

# RESEARCH REPORT CHARR 2016



2016



Centre for Health, Activity,  
and Rehabilitation Research

Overview from Dean and Director of CHARR,

2016 was another successful year for the Centre for Health, Activity, and Rehabilitation Research, School of Physiotherapy.

We farewelled Associate Professor Gill Johnson in April. Gill has been a member of the School since 1987 and throughout her time she has been a valuable contributor to the research activities of the School.

We have continued to develop strong linkages with colleagues and research groups nationally and internationally, as well as across the University. CHARR members have been involved in the leadership of a number of high profile research initiatives. The Centre and the School, in 2016, have continued to develop international linkages.

We were awarded a large number of research grants. These grants were received from Lottery Health Research, Brain Health Core, Ageing Well National Science Challenge, Maurice and Phyllis Paykel, Physiotherapy New Zealand, New Zealand Manipulative Physiotherapy Association, Arthritis New Zealand, University of Otago Major Equipment Grant, and the University of Otago Research Grant. Regardless of the size of the funding received, these awards have contributed towards the growing profile of CHARR as a preeminent research centre for Physiotherapy research. Our publication record continues to be not only impressive in quantity but also in quality with many staff publishing in leading rehabilitation journals.

Our postgraduate programme continues to be a vital part of CHARR and we were pleased to welcome two new graduate research candidates from New Zealand and around the world. 2016 also saw the completion and graduation of four PhD candidates.

We hope you enjoy reading in more detail about our 2016 successes.

Prof Leigh Hale (Dean, School of Physiotherapy) and Prof David Baxter (Director, CHARR)

# Research Report CHARR 2016

## OVERVIEW

### RESEARCH LEADERS

#### **Professor David Baxter**

BSc (Hons), DPhil, MBA  
Position: Director of CHARR

David's work has largely focused on physical therapy interventions to reduce pain and disabilities, and the impact of non-communicable diseases: physical activity and rehabilitation; low back pain; complementary and alternative medicine; photomedicine and laser therapy; surveys; controlled trials; and systematic reviews of clinical effectiveness of physical interventions for non-communicable diseases. He is currently leading a trial of laser therapy (photobiomodulation) in the management of breast cancer-related lymphoedema, and works with a multinational network focused on physical activity and health (including UK, Ireland, Sweden).

#### **Professor Leigh Hale**

BSc (Physio), MSc, PhD (WITS), FNZCP  
Position: Dean

Leigh's work has focused on the needs of people with disabilities and those who support them, and developing community-based interventions to improve function, participation and engagement: Neurological rehabilitation and disability research; community-based rehabilitation; virtual reality in rehabilitation; falls prevention; using both qualitative and quantitative methodology with people with multiple sclerosis, stroke, Parkinson's disease, intellectual disability, older adults, Alzheimer's disease and dementia, and diabetes.

#### **Associate Professor Gill Johnson**

Dip Phty, MSc, PhD (Otago), FNZCP  
Position: Deputy Dean (Until April 2016), Associate Professor

Gill's main research focus is in the area of spinal health and factors impacting on self-reports of low back pain. Her more recent research interests include the examination of balance performance in different patient populations and quantifying coupled movement patterns between the jaw and cervical spine using kinematic

analysis. Gill's clinical interests include musculoskeletal dysfunction and professional practice issues.

**Professor S. John Sullivan**

DipPhEd (Otago)MSc PhD (Wat)

Position: Associate Dean of Under-Graduate Studies and Professor

John is an established researcher in the emerging field of sport related concussion. His research is focused on: the understanding of the physical and social consequences of a sports concussion, the use of emerging social networking technologies in concussion awareness and management, the development of a safe return-to-play protocols and sideline screening assessment tools and the effects of multiple concussions on brain health in later life. He collaborates with researchers in Australia, Canada, and the UK, John also manages a research programme focused on mobility and the role of mobility scooters in keeping older adults mobile in their communities.

**Associate Professor Debra Waters**

BS, PhD

Position: Director of Gerontology, Associate Professor

Debra's work has focused on the determinants and prevalence of sarcopenia and sarcopenic-obesity, the impact of sarcopenia and sarcopenic-obesity on physical function, and on community-based exercise interventions to maintain physical function during ageing. Debra holds the position of Director of Gerontology, a joint appointment by the Dunedin School of Medicine and the School of Physiotherapy. She is also the Director of the Collaboration of Ageing Research Excellence (CARE), which received University of Otago theme funding in 2015. Debra sits on Management Directorate for the Aging Well National Science Challenge.

## KEY AND EMERGING STAFF

### **Dr Cathy Chapple**

BSc (Hons), Grad Dip Phty, Post Grad Dip Phty, MManipPhty, PhD (Otago)  
Position: Associate Dean of Clinical Studies and Lecturer

#### Research Interests

Cathy's research focuses on physiotherapy management of osteoarthritis including manual therapy and levels of physical activity. She has an interest in translating research into physiotherapy clinical practice by exploring: facilitators and barriers to implementation of research findings, and the delivery of effective treatment e.g. dosage. Another research interest is the contribution of the cervical spine to headache and post-concussion symptoms. Her interest in clinical education focuses on the use of feedback to enhance learning in the clinical environment, and clinical reasoning in students and experienced physiotherapists.

### **Dr Lynne Clay**

BSc MPhty PhD  
Position: Lecturer

#### Research Interests

As a physiotherapist, Lynne's over-arching interest lies in facilitating people to maximise their well-being & quality of life. Her research uses mixed methods and focuses on exploring the psychological constructs & individual factors contributing to health behaviour and how this knowledge can be used by clinicians. She has two main research directions. The first focuses on the importance of physical activity, especially in people with chronic and life-changing conditions, whilst, the second focuses on injury / illness prevention.

### **Dr Prasath Jayakaran**

BPT, MPT, PhD (Otago)  
Position: Post-doctoral Fellow

#### Research Interests

Prasath has a primary interest in musculoskeletal rehabilitation, particularly in persons with a physical disability. Further to completion of his doctoral studies (2012) on balance in lower limb amputation, Prasath has completed two postdoctoral fellowships. In his first fellowship (2013) in Brunel University, London he was closely involved in two projects investigating gait and balance with an application to people with disability. In his second fellowship (2014-2017) at the Centre for Health, Activity and Rehabilitation Research, University of Otago, he developed projects investigating physical activity and health in individuals with long-term pain and disability.

His current research interests include; postural control and functional balance in persons with physical disability, physical activity and quality of life in persons with long-term physical disability, and motor control and cortical re-organisation in persons with lower limb amputation.

**Dr Ewan Kennedy**

BPhy, PhD (Otago)

Position: Post-doctoral Fellow Orthopaedic Manipulative Therapy

Research interests

In 2016 Ewan was awarded the Postdoctoral Fellow in Orthopaedic Manual Therapy working to enhance clinical and manual therapy related research in the School of Physiotherapy. The main focus of the project is collaborating with Dr Cathy Chapple, Dr Steve Tumilty and a local clinician Mr Dusty Quinn to investigate how the neck contributes to persistent post-concussion symptoms. This brings together interests in orthopaedic manual therapy, the neck and clinical research, and relates to his PhD thesis titled 'The clinical anatomy of the anterior neck muscles'.

**Dr Ramakrishnan Mani**

B.P.T (Physiotherapy) M.P.T (Manipulative Physiotherapy), PGCertC (Biostatistics, Epidemiology and Research methodology), PhD (Otago).

Position: Lecturer

Research Interests

Ram's primary research interest is to investigate clinical pain mechanisms (central sensitisation/neuroplasticity, and psychosocial factors) for developing targeted management of musculoskeletal pain. Other key research interests include life-course predictors of pain development and chronicity, understanding the psychosocial predictors of context-based sedentary behaviours and physical activity, and pain education/curriculum. He is a member of various national and international professional organisations such as International Association for the study of pain (IASP), New Zealand Pain Society (NZPS) and Injury Prevention Network, Aotearoa, New Zealand (IPNANZ).

**Dr Hilda Mulligan**

BSc, MHSc, PhD (Otago)

Position: Associate Dean of Post-Graduate Studies and Senior Lecturer (School of Physiotherapy, Christchurch)

Research Interests

Hilda's teaching and research interests lie in disability and rehabilitation, with a broad and participatory approach to the meaning of rehabilitation. She particularly enjoys

working with children and adults with disabling neurological conditions, and with older adults to address falls prevention.

**Dr Meredith Perry**

BPhy, MManipTh, PhD (Otago)

Position: Lecturer (School of Physiotherapy, Wellington)

Research Interests

Meredith's teaching and research to date has focused on the prevention, rehabilitation and management of long term conditions and in particular the impact physical activity has on physical, psychological, social and spiritual wellbeing. She is also interested in relationships between health care providers and their clients particularly in the area of primary health and in people with long term conditions. She has experience in qualitative and mixed methods research.

