

# National Highway Traffic Safety Administration

## USA: Rulemaking and Research Priorities

[http://www.nhtsa.gov/staticfiles/rulemaking/pdf/2011-2013\\_Vehicle\\_Safety-Fuel\\_Economy\\_Rulemaking-Research\\_Priority\\_Plan.pdf](http://www.nhtsa.gov/staticfiles/rulemaking/pdf/2011-2013_Vehicle_Safety-Fuel_Economy_Rulemaking-Research_Priority_Plan.pdf)

Christopher J. Bonanti  
Associate Administrator for Rulemaking  
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# Developing Standards

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- Based on relevant vehicle safety information
  - Real world crash, death and injury data
  - Research
- Meet a safety need
- Be practicable
  - (Technologically and economically)
- Objectively measurable compliance
- Performance-oriented
  - (Not unnecessarily design restrictive)
- Appropriateness of standard for each vehicle type
- Developed through public process: notice of proposal published and opportunity for public to comment

# Analysis of Motor Vehicle Crashes

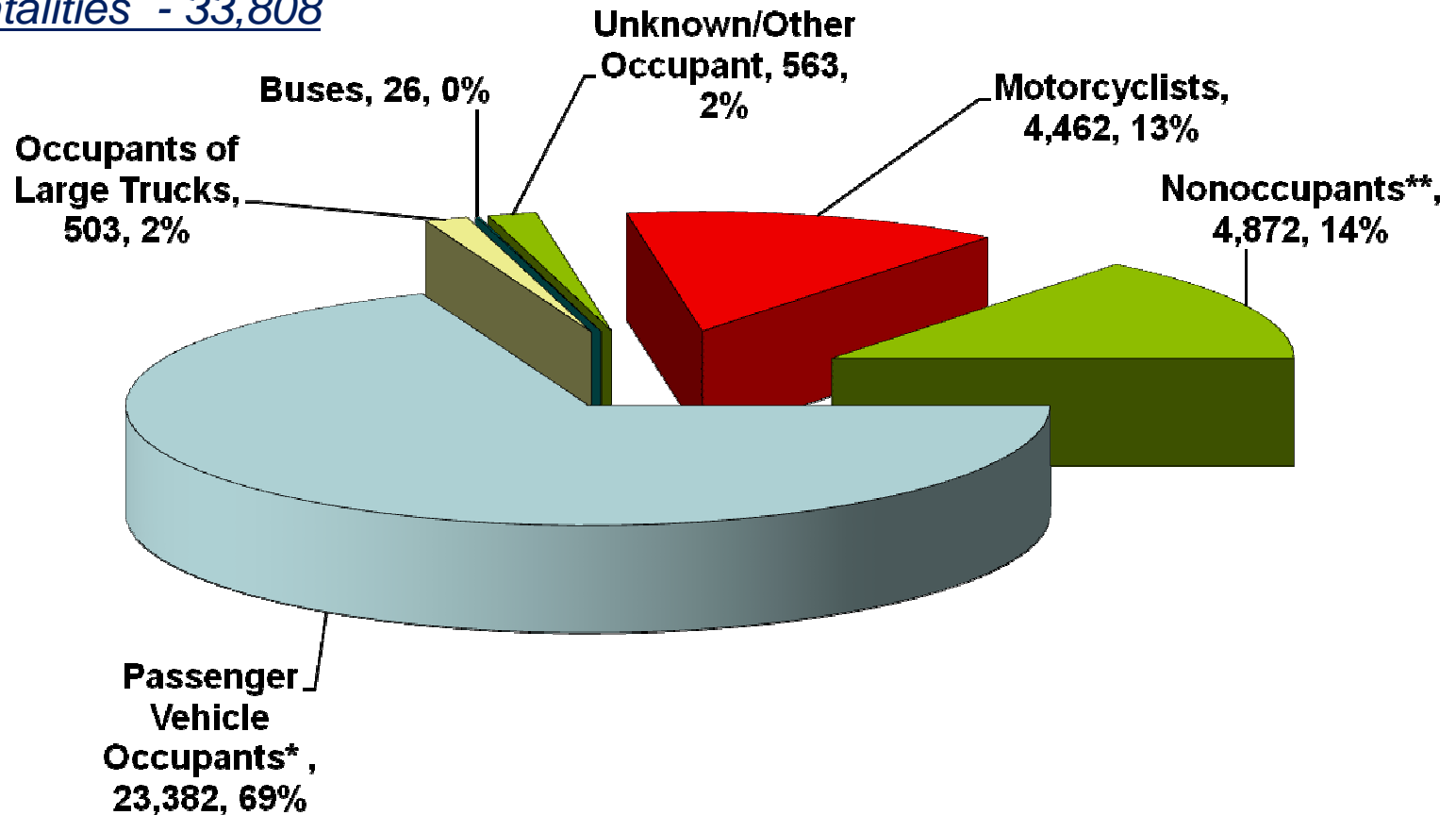
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- Vehicle Type
- Crashworthiness
- Crash Avoidance
- Crash Partners
- Body Region injured
- Societal Costs

