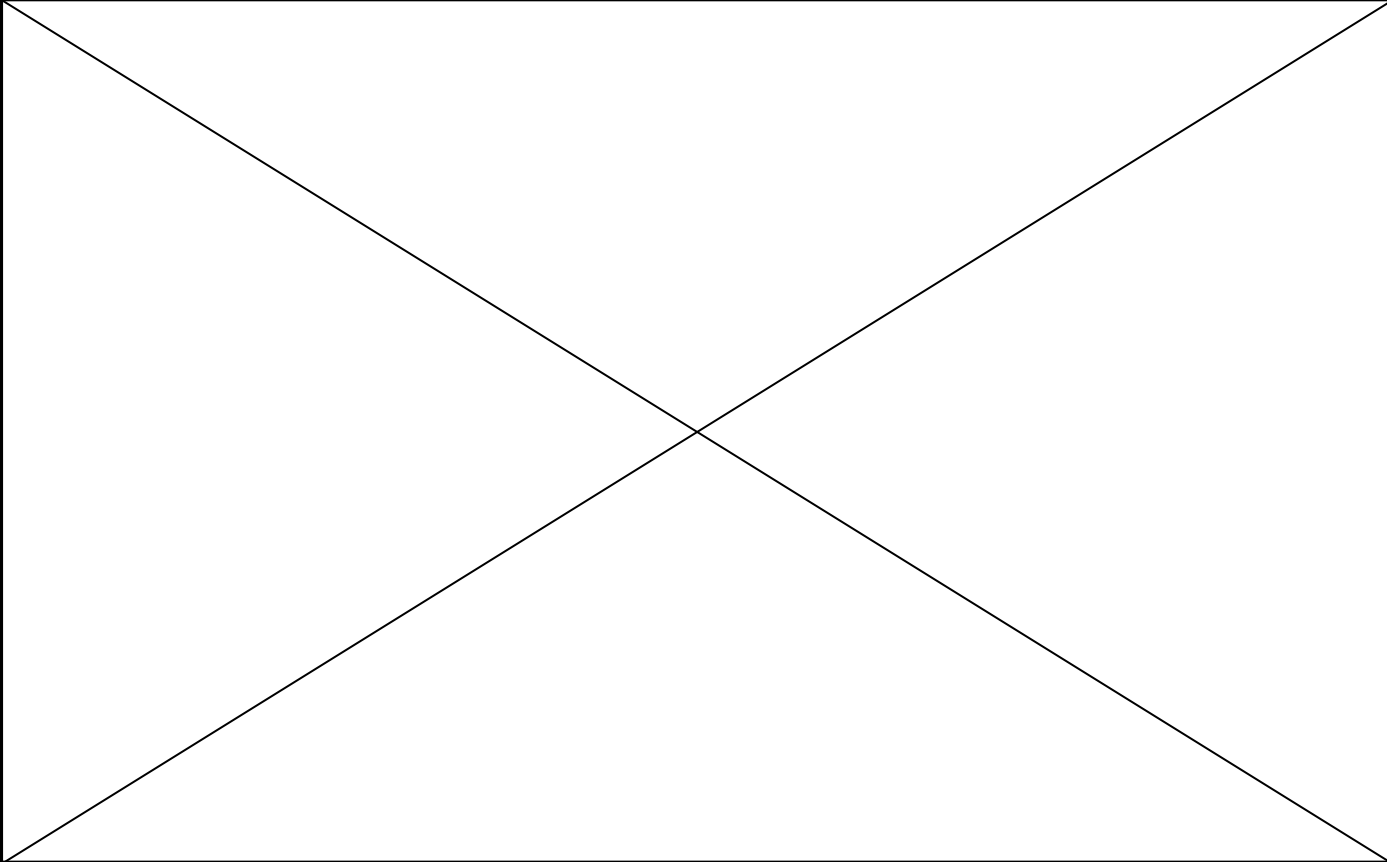


# Building Society

*(One Engineer at a Time)*

Heather K. Hunt  
Department of Bioengineering  
University of Missouri

