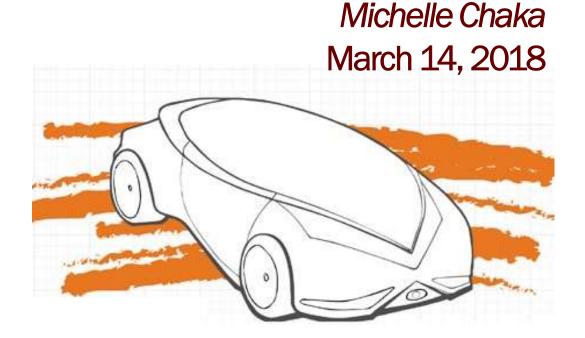
Northern Virginia Transportation Roundtable



New Mobility Revolution Panel Session



# The <u>Automation</u> Revolution? Public Perception § Acceptance

### Public Risk Perception

An important factor in the public perception of risk is how media treats, and will continue to treat, automated vehicle-related crashes:

- Media hits re: Tesla autopilot crash in June 2016:
  230 (national news)
- Media hits re: similar manual crash where driver crashed (one occupant death) into the side of a semi truck at intersection:

4 (local sources)

Source: http://www.dailyunion.com/news/article\_385a185e-609a-11e6-8a1c-4b78b2e3f702.html

BUSINESS DAY

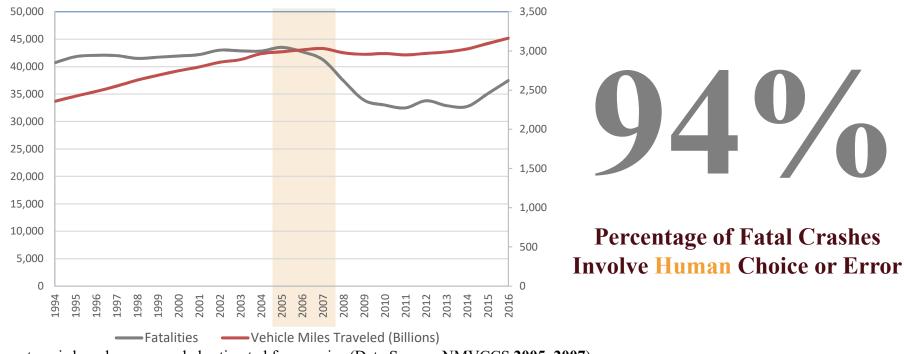
### Self-Driving Tesla Was Involved in Fatal Crash

By BILL VLASIC and NEAL E. BOUDETTE JUNE 30, 2016



A Tesla Model S, with its self-driving mode enabled. In a statement, the National Highway Traffic Safety Administration said it had sent an investigative team to examine the vehicle and the crash site in Williston, Fla. Jasper Juinen/Bloomberg

### Motor Vehicle Traffic Safety Landscape



Percentage is based on unrounded estimated frequencies (Data Source: NMVCCS 2005-2007)

https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812115

## **Alcohol-impaired Driving**



# Fatigue



### **Crashes Avoided**

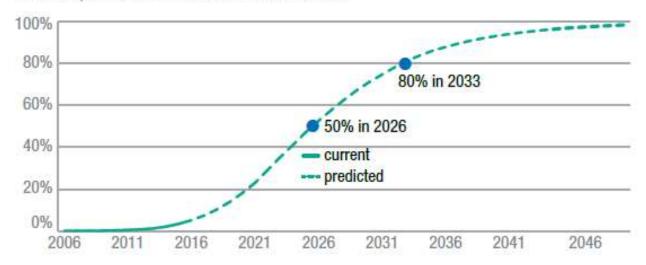


# The <u>Automation</u> Revolution? Technology Deployment

### Automated Emergency Braking Example

Drivers can expect a mixed fleet of autonomous and conventional cars for decades. Autobrake, for example, won't be in 80 percent of registered vehicles until 2033, even with automakers' pledge to make it standard by 2022.

