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PRIMARY
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HEALTH CARE

REHABILITATION, AGEING AND INDEPENDENT LIVING (RAIL) RESEARCH CENTRE

Member eBulletin #29

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A message from the Director

RAIL staff continue to be very busy on a broad mix of projects across the rehabilitation, ageing and independent living streams that are growing in terms of impact locally, nationally and internationally. I was reminded of this by a presentation at the RAIL External Advisory Committee meeting earlier this week, when Dr Natasha Layton, one of our staff (an Occupational Therapist) provided an overview of a stream of projects in the assistive technology area that she has been involved in since commencing at RAIL in early 2020. These have included a World Health Organisation project evaluating the impact of the covid pandemic on assistive technology use globally; and a project evaluating the large number (and high costs) associated with assistive technology provision in Australia, which includes some economic implications from RAIL's Dr Natasha Brusco. Natasha Layton was also a contributing author to the World Health Organisation and UNICEF Global Report on Assistive Technology, that has just been released (see details in story below). Congratulations to Natasha Layton on this impressive series of projects, outcomes and impacts.

It is very pleasing to be able to report on the outcomes of the 2022 RAIL seed funding grant application round. Three grants were successful. They represent a good diversity of topics across our themes of rehabilitation, ageing, and independent living, across different disciplines and departments, and with strong early-mid career researchers, teams and mentoring processes. Details of the teams and their projects are provided below. We look forward to hearing outcomes from these projects over the coming 12-18 months. There will be a further grant application round in the first quarter of 2023.

I hope you enjoy reading about our activities and outcomes in the e-bulletin, and we welcome any contributions you consider will be of interest to others. Finally, if you have colleagues, or people new to Monash who would like to become a Member of RAIL, and thereby be on our email communications and e-bulletin distribution list, please complete the Member survey [online](#).

Stay safe and well.

Professor Keith Hill

Member profile



Dr Sze-Ee Soh is a senior lecturer and post-doctoral research fellow in the School of Primary and Allied Health Care at Monash University. She is an experienced physiotherapist who has worked in neurological rehabilitation and aged care for over 20 years. In addition to her physiotherapy qualification, Sze-Ee also holds a Master in Biostatistics. Her unique and complementary skillset allows her to work effectively across disciplines to provide insights into multiple issues affecting healthcare provision and patient outcomes.

Her research has spanned the areas of chronic disease, health services, patient-reported outcomes and the psychometric properties of measurement tools. Current projects include:

- Co-designing a person-centred falls prevention program (Be Your Best) for people with osteoarthritis
- Evaluating the psychometric properties of patient-reported outcome measures following joint replacement surgery
- Implementing and evaluating the Enhanced Dementia Diagnosis (EDD) program as part of the Centre of Research Excellence in Enhanced Dementia Diagnosis (CREED)

Sze-Ee is currently the course coordinator for the Doctor of Physiotherapy program at Monash University and the course director of a number of short courses in the School of Public Health and Preventive Medicine.

Member and Partner forum

Upcoming RAIL forum

RAIL is pleased to announce the next forum titled *Bringing together practice, evidence and campaigning to influence systemic change: Learnings from the Australian Assistive Technology Equity Study*, that will be held via Zoom on Thursday 30th June 12.00-1.00pm, AEST.

Speakers include:

- **Dr Natasha Layton** - Senior Research Fellow with RAIL Research Centre, Monash University and Occupational therapist
- **Dr Natasha Brusco** - Rehabilitation Stream Lead at the RAIL Research Centre, Monash University, health economist and neurological physiotherapist
- **Ms Lauren Henley** - Senior project lead with COTA Victoria and campaign manager of the AT for All Campaign

More details will be circulated shortly. If you would like to register now, please click on the link below.

[REGISTER HERE](#)

Previous RAIL forum

In our most recent RAIL forum titled *'Robotics in health care: The future is here'* that was held on 24th May 2022, speakers delivered inspiring presentations around the topic of robotics in health care which certainly captivated the audience!

