

On an average day in the United States, auto accidents kill 116 people and injure over 7,900.



Chunxiao (Tricia) Chigan
Electrical & Computer
Engineering

Intelligent transportation

Making driving smarter, more cooperative, and safer

The US spends more health-care dollars treating vehicular crash victims than any other cause of illness or injury. With an annual economic impact of close to \$200 billion, the US Department of Transportation has declared the reduction of vehicular fatalities its top priority.

A new form of distributed wireless technology, Vehicular Ad Hoc Network (VANET), provides inter-vehicle communications capability that could achieve smarter and safer traffic operation.

Chunxiao (Tricia) Chigan is a 2007 National Science Foundation CAREER Award winner. Her project addresses major challenges in VANET-related secure communication technology.

“VANET has genuine life-saving potential,” says Chigan. “It is able to form a dynamic communication system anytime, anywhere, and without preestablished communication infrastructures such as the optical network and the cellular network.”

Cooperative driving will soon be made possible with VANET, which also holds the potential to provide real-time collision avoidance by notifying drivers of road hazards, road blocks, traffic conditions, auto accidents, and rush-hour rerouting.

“VANET has great potential for emergency crews, who can quickly establish a network when working at a disaster site,” she adds. Another bonus: VANET could help reduce fuel usage. Smarter, VANET-supported cooperative driving could mean less driving time and therefore less carbon in the atmosphere.