Brain injuries and ankle/knee injuries have long-term disability and high societal costs

# 2009 Fatalities by Vehicle Type

Total Fatalities - 33,808

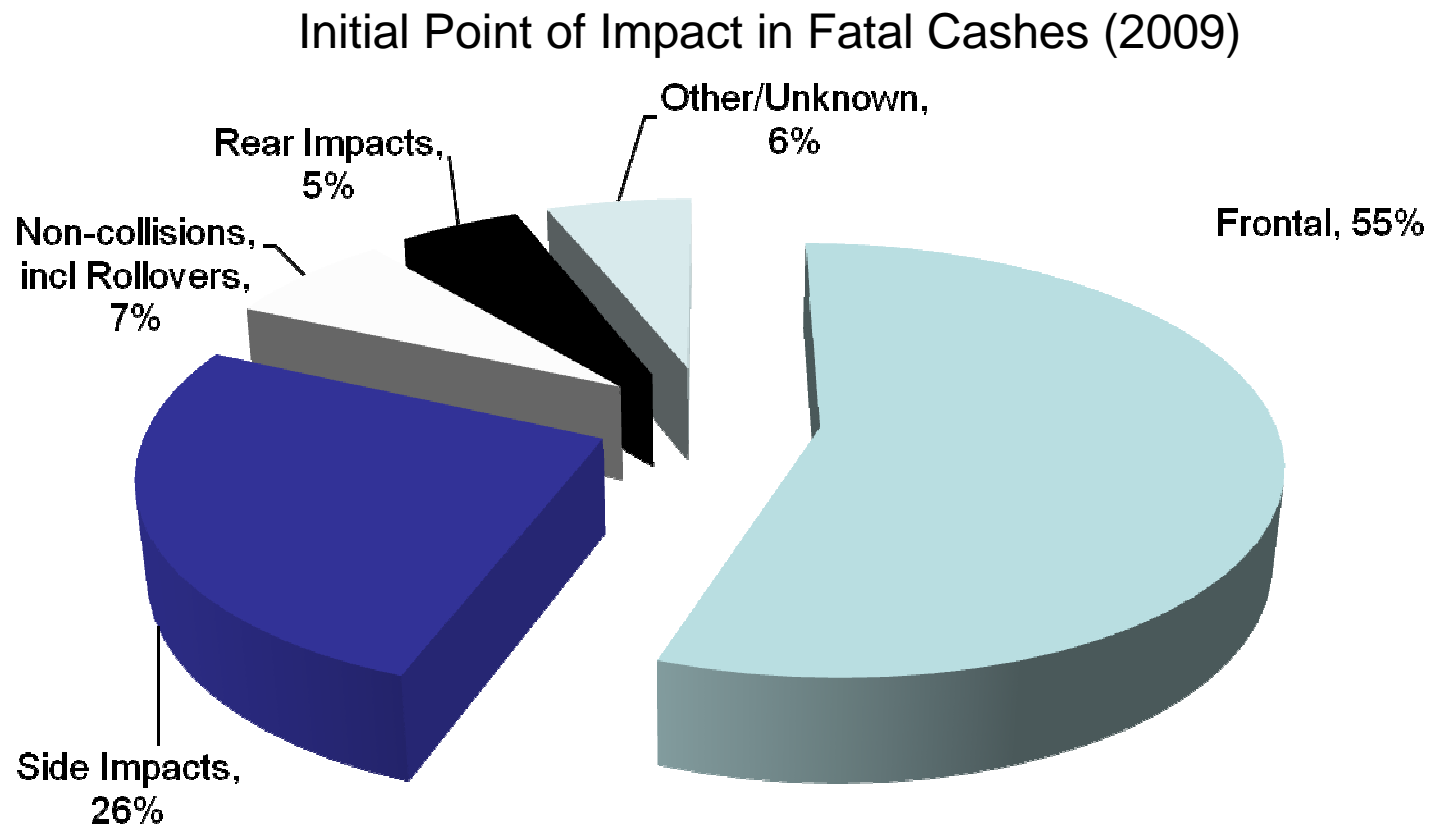


\* Passenger Vehicles = Passenger cars and light trucks (SUVs, vans, & pickups)