It was fascinating to hear from experts on a diversity of topics from the use of autonomous social robots in supporting health and well-being

services, soft robotics in gerontechnology research, a digital self-management intervention for prevention of musculoskeletal injuries in office workers to the development of an adaptive framework that provides personalised gait cues to people with Parkinson's Disease.

Thank you to Dr Nicole Robinson, Professor Pei-Lee Teh, Dr Pamela Carreno-Medrano and Ms Tina Wu for their great presentations!

RAIL Early-Mid Career Researcher (EMCR) grants awarded

We are pleased to announce that three RAIL Early - Mid Career Researcher seed grants have been awarded for the 2022 round. We will provide a profile of each of the lead researchers over coming e-bulletins – the first of these is below the three successful grants, described below:

Dr Laura Jolliffe (Department of OT, School of Primary and Allied Health Care, Monash University) - Chief Investigator

Other investigators: Associate Professor Michele Callisaya (Peninsula Clinical School, National Centre for Healthy Aging, Monash University), Dr David Snowdon (Peninsula Clinical School, National Centre for Healthy Aging, Monash University), Dr Aislinn Lalor (Department of OT, RAIL Research Centre, School of Primary and Allied Health Care Monash University)

Project title: Preventing hospital-related harms in older adults: A qualitative exploration and implementation mapping study

Summary: Older adults (>65years) account for 42% of all hospitalised patients within Australia [1]. Within the Peninsula region (Frankston-Mornington) Peninsula Health services 80,000 patients annually; 50,000 of whom are 65 years or older (63% of hospitalisations). It is well documented that this vulnerable population is at disproportionate risk of hospital-related harms (HRH) including delirium, falls, malnutrition, and pressure injuries [2-4]. These harms

are largely preventable [5-7] and various prevention programs have demonstrated efficacy [8, 9] and cost-benefit [4, 10]. Despite this, most programs have been poorly implemented [11], unsustainable [12], or at scale did not reproduce expected outcomes [13].

This novel, three-phase qualitative study aims to explore the contextual barriers and facilitators of implementing a prevention program within a 90-bed (3-ward) subacute Geriatric Evaluation and Management centre. Employing implementation science methods, findings will produce first-ever data on: 1) factors to consider for large RCTs conducted in subacute facilities in Australia; 2) clinical evidence for how to approach prevention programs in subacute care; 3) key barriers to overcome; and, 4) a contextually-appropriate implementation approach to optimise implementation success of a HRH prevention program. An important secondary reason for this study is to provide essential fidelity data for future pilot-trial grant applications.

Dr Linda Barclay (Department of OT, School of Primary and Allied Health Care, Monash University) - Chief Investigator

Other Investigators: Dr Em Bould (Department of OT, School of Primary and Allied Health Care, Monash University), Associate Professor Narelle Warren (School of Social Sciences, Faculty of Arts, Monash University), Mr Antonio Vecchio (Lived experience expert), Mr Beau Vernon (Lived experience expert)

Project title: Development of an evidence-informed explainer video: Empowering employers to hire people with spinal cord injuries.

Summary:

Significance: Estimated rates of employment for people with SCI range between 31-49% compared to the non-disabled population (84%) [1]. This rate has not changed for the past three decades. Employers' negative attitudes is one of the main contributors to non employment of people with disabilities [2]. One of the four priority areas of Employ My Ability – the Disability Employment Strategy is

lifting employer engagement, capability and demand, by providing employers with the tools and abilities to confidently hire, and support more people with disability [3]. An explainer video will equip employers with increased knowledge and confidence to employ people with SCI.

Research question: Can a video explainer be used to increase employers' confidence to employ people with SCI?

Methodology: Qualitative methods will be used to explore the perceptions and understanding of employers/employer groups regarding employing someone with a SCI. A co-production process will be undertaken with the lived experience experts on the team, to incorporate this new evidence to inform the development of a video explainer. The video explainer will be disseminated to potential future employers of people with SCI.

