

Driving Simulator Lab

ECE Professor Russ Eberhart's lab is driving to crashes, saves lives

Date August 26, 2008

Duration 1:37

Transcript

[R. Eberhart] We are a part of the Transportation and Active Safety Institute which is a signature center at IUPUI. In the simulator lab here we have a couple of driving simulators. One you see, our most sophisticated simulator, you see behind me that has been provided to us by a corporate sponsor, and we're looking at a project we're working on now at sleepy and inattentive driving.

So we're bringing people in for seven sessions each. We bring 15 subjects in, and each subject comes in for a one-hour session of orientation and then six, one-hour sessions — three of which they come in after a normal nights sleep and three of which they come in after they've been up all night, so a sleep deprived session. And we look at the effects of the sleepiness of the driving. At the same time they're driving the simulator we're taking biomedical data. We're taking multiple channels of EEG or brainwave.

We're taking ECG and other biomedical data and at looking at that biomedical data along with their driving performance and the simulator to look at what happens to the physiology of the driver in sleep deprived versus non sleep deprived situations. And the real goal of that is to be able to develop devices that will counter the sleepiness in their driving such as active safety devices that might flash lights, make a sound, vibrate the seat they're sitting on or do something else that might counteract their tendency not to perform correctly because of their sleepiness or inattentiveness.

We're looking in areas that will provide new devices for the automobile industry and also looking into areas that is of interest to the government agencies or regulation of the auto industry and providing information to them on active safety devices for government information as well.