

Hazard Alert Leads to New Tractor Rollover Lifesaving Device

What if you were out working on your farm alone on a tractor and it rolled over? Would you be able to call for help? Would you be able to pinpoint your location in the field or alongside a back road to direct first responders to your aid? A new device developed by an Iowa State University industrial design class could help increase survival rates for workers involved in tractor rollovers

The Challenge

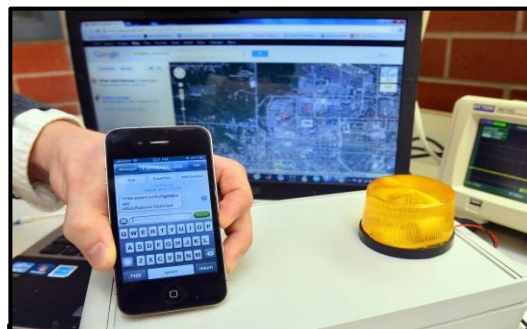
From 2003 through 2010, 74 farm operators and workers in Iowa died from tractor-related injuries. Most of these fatalities were caused by tractors that overturned on the farm or roadway, where the tractor did not have ROPS (rollover protective structures) or seat belts in use to prevent the operator from being pinned under or thrown from the tractor. When a worker is not killed immediately in a tractor rollover, the injuries sustained can quickly become life-threatening, especially if they involve crush injuries.

The Response

The Iowa Department of Public Health's Occupational Health and Safety Surveillance Program (IDPH OHSSP) and their Iowa Fatality Assessment and Control Evaluation (IA FACE) program partner at the University of Iowa released an Iowa FACE Alert on Tractor Overturn Risk in 2011. The IA FACE Alert, which was covered in the media, was picked up by David Ringholz, an Iowa State University (ISU) associate professor searching for project ideas for graduate students in one of his industrial design classes. Ringholz and his students "unpacked the problem," completing a review of research on tractor accidents and safety systems and conducting interviews with key ag safety researchers. The students subsequently developed a prototype device that sends an alert signal in the event of a rollover using cellular technology, with \$300,000 that Ringholz secured from the ISU College of Design.

The Impact

The ISU team is currently partnering on the next phases of development which involve field testing, funding, production, and distribution. "This effort is going full circle," says Kathy Leinenkugel, program coordinator for the IDPH OHSSP. "It started with an idea to raise awareness about a hazard identified through our occupational injury surveillance system, was picked up by the ISU industrial design team, and now has been brought back for further networking with our University of Iowa partnering organizations. This is how collaboration in public health should work!"



The device monitors tractor's position, sending a signal in the event of a rollover. The signal alerts family or EMS cell phones and links to rollover location on map. Photo by Bob Elbert.

For more information, visit the IDPH OHSSP and IA FACE Program Web pages:

www.idph.state.ia.us/eh/

www.public-health.uiowa.edu/face/