

Center for Safety Equity in Transportation

If you have a right to get there, you have a right to get there safely.

February 2019

CSET Research Showcase

Effects of Reading Text While Driving: Analysis of 200 Honolulu Taxi Drivers on a Simulator

Although 47 US states make the use of a mobile phone while driving illegal, many people use their phone for texting and other tasks while driving. The poster presented at the Transportation Research Board (TRB) Annual meeting summarized the large literature on distracted driving and compared major outcomes with those of our study. In this poster, we have focused only on distraction due to reading text because this activity is most common. For this research project, we collected simulator observations of 203 professional taxi drivers (175 male, and 28 female) working at the same Honolulu taxi company. After a familiarization period with the simulator, drivers were asked to read realistic text content relating to passenger pick up displayed on a 7-inch tablet affixed to the dashboard. The experimental scenario was simulated on a two lane rural highway having a speed limit of 60 mph and medium traffic. Drivers needed to follow the lead vehicle under regular and text-reading conditions. The simulator provided identical traffic and environmental conditions for all drivers.

The large sample size of this study provided a strong statistical base for driving distraction investigation on a driving simulator. The

comparison between regular and text-reading conditions revealed that the drivers significantly increased their headway (20.7%), lane deviations (354%), total time of driving blind (352%), and maximum duration of driving blind (87.6%), and significantly decreased lane change frequency (35.1%). There was no significant effect on braking aggressiveness while reading text. The outcomes indicate that as expected, it is unsafe to read text while driving.

The findings of the research discussed readily extend to transportation network companies such as Didi, Lyft and Uber, as well as drivers in urban areas that deal frequently with digital interfaces as part of their driving task. Given the increasing role of digital communications in people's lives, and the large amount of distraction (and increased safety risk) caused by the use of these devices (despite laws that disallow their usage), the promise of automated driving, even for limited periods, is improved safety because motorists will have "time off" from driving to to check and respond to messages.

Announcements

The CSET call for proposals for year 3 projects has been sent to the participating institutions. Proposals are due by March 18, 2019. If you are interested, please contact us at cset.utc@alaska.edu.



Panos Prevedouros discussing the results of the research with an interested conference attendee at the TRB Annual Meeting.



A professional taxi driver in the simulator to test the impact of text distractions while driving in set conditions.

CSET has been funded through the 2016 University Transportation Center Program by the US Department of Transportation as part of the FAST Act at approximately \$1.4 million in each of the next five years.

Focus on where you're going...



Distracted Driving Facts & Stats

Distracted driving is more than just using your phone. The three types of distractions include: visual tasks (e.g., checking a navigation system) that causes you to divert attention away from the road; manual tasks (like reaching for a coffee cup) that requires you to remove one or both hands from the steering wheel; and cognitive tasks that cause your mind to focus and wander to something besides the task of driving.

Distracted driving accounts for 25% of all motor vehicle crash fatalities.

It takes only 3 seconds, which corresponds to half a football field when traveling at a speed of 35 mph, for a crash to occur once a driver's attention has been diverted from the road.

Texting while driving is 6 times more likely to cause a crash than driving under the influence of alcohol.

Nationally, each day 11 teens die as a result of texting and driving.

Image credit: Dylan Carpenter, UAF Class of 2017

In 2016 there were 660 vehicle collisions with moose in Alaska, 62% occurred in rural areas.

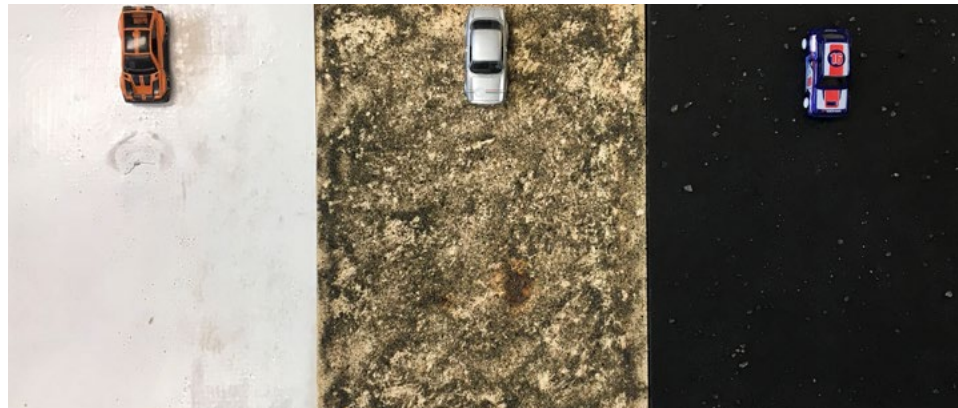
In Alaska, texting and driving can result in a \$10,000 fine.

CSET at the UAF College of Engineering and Mines Open House

Researchers and students affiliated with CSET will be presenting an activity focused on safe stopping distances at the UAF-CEM Engineering Open House on February 23, 2019 from 11 am to 3 pm at the Engineering Learning and Innovation Facility at UAF.

UAF Come study with us!

The University of Alaska Fairbanks is actively seeking graduate students interested in research related to rural, isolated, tribal and indigenous transportation safety. Civil engineering is preferred, but also looking for interdisciplinary and Alaskan Native students. For more information contact Nathan Belz at npbelz@alaska.edu.



A demonstration shows students the difference in traction between three simulated road surfaces (from left to right, ice, gravel, and pavement).



UAF graduate student, Gabriel Fulton (wearing the safety vest), helps 2018 open house participants make "concrete."