming a model for such programs nationwide. Cruisers is research-based road safety instruction that begins in first grade. It's designed to equip students with skills required to approach driving more responsibly and make appropriate decisions. One national transportation official has called it "the most innova-

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tive and creative lesson plan for traffic safety in this country."

Think of it as quarter-midgets or racing karts for those who will never race but will be driving for most of their lives. With nutrition, health, sex and basic consumer education now standard in most elementary-school curricula in the United States, one wonders why a program like Cruisers is not.

"Three million people have been killed in crashes since the advent of the car in this country," says Kim Alexander, director of Clemson's Automotive Safety Research Institute (ASRI). Every year, there are 110-plus fatalities a day—the equivalent of 110 people killed in an airplane crash every day, 365 days of the year—and we call them accidents. "Accident" implies a lack of responsibility.

"So why are we waiting until kids get behind the wheel to introduce them to traffic safety? Youth traffic-safety interventions should be designed for both elementary and middle school, to promote appropriate attitudes and behavior before children become novice drivers. That's when children are evaluating their environment, forming impressions and making important choices. That's where we can instill values that underlie a 'lifestyle of safety.'"

Alexander, to be sure, has a personal axe to grind. The Cruisers program is a product of ASRI, an institution she's helped forge from her own drive and ambition. Even more to the point, she suffered spinal-cord injuries in a car crash as a teenager (see sidebar) and has used a wheelchair since. Last but certainly not least, as ASRI's executive director, Alexander considers the sobering toll that poor driver preparation takes on our roads every day.

You've seen the statistics in detail here and elsewhere, but it bears repeating: Traffic crashes are the leading cause of death for all age groups through age 24. Not gun violence or drug abuse or sexually transmitted diseases—traffic crashes. That does not account for economic cost, serious injuries or the young people whose lives are immeasurably altered, as was Alexander's. The crash rate per mile driven among 16-to-19-year-olds is four times higher than it is for older drivers. We are failing our children and failing ourselves.

That realization moved Alexander, along with a discovery that "there was no program at the K-12 level doing justice to traf-



fic safety." By the time she earned her master's degree in 1992, Alexander was thinking about a structured curriculum for an ongoing program in public schools. In 1994, while working for Clemson's Family and Youth Development cooperative extension, she applied for and received a \$450,000 grant from NHTSA to develop a national model for a teen driver safety program.

Cruisers rolled out in four South Caro-

lina high schools in 1997, because the grant so mandated and because it would reach those most immediately affected first. The goal was reducing teen highway deaths and injuries, which in South Carolina typically exceeded the national average by 50 percent or more, but Cruisers took a different tack. The curriculum was geared toward developing teen opinion shapers who might guide and influence their peers and carry rational approaches to

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KIM ALEXANDER WAS a model teen in Salem, South Carolina, population 125, but she started her last day of high school seething at the injustice in the world. What followed might be described as a fleeting lapse of judgment—something all of us have suffered dozens of times—but this lapse cost Alexander dearly. It also gave us one of our most passionate, dedicated teachers and researchers in the field of highway safety.

Alexander woke up eager that morning in 1979, excited to be graduating with 26 other seniors in Salem. She'd earned good grades and won a basketball scholarship at a junior college, where she hoped to continue wearing No. 13 and to enhance her on-court reputation as "Lightning in a Jar." Then her father told her that she wouldn't be able to use the family car that day, and she got angry.

As she rode off with the girlfriend who picked her up, she made what would have been an unthinkable choice just the night before. She'd join some friends for Senior Skip Day and head to a local lake to party. And when one of those friends suggested they get something to celebrate with—at 18, Alexander had reached what was then the legal drinking age—she heard herself buying cheap wine.

The lapse lasted a few sips. Not so angry, Alexander rethought her situation and insisted that her friends take her back to school. It's impossible to know if the small amount of alcohol consumed contributed to what happened next, but the road was twisty, and it started to rain. Alexander was belted into

the back seat of the Dodge Omni when it hydroplaned about 25 feet and spun backward into a tree.

There was no blood. No one in the car seemed seriously hurt, but the smell of gasoline was intense, and when Alexander didn't get out of the potential deathtrap fast enough, her friends dragged her out. She was picked up from the road by emergency workers and at some point realized she couldn't move. She'd broken her neck.

"That night, I lay immobile in the hospital, thinking, 'This is your graduation . . . this is your life,'" she says. "Those were the consequences of the choice I'd made. When you play the odds, even for a brief moment, you never expect you'll be the one to lose."

What followed was recovery, therapy to help regain control of her arms and three years of vocational rehab. Two years into the process, Alexander's father was killed in an alcohol-related car crash, and when she finished rehab, it was just Alexander and her mother.