\*\* Nonoccupants include pedestrians, bicyclists, and unknown/other nonoccupants

# Crashworthiness – Crash Types

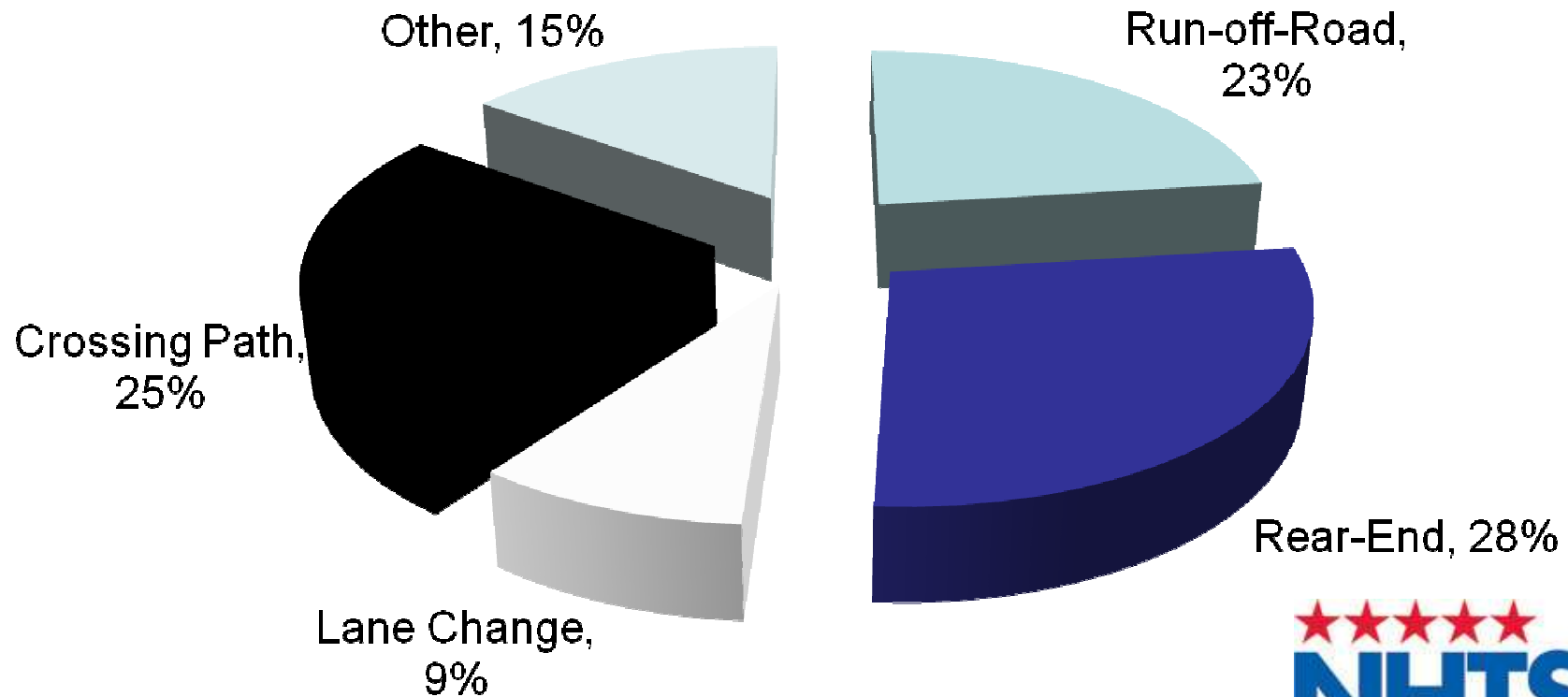
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# Crash Avoidance – New Technologies