Dr Pamela Carreno-Medrano (Monash Robotics, Faculty of Engineering) - Chief Investigator

Other investigators: Professor Dana Kulić (Monash Robotics, Faculty of Engineering), Dr Natasha Brusco (RAIL Research Centre, School of Primary and Allied Health Care, Monash University), Dr Aislinn Lalor (Department of OT, RAIL Research Centre, School of Primary and Allied Health Care, Monash University), Associate Professor Leah Heiss (Monash Art, Design and Architecture)

Project title: Socially assistive robots for the prevention of musculoskeletal disorders

Summary: In Australia, seven million people suffered from musculoskeletal conditions (MSD) in 2017-18. MSD can be preventable through education and programs that reduce sedentary behaviour and facilitate symptom self-management. However, poor adherence, exacerbated by a lack of individualisation, is an issue. This project will complete vital pilot work to prevent

MSD through a preventative rehabilitation self-management program. To improve adherence, this project uses socially assistive robots (SARs). Endowed with social, learning, and interaction capabilities, SARs represent a promising means to promote and support self-care in a socially engaging and adaptive manner. To address the lack of individualisation, this project investigates co-design methodologies through which users and health professionals actively contribute to the design of the SAR system and identify personalised strategies that users are willing to adopt in the long-term. We request \$15000 to complete the development of the SAR sensing and acting capabilities and conduct two co-design sessions where participants will use the developed robot capabilities to design interaction and personalisation strategies for the SAR. By working directly with the robot, participants will experience realistic versions of the system and be empowered to provide salient feedback and suggestions for the design and development of the full first SAR prototype.

RAIL 2022 EMCR awardee profile

We will profile the lead investigator of the three successful RAIL seed grants over the next several e-bulletins. The first one is below:

Dr Laura Jolliffe is the Allied Health Research and Knowledge Translation Lead at Peninsula Health, and a Lecturer in the Department of Occupational Therapy, Monash University. She completed her PhD in 2020 which investigated the implementation of guidelines in rehabilitation. Laura completed a specialist certificate in Implementation Science from University of Melbourne 2018, and led the pilot study for the recently MRFF-funded PROMOTE trial. Laura has a keen interest in supporting clinicians to provide evidence-based care to consumers, using implementation science methods.



Congratulations to Laura for her success in the 2022 RAIL EMCR grant round!

RAIL paper of the month

Physical Activity in the Acute Hospital Following Elective Lower Limb Joint Arthroplasty

Kirk AG, Burge AT, **Ekegren CL**, Liew SM, & Kimmel LA

ABSTRACT

The objective of this study was to quantify physical activity undertaken by patients in the acute setting following elective lower limb joint replacement and determine the relationship between physical activity and hospital outcomes

(length of stay [LOS] and discharge destination). This prospective observational study included 74 adults with osteoarthritis who underwent lower limb arthroplasty (total hip replacement n = 38, total knee replacement n = 36). Participants were fitted with an accelerometer and inclinometer-based device (activPAL3™) post-operatively prior to first mobilisation for the duration of the acute hospital admission. Physical activity data collected were steps, sit-to-stand transitions and upright time (standing and stepping). The relationship between each physical activity variable and hospital outcomes was calculated using logistic regression (for discharge destination) and linear regression (for LOS). Potential confounding factors considered in multivariable models included age, sex, body mass index, Risk Assessment Prediction Tool, American Society of Anesthesiologists Score and surgical procedure. Analyses for the relationship with these outcomes used physical activity data from day two as these comprised the largest dataset for a single day. Participants' mean (SD) age was 67 (10) years and 53% were female. Participants performed a median (IQR) of 136 (50–294) steps, 17 (11–75) transitions and 52 (32–94) upright minutes per day. All physical activity variables were significantly negatively associated with LOS (steps p = 0.016, transition p = 0.025, upright time p = 0.024). There was a significant association between discharge to inpatient rehabilitation for steps (p = 0.010) and transitions (p = 0.005). Participants undergoing elective lower limb arthroplasty engaged in low levels of post-operative physical activity during hospitalisation. Lower levels of physical activity on post-operative day two were associated with discharge to inpatient rehabilitation and a longer total hospital LOS.