# Engineering Done Right!



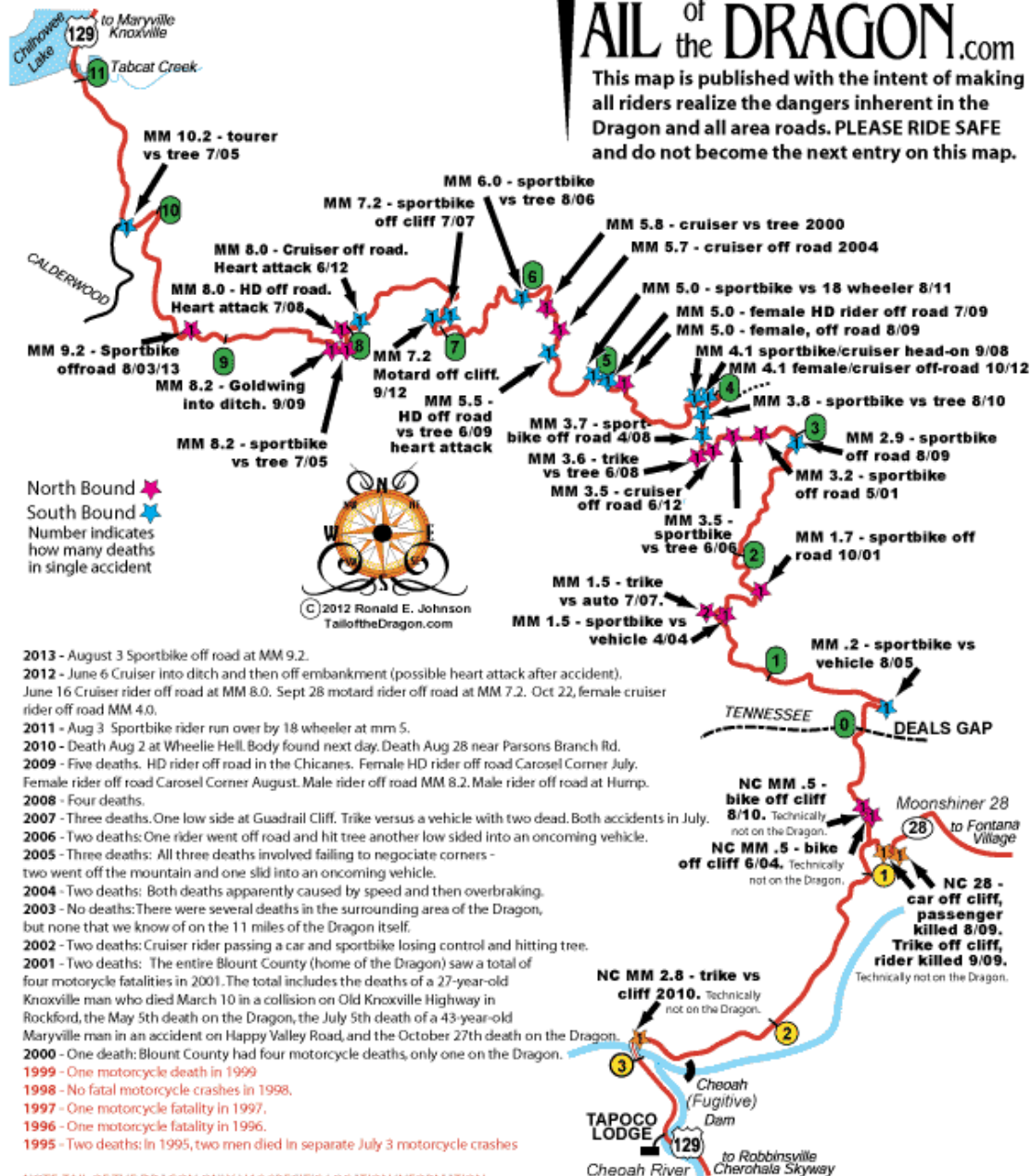
# Why do we care?

World Health Organization ranks U.S. as more dangerous than EU countries in highway deaths