**Dr Daniel Ribeiro**

BPhy (IPA), MSc (UFRGS) PhD (Otago)

Position: Co-ordinator Graduate Studies and Lecturer

Research Interests

Dan's research programme has two main research themes. The first is focused on clinical biomechanics, with special interest in shoulder and low back biomechanics. This is laboratory-based research focusing on the association between musculoskeletal injury and neuromuscular and movement impairments.

The second theme explores the use of biofeedback in rehabilitation, combining laboratory with field-based research. This theme aims to identify ideal forms of feedback provision and its effectiveness as an intervention tool.

His final research goal is to use the information gathered from these research themes to inform and develop new strategies for musculoskeletal rehabilitation and injury prevention.

**Dr Margot Skinner**

Dip Phy, MPhEd, PhD (Otago), FNZCP, FPNZ

Position: Deputy Dean (from April 2016) Senior Lecturer

Research Interests

Margot had continued to develop her interest in the conservative management of patients with obstructive sleep apnoea, through the supervision of postgraduate students' research in the area. She also has an interest in research in interprofessional education, and global health initiatives, each of which links well with her teaching commitments and involvement in physiotherapy professional affairs at an international level.

**Dr Catherine Smith**

DipPhty, PhD (Otago)

Position: Research Fellow

Research Interests

Cath's current research interests include facilitation of participation in physical activity and exercise for people with disability and chronic health problems, in particular Multiple Sclerosis. She also has a special interest in how dog-walking contributes to the health and well-being of healthy adults and adults with chronic health conditions.

**Dr Gisela Sole**

BSc (Physio) (Stellenbosch), MSc (Med) Exercise Science (UCT), PhD (Otago), FNZCP

Position: Senior Lecturer

Research Interests

Gisela contributes to sports and musculoskeletal research and teaching at the School. Her research into 'Developing a motor control model for individuals with hamstring injuries' has contributed towards the understanding of the high recurrence rate of this injury and is leading towards more effective prevention and management strategies. Current research focuses on decreasing risk for osteoarthritis following ACL and other knee injuries, and the role that footwear may have on these. She is also leading research in integrating pain education into rehabilitation of persistent shoulder pain.

**Dr Steve Tumilty**

GradDipPhys (Northumbria); PGDipPhty(Manip), PGCertTertT, MPhty (Otago), PhD (Otago)

Position: Senior Lecturer and Registered Physiotherapy Specialist (musculoskeletal)

Steve's passion is for clinically applicable musculoskeletal research. His recent focus has been exploring the treatment of tendinopathies. His research directions include translational research projects that will bring new knowledge to the profession.

Research Interests include: Tendinopathy, Orthopaedic manipulative therapy; modulation of the HPA axis using manipulative interventions, the influence of the sympathetic nervous system on musculoskeletal pain, measuring physiotherapy clinical outcomes, musculoskeletal/sports injury, and laser therapy.



## RESEARCH NETWORKS AND THEMES

### **National Science Challenge Ageing Well:**

Prof David Baxter is the Director of the National Science Challenge for Ageing Well. This was awarded \$14.6M of support funding for research across New Zealand, and was formally launched at the School of Physiotherapy in 2015.

The Ageing Well National Science Challenge vision is to add life to years for all older New Zealanders. This will be achieved by harnessing science to sustain health and wellbeing into the later years of life.

Further links:

<https://www.ageingwellchallenge.co.nz/>

### **Brain Research New Zealand – a Centre of Research Excellence:**

Brain Research New Zealand – Rangahau Roro Aotearoa, is a unique research partnership on the Ageing Brain, co-hosted by the University of Auckland and the University of Otago, in conjunction with research teams from the NZ Brain Research Institute in Christchurch, the University of Canterbury and Auckland University of Technology. Prof Leigh Hale is in the leadership team of Theme 4: Prevention, intervention & delivery.

Further links:

<http://www.brnz.ac.nz/en.html>

### **University of Otago Research Themes**

The School hosts two University of Otago Research Themes. Research themes signal a developing or potential research area of excellence within the University.

#### ***CARE (Collaboration of Ageing Research Excellence) Research Theme***

The CARE theme is led by Associate Professor Debra Waters and is a continuation of a network that began in 2013. The CARE network concentrates on three areas of research strength:

- Physical health
- Brain health
- Social and policy development

Further links:

[www.otago.ac.nz/care](http://www.otago.ac.nz/care)

Email: [care@otago.ac.nz](mailto:care@otago.ac.nz)

### ***Pain Research Theme***

The Pain theme is a new collaboration of researchers from across the University working in all areas of pain research. The theme's research incorporates basic, clinical and population level research. The overall goal of the Pain at Otago research theme will be the formation of an interdisciplinary team of researchers resulting in measurable outcomes in the form of externally funded research, and key national and international research collaborations and publications. Translational and clinical outcomes are ultimately designed to reduce the burden of chronic pain at an individual and national level. Pain at Otago research theme and its network of researchers will be the first of its kind in New Zealand.

The theme is led by Prof Ted Shipton (Director), Department of Anaesthesiology University of Otago, Christchurch, and by Dr Ram Mani (Deputy Director) from CHARR. CHARR researchers contribute to this theme in the areas of chronic musculoskeletal (MSK) pain: central pain mechanisms; life course epidemiology; neuroendocrinal and autonomic dysfunction, and testing novel and innovative approaches including pain education for patients, health professionals and students.

Further links:

[www.otago.ac.nz/pain](http://www.otago.ac.nz/pain)

Email: [pain@otago.ac.nz](mailto:pain@otago.ac.nz)

### **Physical Activity, Health, and Wellbeing Network**

The overarching goal of this group is to be an effective interdisciplinary network of PA, health and wellbeing researchers. The network aims to: improve the mutual awareness and perspectives of other researchers and wider communities; provide increased knowledge and communication for PA research and researchers; and lead to the establishment of research with, and for, healthy (non-communicable) diseased and disabled populations.

In 2016, the network held a workshop on the Economics of Physical Activity.

Further links:

<http://www.otago.ac.nz/physio/research/otago436804.html>

## **Support Workers and Caregivers Network**

The Support Workers and Caregivers Network has been in place since 2012. This network is led by Prof Leigh Hale and brings together researchers and community stakeholders. A project led by Prof Hale was awarded funding by the Brain Research New Zealand CoRE. The project is titled "Valuing those supporting people living with cognitive decline".

Further links:

<http://www.otago.ac.nz/physio/research/ageing/otago445601.html>

## **Concussion Group**

Prof John Sullivan is one of the leaders of a group of researchers looking at concussion research. The concussion group held a symposium as part of CHARR research week on "Sport related concussion research and services in Dunedin". This seminar brought together researchers, medical professionals, service providers and sport administrators to share research and clinical knowledge to better understand and support those players with a sport related concussion.

Further links:

[www.otago.ac.nz/sport-concussion](http://www.otago.ac.nz/sport-concussion)

## **INTERNATIONAL: COLLABORATIONS AND ADVISORY BOARD**

CHARR has well-established links with research groups internationally, as evidenced by joint publications, grant applications and supervisory arrangements. Key research collaborations include University of Ulster (UK; physical activity, low back pain); University of Melbourne (Australia; sport related concussion, sports medicine); University of Glasgow (multiple sclerosis and physical activity); University of London / St George's Hospital (self-management of long term conditions) and University of Sydney (falls and intellectual disability). We also continue active collaborations with previous staff from the School who have moved overseas, including Professor Stephan Milosavljevic (University of Saskatchewan), Dr Paul Hendrick (University of Nottingham), and Dr Leica Claydon (Anglia Ruskin University). Prof Anthony Schneiders, Central Queensland University.

### **International advisory board**

The work of the Centre is supported by an International Advisory Board comprised of international experts in relevant research fields who aid the Centre through staff and student exchanges; contributing to PhD programmes through supervisory or

advisory roles; reviewing grants/publications; and networking on research developments at the international level.

### **International appointments in 2016**

#### **Prof Suzanne McDonough (Ulster University)**

Honorary Research Professor in the School from 1 September 2016 to 31 August 2019.

### **International visitors**

In 2016, CHARR hosted a number of international visitors. Including:

#### **Prof Pernilla Åsenlöf**

Prof Pernilla Åsenlöf is a Professor in Physiotherapy, Department of Neuroscience, Uppsala University, and the Pain Centre at the University Hospital of Uppsala, Sweden. During her time at the School she gave a lecture on “The ongoing shift of paradigm within physiotherapy and pain management” and a workshop on “The application of learning theory and behaviour change techniques in physiotherapy”.