"I tried to find a way to fit in, always wondering how I was going to compete, and at some point, I just decided I had to do it and enrolled at Clemson," she says. "I didn't have an electric wheelchair, because to use one, you needed a van, and we couldn't afford one. My mom had to work full time, and her shift started at seven a.m., so she would take me [to Clemson] at six in the morning, and I'd stay there until she could come and get me"

Custodial staff at the university took a shine to the ever-present girl in the wheelchair. They helped her make it to her classes and cleared

"office space" for her in a supply closet, running an extension cord from the hallway so she'd have a light to study by. As her studies progressed, Alexander's confidence returned. Before she earned her bachelor's in marketing, she'd won the Ms. Wheelchair South Carolina title, and she'd been asked to make her first motivational speech.

Alexander graduated from Clemson in 1988, nine years after the car crash. By then, she'd developed a presentation called "Keeping in Motion," based on her personal experience, and was sharing it with students and parents throughout the South, urging people to use their talents and seize opportunities: "To survive, you have to keep your eyes open and your options alive and realize that you may not always get a second chance."

In 1990, Alexander found a position with Clemson's cooperative extension and began work on a master's in counseling and guidance services. Shortly thereafter, she successfully applied for her first federal grant and launched what would become the Cruisers program. With more grants, she joined forces with associate Philip Pidgeon and established the Center for Safety Research and Education at Clemson. When the university created its International Center for Automotive Research in 2004, Alexander's safety center was endowed as the Automotive Safety Research Institute.

"People tell me I overcompensate because I'm in this chair, like getting all A's working on my master's and Ph.D.," she says. "I don't

know if that's true. I would have done something with my life, but in all honesty, I don't know that it would be as meaningful. It gave me my issue. I can't think of one that needs more attention, given the carnage and the consequences of what we're dealing with."

Alexander still lives in Salem, about 20 miles from the Clemson campus. Most of her energy is directed toward ASRI, but she still gives her "Keeping in Motion" presentation to Clemson's freshmen each fall, and she recently worked with the National Institute for Driver Behavior to establish a measurable standard for accrediting commercial driver-training courses.

She sees nothing remarkable in her journey, and she's aware that her achievements would not have been possible without her mother's commitment, the Clemson custodial staff and the other students who pushed her to class. But she's also proud of those achievements, describing ASRI as "a personal commitment that became a program and then an institute."

"I have a knowledge base, part of which can only be gained by experience, and it's been a long curriculum," she says. "If I look back at where this started, it was with a high-school senior not realizing the life consequences of actions she was taking. At one point in my life, I made a choice that led me to be sitting here, and I realized conclusively that life doesn't happen. We create it."

"I want to leave the world a better place than I found it, and I'm fortunate to know the one area I want to focus on. I'm still excited that I can be, somehow, contributing." —JPV

safety and lifestyle decisions into adulthood. Initial success helped Alexander acquire more grants, and her research reinforced her assessment that "we are better served starting at a younger age, where there's more willingness to adjust lifestyle."

The program spread to middle schools and then elementary schools, where the curriculum might have its longest-lasting impact. Cruisers focuses less on driver skills and more on driver attitudes, knowl-

edge and decision making, through the development of "life skills": respect for self and others, communication, responsibility, self-awareness, assessing consequences and problem solving. An interdisciplinary approach allows it to be taught in several classes, including health education, science, math, computers, geography, art and traditional driver's ed programs.

The benefits were apparent early. At every grade level, students who participat-

ed more quickly recognized high-risk traffic situations and were more confident in their ability to respond. In elementary school, Cruisers kids embraced the idea of being good passengers and respecting the driver and increased their awareness of potential threats to pedestrians and bicyclists. Cruisers was certified as an accepted curriculum in South Carolina public schools. The state Department of Transportation endorsed it, and the pro-

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program spread through several counties near Clemson.

The number of Cruisers lessons varies with grade level. Elementary topics include safety as passengers, pedestrians and bicyclists, as well as work-zone safety and understanding traffic-control measures. Instruction incorporates small-group discussions, behavioral rehearsal, role-play and simulations. Students might write the script for a public-service announcement addressing a traffic or pedestrian problem and then film a commercial.

Specifics of the curriculum matter less than the process, which is designed to imbue students with a rational, consistent approach to recognizing and solving problems and allow them to carry that approach to the driver's seat.

It's not just about driving, either—schools don't need yet another separate program layered atop the rest. The lifestyle-of-safety approach carries through to most aspects of student life. Data suggest that Cruisers students improve their scores on standardized tests. Fourth-grade students



at Clemson Elementary, near the university, posted the highest scores in the district on English and writing tests, and scores have risen for each of the four years the school has participated. Older students

demonstrate an appreciation of their responsibility and care about their leadership roles with younger ones.

The fourth-grade teacher says the program fires the students' interest in all

forms of learning by connecting the school curriculum to the mobile lives they lead outside the classroom. They also come to understand that their teachers are interested in them as individuals and care about their lives beyond school.

Billy Crank, community relations manager at nearby Michelin North America, which supports Cruisers, says he's seen remarkable improvements in participants' self-esteem: "The empowerment component seems to motivate these students. It brings them out and develops their leadership potential."