- 11 highway deaths / 100,000 each year

# TAIL of the DRAGON.com

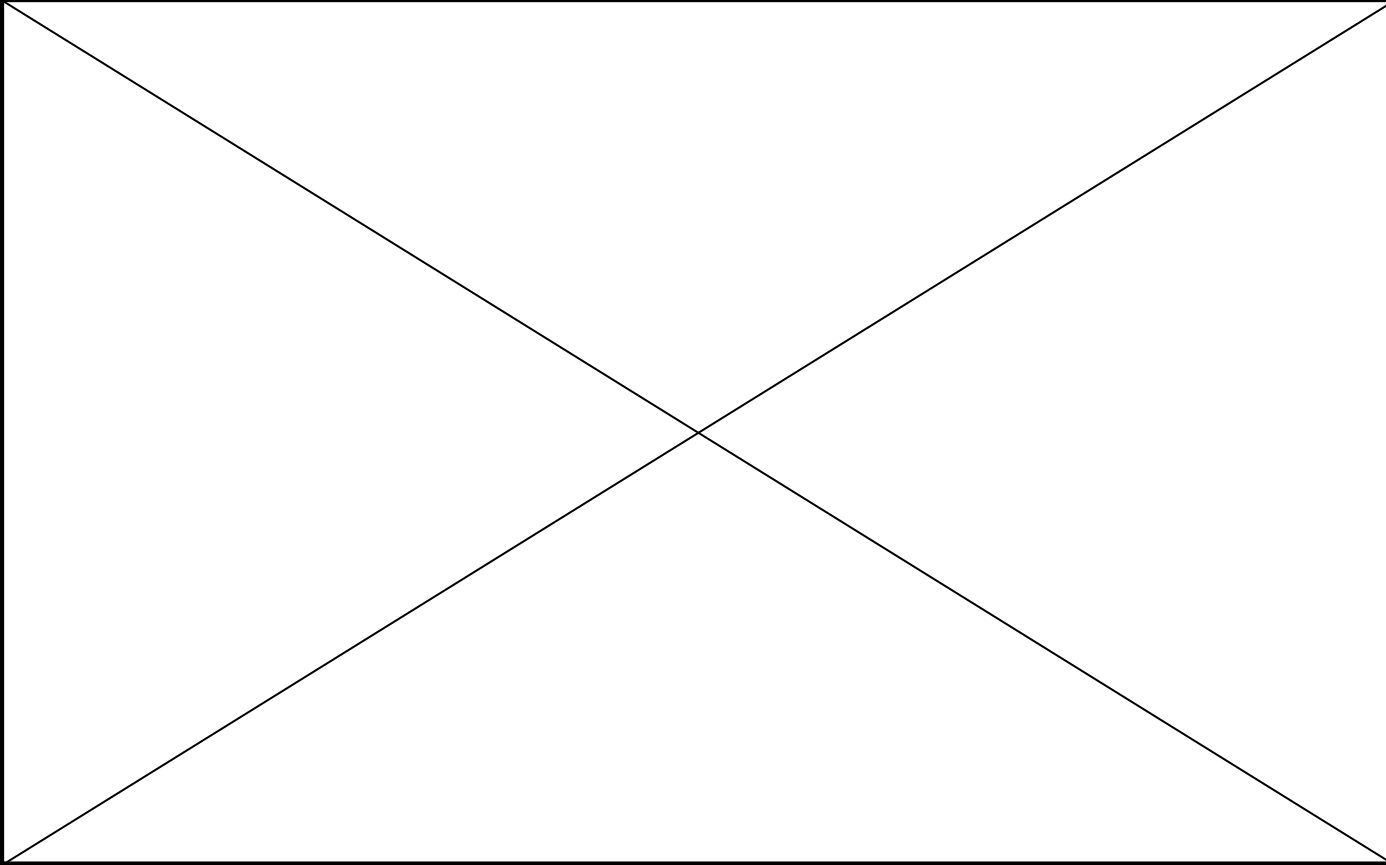
This map is published with the intent of making all riders realize the dangers inherent in the Dragon and all area roads. PLEASE RIDE SAFE and do not become the next entry on this map.