Pernilla's visit was funded by the Otago/Southland Physiotherapy Trust.

#### **Professor Sandra Barker and Professor Randolph Barker**

Profs Barkers are from the Virginia Commonwealth University. Both are leading experts in the field of human-canine interactions. The Barkers were hosted by Dr Cath Smith.

#### **Associate Professor Martijn Huisman (William Evans Fellow)**

Dr. Huisman is the scientific director of the Longitudinal Ageing Study Amsterdam (LASA). His main focus is the role of socioeconomic adversity on health in old age. He is also the research coordinator of the Amsterdam Center on Aging (ACA). He has an MSc in Clinical and Health Psychology, and PhD in Epidemiology. He currently leads several projects that use a combination of qualitative and quantitative research. Examples of specific topics in his research are: perceived control in relation to health care use in older adults (National Program of Care for the Elderly) and resilience in older adults who have been exposed to socioeconomic adversity (NWO, VIDJ).

Martijn was hosted by A/Prof Debra Waters and the School of Physiotherapy.

#### **Professor Lynne Parkinson**

Professor Lynne Parkinson from Central Queensland University, Rockhampton hosted by Debra Waters.

**Prof Klaus Pfeifer and Dr Alexander Tallner**

(New Zealand-Germany Science & Technology Programme Funding)

Prof Klaus Pfeifer and Dr Alexander Tallner (Institute of Sport Science and Sport, Freidrich-Alexander University) are visiting Otago as part of a travel grant funded by the New Zealand-Germany Science & Technology Programme (Royal Society of New Zealand). They were hosted by Dr Hilda Mulligan (CHARR, School of Physiotherapy).

Hilda also received funding as part of this grant and visited Germany in 2015. The team are working on exploring linkages between the two institutions for a project based around linking internet based fatigue management with exercise in multiple sclerosis.

**Dr Lis Preston**

Dr Preston from the University of Canberra worked with Prof Leigh Hale and Dr Cathy Chapple to evaluate an eSkills neurology learning tool for undergraduate physiotherapy students.

**International visits by staff**

**Professor David Baxter gave** invited lectures at Men's Health World Congress, New Delhi (Feb 2016), and a workshop on Photobiomodulation at American Society for Laser Medicine and Surgery (Boston, Apr 2016). He visited Ulster and Keele Universities (UK) in May-June 2016 and High Point University in November.

**Professor Leigh Hale** was an invited speaker at the 32nd European Congress for Treatment and Research in Multiple Sclerosis / 21st Rehabilitation in Multiple Sclerosis, London, and at the University of College London, Partners Centre for Neurorehabilitation, Queens Square, London in September 2016.

**Prof Leigh Hale and Dr Gisela Sole** visited High Point University, North Carolina in February 2016.

**Dr Prasath Jayakaran** attended the 4th World Congress of Gerontology and Geriatrics 2016 – "Healthy Ageing in the Changing World" held in Bangalore from 22nd to 25th Nov 2016 and won a best presenter award for his paper on 'Physical activity levels in individuals with osteoarthritis: A secondary analysis from a community based survey'.

**Dr Ramakrishnan Mani** was an invited speaker at The Science of Pain and its Management-2016, online conference (December 6-8th 2016) organised by EuroSciCon. [www.lifescienceevents.com/pain2016](http://www.lifescienceevents.com/pain2016) to present: Clinical assessment of central sensitisation in patients with musculoskeletal pain. He was also an invited

Research Advisor to Sikkim Manipal College of Physiotherapy, Sikkim Manipal University, Sikkim, India. He attended the IASP World Congress in Japan.

**Dr Margot Skinner** is an international advisor (physiotherapy education) to the Chinese Association of Rehabilitation Medicine. In May she was the official delegate: WCPT (physiotherapy) representative at the World Health Assembly in Geneva (WCPT is in official relations with WHO). She presented a statement in support of Global co-operation on Assistive Technology (GATE) 50 priority assistive devices.

**Professor John Sullivan** was an invited participant at the 5th International Consensus Conference on Concussion in Sport, Berlin, November 2016.

**Dr Steve Tumilty** gave an invited seminar at Gunma University Japan.

**A/P Debra Waters** visited the Institute du Vieillessement, University of Toulouse, Toulouse, France (Prof B. Vellas). She also visited Shanghai, and New Mexico for research collaborations.

## CONFERENCES AND EVENTS

### PNZ Conference

A number of CHARR staff attended the Physiotherapy New Zealand Conference in Auckland in September 2016. Keynote addresses were provided by Prof Leigh Hale '*Somebody's kindly following you along the line: Supporting physical activity for people living with long-term conditions*' and Prof David Baxter '*Men's health: A challenge for physiotherapy*'. Numerous staff presented platform presentations and chaired sessions. Further details of platform presentations can be found in our list of publications.

### Combined Sections Meeting (CSM) U.S.A

CHARR staff members Prof Leigh Hale and Dr Gisela Sole attended the regular CSM meeting held in January 2015. CHARR co-hosted with High Point University a *Friends of Otago and High Point* reception for collaborators and potential graduate students.

### CHARR Seminar Series 2016:

The regular CHARR seminar series throughout Semesters 1 and 2 of 2016 showcased CHARR researchers and graduate students and hosted a number of visiting academics.

## **CHARR Research Week 2016:**

The CHARR Research week was held from the 21-25 November. Over the course of the week, events were held on the following topics:

### *Health, Movement, and Lifestyle: A multidisciplinary approach*

Graduate Research Symposium - co-hosted with the School of Physical Education, Sport, and Exercise Science.

### *Showcasing CHARR research excellence*

Presentations by CHARR researchers on their current research work and impact on wider communities.

### *Enjoyment through movement: Korero with Collaboration of Ageing Research Excellence (CARE) and stakeholders*

CARE Research Theme event.

### *Celebrating our community links*

Members of our community classes are invited to join us at the School. This provides people with a chance to look around the School, hear about the other community classes we offer, and meet members of staff. This also provides an opportunity for feedback on how we can improve, or build upon our community classes.

### *Sport related concussion research and services in Dunedin*

This seminar brought together researchers, medical professionals, service providers and sport administrators to share research and clinical knowledge to better understand and support those players with a sport related concussion.

### *Pain relief through research informed practice.*

A Pain@Otago Research Theme Annual Meeting.

The events were attended by academics from all divisions across the University, representatives from community organisations, the health sector, and members of the general public, DCC.

**STAFF HIGHLIGHTS**

**SIGNIFICANT FUNDING AWARDS 2016**

<b>Investigator</b>	<b>Title</b>	<b>Agency</b>
David Baxter, Ramakrishnan Mani and Debra Waters (Als)	Musculoskeletal health: Dunedin Multidisciplinary Longitudinal Study	Health Research Council Programme Grant
Miranda Buhler	Impact of thumb base osteoarthritis	PNZ
Cathy Chapple	How does frequency of manual therapy treatment influence outcome for people with knee osteoarthritis?	NZMPA
Cathy Chapple	Does exercise using the Wii Fit™ Balance Board increase muscle strength and decrease instability in individuals with knee osteoarthritis: A feasibility study?	Arthritis New Zealand
Cathy Chapple	Does exercise using the Wii Fit™ Balance Board increase muscle strength and decrease instability in individuals with knee osteoarthritis: A feasibility study?	MPPT
Lynne Clay	Walking to better health after stroke	UORG
Lynne Clay	Concurrent validity of the Mini- BESTest in people with vestibular dysfunction	Otago Branch PNZ
Lynne Clay and Daniel Ribeiro (AI)	A systematic review of measurement properties of assessment methods for permanent functional impairment of the spine: Blending evidence, international perspectives and stakeholder consultations	WorkSafeBC
Angela Gisselman	CSM Conference	MPPT Travel



Leigh Hale (AI)	Electrical Stimulators for Stroke Recovery	Ageing Well National Science Challenge
Ewan Kennedy	Physiotherapy Orthopaedic Manual Therapy Postdoctoral Fellowship	Alumni of the University of Otago in America (AUOA)
Lizhou Liu	Tai Chi for Breast Cancer	2017 NZBCF Fellowship
Meredith Perry	Park accessibility: Perceived barriers by older adults in the Wellington area	UORG
Meredith Perry (AI)	Access and safety of non-invasive ventilation for people with neuromuscular disorders. Neill A (PI), Ingham T (Co-PI), Perry M, Jones B, Sim D, Devan H, Aldridge D	Neuromuscular Foundation Trust of New Zealand
Daniel Ribeiro	The effectiveness of tailored rehabilitation versus standard exercise programme for patients with shoulder pain: a feasibility randomized controlled trial	PNZ
Daniel Ribeiro	Exploring the effects shoulder mobilization on scapular and shoulder muscle activities	UORG
Cath Smith	Developing an intervention to promote physical activity engagement for people with multiple sclerosis living in rural settings: a feasibility study	MPPT
Cath Smith	Developing an intervention to promote physical activity engagement for people with multiple sclerosis living in rural settings: a feasibility study	PNZ
John Sullivan	How does purchasing a mobility scooter impact upon an individual's physical activity, health and mobility in the community?	Lottery Health Research
John Sullivan	5th International Consensus Conference on Concussion in Sport	MPPT Travel
John Sullivan	Equitest Balance System	Major Equipment Grant University of Otago

Steve Tumilty	Efficacy of thoracic spinal manipulation in eliciting changes in the neuro-endocrinal mechanisms in people with Achilles tendinopathy	NZMPA
Debra Waters and Leigh Hale (AIs)	SUPER Trial	Ageing Well National Science Challenge

## GRADUATE STUDENT SUCCESS

**Abdullah Alqarni** (PhD) was awarded the best poster prize at the Pain @ Otago conference, Dunedin, New Zealand (2016). His poster was titled: "Assessment of pain mechanisms: Translating research into clinical practice".

