



# Tactical Research Unit Prospectus



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## Executive Summary

The Tactical Research Unit (TRU) at Bond University works towards the protection and performance of individuals on the front line who protect our community and country.

The TRU is a network of multidisciplinary international experts who investigate ways to optimise the physical and cognitive capabilities, and safety of tactical personnel - whether military, law enforcement, firefighters, or first responder organisations. It is a part of Bond University's Faculty of Health Sciences & Medicine, which received the highest possible ranking of 'well above world standard', and 'at world standard' for human movement and sports science, from the Australian Research Council (ARC) in its Excellence in Research for Australia (ERA) 2015 results.

The overarching aim of the TRU is to improve the wellbeing and occupational performance of those who serve and ensure new research findings are shared across the different tactical populations.

### MISSION

To enhance the protection and performance of tactical personnel through pragmatic research, education and advice.

### VISION

Excellence in research that will lead to improvements in the health, wellbeing and occupational performance of tactical personnel.



## About the TRU

The TRU is unique and purpose built, and as such bring several key strengths to tactical research:

- TRU members have a unique blend of tactical and research experience with members of the unit having served within, or worked directly for, tactical organisations.
- All lead TRU members have, or have had, a security clearance and as such ensure data is treated securely and with relative sensitivity. Where security clearances are required, the level of work can be completed from Baseline Vetting through to Negative Vetting Level 2.
- The TRU does not seek out organisations to complete research but works with organisations to meet their research needs and demands.
- The TRU research outcomes are based on practical and realistic approaches, with the focus being on useable research dissemination as opposed to chasing journal publications and to this end, the TRU produce grey literature reports, that meet the requirements of the organisation.
- With a wide array of tactical experience across the three management levels (tactical, operational and strategic) and research across the tactical spectrum from recruiting through to specialist, the TRU team bring lessons learnt from tactical organisations to better optimise organisational outcomes.
- Being from tactical backgrounds the TRU team are task focused. With multiple consultancy and research grant projects spanning over \$2 million, the TRU have finished all projects on budget, and more importantly, in a timely manner.

The generic scope of the TRU includes, but is not limited to:

- Occupational task analysis
- Fitness standard validation
- Physiological and musculoskeletal profiling and fitness screening
- Physical capability and task performance evaluation
- Injury epidemiology
- Injury risk identification, minimisation and mitigation
- Equipment to human integration and impact assessments
- Thermal research
- Physical conditioning reviews
- Physical conditioning program development
- Tactical performance, health, fitness and wellbeing
- Operational protocols and strategic guidance
- Nutrition and hydration requirements, barriers and attitudes

“There is a notable gap in research around the health and safety of all tactical personnel as a collective, with a key problem being that much of the research conducted is siloed within each of the different forces and services.”

**Dr Rob Orr**  
Director TRU, Bond University

## Our Staff



### DR ROB ORR - DIRECTOR, TRU

Director, Dr Rob Orr, leads the team and brings over 30 years of military experience to the TRU, having served in the Australian Regular Army for over two decades as an infantry soldier, physical training instructor, physiotherapist and human performance officer and now serving in the Army Reserves. Joining Bond University in 2012, his fields of research, consultancy, and education provision spans physical conditioning, reconditioning, rehabilitation and injury prevention for military, law enforcement and protective services across their occupational lifespan (initial trainee to specialist).



### DR BEN SCHRAM - RESEARCH COORDINATOR

Dr Schram has a Bachelor of Exercise Science, Doctor of Physiotherapy and a PhD and is currently employed as an Assistant Professor at Bond University. He is the research and data coordinator for the Tactical Research Unit, where he conducts research with the military, police and firefighters with a focus on injury identification and reduction strategies, validation of fitness standards, determining the physical demands of tactical occupations and ways to maximise performance within this population. He has been successful in obtaining almost \$2 million dollars in research funding in a variety of tactical projects and has worked clinically as a physiotherapist for eight years.



### DR. ELISA CANETTI - PROJECT COORDINATOR

Dr. Canetti is a physiotherapist trained in Brazil with a master's degree in high-performance science and a doctorate degree (Ph.D.) in exercise immunology and iron metabolism. Dr. Canetti joined the Tactical Research Unit as the general research project manager ensuring coordination of activities, providing high-level project support, and research expertise. Dr. Canetti has over 5 years' experience teaching across multiple degrees at Bond University and is an experienced researcher in musculoskeletal conditions.



