

2026

QLD HUMAN FACTORS AND ERGONOMICS RESEARCH SHOWCASE

Discover the cutting edge of human-system design at the upcoming Human Factors and Ergonomics Research Showcase organised by the HFESA QLD Branch. This half-day hybrid event brings together PHD and Early Career researchers from QLD to share insights into human-robot interaction, virtual reality training, healthcare technologies, and AI-driven workplace safety.

Whether you are an industry professional, researcher, or student, this showcase offers an invaluable opportunity to explore how sociotechnical systems design can optimise safety, efficiency, and human well-being in complex environments.



When: July 31st 2026 8:50am - 1:00pm AEST

Where: QUT Kelvin Grove campus – Room A105 OR Online (via zoom)

Schedule:

9:00 – 9:15 Registrations

9:15 – 9:25 Welcome

9:25 - 10:50 Session 1

10:50 – 11:30 Coffee/tea break - Networking

11:30 – 12:55 Session 2

12:55 – 13:00 Closure

Speakers:



JAMES DWYER

Design-led prototyping for human-robot interaction in expert practice



RYAN G. KING

The Effectiveness and Transfer of Virtual Reality Training: A Sensorimotor Perspective



AMIR ASADI

Human-Robot Collaboration in Healthcare: A Sociotechnical Perspective



MEHRDAD HASSANI

Can AI Predict Workplace Injury Risks? Lessons from Ergonomics Research



JASPER VERMEULEN

Human Factors in Robot-Assisted Surgery: Opening the Theatre Doors



NICKI NEWTON

Defining the problem, causes, and solutions to alert fatigue in hospitals using a human factors approach

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QLD HUMAN FACTORS AND ERGONOMICS RESEARCH SHOWCASE

REGISTRATION 9:00 - 9:15

WELCOME 9:15 - 9:25

SESSION 1 9:25 - 10:50



JAMES DWYER

Design-led prototyping for human-robot interaction in expert practice

Synopsis: How can designedly prototyping approaches support the development of human-robot interaction (HRI) in high-risk and highly constrained domains characterised by skilled expert practice, where work is shaped by deep tacit knowledge, refined embodied techniques, and tightly constrained spatial and procedural conditions that shape the nature of situated practice.



AMIR ASADI

Human-Robot Collaboration in Healthcare: A Sociotechnical Perspective

Synopsis: This presentation explores human-robot collaboration in healthcare from a sociotechnical perspective. Drawing on doctoral research, it examines why technically promising healthcare robots can struggle in real clinical settings and highlights the role of stakeholders, organizational factors, and macro-level pressures. The presentation introduces the STEER-H framework (SocioTechnical Engineering for Effective Robotics in Healthcare) as practical guidance for designing and integrating healthcare robots in ways that are safe, acceptable, and sustainable.



JASPER VERMEULEN

Human Factors in Robot-Assisted Surgery: Opening the Theatre Doors

Synopsis: Robot-assisted surgery is often described through the relationship between the surgeon and the robotic system. However, from a human factors and ergonomics perspective, robotic surgery is better understood as a complex socio-technical work system. Safe and efficient use of a surgical robot depends not only on the primary operator, but also on the coordinated work of robotic specialists, scrub nurses, assistants, and other theatre staff.

This presentation draws on my PhD research into the Stryker Mako robotic arm system used in joint replacement surgery. Based on video analysis, ethnographic observations, and interviews with robotics specialists, I examine how robotic surgery is made workable in practice. The presentation will discuss how teams coordinate attention, manage spatial constraints, adapt roles, maintain workflow, and support the surgeon-robot interaction through often invisible forms of work.

By foregrounding the wider surgical team, this presentation shows how human factors and ergonomics can contribute to the design, implementation, and evaluation of robotic systems in healthcare. Rather than treating human-robot collaboration as a one-to-one interaction, I argue that it should be understood as a distributed team achievement shaped by people, technologies, tasks, environments, and organisational routines.

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NETWORKING/BREAK

10:50 - 11:30

SESSION 2

11:30 - 12:55



RYAN G. KING

The Effectiveness and Transfer of Virtual Reality Training: A Sensorimotor Perspective

Synopsis: Virtual reality (VR) training has become increasingly popular as a means of preparing staff to perform real-world tasks, covering anything from surgery, to firefighting or flying and driving. Despite many promising use cases, research on the effectiveness of VR training after transferring to the physical world has produced inconsistent results. The sensory differences between real and virtual environments have the potential to impact the sensorimotor routines learnt during training, and for tasks requiring precise motor control, these adapted movements could produce unwanted side-effects in the real world. In our research, we aim to investigate the effect that VR training has on the learning and transfer of a reaching task. To achieve this, a physical apparatus was built and was identically replicated within VR, allowing us to manipulate the sensory feedback provided. Overall, we found that VR training was more effective for cognitive (task) learning than motor learning, and that training in VR could cause altered head movements acquired during VR training. Additionally, we found that improved haptic feedback may encourage more natural responses than the typical, vibration feedback provided by VR controllers.



MEHRDAD HASSANI

Can AI Predict Workplace Injury Risks? Lessons from Ergonomics Research

Synopsis: Work-related musculoskeletal disorders (WMSDs) remain one of the leading causes of workplace injury and reduced productivity across many industries. This presentation will provide an overview of ongoing research exploring the feasibility of using artificial intelligence (AI) and machine learning approaches to improve ergonomic risk assessment in both office-based and manual handling occupations. The presentation will discuss how occupational datasets containing demographic, psychosocial, organisational, and physical risk factors can be integrated to develop predictive models for WMSD risk assessment. It will also highlight the potential role of AI in supporting more proactive, data-informed, and scalable approaches to workplace health and safety.



NICKI NEWTON

Defining the problem, causes, and solutions to alert fatigue in hospitals using a human factors approach

Synopsis: This presentation will describe a mixed-methods study conducted with junior doctors to explore alert fatigue associated with electronic health record (EHR)-based alerts in hospitals. We conducted in depth interviews, surveys and analysis of use metrics to understand doctors' experiences of alert fatigue and their actual use of alerts. Findings and associated recommendations for the design, implementation and evaluation of alerts will be presented.

CLOSURE

12:55 - 13:00