**Donald Manlapaz** (PhD) attended the Asian Confederation of Physical Therapy Congress 2016 Kuala Lumpur, Malaysia He was awarded the Young Researcher's scientific research platform "A narrative synthesis of Nintendo Wii Fit gaming protocol in addressing balance among health older adult: what system works?"

**Sarah Rhodes** (MPhty Research) presented at Cardiovascular highlight for theHealth Sciences on 20<sup>th</sup> September.

### *Graduating PhDs*

**Daniela Aldabe**, A prospective study of muscle activity and innominate bone motion patterns during pregnancy.

**Hemakumar Devan** Asymmetrical movements of lumbopelvic region in people with lower limb amputation: Is this a possible mechanism for low back pain? Primary supervisor: Prof Leigh Hale.

**Priya Kannan** Effects of exercise and aerobic training on menstrual pain in women with primary dysmenorrhea: A randomized controlled trial. Primary supervisor: Dr Cathy Chapple.

**Parimala Kanagasabai** Participation of children with physical disability in leisure activities in New Zealand. Primary supervisor: Dr Hilda Mulligan.

---

**Appendix I: PHD STUDENTS AND TOPICS**

**PhD Students (2016)**

***Primary Supervisor School of Physiotherapy***

Alqarni, Abdullah	Knowledge translation of clinical assessment of pain mechanisms in to clinical practice.
Bell, Ricky	Huarahi Hauora – Identifying a pathway forward to wellness for Māori: an investigation of the association between BMI, body image and their relationship to improved health.
Buhler, Miranda	The impact of base of thumb osteoarthritis and the effectiveness of orthotic management.
Calder, Ally	Access to Physical Activity for men following stroke.
Donaldson, Gail	Does the use of silicon oil change the post-operative outcomes after Dupuytren's contracture release surgery?
Jafarian, Zohreh	Exploring the effect of shoulder passive mobilisation on shoulder function, pain and muscle activity levels in patients with shoulder disorders.
Kannan, Priya	Effects of exercise and aerobic training on menstrual pain in women with primary dysmenorrhea: A randomized controlled trial.
Kaur Mandeep	Outcomes of ACL injuries.
Lui, Lizhou	Acupuncture for musculoskeletal disorders.
Mabire, Leon	The influence of body weight on the effectiveness of brisk walking for the management of obesity in adults.

Manlapaz, Donald	The use of Nintendo Wii Fit™ in improving falls risk, balance and adherence to exercise in patients with Knee Osteoarthritis.
Mesbah, Normala	Postural stability in older adults with early diagnosed Alzheimer's disease.
Moran, Rob	Musculoskeletal injury prediction in high intensity strength and conditioning athletes.
Ramsey, Codi	The influence of asymmetric footwear on overuse running-related injuries.
Sampath, Kesava	Thoracic spinal manipulation and short-term changes in the activities of (1) hypothalamic-pituitary-adrenal (HPA) axis and Hypothalamic-pituitary-gonadal (HPG) axis (i.e. HPA-HPG axis) and (2) the sympathetic nervous system (SNS). Is that a potential viable treatment option for people with chronic pain?
Sangelaji, Bahram	Developing and testing an intervention to promote life-long exercise in people with MS.
Spontelli Gisselman, Angela	The role of heart rate variability indices in prevention of musculoskeletal overuse injuries in collegiate athletes.
Taylor, Karen	Evaluating the primary care and decision-making process for acute shoulder injuries in New Zealand.

***Secondary Supervisor School of Physiotherapy***

Kermat Kar, Maryam	Nursing and physiotherapy [Working Title].
Jeremy Goh	A combined physical and cognitive intervention in Parkinson's disease.
Quick, Andrew	The influence of orthognathic therapy on mandibular motion.

## Research Outputs

### Physiotherapy 2016

#### Chapter in Book - Research

**Baxter, G. D.**, & Basford, J. R. (2016). Overview of other electrophysical agents including thermal modalities. In K. A. Sluka (Ed.), *Mechanisms and management of pain for the physical therapist*. (2nd ed.) (pp. 225-236). Philadelphia, PA: IASP Press.

**Baxter, G. D.**, & McDonough, S. M. (2016). Laser acupuncture. In J. Filshie, A. White & M. Cummings (Eds.), *Medical acupuncture: A Western scientific approach*. (pp. 269-277). Edinburgh, UK: Elsevier.

**Smith, C. M.**, Treharne, G. J., **Mulligan, H.**, & **Hale, L. A.** (2016). Using qualitative evidence to develop an intervention for enabling people with chronic disabling conditions to be more physically active. In K. Olson, R. A. Young & I. Z. Schultz (Eds.), *Handbook of qualitative health research for evidence-based practice*. (pp. 453-472). New York: Springer. doi: 10.1007/978-1-4939-2920-7\_27.

#### Journal - Research Article

Adhia, D. B., **Mani, R.**, Milosavljevic, S., **Tumilty, S.**, & Bussey, M. D. (2016). Does repeated palpation-digitization of pelvic landmarks for measurement of innominate motion introduce a systematic variation? A psychometric investigation. *Manual Therapy, 21*, 282-286. doi: 10.1016/j.math.2015.09.009

Adhia, D. B., Milosavljevic, S., **Tumilty, S.**, & Bussey, M. D. (2016). Innominate movement patterns, rotation trends and range of motion in individuals with low back pain of sacroiliac joint origin. *Manual Therapy, 21*, 100-108. doi: 10.1016/j.math.2015.06.004

Adhia, D. B., **Tumilty, S.**, **Mani, R.**, Milosavljevic, S., & Bussey, M. D. (2016). Can hip abduction and external rotation discriminate sacroiliac joint pain? *Manual Therapy, 21*, 191-197. doi: 10.1016/j.math.2015.08.002

Adhia, D. B., **Tumilty, S.**, **Mani, R.**, Milosavljevic, S., & Bussey, M. D. (2016). Innominate segment deformation during passive hip abduction and external rotation. *Manual Therapy*. Advance online publication. doi: 10.1016/j.math.2016.06.004

Arumugam, A., Raja, K., Venugopalan, M., Chandrasekaran, B., **Kovanur Sampath, K.**, Muthusamy, H., & Shanmugam, N. (2016). Down syndrome: A narrative review with a focus on anatomical features. *Clinical Anatomy*, 29, 568-577. doi: 10.1002/ca.22672

Balasundaram, A. P., Athens, J., Schneiders, A. G., McCrory, P., & **Sullivan, S. J.** (2016). The influence of psychological and lifestyle factors on the reporting of postconcussion-like symptoms. *Archives of Clinical Neuropsychology*, 31, 197-205. doi: 10.1093/arclin/acw001

Balasundaram, A. P., Athens, J., Schneiders, A. G., McCrory, P., & **Sullivan, S. J.** (2016). Day-to-day variability of post-concussion-like symptoms reported over time by a non-concussed cohort. *Brain Injury*. Advance online publication. doi: 10.1080/02699052.2016.1199902

Baxter, S. V., **Hale, L. A.**, Stebbings, S., Gray, A. R., **Smith, C. M.**, & Treharne, G. J. (2016). Walking is a feasible physical activity for people with rheumatoid arthritis: A feasibility randomized controlled trial. *Musculoskeletal Care*, 14(1), 47-56. doi: 10.1002/msc.1112

Baxter, S., **Smith, C.**, Treharne, G., Stebbings, S., & **Hale, L.** (2016). What are the perceived barriers, facilitators and attitudes to exercise for women with rheumatoid arthritis? A qualitative study. *Disability & Rehabilitation*, 38(8), 773-780. doi: 10.3109/09638288.2015.1061602

