



University of
South Australia

Behaviour-Brain-Body
Research Centre

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We conduct research in real-world contexts with community and industry partners to solve problems and build resilient behaviours, enhance performance and support behaviour change.

Building resilient behaviours to enhance human function

Every day we rely on others to perform at their best in extreme circumstances. Whether it be surgical teams, firefighters, army and navy personnel, or other shift workers, we need them to function at peak performance, often without sleep and in stressful situations.

Many of us may also be under stress, whether it be from coping with or recovering from illness, managing the pervasiveness of technology, or the complexities of ageing.

How do we ensure that people are able to function and be at their best? How do we help people improve their function and build resilient behaviours, despite what life throws at them?



Conducting research to understand and reduce cancer-related cognitive impairment

Approximately 75% of cancer patients undergoing treatment experience problems with thinking, attention and memory – a condition known as cancer-related cognitive impairment (CRCI). One-third continue to suffer CRCI after treatment, which leads to difficulties performing everyday tasks, a reduced ability to work and often leaves them in significant emotional distress.

BBB researchers are working with clinicians and patients to develop interventions that reduce the impact of CRCI and help cancer patients to live their best lives during and after treatment.



Improving safety and performance in competitive video gaming

Esports is a USD 1.38 billion global industry that reaches an audience of 532 million people, but we know comparatively little about health, safety and performance in this growing workforce.

BBB researchers are generating new knowledge to inform evidence-based practice for esports athletes, coaches, educators, sports psychologists and other professionals working in the video gaming industry.



Helping people make better decisions in high-tech control rooms

Operation centres and control rooms across industries such as defence, health and mining are becoming increasingly complex, high-tech and high-data environments. This is inhibiting people's ability to perform at optimal efficiency.

BBB research with global defence organisations in Australia, the UK and the US is transforming our understanding of the impact these environments have on cognitive load. We are providing our partners with a competitive edge by optimising their control rooms for enhanced human-machine interaction, superior decision-making capability, and improved performance.

Enter the Behaviour-Brain-Body Research Centre (BBB)

Our approach to building resilient, healthy behaviours is unique. What sets us apart is that we investigate humans through the combined lens of behaviour, brain and body, rather than through the lens of a single discipline.

Supported by state-of-the-art facilities, our team of more than 30 experts works collaboratively across behavioural change, fatigue and stress management, decision-making and recovery, to predict, prevent, detect and intervene to optimise human function.

We help our community, government and industry partners tackle their toughest challenges and develop solutions that improve cognitive function and promote healthy interactions with technology.

For more information visit: unisa.edu.au/bbb

Creating competitive edge through enhanced teamwork

Technology and the rapid adaptation to pandemic lockdowns transformed the work environment. More and more organisations now have a network of remote and distributed teams. How can they make sure that employees are performing optimally in these environments and are taking advantage of all that technology has to offer?

BBB researchers are partnering with global organisations to assess employee performance in remote, distributed and machine-teaming environments. Our researchers are also developing interventions that enhance team performance and enable superior decision-making.

Helping to build a sustainable society

Over \$20 billion is wasted each year on food and 'fast' fashion, despite millions of dollars being spent on advertising and marketing to help improve waste and recycling behaviours. There is an urgent need to change consumer habits and improve sustainability.

We are collaborating with experts to uncover the barriers that stop people from adopting sustainable behaviours. Our findings will be used to create successful, evidence-based behavioural change campaigns that will help build a more sustainable society.



Saving lives by preventing and detecting post-operative delirium

More than 30% of people over the age of 65 experience post-operative delirium. This also means that they are eight times more likely to develop dementia and three times more likely to die within a year.

Transformative BBB research is exploring who is most likely to develop delirium after surgery, and why, to help hospitals prepare in advance. This could reduce the number of post-operative delirium cases by up to a third.

Using VR to promote greater independence for people with Down Syndrome

Many of the ~13,000 people living with Down Syndrome in Australia cannot access ongoing life and work skills training due to factors like cost and accessibility. This directly impacts their ability to live more independent lives.

Researchers at BBB are working with educators to uncover how virtual reality can be used to develop low-risk, low-cost and highly accessible learning experiences and training. This will enable people living with Down Syndrome to develop a diverse range of skills to build more confident and independent lives.





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We respectfully acknowledge the Kaurna, Boandik and Barngarla First Nations Peoples and their Elders past and present, who are the First Nations' Traditional Owners of the lands that are now home to the University of South Australia's campuses in Adelaide, Mount Gambier and Whyalla. We also acknowledge other First Nations lands across Australia with which we conduct business and their Elders, ancestors, cultures and heritage.

For further information:

unisa.edu.au/bbb