Kirk AG, Burge AT, **Ekegren CL**, Liew SM, & Kimmel LA (2022). Physical activity in the acute hospital following elective lower limb joint arthroplasty. *New Zealand Journal of Physiotherapy*, 50(1), 42-49

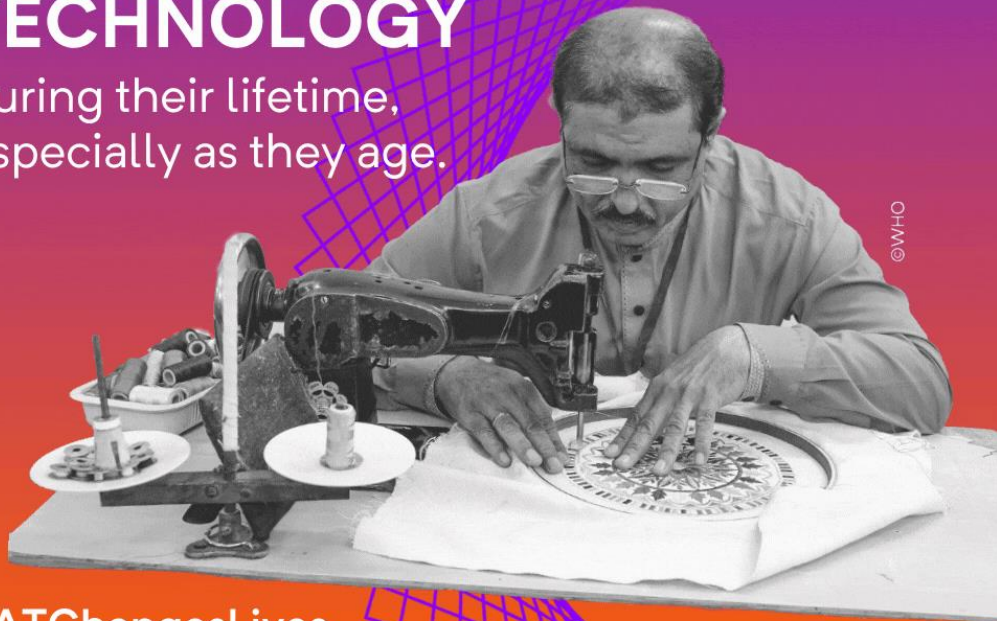
<https://www.proquest.com/scholarly-journals/physical-activity-acute-hospital-following/docview/2643280702/se-2?accountid=12528>



World Health
Organization

EVERYONE IS LIKELY TO NEED ASSISTIVE TECHNOLOGY

during their lifetime,
especially as they age.



#ATChangesLives

The WHO/ UNICEF Global Report on Assistive Technology was launched on 16 May (<https://apps.who.int/iris/handle/10665/354357>)

RAIL researcher **Dr Natasha Layton** is a contributing author to the Report, which presents the first ever set of data on use and unmet need for products such as orthotics, wheelchairs, and eyeglasses. The Report provides a blueprint to build access and equity for the 2.5 billion people globally and more than two million Australians living with health, disability or age-related conditions who need assistive products.