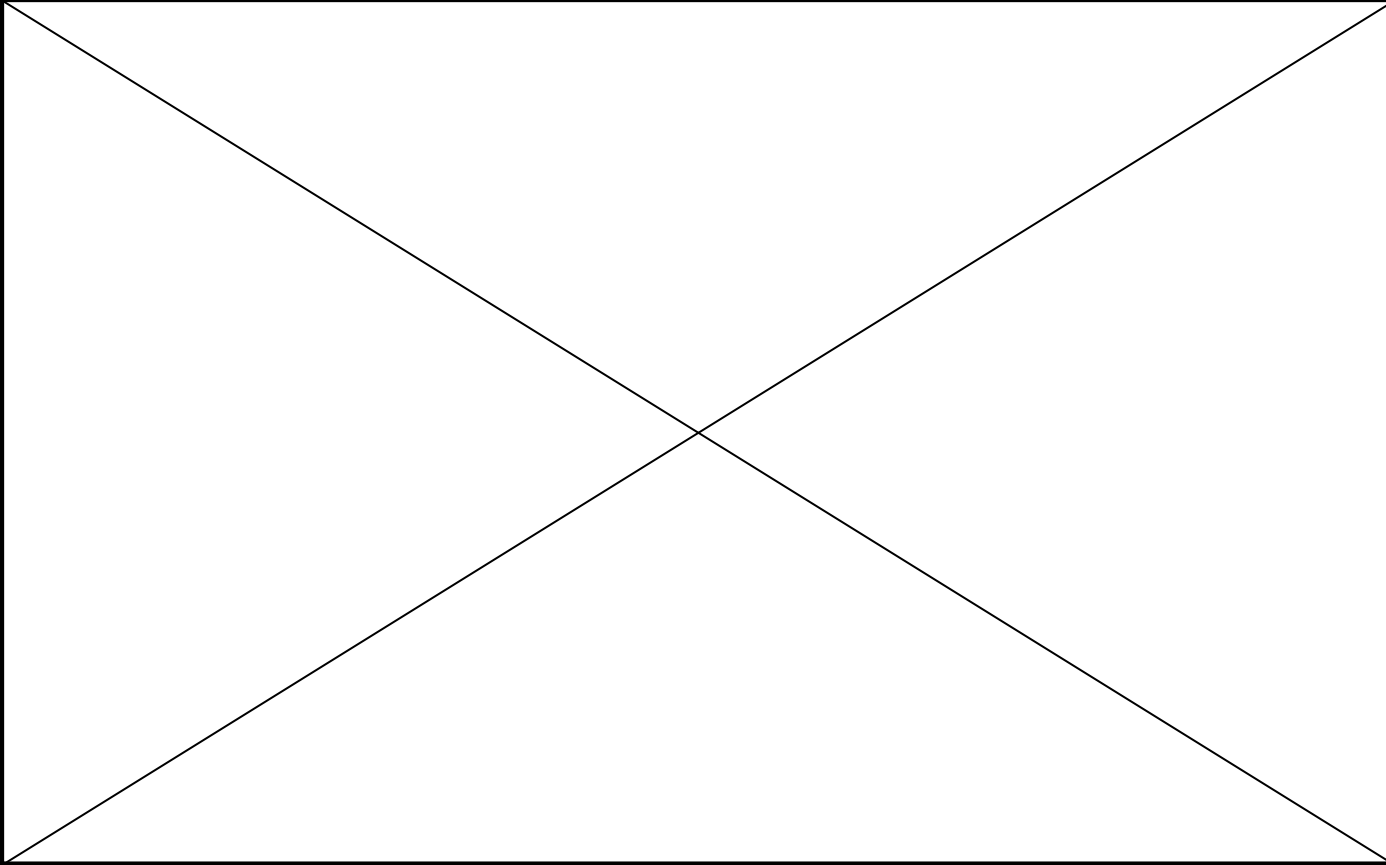
- 2013 - August 3 Sportbike off road at MM 9.2.
- 2012 - June 6 Cruiser into ditch and then off embankment (possible heart attack after accident). June 16 Cruiser rider off road at MM 8.0. Sept 28 motard rider off road at MM 7.2. Oct 22, female cruiser rider off road MM 4.0.
- 2011 - Aug 3 Sportbike rider run over by 18 wheeler at mm 5.
- 2010 - Death Aug 2 at Wheelie Hell. Body found next day. Death Aug 28 near Parsons Branch Rd.
- 2009 - Five deaths. HD rider off road in the Chicanes. Female HD rider off road Carosel Corner July. Female rider off road Carosel Corner August. Male rider off road MM 8.2. Male rider off road at Hump.
- 2008 - Four deaths.
- 2007 - Three deaths. One low side at Guadrail Cliff. Trike versus a vehicle with two dead. Both accidents in July.
- 2006 - Two deaths: One rider went off road and hit tree another low sided into an oncoming vehicle.
- 2005 - Three deaths: All three deaths involved failing to negotiate corners - two went off the mountain and one slid into an oncoming vehicle.
- 2004 - Two deaths: Both deaths apparently caused by speed and then overbraking.
- 2003 - No deaths: There were several deaths in the surrounding area of the Dragon, but none that we know of on the 11 miles of the Dragon itself.
- 2002 - Two deaths: Cruiser rider passing a car and sportbike losing control and hitting tree.
- 2001 - Two deaths: The entire Blount County (home of the Dragon) saw a total of four motorcycle fatalities in 2001. The total includes the deaths of a 27-year-old Knoxville man who died March 10 in a collision on Old Knoxville Highway in Rockford, the May 5th death on the Dragon, the July 5th death of a 43-year-old Maryville man in an accident on Happy Valley Road, and the October 27th death on the Dragon.
- 2000 - One death: Blount County had four motorcycle deaths, only one on the Dragon.
- 1999 - One motorcycle death in 1999
- 1998 - No fatal motorcycle crashes in 1998.
- 1997 - One motorcycle fatality in 1997.
- 1996 - One motorcycle fatality in 1996.
- 1995 - Two deaths: In 1995, two men died in separate July 3 motorcycle crashes