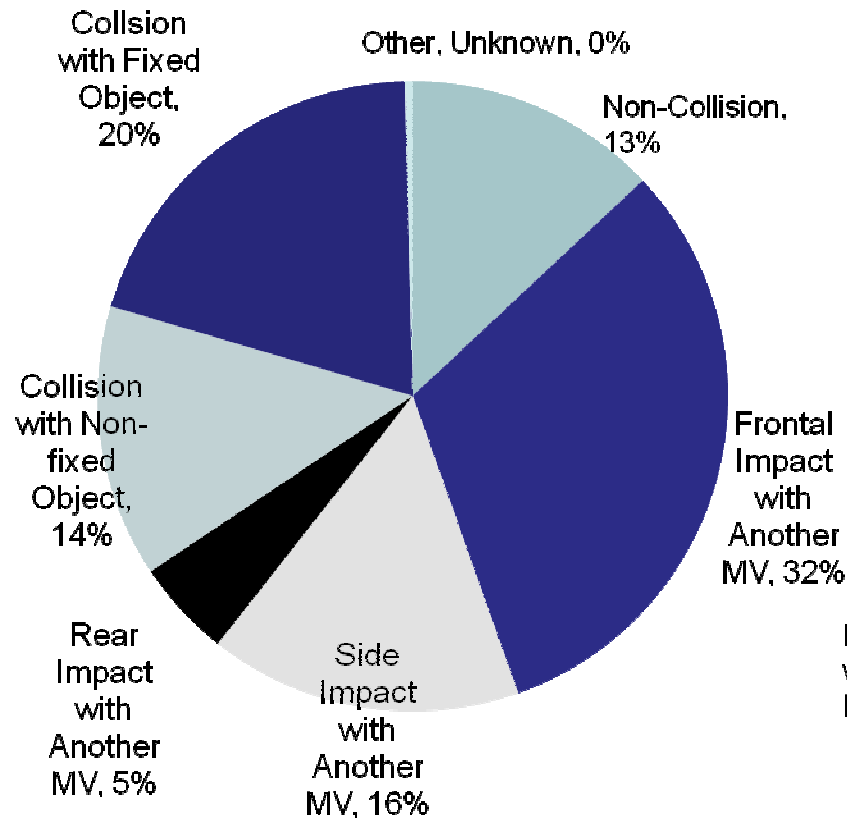
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## Crash Types Mitigated by New Technologies (FARS, GES 2009)