**Bell, R., Tumilty, S.**, Kira, G., **Smith, C., & Hale, L.** (2016). Using a community based participatory research model within an indigenous framework to establish an exploratory platform of investigation into obesity. *Obesity Medicine*. Advance online publication. doi: 10.1016/j.obmed.2016.03.001

Boland, P., Levack, W., **Perry, M.**, & Graham, F. (2016). Equipment provision after stroke: A scoping review of the use of personal care and mobility aids in rehabilitation. *British Journal of Occupational Therapy*. Advance online publication. doi: 10.1177/0308022616664910

Botnmark, I., Tumilty, S., & **Mani, R.** (2016). Tactile acuity, body schema integrity and physical performance of the shoulder: A cross-sectional study. *Manual Therapy*, 23, 9-16. doi: 10.1016/j.math.2016.02.001

Burrell, B. A., Jordan, J., Crowe, M., **Wilkinson, A.**, Williman, J., Jones, V., Harris, S., & Gillon, D. (2016). Life-balance self-management programme for community-based older adults living with chronic disease: A feasibility study. *European Journal for Person Centered Healthcare*, 4(3), 459-466. doi: 10.5750/ejpch.v4i3.1128

Campbell, K., **Smith, C. M.**, **Tumilty, S.**, Cameron, C., & Treharne, G. J. (2016). How does dog-walking influence perceptions of health and wellbeing in healthy adults? A qualitative dog-walk-along study. *Anthrozoös*, 29(2), 181-192. doi: 10.1080/08927936.2015.1082770

**Clay, L.**, Hay-Smith, J., Treharne, G., & Milosavljevic, S. (2016). "There are risks to be taken and some just push it too far": How farmers perceive quad-bike incident risk. *Australian & New Zealand Journal of Public Health*, 40(1), 55-61. doi: 10.1111/1753-6405.12454

Darlow, B., Donovan, S., Coleman, K., McKinlay, E., Beckingsale, L., Gallagher, P., Gray, B., Nesar, H., **Perry, M.**, & Pullon, S. (2016). What makes an interprofessional education programme meaningful to students? Findings from focus group interviews with students based in New Zealand. *Journal of Interprofessional Care*, 30(3), 355-361. doi: 10.3109/13561820.2016.1141189

Darlow, B., **Perry, M.**, Dean, S., Mathieson, F., **Baxter, G. D.**, & Dowell, A. (2016). Putting physical activity whilst experiencing low back pain in context: Balancing the risks and benefits. *Archives of Physical Medicine & Rehabilitation*, 97(2), 245-251.e7. doi: 10.1016/j.apmr.2015.09.020

Diab, A. S., **Hale, L. A.**, **Skinner, M. A.**, Hammond-Tookey, G., Ward, A. L., & **Waters, D. L.** (2016). Body composition and postural instability in people with idiopathic Parkinson's disease. *Journal of Aging Research & Clinical Practice*, 5(1), 14-19. doi: 10.14283/jarcp.2016.86

Diong, C., Jones, P. P., Tsuchimochi, H., **Gray, E. A.**, Hughes, G., Inagaki, T., Bussey, C. T., Schwenke, D. O. (2016). Sympathetic hyper-excitation in obesity and pulmonary hypertension: Physiological relevance to the 'obesity paradox'. *International Journal of Obesity*, 40, 938-946. doi: 10.1038/ijo.2016.33

**Falling, C.**, & **Mani, R.** (2016). Ageing and obesity indices influences the tactile acuity of the low back regions: A cross-sectional study. *Manual Therapy*, 23, 25-31. doi: 10.1016/j.math.2016.02.004



**Falling, C., & Mani, R.** (2016). Regional asymmetry, obesity and gender determines tactile acuity of the knee regions: A cross-sectional study. *Manual Therapy*, 26, 150-157. doi: 10.1016/j.math.2016.08.002

George, E., **Hale, L.**, & Angelo, J. (2016). Valuing the health of the support worker in the aged care sector. *Ageing & Society*. Advance online publication. doi: 10.1017/S0144686X16000131

**Gisselman, A. S., Baxter, G. D.,** Wright, A., Hegedus, E., & **Tumilty, S.** (2016). Musculoskeletal overuse injuries and heart rate variability: Is there a link? *Medical Hypotheses*, 87, 1-7. doi: 10.1016/j.mehy.2015.12.003

Graham, H., Bond, A., McCormick, M., Hobbs, O., Yoo, C., Gupta, S., **Mulligan, H.**, & King, M. (2016). A novel communication application to encourage social interaction by children with autism spectrum disorder [ML Roberts Prize]. *New Zealand Journal of Physiotherapy*, 44(1), 50-57. doi: 10.15619/NZJP/44.1.06

Hajizadeh, M., Hashemi Oskouei, A., Ghalichi, F., & **Sole, G.** (2016). Knee kinematics and joint moments during stair negotiation in participants with anterior cruciate ligament deficiency and reconstruction: A systematic review and meta-analysis. *PM&R*, 8, 563-579. doi: 10.1016/j.pmrj.2016.01.014

Hajizadeh, M., Hashemi Oskouei, A., Ghalichi, F., Tabatabai Ghomshe, F., Razi, M., & **Sole, G.** (2016). Kinematic differences in participants with ACL-deficient knees during stair ascending with different height. *Iranian Journal of Biomedical Engineering*, 9(1), 17-31.

**Hale, L. A.**, Mirfin-Veitch, B. F., & Treharne, G. J. (2016). Prevention of falls for adults with intellectual disability (PROFAID): A feasibility study. *Disability & Rehabilitation*, 38(1), 36-44. doi: 10.3109/09638288.2015.1017613

Hall-McMaster, S. M., Treharne, G. J., & **Smith, C. M.** (2016). 'The positive feel': Unpacking the role of positive thinking in people with multiple sclerosis's thinking aloud about staying physically active. *Journal of Health Psychology*, 21(12), 3026-3036. doi: 10.1177/1359105315592047

Hegedus, E. J., McDonough, S., Bleakley, C., **Baxter, G. D.**, DePew, J. T., Bradbury, I., & Cook, C. (2016). Physical performance tests predict injury in National Collegiate

Athletic Association athletes: A three-season prospective cohort study. *British Journal of Sports Medicine*, 50, 1333-1337. doi: 10.1136/bjsports-2015-094885

**Higgs, C., Skinner, M., & Hale, L.** (2016). Outcomes of a community-based lifestyle programme for adults with diabetes or pre-diabetes. *Journal of Primary Health Care*, 8(2), 130-139. doi: 10.1071/HC15038

Janssen, J., **Hale, L.**, Mirfin-Veitch, B., & Harland, T. (2016). Perceptions of physiotherapists towards research: A mixed methods study. *Physiotherapy*, 102, 210-216. doi: 10.1016/j.physio.2015.04.007

Johnson, G. M., Little, R., Staufenberg, A., McDonald, A., & **Taylor, K. G. M.** (2016). How do they feel? Patient's perspectives on draping and dignity in a physiotherapy outpatient setting: A pilot study. *Manual Therapy*. Advance online publication. doi: 10.1016/j.math.2016.08.007

**Kanagasabai, P. S.**, Mohan, D., Lewis, L. E., & Rao, B. K. (2016). Behavioral responses to multisensory stimulation in preterm infants. *Journal of Nepal Paediatric Society*, 36(2), 110-114. doi: 10.3126/jnps.v36i2.14850

**Kaur, M., Ribeiro, D. C.**, Theis, J.-C., Webster, K. E., & **Sole, G.** (2016). Movement patterns of the knee during gait following ACL reconstruction: A systematic review and meta-analysis. *Sports Medicine*. Advance online publication. doi: 10.1007/s40279-016-0510-4

**Kovanur Sampath, K., Mani, R.**, Miyamori, T., & **Tumilty, S.** (2016). The effects of manual therapy or exercise therapy or both in people with hip osteoarthritis: A systematic review and meta-analysis. *Clinical Rehabilitation*, 30(2), 1141-1155. doi: 10.1177/0269215515622670

**Liu, L., Skinner, M. A.**, McDonough, S. M., & **Baxter, G. D.** (2016). Traditional Chinese Medicine acupuncture and myofascial trigger needling: The same stimulation points? *Complementary Therapies in Medicine*, 26, 28-32. doi: 10.1016/j.ctim.2016.02.013

**Liu, L., Skinner, M. A.**, McDonough, S. M., **Taylor, K. G. M.**, & **Baxter, G. D.** (2016). Does the dose of Traditional Chinese Medicine acupuncture in addition to usual care affect outcomes for adults with chronic low back pain? Protocol for a

randomized controlled feasibility study. *Physical Therapy Reviews*. Advance online publication. doi: 10.1080/10833196.2015.1107365