NOTE: TAIL OF THE DRAGON ONLY HAS SPECIFIC LOCATION INFORMATION DATING BACK TO 2000. WE WOULD APPRECIATE ANYONE WITH SPECIFIC LOCATION INFORMATION PRIOR TO THAT TO PLEASE CONTACT US SO WE CAN UPDATE THE LOCATION MAP.

What happens when we fail . . .



What happens when we fail . . .



# Safety drives innovation

Future technologies for traffic safety depend on innovative thinking and design

- New materials – are concrete and asphalt the only answers?

# Safety drives innovation

Future technologies for traffic safety depend on innovative thinking and design

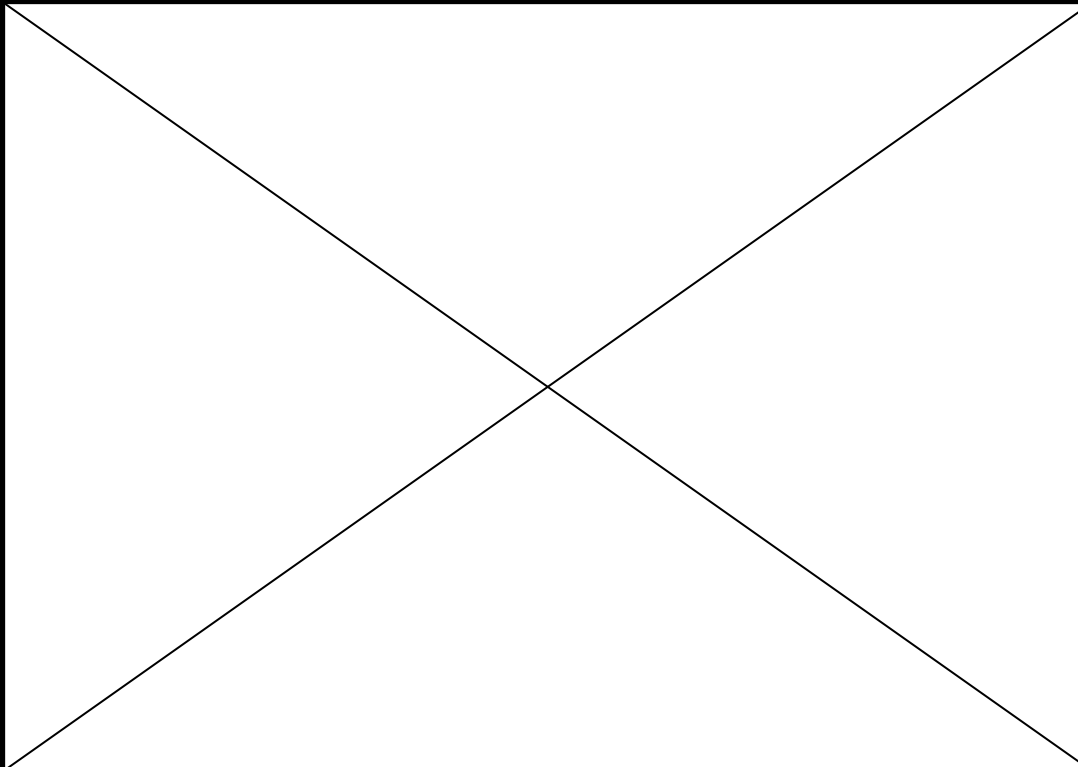
- New coatings
  - Reduce friction
  - Increase friction