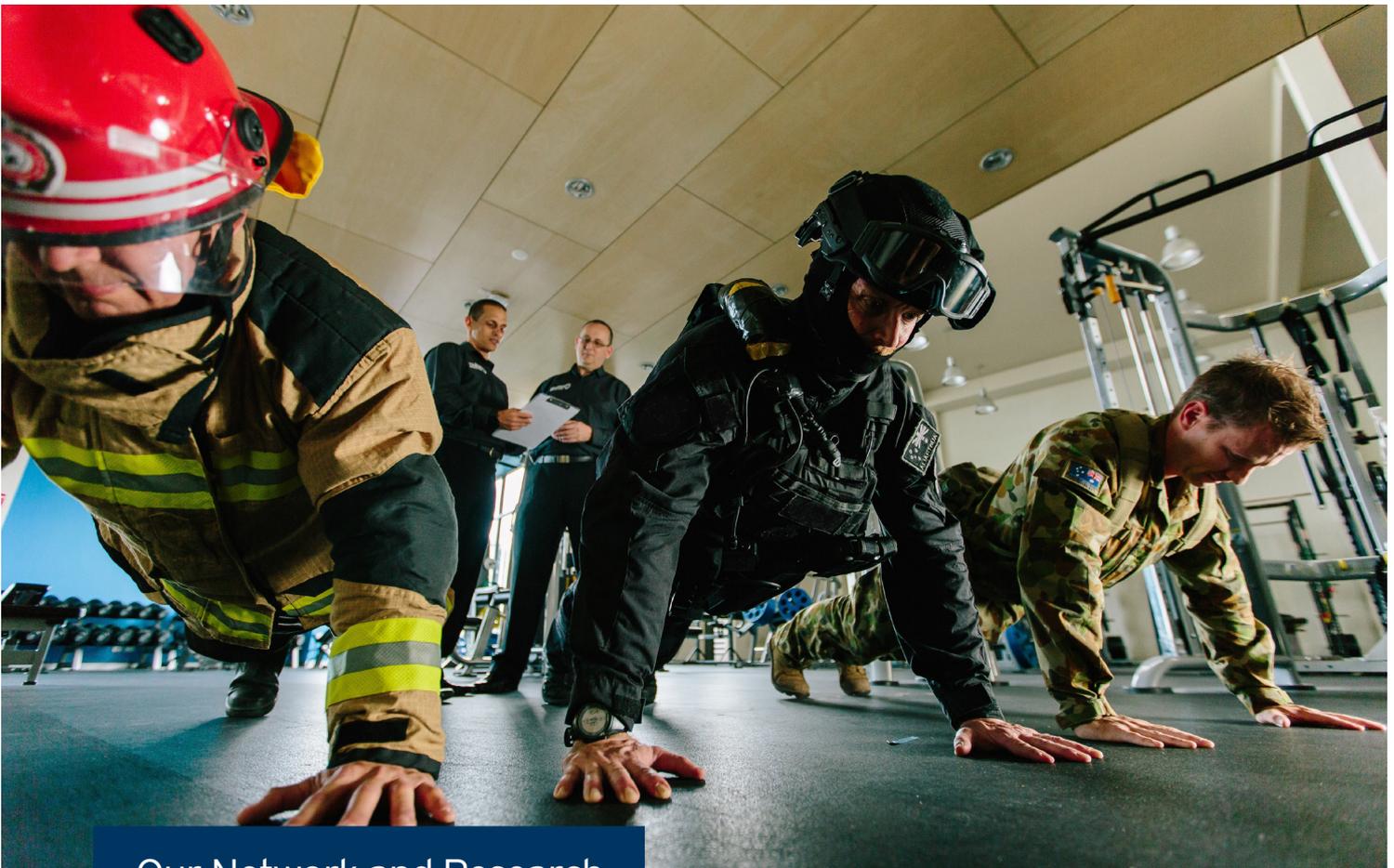
### DR. VINICIUS SIMAS - POST DOCTORAL RESEARCH FELLOW

Dr. Simas is a Sport and Exercise Physician, with clinical experience in injury prevention and rehabilitation, sports performance, and cardiopulmonary rehabilitation. He is a former member of the Brazilian Army Medical Corps, where he served as a cavalry lieutenant. Since 2015, Dr. Simas has been working in research and teaching at Bond University, where he completed his Ph.D. in Sport and Exercise Science. Dr. Simas has a strong passion for clinical and functional anatomy, focusing on the prevention of injuries and chronic diseases. He joined the TRU in 2020 as a Post-Doctoral Research Fellow.