MacDonell, S. O., Miller, J. C., Harper, M. J., **Waters, D. L.**, & Houghton, L. A. (2016). Vitamin D status and its predictors in New Zealand aged-care residents eligible for a government-funded universal vitamin D supplementation programme. *Public Health Nutrition*. Advance online publication. doi: 10.1017/S1368980016001683

MacDonell, S. O., Miller, J. C., **Waters, D. L.**, & Houghton, L. A. (2016). Dietary patterns in the frail elderly. *Current Nutrition Reports*, 5, 68-75. doi: 10.1007/s13668-016-0156-8

Mehta, P., Claydon, L. S., Hendrick, P., Cook, C., & **Baxter, G. D.** (2016). Pain and physical functioning in neuropathic pain: A systematic review of psychometric properties of various outcome measures. *Pain Practice*, 16(4), 495-508. doi: 10.1111/papr.12293

Milford, J., Sole, C. C., & **Sole, G.** (2016). Plantar pressure profiles of athletes with and without ankle sprains while walking barefoot and in sport shoes. *Footwear Science*, 8(1), 41-48. doi: 10.1080/19424280.2016.1145743

Moran, R. W., Schneiders, A. G., Major, K. M., & **Sullivan, S. J.** (2016). How reliable are Functional Movement Screening scores? A systematic review of rater reliability. *British Journal of Sports Medicine*, 60, 527-536. doi: 10.1136/bjsports-2015-094913

**Mulligan, H.**, Miyahara, M., & Nichols-Dunsmuir, A. (2016). Multiple perspectives on accessibility to physical activity for people with long-term mobility impairment. *Scandinavian Journal of Disability Research*. Advance online publication. doi: 10.1080/15017419.2016.1167772

**Mulligan, H.**, **Wilkinson, A.**, Barclay, A., Whiting, H., Heynike, C., & Snowdon, J. (2016). Evaluation of a fatigue self-management program for people with multiple sclerosis. *International Journal of MS Care*, 18(3), 116-121. doi: 10.7224/1537-2073.2015-019

**Mulligan, H.**, **Wilkinson, A.**, & Snowdon, J. (2016). Perceived impact of a self-management program for fatigue in multiple sclerosis: A qualitative study. *International Journal of MS Care*, 18(1), 27-32. doi: 10.7224/1537-2073.2014-110

Nicholls, D. A., Harwood, G., & **Bell, R.** (2016). Physical therapies in 19th century Aotearoa/New Zealand: Part I: Māori physical therapies. *New Zealand Journal of Physiotherapy*, 44(2), 75-83. doi: 10.15619/NZJP/44.2.02

Overton, M., Reynolds, E., Clark, N., Bhana, H., **Mulligan, H., Elliott, K., & Minnoch, P. C.** (2016). Physical activity levels and injury prevention knowledge and practice of a cohort of carpentry students. *New Zealand Journal of Physiotherapy*, 44(2), 84-90. doi: 10.15619/NZJP/44.2.03

Pelham, K., **Skinner, M. A.**, McHugh, P., & Pullon, S. (2016). Interprofessional education in a rural community: The perspectives of the clinical workplace providers. *Journal of Primary Health Care*, 8(3), 210-219. doi: 10.1071/HCI6010

**Perry, M.**, Dean, S., & **Devan, H.** (2016). The relationship between chronic low back pain and fatigue: A systematic review. *Physical Therapy Reviews*. Advance online publication. doi: 10.1080/10833196.2016.1264665

**Potiki Bryant, K., Hale, L.**, Tikao, K., Milosavljevic, S., Wright-Tawha, T., Ward, A. L., & Mirfin-Veitch, B. F. (2016). Art as a tool for disseminating research outcomes: The Hauā Mana Māori Project and Participatory Action Research in New Zealand. *Journal of Humanities in Rehabilitation*. Retrieved from <https://scholarblogs.emory.edu/journalofhumanitiesinrehabilitation>

Pullon, S., Wilson, C., Gallagher, P., **Skinner, M.**, McKinlay, E., Gray, L., & McHugh, P. (2016). Transition to practice: Can rural interprofessional education make a difference? A cohort study. *BMC Medical Education*, 16, 154. doi: 10.1186/s12909-016-0674-5

**Ribeiro, D. C.**, Peduzzi De Castro, M., **Sole, G.**, & Vicenzino, B. (2016). The initial effects of a sustained glenohumeral postero-lateral glide during elevation on shoulder muscle activity: A repeated measures study on asymptomatic shoulders. *Manual Therapy*, 22, 101-108. doi: 10.1016/j.math.2015.10.014

**Ribeiro, D. C.**, Shemmell, J., **Falling, C.**, & **Sole, G.** (2016). Shoulder muscle activity during the modified dynamic relocation test and side-lying shoulder external rotation: A cross-sectional study on asymptomatic individuals. *Journal of Manual & Manipulative Therapy*. Advance online publication. doi: 10.1080/10669817.2016.1157945

**Sangelaji, B.,** Kordi, M., Banihashemi, F., Nabavi, S. M., Khodadadeh, S., & Dastoorpoor, M. (2016). A combined exercise model for improving muscle strength, balance, walking distance, and motor agility in multiple sclerosis patients: A randomized clinical trial. *Iranian Journal of Neurology, 15*(3), 111-120.

**Sangelaji, B., Smith, C. M.,** Paul, L., **Kovanur Sampath, K.,** Treharne, G. J., & **Hale, L. A.** (2016). The effectiveness of behaviour change interventions to increase physical activity participation in people with multiple sclerosis: A systematic review and meta-analysis. *Clinical Rehabilitation, 30*(6), 559-576. doi: 10.1177/0269215515595274

Sharma, S., Balthillaya, G., Rao, R., & **Mani, R.** (2016). Short term effectiveness of neural sliders and neural tensioners as an adjunct to static stretching of hamstrings on knee extension angle in healthy individuals: A randomized controlled trial. *Physical Therapy in Sport, 17*, 30-37. doi: 10.1016/j.ptsp.2015.03.003

Shields, C., **Baxter, D., & Mani, R.** (2016). Psychosocial correlates of physical activity levels in individuals at risk of developing diabetes mellitus: A feasibility study. *New Zealand Journal of Physiotherapy, 44*(3), 157-165. doi: 10.15619/NZJP/44.3.05

**Sole, G.,** Tengman, E., Grip, H., & Häger, C. K. (2016). Knee kinematics during stair descent 20 years following anterior cruciate ligament rupture with and without reconstruction. *Clinical Biomechanics, 32*, 180-186. doi: 10.1016/j.clinbiomech.2015.11.013

Spall, P., **Ribeiro, D. C., & Sole, G.** (2016). Electromyographic activity of shoulder girdle muscles in patients with symptomatic and asymptomatic rotator cuff tears: A systematic review and meta-analysis. *PM&R, 8*, 894-906. doi: 10.1016/j.pmrj.2016.02.015

Trip, H., Conder, J., **Hale, L., & Whitehead, L.** (2016). The role of key workers in supporting people with intellectual disability in the self-management of their diabetes: A qualitative New Zealand study. *Health & Social Care in the Community, 24*(6), 789-798. doi: 10.1111/hsc.12262

**Tumilty, S., Mani, R., & Baxter, G. D.** (2016). Photobiomodulation and eccentric exercise for Achilles tendinopathy: A randomized controlled trial. *Lasers in Medical Science, 31*(1), 127-135. doi: 10.1007/s10103-015-1840-4

- Villarreal Santiago, M., **Tumilty, S.**, Mącznik, A., & **Mani, R.** (2016). Does acupuncture alter pain-related functional connectivity of the central nervous system? A systematic review. *Journal of Acupuncture & Meridian Studies*, 9(4), 167-177. doi: 10.1016/j.jams.2015.11.038
- von Aesch, A. V., **Perry, M.**, & **Sole, G.** (2016). Physiotherapists' experiences of the management of anterior cruciate ligament injuries. *Physical Therapy in Sport*, 19, 14-22. doi: 10.1016/j.ptsp.2015.08.004
- Wassinger, C. A., Rich, D., Cameron, N., Clark, S., Davenport, S., Lingelbach, M., ... **Baxter, G. D.** (2016). Cervical & thoracic manipulations: Acute effects upon pain pressure threshold and self-reported pain in experimentally induced shoulder pain. *Manual Therapy*, 21, 227-232. doi: 10.1016/j.math.2015.08.009
- White, P. E., Donaldson, A., **Sullivan, S. J.**, Newton, J., & Finch, C. F. (2016). Australian Football League concussion guidelines: What do community players think? *BMJ Open Sport & Exercise Medicine*, 2(1), e000169. doi: 10.1136/bmjsem-2016-000169
- Whitehead, L. C., Trip, H. T., **Hale, L. A.**, & Conder, J. (2016). Negotiated autonomy in diabetes self-management: The experiences of adults with intellectual disability and their support workers. *Journal of Intellectual Disability Research*, 60(4), 389-397. doi: 10.1111/jir.12257
- Winser, S., **Smith, C. M.**, **Hale, L. A.**, Claydon, L. S., Whitney, S. L., Klatt, B., Mottershead, J., ... Heyman, R. (2016). Psychometric properties of a core set of measures of balance for people with cerebellar ataxia secondary to multiple sclerosis. *Archives of Physical Medicine & Rehabilitation*. Advance online publication. doi: 10.1016/j.apmr.2016.07.023
- Wurzer, B., **Waters, D. L.**, & **Hale, L. A.** (2016). Fall-related injuries in a cohort of community-dwelling older adults attending peer-led fall prevention exercise classes. *Journal of Geriatric Physical Therapy*, 39(3), 110-116. doi: 10.1519/jpt.0000000000000061