Predicted penetration of autobrake into vehicle fleet



Source: IIHS Status Report (Nov. 10, 2016)

# Virginia Connected Corridor

L2 Automation "Elite" NDS

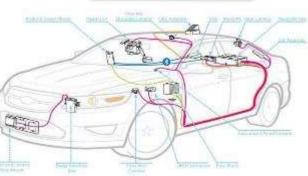
**Purpose:** Build naturalistic data set to assess behavior with early production L2 vehicles and responses to a mobile CV application

#### **Details:**

 50 personally owned production L2 and ADAS-equipped vehicles

- 12 months of data collection
- Use of connected-vehicle application on the VCC CV environment
- Evaluating drivers' interactions with technologies





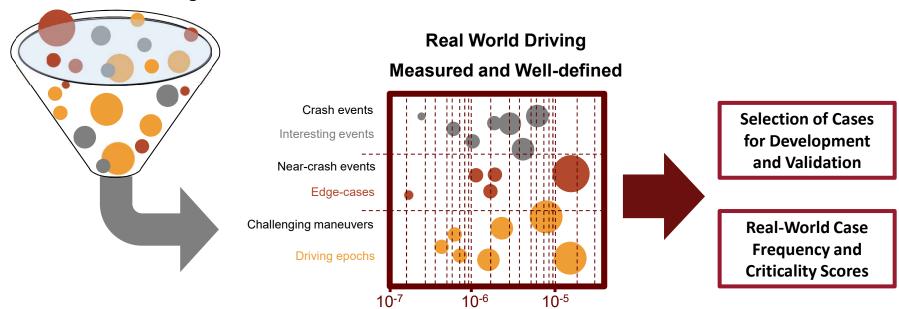
- 11 Tesla Model S
- 1 Tesla X
- 2 Acura RDX
- 1 Acura MDX
- 2 Acura TLX
- 3 Jeep Grand Cherokee
- 4 Hyundai Genesis
- 3 Hyundai Sonata
- 1 Ford Flex
- 4 Ford Fusion
- 1 VW Passat
- 5 Honda Accord
- 1 Honda Civic
- 1 Cadillac SRX
- 1 Mercedes CLS550
- 1 Nissan 300ZX
- 3 Toyota Highlander
- 1 Toyota RAV4
- 1 Volvo S90
- 1 Volvo XC 90
- 2 Chrysler Pacifica Limited
- 1 Chevrolet Suburban

## **Driver and Technology Interactions**

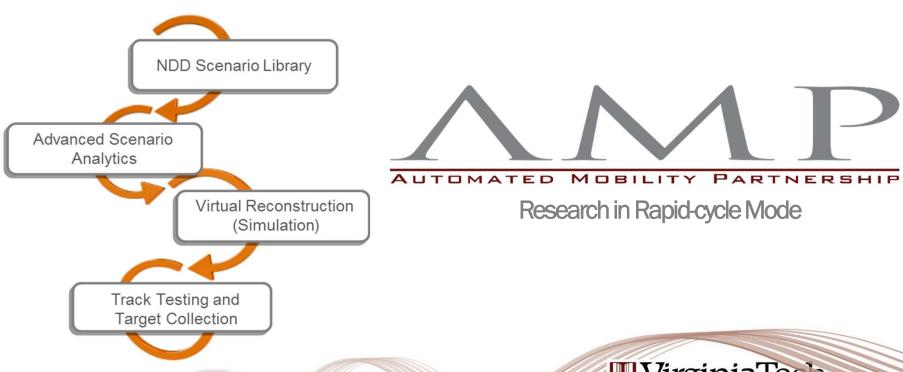


# How Can Naturalistic Driving Data Help to Build

# **ADS Confidence? Real World Driving**



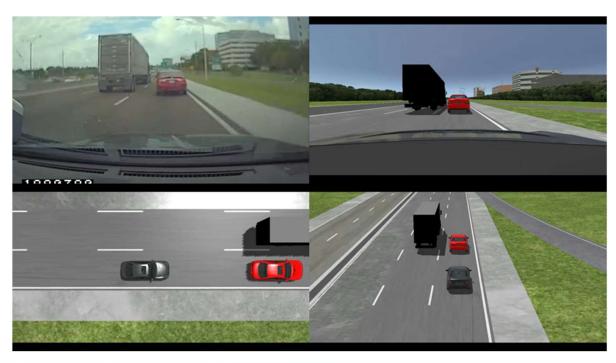
### VTTI's Automated Mobility Partnership Program