### DR. PATRICK CAMPBELL - POST DOCTORAL RESEARCH FELLOW

Dr. Campbell completed his Ph.D. in Sports Science at the Queensland University of Technology, where he concurrently taught subjects pertaining to Exercise Physiology, Sport and Exercise Science, and Research & Data Analysis. Dr. Campbell comes from a background in managing the physical preparation in a variety of sports and populations in high-level athletes. He has now joined the TRU as a Postdoctoral Research Fellow and has a strong passion for investigating factors relating to human performance, injury risk factors, and injury prevention.



## Our Network and Research

### OUR NETWORK CONSISTS OF:

- Exercise physiologists
- Injury epidemiologists
- National and international fire and rescue personnel
- National and international law enforcement personnel
- National and international military personnel
- Nutritionists
- Physiotherapists
- Psychologists
- Thermal physiologists

### RESEARCH AND CONSULTANCIES

With many TRU personnel and collaborators having served in a tactical population, the TRU appreciates the need for research to be pragmatic and able to be translated to practice in the real world. Furthermore, the TRU acknowledges that, typically, when industry or organisations need the information provided by the research, they need it quickly. To meet this need, the TRU have the capability to stand up research capabilities for small through to large scale projects to make sure the research is fast, but not rushed.

### THE PERFECT TRINITY

With experience in tactical service, members of the team have experienced first hand disconnects between research, industry and tactical organisations. On this basis, wherever viable, the TRU engages with both industry and tactical organisations in order to ensure downstream recommendations have the greatest chance of effective implementations and that the outcomes are relevant to both industry and the organisations involved.



## Recent Research Consultancies

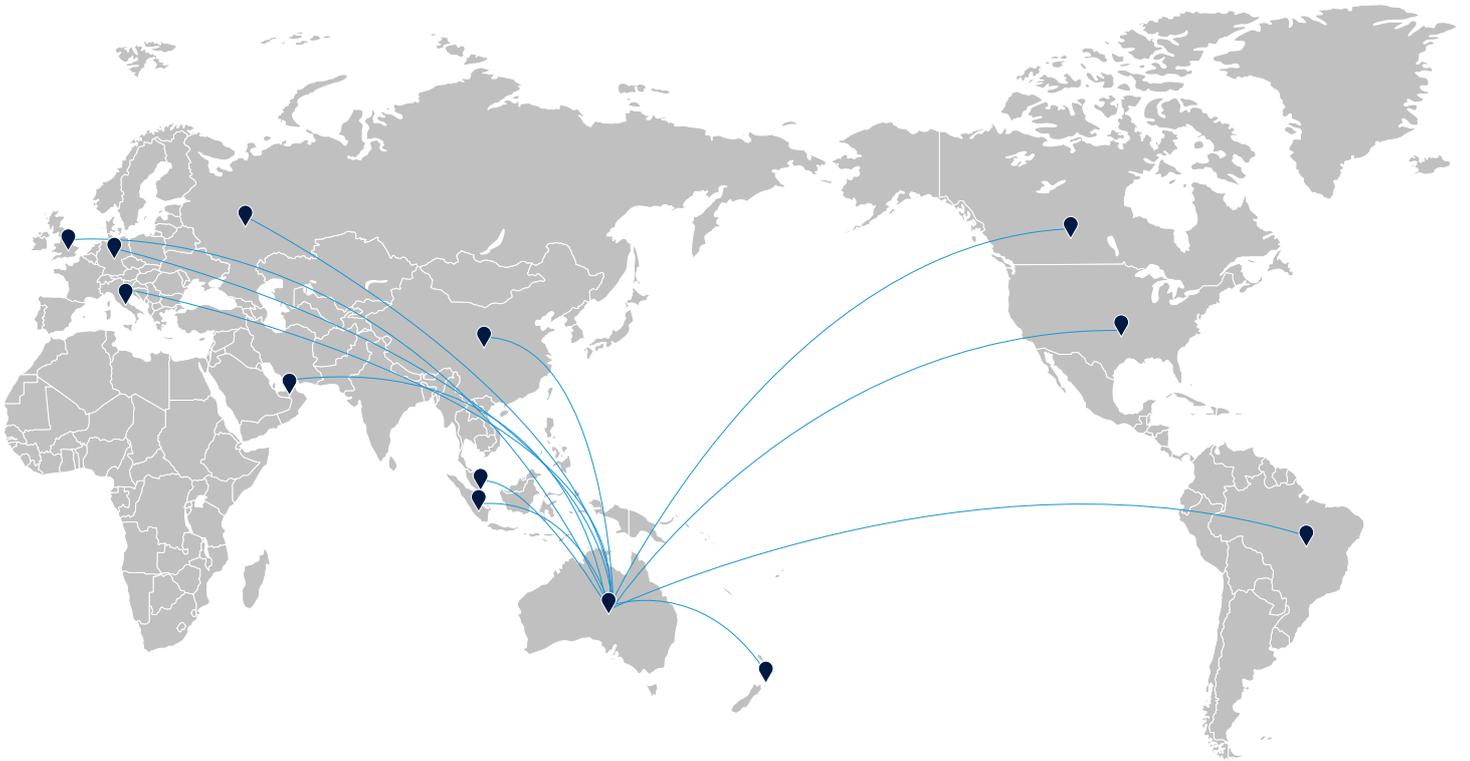
Through dedicated and reinforced collaborations, the TRU have conducted research with a multitude of government organisations, industry partners and academic institutions on topics ranging from physical employment standards and optimal conditioning to tactical equipment integration and operational effectiveness.