# Safety drives innovation

Future technologies for traffic safety depend on innovative thinking and design

- New coatings



# Safety drives innovation

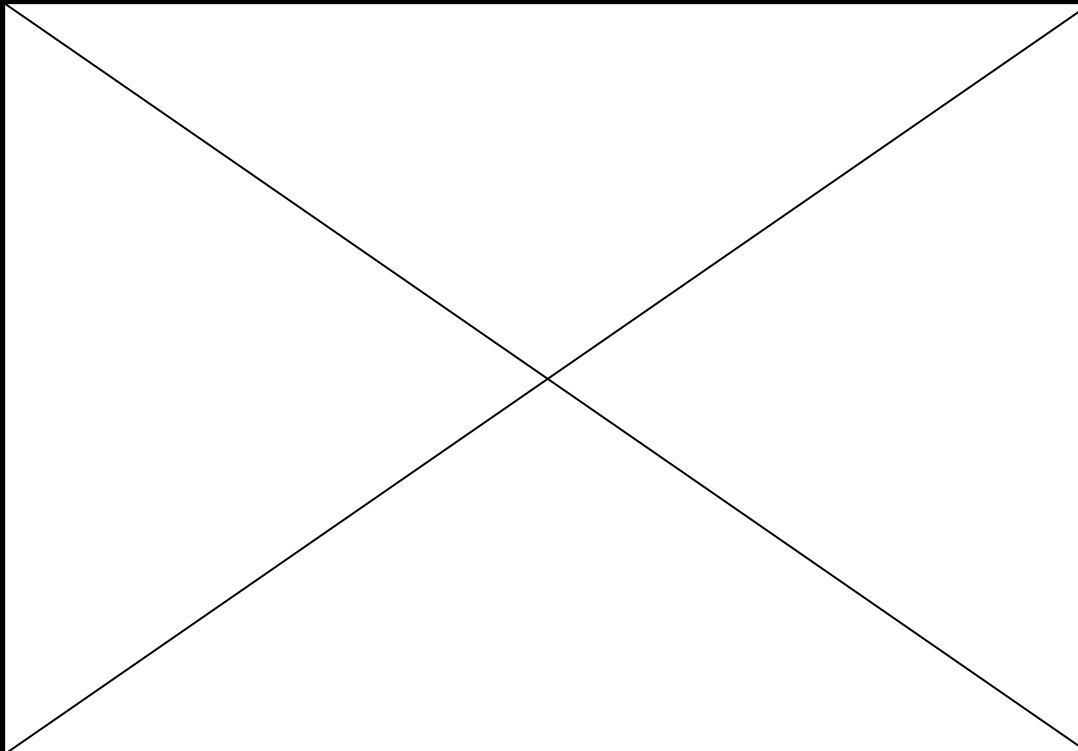
Future technologies for traffic safety depend on innovative thinking and design