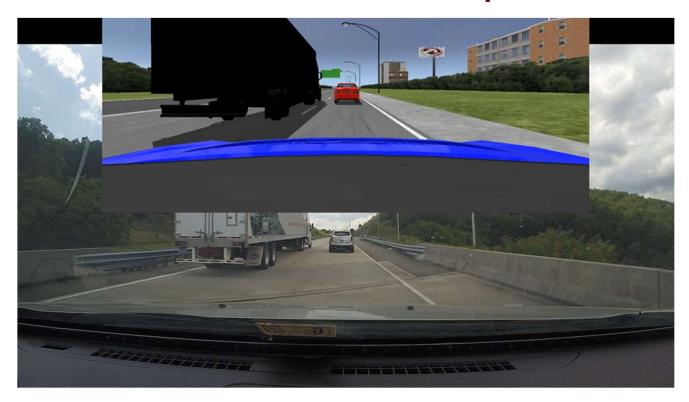


## Virtual Reconstruction Example NDD Highway Reveal

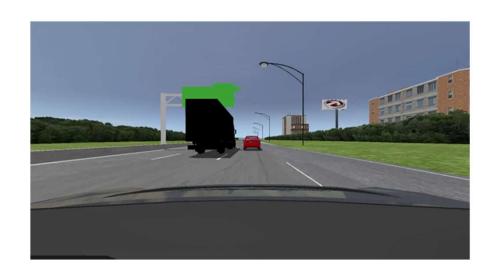
V



## Test Track Reconstruction Example



## Simple Autobrake Algorithm Example





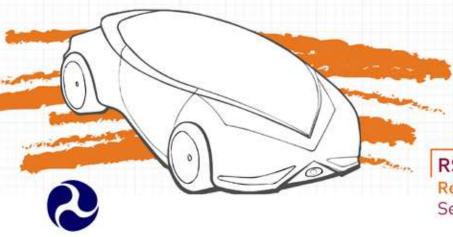
### SAVE THE DATE

### STAKEHOLDER MEETING: FMVSS CONSIDERATIONS FOR AUTOMATED DRIVING SYSTEMS

### Meeting Objectives

- · Provide the Research Team with input related to FMVSS technical translations and test procedures.
- Identify potential barriers for self-certification and compliance verification of innovative new vehicle designs precipitated by Automated Driving Systems (ADSs).

We will discuss project progress and gather feedback on technical translation developments to date.



WHEN: April 3, 2018 - April 4, 2018

9:00 AM - 5:00 PM 9:00 AM - 12:00 NOON

VIRGINIA TECH TRANSPORTATION INSTITUTE

WHERE: USDOT Atrium

U.S. DEPARTMENT OF TRANSPORTATION 1200 NEW JERSEY AVENUE, SE WASHINGTON, DC 20590

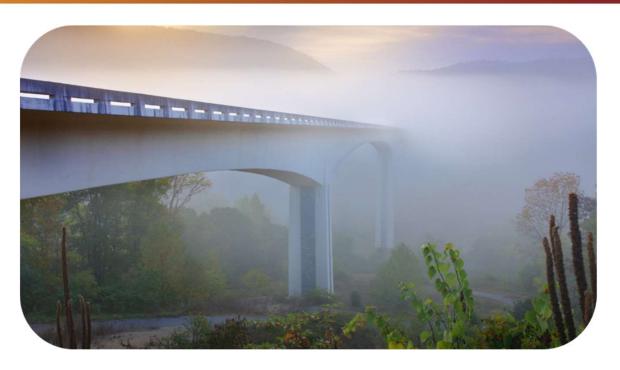
RSVP by March 20

Register to reserve your spot!

Seating is limited.

U.S. Department of Transportation

### Advancing Transportation through Innovation



Questions?