Examples of recent collaborations include: Australia and New Zealand Counter Terrorism Committee, NSW Police Force, Australian Federal Police, NT Police Force, Colorado State Patrol, LA Sheriff's Department, Queensland Fire and Rescue Service, ACT Emergency Services, the Australian Defence Force, the US Army Rangers, The Singapore Army, The Defence Science and Technology Group, The United States Army Research Institute of Environmental Medicine, United States Naval Health Research Centre, Australian Defence Apparel, LE Gear, Optimal Performance Solutions, University of Colorado - Colorado Springs, California State University, Oklahoma State University, Hofstra University, National University of Defense Technology, the AGIS Group, and more.

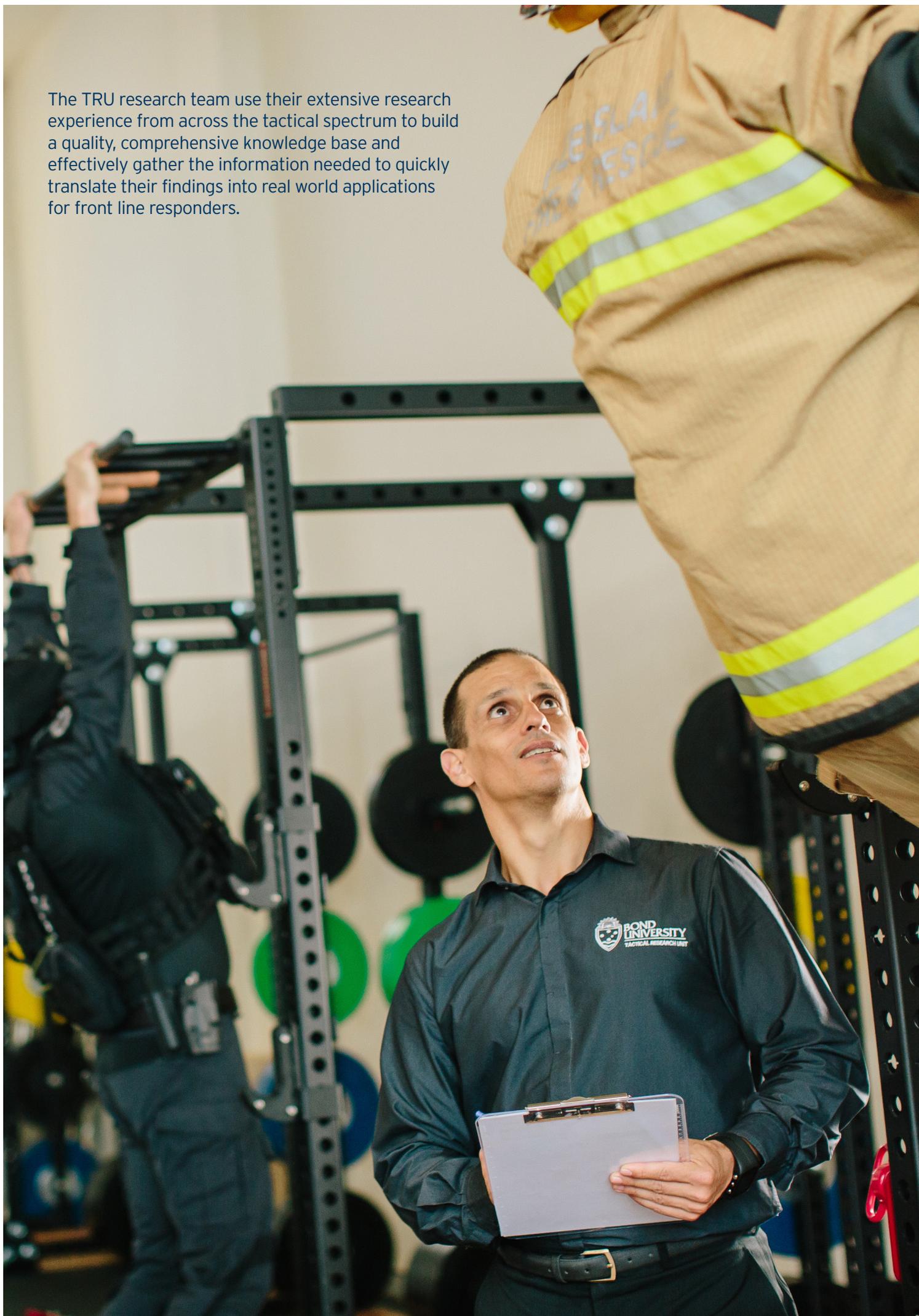
Examples of the current areas of research and ongoing research projects include:

- Fitness assessment standards for initial entry
- Ongoing service and specialist selection
- Training injury risk identification and mitigation
- Tactical load carriage and its impacts on lethality, mobility, and sustainability
- Optimal physical conditioning processes and tactical program training evaluation and validation
- Thermal effects of Personal Protective Equipment from firefighting clothing to body armour
- The impact of body armour on measures of fitness and task performance
- Training needs and occupational task analysis
- Nutritional habits, beliefs and needs
- Occupational exposure-related health conditions

## International Research Collaborations



The TRU research team use their extensive research experience from across the tactical spectrum to build a quality, comprehensive knowledge base and effectively gather the information needed to quickly translate their findings into real world applications for front line responders.