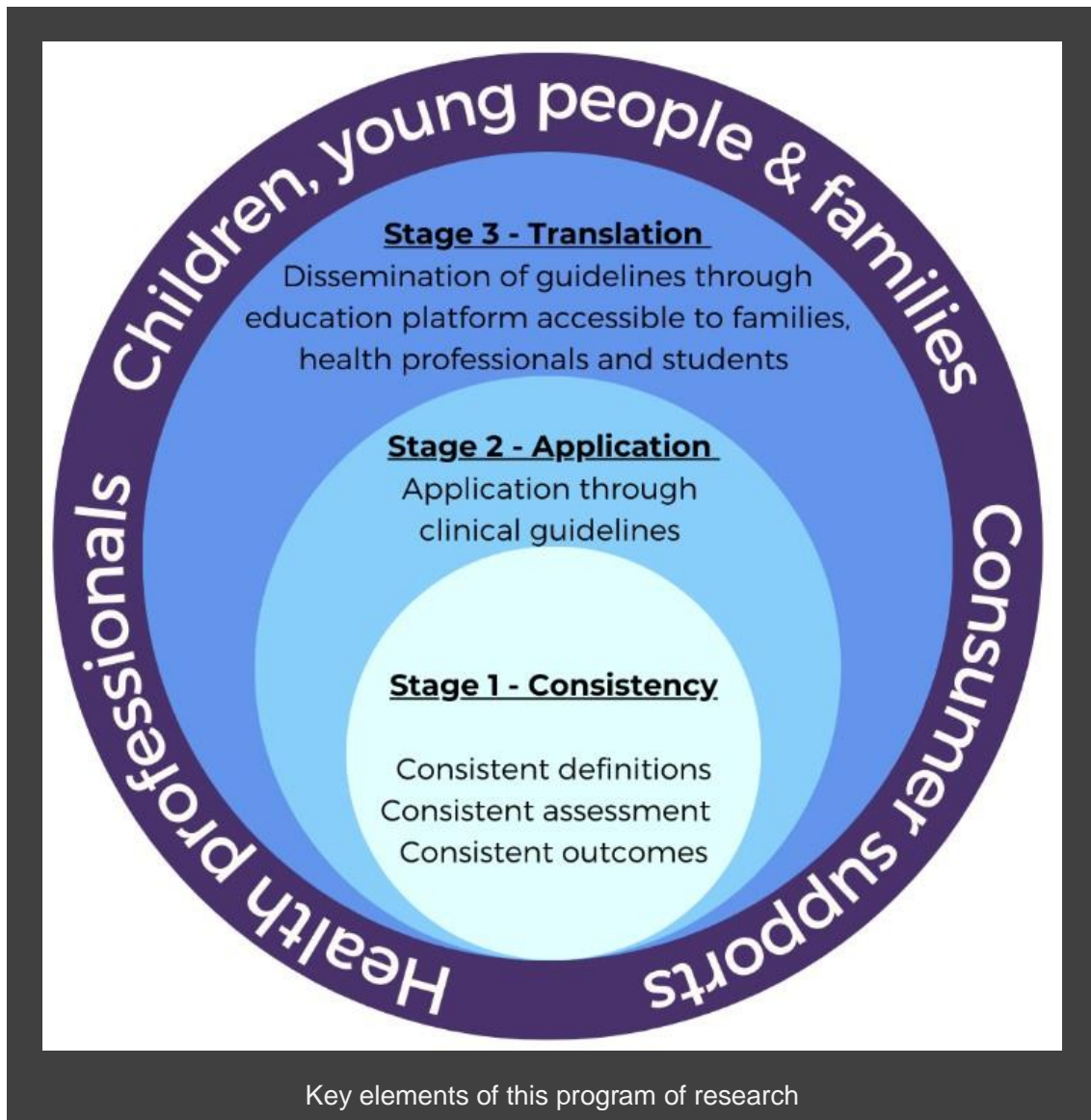
Grant success for SPAHC researcher - Associate Professor Cylie Williams



Children with Lower Limb Pain (CLLiP): Working with families, community, and health care providers to improve outcomes Project

Our team¹ has just received \$1.8M from the Australian Government Medical Research Futures Fund for foundational research aiming to improve consistent assessments and outcomes for kids with chronic pain at the lower limb. We are partnering with MSK Australia, the Australian Pain Society and the Australian Podiatry Association.





We will provide multiple opportunities for Australian families, Australian, and International health care providers to provide their opinions about what matters to them, what language is preferred and what are the priorities for care and outcomes.

To follow our progress, we are on all social media platforms using the profile names @KidsLegPain (Twitter and Facebook) or @kids_leg_pain (Instagram). We will also be using the #KidsLegPain, #KidsHipPain, #KidsKneePain, #KidsAnklePain and #KidsFootPain to engage.

