

Driving Simulation Scientific Applications

DriveSafety's driving simulation systems are used by researchers, educators and healthcare professionals throughout the world. Subject-matter experts including psychologists, neuropsychologists, neurologists, ophthalmologists, occupational therapists, human factors engineers and designer, transportation engineers and designers, scientists and safety specialists, and educators use the simulators to better understand driving impairments, distractions, conditions, new vehicle equipment, personal fitness, rehabilitation, audio/visual communications, difficult driving maneuvers, age/gender and attitudes, road and intersection designs, and learning and teaching methods.

Driving simulators allow researchers, educators and rehabilitation experts to use a consistent and repeatable driving environment to accomplish its goals. The following are some applications that lend themselves to driving simulators:

DriveSafety Research Customers

Corporations

Battelle
Delphi
Ford
General Motors
Johnson Controls
Motorola
Nissan
Transport Canada
Texas Transport Institute
Volkswagon
Western Transportation Institution

Universities

Central Michigan University
Clemson University
Cleveland State University
Colorado State University
McMaster University
Mississippi State University
North Dakota State University
Simon Fraser University
Texas Southern University
The University of Iowa
University of Central Florida
University of Calgary
University of Guelph
University of Illinois
University of Michigan
University of New Hampshire

Hospitals

Veterans Affairs

Impairments – vision research including studies into eye wear, vision correction, Glaucoma; blocked or narrow field of vision issues including left and right side blind spots; driving and loss of hearing; driving and drugs (legal and illegal); and driving and alcohol; etc.

Medical Conditions – studies into driving errors associated with different forms of neurological impairment or disease; e.g., Alzheimer's, ALS, Multiple Sclerosis, Muscular Dystrophy, diabetes, bipolar disorder, epilepsy; driving performance of handicapped, those using prostheses or orthoses, etc.

Distractions – driving impact and cell phones, radios, CD/MP3 players, headphones, video systems, computers, cruise control, and driver assistance systems; impact of other passengers (adult, children, infants); impact of eating and/or drinking while driving; etc.

Conditions – problematic driving conditions including driving at night, dusk/dawn, temperature variance, rain, snow, fog, pavement types, road contour, road width, shoulder width, confusing or new exchanges or patterns, etc.

New Vehicle Equipment – new cars come with or may someday offer new services or accessories that can impact driving behavior including in-vehicle information systems, proximity warning systems, rear video systems, restraint systems, data recording systems, mapping systems, etc.

Personal Fitness – research into how driver condition can impact driving performance including hours behind the wheel, lack of sleep, time of day, obesity, diet, frequency of exercise, occupational impact, etc.

Rehabilitation – injury or medical conditions can impact an individual's ability to drive including victims of traumatic brain injuries, spinal cord injuries, coronary disease, extremity injuries, major and minor surgery.

Audio / Visual Communications – the impact of road markings, signs, traffic lights, warning lights and/or sounds, external advertisements, external events, in-vehicle signals, etc.

Difficult Driving Maneuvers – certain driving skills can have an impact on driving performance including left turns, merging, stopping, backing, parking, acceleration, passing/overtaking, lane changes, lane choices, roundabouts, etc.

Age / Gender – novice and elderly drivers cause a disproportionate number of accidents – inability to stay in a driving lane, misjudging distances between cars, poor decisions at intersections, behavioral impulsivity (hitting the gas instead of the break), etc.

Attitudes – research into driver attitude and the impact on their driving success including their thoughts toward risk, authority, anger, patience, aggression, etc.

Road and Intersection Designs – new road layout, traffic flow, work zones, signs and signals, pavement markings and control measures, new construction and vegetation designs give transportation engineers a tool to test and verify their ideas prior to costly deployment.

Learning and Teaching Methodology – relationships between speed, breaking and following distance, responding to unsafe and dangerous driving actions, and emergency situations can be taught in a safe yet effective environment, things novice drivers cannot learn in traditional training programs.

Determining normative driving scenarios for researchers is a challenge. DriveSafety works with subject-matter experts to establish industry-acceptable psychometric characteristics such as validity, reliability and diagnostic classifications.

DriveSafety DS-600c and DS-100c hardware coupled with the industry's most advanced scenario authoring tool (HyperDrive) allows researchers to create their ideal driving laboratories with DriveSafety's library of roads, intersections, vehicles, traffic patterns and landscapes, plus the ability to script specific actions and to collect the desired data.

DriveSafety, Inc.
266 White Pine Drive
Salt Lake City, UT 84123 U.S.A

p: 1.801.266.4510
f: 1.801.266.4570
w: www.drivesafety.com
e: info@drivesafety.com