As Clemson launched its International Center for Automotive Research and Alexander's efforts through the cooperative extension evolved into ASRI, she and Philip Pidgeon, ASRI's assistant director for research, considered prospects to expand the safety curriculum's reach. The result was e-Cruisers, which enhances the Cruisers curriculum with up-to-date technology such as podcasts, blogs, Comic Life and iMovie.

Pidgeon says the objective is "a dynamic Wikipedia for traffic safety," using technology "as a vehicle that adds relevance and makes Cruisers boundless." The centerpiece will be a Virtual Conference Center connecting students with instructors and instructors with their peers around the country.

In October 2006, with support from Michelin, Apple and other sponsors, ASRI opened the first e-Cruisers Instructional Design Laboratory at Clemson Elementary. Similar centers are planned at schools in three adjacent counties. Students at Clemson use state-of-the-art laptops and iPods to study the Cruisers curriculum and share their work, including podcasts, with students at other schools. To date, 620 students have participated.

E-Cruisers is "approaching critical mass," says Pidgeon, and ASRI is busy seeking funding to take it national. But the basic objective—improving teen drivers out of the box and ultimately reducing traffic deaths and injuries—hasn't changed.

"I have the opportunity to speak to students and adults nationwide, offering them a look at the consequences of poor judgment," Alexander says. "I tell students my story and how a decision made in just a few moments can change your life and the lives of everyone around you. Their feedback and my research have convinced me that we need better training in two areas.

"First, we need to address lifestyle, mo-

MOTOR CITY SOUTH

Automotive action in the New South

» THERE ARE A COUPLE of dozen university-based transportation research facilities such as Clemson University's International Center for Automotive Research (CU-ICAR), including those at the University of Maryland, the University of Michigan, Ohio State University and the University of California. Most are longer-established than CU-ICAR, and some are better known. None is bolder or more confident in its future.

CU-ICAR's goal is simple: To be the premier automotive and motorsports research and educational facility in the world. It's quickly building the resources and credentials to achieve that goal, and it's becoming a model for such facilities around the world.

Established in 2004 and endowed by South Carolina's

higher-education authority, CU-ICAR was shaped to harness energy created by two waves: the rapid growth of an auto industry in the South and the rise of NASCAR as a national phenomenon.

CU-ICAR's "technopolis" is in Greenville, in South Carolina's northeast corner, next door to both Michelin North America and BMW's manufacturing and research facilities, midway along Interstate 85 between Atlanta and Charlotte.

The mission is providing internationally recognized automotive engineering programs, world-class facilities for automotive and motorsports research and a university-industry interface for the associated academic disciplines of engineering, management, marketing and communications.

The CU-ICAR campus will be home to the massive computing infrastructure of the new Computational Center for Mobility Systems, joining Clemson's Computational Fluid Dynamics Lab, which is already recognized

as one of the world's best. The Carroll A. Campbell Jr. Graduate Engineering Center is offering the world's only doctoral program in automotive engineering. BMW and Timken already have research facilities on the CU-ICAR campus; Sun Microsystems will be joining them.

Kim Alexander's Automotive Safety Research Institute (ASRI) is CU-ICAR's safety component. ASRI is an interdisciplinary program focused on the human-vehicle-road interaction, combining core disciplines of civil, industrial and mechanical engineering with sociology, psychology and public health services, all focused on improving transportation safety.

ASRI's current projects include the Cruisers program, a Child Passenger Safety campaign, a college alcohol-abuse-prevention model, a database for human-factors analysis and classification and a program with Michelin to train first responders at vehicle crashes.

—JPV

tivation and attitude factors, starting with programs like Cruisers. Second, we need to focus on driving errors—skill deficiencies that contribute to teen crashes, such as anticipating hazards, overreacting or reacting too slowly."

Which brings us back to racers and that two-pronged approach. In March, ASRI announced a joint venture with the Richard Petty Driving Experience intended to exploit each organization's strengths. The National Safe Driving Program applies best practices in both classroom instruction and car control. ASRI has developed a curriculum emphasizing appropriate attitude and problem solving. Petty teaches skid management, two-wheels-off recovery technique and crash avoidance.

Equally important, ASRI will track results in an effort to convince insurers and regulators of the value of such programs. About 2500 teens will participate in the

Safe Driving Program this year at 25 to 30 events. Petty executives say they could reach 100,000 teens a year through five school locations if resources were available.

Still, Cruisers demonstrates that teaching can start long before a new driver sits behind the wheel. In Alexander's view, laying the foundation for safe driving in elementary school is as important as reading, writing and arithmetic.

"A program like Cruisers should be required in every elementary school, just like the three R's," she insists. "We're finding that Cruisers is developing the three R's by giving students topical material that has relevance and meaning. A common thread for all students is that we live in a mobile society, and the ability to utilize the three R's is diminished if kids don't have skills to guide them safely through a world that can be dangerous." 🚗