- New coatings
  - Reduce wettability

# Safety drives innovation

Future technologies for traffic safety depend on innovative thinking and design

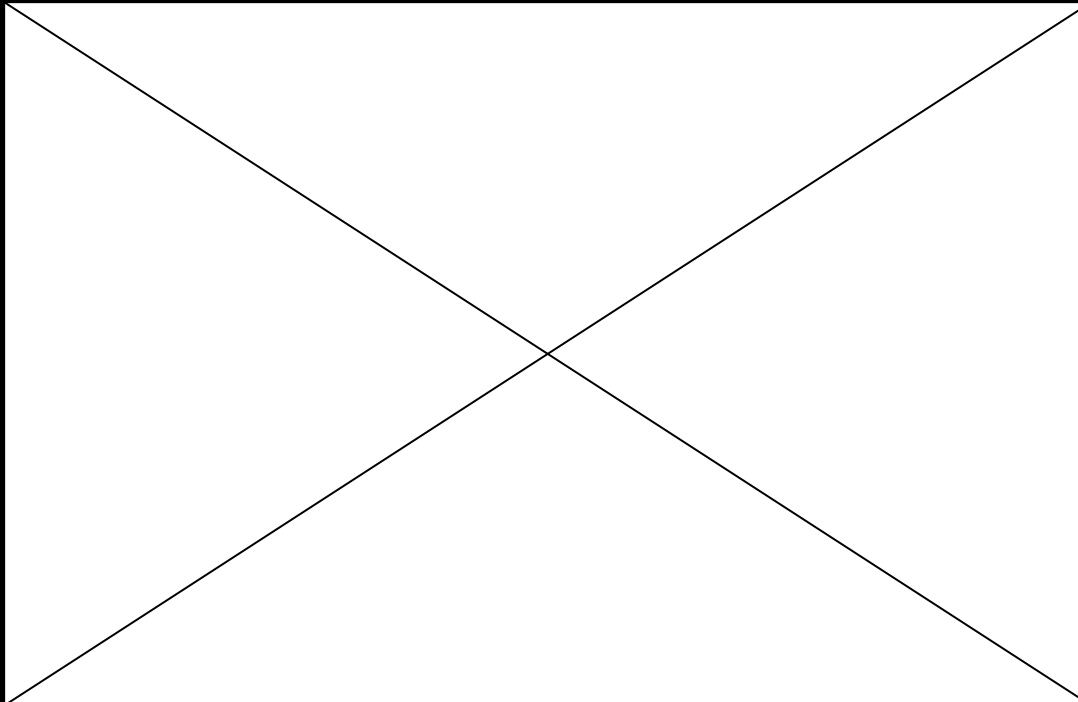
- New coatings



# Safety drives innovation

Future technologies for traffic safety depend on innovative thinking and design

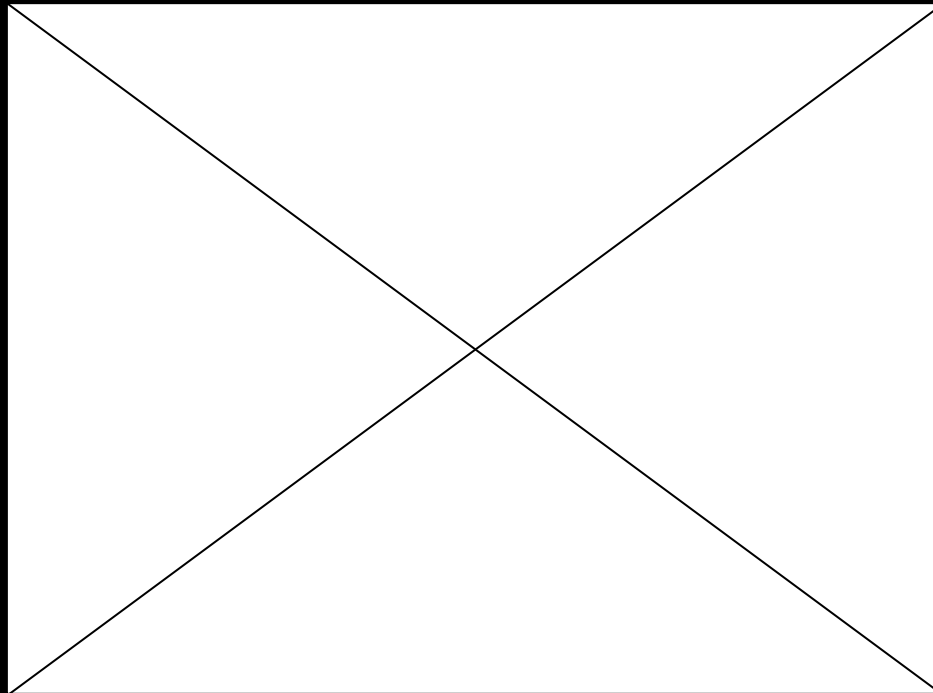
- New coatings



# Safety drives innovation

Future technologies for traffic safety depend on innovative thinking and design

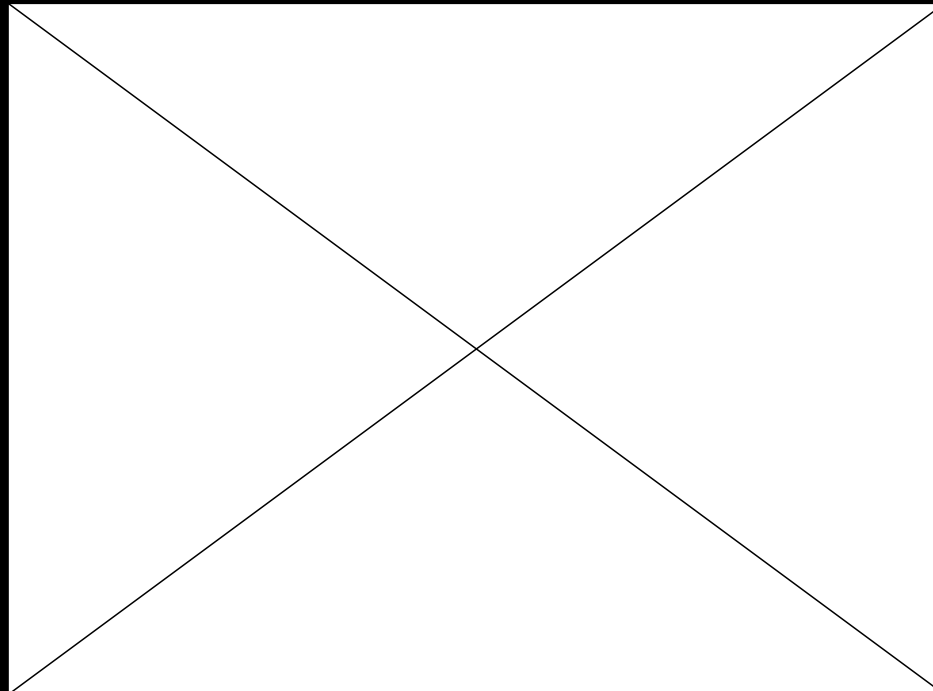
- New sensors
  - Crowd-sourced data and data-mining



