



HUMAN FACTORS IN TRANSPORT AND WORKPLACE SAFETY

FACT SHEET

OVERVIEW

Human factors is about understanding people's abilities, characteristics and limitations, and then applying that understanding to the design of the systems they use, the tasks they perform and the environments in which they function. Our Human Factors team undertakes world-class projects in the areas of traffic safety, human machine interaction, equipment design, vehicle automation and driver behaviour. The research is applied across multiple settings including transportation, healthcare, workplace, defence, mining, manufacturing and product design.

Human factors is also known as Ergonomics or Human-Centred Design.

Expertise and Resources

Team members have backgrounds in experimental psychology, human factors, computer science and engineering.

The team uses a variety of methods to support projects, including on-road testing, simulation, surveys, participatory ergonomics design, structured interviews, stakeholder consultation and human factors methods such as cognitive task analysis, and interface and usability assessment.

Our simulation facilities, vehicles and capabilities are unmatched in Australia:

- A full car (Holden) simulator with new software and functionality that includes a motion platform, 3D sound, eye tracking and advanced driver behaviour monitoring systems
- A motorbike simulator: developed in conjunction with Italian rider safety researchers
- A cycle simulator that uses Virtual Reality technology
- A truck simulator with full truck cab
- A defence crew simulator helping researchers understand crew performance, training and workload in a multi-crew army-style vehicle
- A portable car simulator that can easily be transported to other locations

Key Areas of Research Focus

- Simulator studies using our car, motorcycle, bike, and truck simulator platforms
- The safety benefits of vehicle automation and new technologies
- Safe design of equipment, tasks, and systems
- Work-related road traffic injury: Managing the risk
- Impairment related to alcohol/drugs and drowsiness
- Driver/operator decision-making, error and situation awareness
- Driver and pedestrian distraction related to in-vehicle devices and external sources
- The design and evaluation of advanced driver assistance systems and information systems, including driver acceptance of in-vehicle technology
- The influence of road signage and infrastructure design on road safety
- Development of methods to model operator performance in complex systems
- Organisational influences on worker safety

Recent collaborators and partners

- National Institute for Occupational Safety and Health, USA
- Alfred Hospital, Melbourne
- Cambridge University, UK
- Seeing Machines
- Transport Research Laboratory, UK
- VicRoads
- University of Queensland
- Transport Accident Commission (TAC)
- Department of Justice (Vic)
- Victoria Police
- Austroads
- University of New South Wales

Further Information

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