## Education and Training

More than just research, the TRU realises the importance of application. To this end, the TRU provides education and training services to a plethora of organisations and industry. With the ability to draw on the latest research and an international framework of collaborators, as well as actual practical experience and service, the TRU can customise training and education products to meet the needs of each organisation.

Members of the TRU can provide dedicated, applicable and evidence-based education and training from the tactical through the operational, to the strategic level.

Some of the practical training sessions that the TRU offer include:

- Single session presentations (e.g. on load carriage [ANZCTC] and optimal recruit conditioning [USARIEM, Australian Army, Singapore Army])
- One-day workshops (e.g. optimised operational conditioning [Australian Army Infantry Battalions, the LA Sheriff's Department])
- Three-day Tactical Conditioning Optimisation course (e.g. for general tactical populations run in the USA, China and Singapore)
- Four-day National Strength and Conditioning Association Tactical Strength and Conditioning Practitioners Course (e.g. for general tactical populations strength and conditioning coaches)
- 10-day Rehabilitation and Return to Work module (e.g. the Australian Defence Force Physical Training School)

### MORE INFORMATION

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### LINKS

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The information published in this document is correct at the time of printing (February 2021). However, all programs are subject to review by the Academic Senate of the University and the University reserves the right to change its program offerings and subjects without notice. The information published in this document is intended as a guide and persons considering an offer of enrolment should contact the relevant Faculty or Institute to see if any changes have been made before deciding to accept their offer.