# Safety drives innovation

Future technologies for traffic safety depend on innovative thinking and design

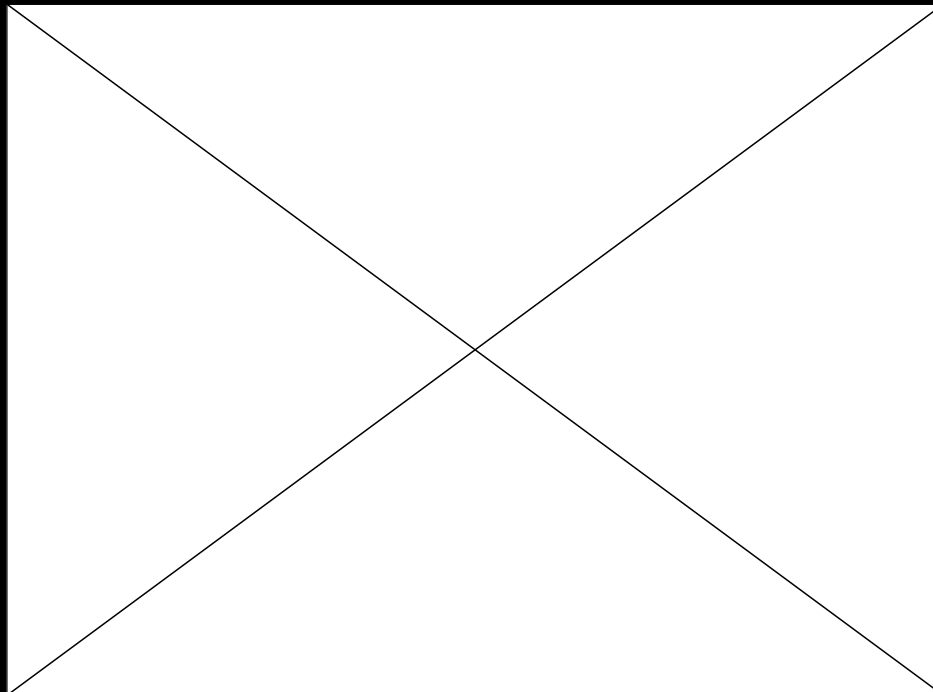
- New sensors & sensor systems in vehicles
  - Autonomous emergency braking



# Safety drives innovation

Future technologies for traffic safety depend on innovative thinking and design

- Augmented reality



# Engineering as a Profession

*It is a great profession. There is the fascination of watching a figment of the imagination emerge through the aid of science to a plan on paper. Then it moves to realization in stone or metal or energy. Then it brings jobs and homes to men. Then it elevates the standards of living and adds to the comforts of life. That is the engineer's high privilege.*



# Engineering as a Profession

*The great liability of the engineer compared to men of other professions is that his works are out in the open where all can see them. His acts, step by step, are in hard substance.*

*He cannot bury his mistakes in the grave like the doctors.*

*He cannot argue them into thin air or blame the judge like the lawyers.*

*He cannot, like the architects, cover his failures with trees and vines.*

*He cannot, like the politicians, screen his shortcomings by blaming his opponents and hope that the people will forget.*

*The engineer simply cannot deny that he did it. **If his works do not work, he is damned.***

# Engineering as a Profession

*On the other hand:*

*Unlike the doctor, his is not a life among the weak.*

*Unlike the soldier, destruction is not his purpose.*

*Unlike the lawyer, quarrels are not his daily bread.*

*To the engineer falls the job of clothing the bare bones of science with life, comfort, and hope.*

“*Science* can amuse and fascinate us all, but it is *engineering* that changes the world.”

~ Isaac Asimov