**Journal - Research Other**

**Baxter, G. D.** (2016). Ageing Well *Kia eke kairangi ki te taikaiaimātuatanga: A National Science Challenge for New Zealand* [Guest editorial]. *New Zealand Journal of Physiotherapy*, 44(1), 5-7. doi: 10.15619/NZJP/44.1.01

Hall-McMaster, S. M., Treharne, G. J., & **Smith, C. M.** (2016). Positive thinking and physical activity motivation for one individual with multiple sclerosis: A qualitative case-study. *New Zealand Journal of Physiotherapy*, 44(1), 26-32. doi: 10.15619/NZJP/44.1.04

Hamer, J., & **Mulligan, H.** (2016). Use of the TIMP in assessment of motor development of infants With Down syndrome [Commentary]. *Pediatric Physical Therapy*, 28(1). doi: 10.1097/pep.0000000000000222

**Ramsey, C. A.** (2016). Running from iliotibial band syndrome: A guide for preventing overuse injuries. *Strategies*, 29(2), 27-33. doi: 10.1080/08924562.2015.1133352

Wurzer, B. M., **Waters, D. L.**, Robertson, L., Hale, B., & **Hale, L. A.** (2016). Adding self-management of chronic conditions to fall prevention: A feasibility study [Brief report]. *Australasian Journal on Ageing*. Advance online publication. doi: 10.1111/ajag.12356

**Conference Contribution - Published proceedings: Abstract**

**Baxter, D. G.** (2016). Men's health: A challenge for physiotherapy [Invited]. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 9). Retrieved from <https://pnz.org.nz/conference>.

**Baxter, G. D.**, & Anders, J. (2016). Photobiomodulation laser therapy: From bench to bedside evidence overview. *Advances in Laserology: Selected Papers of Laser Florence 2015: International Academy for Laser Medicine and Surgery (IALMS) Congress*. Bologna, Italy: Medimond.

**Baxter, G. D.**, Liu, L., **Chapple, C. M.**, **Tumilty, S.**, & Anders, J. (2016). Photobiomodulation laser therapy for lymphoedema: Current evidence. *Advances in Laserology: Selected Papers of Laser Florence 2015: International Academy for Laser Medicine and Surgery (IALMS) Congress*. Bologna, Italy: Medimond.

**Bell, R., Tumilty, S., Hale, L., Smith, C., & Kira, G.** (2016). Developing a new research framework of inquiry with an Indigenous population in regard to obesity. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 57). Retrieved from <https://pnz.org.nz/conference>

**Calder, A., Sole, G., & Mulligan, H.** (2016). Wives, blokes with stroke, and the ubiquitous stickmen. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 61). Retrieved from <https://pnz.org.nz/conference>

**Chapple, C., McLean, A., & Macznik, A.** (2016). SCAN: A framework for engaging in clinical feedback. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 62). Retrieved from <https://pnz.org.nz/conference>

**Clay, L., Vangool, A., Copsey, B., Boden, C., & Ward, L.** (2016). Can yoga be of benefit to my patients with neurological conditions? A systematic review and meta-analysis. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 63). Retrieved from <https://pnz.org.nz/conference>

Clode, N., Wulff, L., Bailey, E., Emery, H., Fernandopulle, S., Garratt, B., & **Perry, M.** (2016). Does physiotherapy 'prehabilitation' before hip and knee replacement surgery change function and reduce pain. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 116). Retrieved from <https://pnz.org.nz/conference>

Coleman, K., Darlow, B., McKinlay, E., Beckingsale, L., Donovan, S., Gallagher, P., Gray, B., Nesar, H., **Perry, M.**, & Pullon, S. (2016). "We're all here for the patient": Exploring the process of interprofessional learning. *Radiotherapy & Oncology*, 119(Suppl. 1), (pp. S989). doi: 10.1016/S0167-8140(16)33353-9

Coleman, K., Darlow, B., McKinlay, E., Gallagher, P., **Perry, M.**, Beckingsale, L., Gray, B., Nesar, H., Donovan, S., Stanley, J., & Pullon, S. (2016). Changes in student attitudes following a pre-registration interprofessional learning experience. *Radiotherapy & Oncology*, 119(Suppl. 1), (pp. S173-S174). doi: 10.1016/S0167-8140(16)31621-8

Collier, G., Kayes, N., **Hale, L.**, Norris, P., Peri, K., Babbage, D., ... Hayes, N. (2016). Living well with mild cognitive impairment: Designing an interactive online resource. *Neuroepidemiology*, 47(3-4), (pp. 132). doi: 10.1159/000453097



Coombs, S., Eberlein, A., Mantata, K., Turnhout, A., & **Smith, C.** (2016). Did dog ownership influence perceptions of adult health and wellbeing following the Canterbury earthquakes? In J. Deely & A. Dierckx (Eds.), *Proceedings of the Inaugural People in Disasters Conference*. (pp. 35). School of Psychology, Massey University. Retrieved from <http://www.massey.ac.nz/~trauma/>

Davidson, M., Laslett, M., Pons, T., **Tumilty, S.**, O'Sullivan, P., & Lewis, J. (2016). The pathway to physiotherapy specialist [Panel discussion]. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 122). Retrieved from <https://pnz.org.nz/conference>

Devan, H., Dillon, M., Carman, A., Hendrick, P., **Hale, L.**, Boocock, M., & **Ribeiro, D. C.** (2016). Spinal and pelvic kinematics during gait in people with lower limb amputation, with and without low back pain: An exploratory study. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 66-67). Retrieved from <https://pnz.org.nz/conference>

Dickson, B., Signal, N., **Clay, L.**, Murphy, H., Busby, W., & Taylor, D. (2016). The intense trial: Putting the patient first by all playing in the same sandpit. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 68). Retrieved from <https://pnz.org.nz/conference>

Dwyer, K., & **Mulligan, H.** (2016). Interactions with community health providers following discharge from inpatient rehabilitation: The experience of individuals with spinal cord injury. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 69). Retrieved from <https://pnz.org.nz/conference>

**Ferdinand, S.**, Dunn, J., Banks, T., King, V., Marrow, K., & Szeto, M. (2016). Patient and physiotherapists' priorities for rehabilitation in an inpatient spinal unit setting: A qualitative study. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 72). Retrieved from <https://pnz.org.nz/conference>

Foster, N., & **Baxter, D. G.** (2016). Getting started on research [Workshop]. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 10-11). Retrieved from <https://pnz.org.nz/conference>

**Hale, L.** (2016). 'Somebody's kindly following you along the line': Supporting physical activity for people living with long-term conditions [Invited]. *Proceedings of the*

*Physiotherapy New Zealand Conference*. (pp. 18). Retrieved from <https://pnz.org.nz/conference>

**Kaur, M., Ribeiro, D. C.,** Theis, J. C., Webster, K., & **Sole, G.** (2016). Movement patterns of the knee during gait following ACL reconstruction: A systematic review and meta-analysis. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 78-79). Retrieved from <https://pnz.org.nz/conference>

**Jayakaran, P.,** Peace, R., Siew, B., and Wills, C. (2016), - Smartphone technology in measuring physical activity - A review of mobile applications. A poster presented at the International Society of Physical Activity and Health Congress 2016, held in Bangkok from 16th to 19th Nov 2016.

**Jayakaran, P.,** Perry, M., and Hale, H.,(2016) - Do physical activity levels differ between individuals with dysvascular and traumatic lower limb amputation. A poster presented at the International Society of Physical Activity and Health Congress 2016, held in Bangkok from 16th to 19th Nov 2016.

