2025
KNOWLEDGE THROUGH NETWORKING & SHARING (KTNS)

Join us for the 2025 KTNS at the Owen J. Wordsworth Room, QUT Gardens Point, S Block - level 12
Date: 22/08/2025

HFESA
Human Factors & Ergonomics
Society of Australia

Our Awesome Speakers:

GRAHAM MILLER
Human Impacts on Work Design

SHUVODEEP SAHA
Towards Adaptive VR: Quantifying VR Presence Through Psychophysiological Signals

CLAIRE GREAVES
Stuck in a Holding Pattern: Human Factors Training Development for Sports and Recreational Aviation

PROF GENEVIEVE HEALY
Capturing sit-stand workstation use: why and how

KEITH JOHNSON
Reshaping Lifestyle Changes in a Heavy Weight World

SRIKRISHNA BHAT
Cognitively Adaptive VR Training Using Real-Time Biosignal Feedback

DR BRIAN THOROMAN
It's Only A Reporting Form

PROF GUY WALLIS
An unexpected role for inertial forces in heading control: contrasting responses in a driving simulator vs a real car

PAULO GOMES
Off-The-Road Tyre Management: The Good, the Bad, and the Ugly

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REGISTRATION	8:30 – 9:00
WELCOME	9:00 – 9:10
CASE STUDY #1	9:10 – 9:35

GRAHAM MILLER
Human Impacts on Work Design

Synopsis: Graham will speak about the complexities of organisational dynamics and their impact on work design. He will highlight the difference between rational, planned organisational behaviours and non-rational, emotionally-driven actions. Graham will use examples like personality conflicts in a team and a stalled 'integrated operations' project to illustrate how masked work design issues and political factors can hinder successful implementation. He will emphasise the importance of recognising both visible and invisible elements within organisations and how individual egos and assumptions can jeopardise positive outcomes.

RESEARCH PRESENTATION #1   9:40 – 10:05

SHUVODEEP SAHA
Towards Adaptive VR: Quantifying VR Presence Through Psychophysiological Signals

Synopsis: This research focuses on the real-time, objective quantification of Virtual Reality (VR) presence, the psychological sense of "being there" in a virtual environment. Traditional self-report measures disrupt immersion and fail to capture real-time deviations. To address this, EEG and EDA signals are used to non-intrusively assess cognitive and emotional states. Three structured studies were conducted with systematically varied presence levels to examine psychophysiological responses, including the impact of cybersickness, embodiment, and breaks in presence. The aim is to develop a robust framework aligning neural and affective markers with adaptive VR systems, enabling real-time adjustments to enhance immersion and user experience.

CASE STUDY #2   10:10 – 10:35

CLAIRE GREAVES
Stuck in a Holding Pattern: Human Factors Training Development for Sports and Recreational Aviation

Synopsis: Claire will present the challenges of creating Human Factors (HF) training for the sports and recreational aviation sector, which has unique risks and motivations distinct from commercial aviation. She will highlight that generic training often fails to address the specific needs of sports aviators. Claire will describe the risk-based approach to developing e-learning modules, consulting with industry and reviewing incident data. Case studies on "Fitness to Fly" and "Threat and Error Management" (TEM) will illustrate difficulties in tailoring content for diverse users and adapting traditional models like TEM, which poorly fit the sector's drivers like rush and risk-taking.Ultimately, internal communication challenges can hinder a novel TEM approach, underscoring the need for bespoke training and clear stakeholder engagement.

22ND AUGUST 2025
8:30AM – 5:00PM

OWEN J. WORDSWORTH ROOM, QUT
GARDENS POINT, S BLOCK – LEVEL 12

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COFFEE & TEA – NETWORKING	10:35 – 11:00

RESEARCH PRESENTATION #2	11:00 – 11:25

PROF GENEVIEVE HEALY
Capturing sit-stand workstation use: why and how

Synopsis: The increased awareness of the health impacts of prolonged sitting has seen increased investment in sit-stand workstations. However, it is unclear whether workers are effectively using the workstations. This talk will discuss findings from a program of research that has explored barriers and enablers to sit-stand workstation usage from the perspectives of furniture purchasing decision makers, and the development of products to measure and enhance workstation usage.

