

Physics At Work

Christine Lopez

New York State Trooper; Poughkeepsie, NY

On average, Christine Lopez spends 12 hours a day in a car. No, she is not a chauffeur or a professional race car driver. For the past 14 years, Lopez has been a New York State Trooper in Troop K headquarters, which covers Columbia, Dutchess, Putnam and Westchester counties.

Lopez said that State Troopers are responsible for assisting the public in a variety of circumstances, including motor vehicle accidents, burglaries, assaults and larcenies. Lopez said that since a State Trooper's job involves long hours in a vehicle, their risk of being involved in a collision is heightened. "Law enforcement officers are ten times more likely than the average driver to be involved in a collision," said Lopez. "Troopers may be exempt from vehicle and traffic laws while responding to emergencies, but they are bound by the same laws of nature as the average driver."

In 2007 alone, Troop K dealt with 3933 accidents. According to Lopez, 814, or 22 percent of those accidents involved drivers between the ages of 16 and 19. The majority of those accidents were caused by unsafe speed, following too closely, and driver inattentiveness/distraction. "All drivers should adhere to the three-second rule for following distance," said Lopez. "By allowing three seconds between your vehicle and the vehicle in front of you, you will have ample braking distance to allow you to make a complete stop."

Lopez also believes that reaction time plays a crucial role in preventing accidents. "The average reaction time is 1.6 seconds. This varies from individual to individual depending on age, illness, fatigue, and alcohol consumption. A drunk driver will take longer to perceive hazards and will have a slower reaction time," said Lopez.



Dr. Jose Holquin-Veras

Professor, Rensselaer Polytechnic Institute; Troy, NY

Dr. Jose Holquin-Veras is a Professor of Civil and Environmental Engineering at Rensselaer Polytechnic Institute (RPI). Veras believes that an understanding of

physics is essential in solving problems and designing roads. "I design traffic signals to deal with the Dilemma Zone, and use braking distance to take reaction time into account." According to Veras, in order to avoid a Dilemma Zone, traffic engineers must use physics to ensure that a yellow light is long enough for a driver to stop or go through the light.

Alyson Coyle

Instructor, Transportation Safety Institute; Oklahoma City, OK

Alyson Coyle is an instructor with the Transportation Safety Institute. Coyle's division is responsible for developing training programs for the National Highway Traffic Safety Administration (NHTSA). Coyle informs participants about everything that happens in a crash, including how seat belts and child safety seats protect occupants. "The best part of my job is helping to save lives every day. According to NHTSA, more than 62,000 lives have been saved by seat belts in the past ten years," said Coyle.