We have multiple opportunities for PhD scholarships, and you can sign up to receive the odd newsletter

here: https://monashmnhhs.qualtrics.com/jfe/form/SV_8c9XfRZkcgctEDY

¹ Cylie Williams (Monash Uni), Verity Pacey (Macquarie Uni), Jane Munro (Murdoch Children's Research Institute), Craig Munn (UQ), Liz Sturgiss (Monash Uni), Nicole Williams (Uni of Adelaide), Louise Tofts (Westmead), Vance Locke (Western Kids), Terry Haines, (Monash Uni), Sue Brennan (Monash Uni), Steve Maloney (Monash Uni), Mitchell Sarkies (Maquarie Uni), Emre Ilhan (Macquarie Uni) and Partners: Ornella Clavisi (MSK Australia), Lisa Nissen (QUT), Australian Podiatry Association, Australian Pain Society.
Email: spahc-kidslegpain@monash.edu

Congratulations to Cylie and her team on this important grant success.

The Australasian Conference on the Care of Older People 2022 - Call for Abstracts now open



Date: Sunday 23 October to Friday 28 October 2022

Location: Online Conference

Times: 10.00am – 12.00pm AWST; 12.00pm – 2.00pm AEST; 3.00pm – 5.00pm NZ

Call for Abstracts Open

We welcome abstracts from anyone with an interest in care of older people including older people, family members, carers, aged care and health care providers, students, researchers, and educators. The aim of the conference is to highlight issues relating to care of older people to better understand how quality care is experienced and can be provided. Abstracts are invited in one of the five themes.

1. (re)Creating home and the workplace
2. Care delivery and care workforce
3. Innovation and technology
4. Current and future directions
5. Cultural safety in care

[Guidelines](#)

For more information about the conference and to submit your abstract, please visit: <https://www.ecu.edu.au/schools/nursing-and-midwifery/our-research/centre-for-research-in-aged-care/news-and-events/australasian-conference-on-care-of-older-people>

Braille Bombing

On Wednesday 11th May 2022, Monash's Inclusive Technologies researcher and braille codes expert Leona Holloway and colleagues led a "bombing" of signage around Melbourne with stickers containing braille. During the event titled the "Braille Bombing Tour" that was part of the [Melbourne Knowledge Week 2022](#), members of the public learned the braille alphabet, created braille labels and stuck them on signs around Melbourne. The event aimed to spread awareness of the use of braille and install more braille signs throughout the city.

For more information on the event, please read the full article: <https://www.theage.com.au/national/victoria/braille-bombers-boost-city-signage-for-the-sight-impaired-20220512-p5aksr.html>

If you would like to know more about the Monash University Inclusive Technology group, please visit: <https://www.monash.edu/it/hcc/inclusive-technologies>

RAIL RESEARCH PROJECTS - Research participants required

Study of digital interventions for healthy ageing – a call for participants



LiveUp research – evaluating a digital suite of solutions aimed at improving functional abilities in older Australians

RAIL researchers **Dr Natasha Layton**, **Dr Natasha Brusco** and **Professor Keith Hill** in partnership with Dr Elissa Burton of Curtin University, are conducting the early implementation evaluation of LifeCurve <http://www.liveup.org.au>. The research involves in-person assessments from a health professional researcher, and participants will be offered a summary of their assessments as well as a summary of the research.

Participants from Frankston and the Mornington Peninsula region (Victoria) **who are over 65 (or over 55 for indigenous Australians), living at home and experiencing some functional difficulties are sought.**

The Research Flyer and consent information can be found here <https://www.monash.edu/medicine/spahc/rail/research/current-research-projects>

Or contact **Dr Natasha Layton** natasha.layton@monash.edu

Early and mid-career research support activities

Although the staffing level for RAIL at this point is small, we are keen to provide support for any early or mid career researcher that we can. We are happy to provide an external review perspective of grants you are preparing as one avenue of support. If you would like to discuss possibly accessing this service, please email Karine in the first instance (spahc.rail@monash.edu).

Member contributions

We would love to showcase current research from our members. We invite you to submit a short story (and relevant images) about any research you are working on that aligns with RAIL. Submissions are due by the 30th of each month to spahc.rail@monash.edu.