Intersection Between Technology and Transportation
Autonomous Vehicles

The Technology Law and Public Policy Clinic
University of Washington School of Law
William Covington, Senior Lecturer and Director,
Introduction
The Technology Law and Public Policy Clinic

• **Who we are**
  • University of Washington 2nd and 3rd year law students
  • Studied autonomous vehicles for three years
  • Generated testing and deployment legislation
Autonomous Vehicles
What are they?

"Autonomous vehicle" means any vehicle equipped with technology that has the capability of operating or driving the vehicle without the active physical control or monitoring of a human operator…” House Bill 2131, Proposed; Washington State Legislature
Autonomous Vehicles
What are they? How do they work?

The Technology: Sensors-Processors-Actuators

See: https://www.youtube.com/watch?v=cdgQpa1pUUE and
https://www.youtube.com/watch?v=tQnVGOoVvVk
Autonomous Vehicles
What are they? How do they work?
Autonomous Vehicles
What are they? How do they work?
Autonomous Vehicles
What are they? How do they work?

- **Level 4 and Level 5 Availability**
  - **Ford** Level 4 vehicle by 2021
  - **Honda, Toyota** autonomous vehicle by 2020
  - **Renault-Nissan** plans to release 10 different self-driving cars by 2020
  - **Tesla-Musk** has predicted that by the end of this year a Tesla will be able to drive from Los Angeles to New York City without a human touching the wheel.

- **Cautionary note**-Gill Pratt, CEO of the Toyota Research Institute, “none of us in the automobile or IT industries are close to achieving true Level 5 autonomy, we are not even close.”

- See: “Self-driving car timeline for 11 top automakers”
  https://venturebeat.com/2017/06/04/self-driving-car-timeframe-for-11-top-automakers/
Autonomous Vehicles
What are they? How do they work?

CONSUMPTION SPREADS FASTER TODAY

SOURCE MICHAEL FELTON, THE NEW YORK TIMES
Autonomous Vehicles
What are they? How do they work?

- **Self driving commercial vehicles**

- California-based startup Starsky Robotics has already used a self-driving truck to haul freight for 120 miles on a highway.
- Peloton, a trucking startup backed by Volvo and UPS, plans to use truck platooning to save on fuel.
- Volvo is also testing its own self-driving trucks for specific scenarios.
Legislative Snapshot
Activities Around Nation and Abroad

Overview

- **2017** 33 states have introduced autonomous vehicle legislation
- **41 states** have considered autonomous vehicle legislation
- **20 states** have passed autonomous vehicle legislation
- **5 states** governor has signed an executive order creating working groups or study committees to support testing and deployment of autonomous vehicles
- **See:** National Conference of State Legislatures
- **Europe** driverless trucks could be permitted on roads in 2 years; agreement signed to allow cross border testing, exploring what existing laws need changing
Public Policy
Issues and Concerns

# Questions legislation is attempting to address

- **Definitions** - What are autonomous vehicles? What is impact of assistive technology?
- **Review and Oversight** - What agency or agencies should have oversight responsibility (accepting and processing applications, monitoring) for autonomous vehicles?
- **Standards** - What standards should be employed in determining if autonomous vehicles should be permitted to use public roads and highways?
- **Operator qualifications** - What should be the qualifications for autonomous vehicle operators?
- **Information gathering, privacy** - What information should be gathered and for what purpose?
- **Liability** - Who should be liable in the event of an accident?
Public Policy
Issues and Concerns-Definitions

**AUTONOMOUS VEHICLE.**—Any vehicle equipped with autonomous technology. The term "autonomous technology" means technology installed on a motor vehicle that has the capability to drive the vehicle on which the technology is installed without the active control or monitoring by a human operator. The term excludes a motor vehicle enabled with active safety systems or driver assistance systems, including, without limitation, a system to provide electronic blind spot assistance, crash avoidance, emergency braking, parking assistance, adaptive cruise control, lane keep assistance, lane departure warning, or traffic jam and queuing assistant, unless any such system alone or in combination with other systems enables the vehicle on which the technology is installed to drive without the active control or monitoring by a human operator.

*State of Florida 2017*
Notwithstanding any other provision of law and except as otherwise provided in this chapter, only the **Department of Motor Vehicles** may adopt regulations or impose any requirement relating to the technology of an automated driving system or autonomous vehicle, .... an autonomous vehicle shall not be tested or operated on a highway within this State with a human operator unless the autonomous vehicle is capable of operating in compliance with the applicable motor vehicle laws and traffic laws of this State, unless an exemption has been granted by the Department, …The Department shall adopt regulations authorizing the operation and testing of autonomous vehicles on highways within the State of Nevada

**State of Nevada 2017**
A motor vehicle manufacturer may participate in a SAVE (Senate Bills 995, 996, 997 and 998 collectively referred to as the SAVE Act) project if it self-certifies to all of the following:… That the participating fleet complies with all applicable state and federal laws.

State of Michigan 2016

A person may operate a fully autonomous vehicle with the automated driving system engaged without a human driver being present in the vehicle, provided that such vehicle: Unless an exemption has been granted under applicable federal or state law, is capable of being operated in compliance with Chapter 6 (Uniform Rules of the Road) of this title and this chapter and has been, at the time of its manufacture, certified by the manufacturer as being in compliance with applicable federal motor vehicle safety standards;

State of Georgia 2016
Public Policy
Issues and Concerns-Operator Qualifications

The department may establish additional requirements by the adoption of regulations, which it determines, in consultation with the Department of the California Highway Patrol, are necessary to ensure the safe operation of autonomous vehicles on public roads, including, new license requirements for operators of autonomous vehicles,

State of California 2012

A person who possesses a valid driver license may operate an autonomous vehicle in autonomous mode on roads in this state if the vehicle is equipped with autonomous technology,

State of Florida 2016
Any person responsible for the testing of an autonomous vehicle shall report to the Department, within 10 business days after a motor vehicle crash, any motor vehicle crash involving the testing of the autonomous vehicle which results in personal injury or property damage estimated to exceed $750.

**State of Nevada 2017**

The manufacturer of the autonomous technology installed on a vehicle shall provide a written disclosure to the purchaser of an autonomous vehicle that describes what information is collected by the autonomous technology equipped on the vehicle.

**State of California 2012**
Public Policy
Issues and Concerns-Liability, Misc.

- Liability-no comprehensive legislative scheme in place at this time

  - Options
    - Incorporate into existing models (health insurance, homeowner’s)
    - No fault
    - Strict liability (could chill innovation)

- Misc.
  - Insurance
  - Direction to “clean up” Motor Vehicle Code
  - Impaired driving?
Public Policy Issues
Related Matters of Concern

- **Infrastructure**
  - Lane markings
  - Carrying capacity
  - Sunlight on traffic signals

- **Job displacement**
  - 3.5 million professional truck drivers
  - 650,000 bus drivers
  - Increase in jobs lost to AI and robots

- **Car free cities**
  - Autonomous vehicles—good or bad?
  - Millennials don’t want cars
  - Last mile problem