CASE STUDY #3	11:30 – 11:55

KEITH JOHNSON
Reshaping Lifestyle Changes in a Heavy Weight World

Synopsis: Keith will explore the complexities of addressing weight issues through ergonomic and holistic approaches. He will highlight the difficulties in sustaining lifestyle changes and the importance of individualised strategies that consider both physical and psychological factors. Keith will delve into the impact of environmental design, workplace interventions, and personal responsibility in managing weight and improving overall well-being. He will reflect on practical experiences and lessons learned in promoting healthier lifestyles.

RESEARCH PRESENTATION #3	12:00 – 12:25

SRIKRISHNA BHAT
Cognitively Adaptive VR Training Using Real-Time Biosignal Feedback

Synopsis: This work explores Cognitively Adaptive Training Systems in Virtual Reality (VR), where task difficulty adjusts in real time based on user workload. Electroencephalography (EEG) and Electrodermal (EDA) signals are used to train a machine learning model to classify cognitive load during a LEGO™ model-building task. Domain adaptation enables the model to generalize across participants and use open-source data. The model is integrated into a VR training system and compared with non-adaptive and performance-adaptive systems. While perceived workload remained similar, the cognitively adaptive system led to better performance and reduced workload, suggesting improved training effectiveness.

LUNCH – NETWORKING	12:25 – 13:30

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CASE STUDY #4   13:00 – 13:55

BRIAN THOROMAN
It's Only a Reporting Form

Synopsis: Brian's presentation will recount the challenges of implementing a new incident reporting form within the led outdoor activity sector. An initial top-down rollout, mandated by executives with the misconception that "it's only a reporting form," failed due to a lack of stakeholder engagement, training, and integration with existing systems. Learning from this, a human-centred design approach was adopted, involving iterative piloting with end-users, broad consultation across departments (IT, admin, operations), and phased implementation. This highlighted that even seemingly simple changes require applying good work design principles and a systems thinking approach for successful safety interventions.

RESEARCH PRESENTATION #4   14:00 – 14:25

PROF GUY WALLIS
An unexpected role for inertial forces in heading control: contrasting responses in a driving simulator vs a real car

Synopsis: The challenge facing would-be users of virtual or mixed reality simulators is that most simulators omit a range of salient non-visual cues . The latest findings from the fields of visual cognition, motor control, and sensory physiology indicate that motor behaviour can be influenced by non-visual cues in startling ways, challenging the wisdom of such omissions. In this presentation I will describe how non-visual cues (presumable inertial forces) profoundly impact how people steer a motor vehicle. If we wish to utilise simulators safely and effectively, we need to better understand the role of non-visual sensory cues in motor behaviour.

CASE STUDY #5   14:30 – 14:55

PAULO GOMES
Off-The-Road Tyre Management: The Good, the Bad, and the Ugly

Synopsis: Paul will delve into the hazardous work of Off-The-Road (OTR) tyre management, emphasising the critical risks tyre fitters face, particularly from mismatching wheel components and inadequate training. The "good" is illustrated by a successful case where empowering tyre fitters led to the co-design of an innovative, award-winning tool that significantly enhanced safety and efficiency. In contrast, the "bad and ugly" recount the frustrating, failed attempts to update an outdated Australian Standard to address these known dangers, highlighting industry resistance and political hurdles. Paul's presentation will underscore the value of end-user involvement in design versus the difficulties in achieving systemic safety changes.

COFFEE & TEA – NETWORKING	14:55 – 15:30
ROUNDTABLES	15:30 – 16:45
CLOSING REMARKS & THANKS	16:45 – 17:00

This event has been organised by the HFESA - QLD Branch