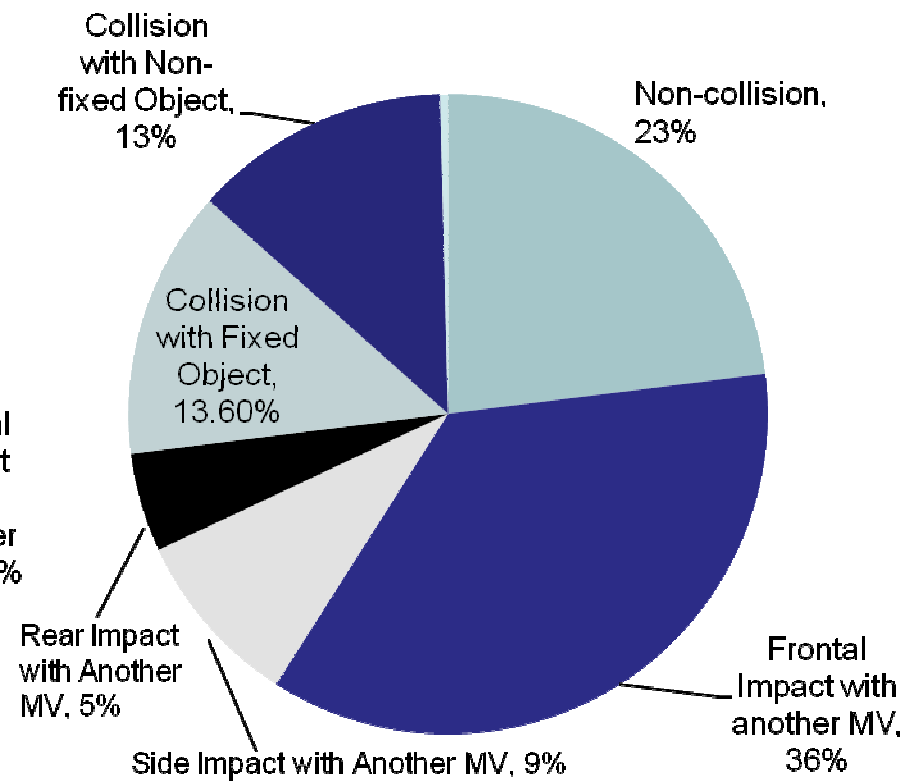


# Crash Partners

## Passenger Cars



## Light Trucks



# Rulemaking Priorities

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- Heavy Trucks
  - Truck Tractor and Motorcoach Stability Control
- NCAP Updates
  - Updating injury criteria in frontal and side impact programs
  - Identify additional advanced technologies through real-world crash data analysis
    - Develop test procedures for new technologies



# Rulemaking Priorities

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- Crash Avoidance
  - Quiet Cars
  - Brake Override
  - Keyless ignition
- Child Safety
  - Side impact for child restraints
  - NCAP Vehicle-CRS Fit Program
  - Rearward visibility
- Motor Coach Safety
  - Seat belts
  - Fire safety protection
  - Emergency evacuation
  - Rollover Structural Integrity



# Research Priorities

## Crash Avoidance

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- Connected Vehicles
- Distraction
- Alcohol
- Pedestrian Crash Avoidance
- Medium Truck and Bus Stability Control
- Heavy-Vehicle Forward Collision Avoidance and Mitigation

# Research Priorities

## Crashworthiness

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- Lithium Ion Battery Safety
- Countermeasures for “lightweighted” vehicles
- Low Offset/Oblique Frontal
- Dynamic Rollover
- Anthropometric Test Devices (crash dummies)
- Vulnerable Occupant Injury Analysis

# Research Priorities

## Electronic Control Systems

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- Reliability
  - Fail Safe Strategies
  - Diagnostic Strategies and Trouble Codes
  - Software strategies and Validation Requirements
  - Hardware and System Validation
  - Electromagnetic Compatibility
- Human/Machine Interface
  - Shared control
  - Transitional Control
  - Control failure warning and notification