**Jayakaran, P.,** Wong, S., and **Hale, L.,**(2016) - Physical activity levels in individuals with osteoarthritis: A secondary analysis from a community based survey. A platform presentation at the 4th World Congress of Gerontology and Geriatrics 2016 – “Healthy Ageing in the Changing world” held in Bangalore from 22nd to 25th Nov 2016.

Lamb, P., Adhia, D., & Button, C. (2016). Time-continuous kinematic assessment of the differences between barefoot and shod gait. In A. Baca, B. Wessner, R. Diketmüller, H. Tschan, M. Hoffmann, P. Kornfeind & E. Tsolakidis (Eds.), *Proceedings of the 21st European College of Sport Science Annual Congress: Crossing Borders through Sport Science*. (pp. 551). European College of Sport Science.

**Mani, R.** (2016). Pain neurophysiology knowledge, pain attitudes and beliefs, and pain-impairment relationships among undergraduate physiotherapy students: A cross-sectional investigation. *Proceedings of the International Association for the Study of Pain (IASP) 16th World Congress on Pain*. PF0049. Retrieved from <http://www.iasp-pain.org/Yokohama16/>

**Mani, R.,** Engheepi, F., Gupta, S., & Raja, K. (2016). Imparting the IASP pain curriculum to physiotherapists and physiotherapy post graduates through distance mode: A study of impact on knowledge, attitudes, and beliefs about pain. *Proceedings*

of the International Association for the Study of Pain (IASP) 16th World Congress on Pain. L00116. Retrieved from <http://www.iasp-pain.org/Yokohama16/>

**Mulligan, H., Smith, C., & Ferdinand, S.** (2016). How do physiotherapists describe their experiences during the Canterbury earthquake? In J. Deely & A. Dierckx (Eds.), *Proceedings of the Inaugural People in Disasters Conference*. (pp. 36). School of Psychology, Massey University. Retrieved from <http://www.massey.ac.nz/~trauma/>

**Perry, M., Burns, M., Gebreselassie, S., Greacen, K., Rouse, T., & Voice, M.** (2016). The reliability and validity of interprofessional education and practice instruments. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 95). Retrieved from <https://pnz.org.nz/conference>

**Perry, M., Darlow, B., Coleman, K., McKinlay, E., Beckingsale, L., Donovan, S., Gallagher, P., Nesor, H., & Pullon, S.** (2016). Development of an interprofessional education teaching team. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 96). Retrieved from <https://pnz.org.nz/conference>

Pullon, S., Gallagher, P., Pelham, K., McHugh, P., McKinlay, E., **Skinner, M.**, & Gray, L. (2016). Partnerships matter: An interprofessional education programme as a socially accountable win-win for students and rural communities. *Proceedings of the Primary Health Care Research Conference: Reform and Innovation in PHC Policy and Practice*. (pp. 29). Retrieved from <http://www.phcris.org.au/conference/2016/>

Pullon, S., & **Skinner, M.** (2016). Breaking in new ground to develop an interprofessional education strategy: The importance of educational governance. *Proceedings of the All Together Better Health (ATBH) VIII Conference*. (pp. 29). Retrieved from <http://www.atbh.org/>

Pullon, S., Wilson, C., Gallagher, P., **Skinner, M.**, McKinlay, E., Gray, L., & McHugh, P. (2016). Transitioning from student to graduate health practitioner. *Proceedings of the Royal New Zealand College of General Practitioners (RNZCGP) Conference for General Practice*. Retrieved from <http://www.generalpractice.org.nz/gp16>

Pullon, S., Wilson, C., McHugh, P., Gallagher, P., Gray, L., **Skinner, M.**, & McKinlay, E. (2016). Rural interprofessional education meets multiple learning objectives for entry to practice. *Proceedings of the All Together Better Health (ATBH) VIII Conference*. (pp. 88). Retrieved from <http://www.atbh.org/>

**Rhodes, S., & Skinner, M.** (2016). Physical activity and obstructive sleep apnoea hypopnoea syndrome: Nothing to lose (except weight) and everything to gain. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 130). Retrieved from <https://pnz.org.nz/conference>

Salmon, D., Pinfold, J., Sullivan, S.J., Gray, A., Lodge, E., Osborne, H. & Tong, D. Descriptive analysis of head impact kinetics in a simulated rugby union tackle: preliminary findings. ? 5th International Conference on Concussion in Sport. Berlin, October, 2016.

**Sampath, K. K., & Tumilty, S.** (2016). Neuro-endocrine response following a thoracic spinal manipulation: A randomized controlled trial. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 109). Retrieved from <https://pnz.org.nz/conference>

Scott, S., **Perry, M., & Sole, G.** (2016). “Not always a straight path”: Patients’ perspectives following anterior cruciate ligament rupture and reconstruction. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 118-119). Retrieved from <https://pnz.org.nz/conference>

**Sullivan, S.J.,** Collins, K., Gray, A. & Handcock, P. (2016) Blue Card: Referees’ perspectives of a Rugby Union Concussion recognition and management programme. 5th International Conference on Concussion in Sport. Berlin, 27-28 October 2016.

**Sullivan, S.J.,** Alla, S., Hale, L., Lee, H. & McCrory, P. (2016) A graded exercise protocol with added cognitive load: a standardized approach for assessing symptom responses following a sports related concussion? 5th International Conference on Concussion in Sport. Berlin, October, 2016.**Sole, G., Hale, L., Skinner, M., & Golding, C.** (2016). Framework for teaching clinical reasoning skills to undergraduate physiotherapy students and models for learning. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 106). Retrieved from <https://pnz.org.nz/conference>

**Tumilty, S., & Baxter, G. D.** (2016). Expanding treatment parameters for Achilles tendinopathy. *Advances in Laserology: Selected Papers of Laser Florence 2015: International Academy for Laser Medicine and Surgery (IALMS) Congress*. Bologna, Italy: Medimond.

**Tumilty, S., & Baxter, G. D.** (2016). More or less treatment of Achilles tendinopathy. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 110). Retrieved from <https://pnz.org.nz/conference>

Unsworth, C.A., Tay, R., Wibowo, S., Console, A., **Sullivan, J.**, Schneiders, A., Simpson, D., Henwood, N., Field, A., Balcam, H., Lo Bianco-Smith, L. (2016). The influence of public transport accessibility on consumer choice and use of mobility aids. Australian Assistive Technologies Conference, July 27-29, Gold Coast Queensland. 2016.

von Aesch, A., **Perry, M., & Sole, G.** (2016). Physiotherapists' experiences of the management of anterior cruciate ligament injuries. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 111). Retrieved from <https://pnz.org.nz/conference>

Winser, S. J., **Smith, C. M., Hale, L. A.**, Claydon, L. S., Whitney, S. L., Klatt, B., Mottershead, J., Heyman, R. (2016). Movement disorders are the common signs as the first neurological deficit in cases with spinocerebellar ataxia type 2 (SCA2). *Movement Disorders*, 31(Suppl. 2), (pp. S337). doi: 10.1002/mds.26688

Woodley, S. J., Flack, N. A. M. S., Nicholson, H. D., **Hargest, C., & Chapple, C.** (2016). A feasibility study of a prehabilitation programme for patients awaiting total hip joint arthroplasty. *Proceedings of the Physiotherapy New Zealand Conference*. (pp. 113). Retrieved from <https://pnz.org.nz/conference>

### **Conference Contribution - Verbal presentation and other Conference outputs**

Goodwin, S., Horne, A., Sela, D. & **Sullivan, S.J.** (2016) Community Mobility: At the Crossroads. Scientific Session, World Sight Day, Dunedin, October, 2016.

**Hale, L.** (2016, November). *Optimising stroke upper limb rehabilitation*. Plenary presentation at the New Zealand Applied Neurosciences Conference (NZANC), Auckland, New Zealand.

**Mani, R.** (2016, 25th November). Poor tactile acuity: a clinical marker of dysfunctional lateral neural inhibition in chronic pain. 1st Annual Pain@Otago Research Theme Meeting: Pain relief through research informed practice, Dunedin, New Zealand.

**Mani, R.** (2016, 25th November). The Brain and Joint Pain Study- preliminary findings. 1st Annual Pain@Otago Research Theme Meeting: Pain relief through research informed practice, Dunedin, New Zealand.

**Moran, R.W.,** Schneiders, A.G., Mason, J., Major, K. & **Sullivan, S.J.** (2016) Can a pre-participation test of movement quality predict injury in sport and exercise? Systematic reviews of reliability and validity of the 'Functional Movement Screen'. Health, Movement and Lifestyle: A Multidisciplinary Approach. School of Physical Education, Sport and Exercise Sciences and Physiotherapy Postgraduate Symposium. Dunedin, November 2016.

**Moran, R.W,** Mason, J., Schneiders, A.G., Major, K. & **Sullivan S.J.** Can a pre-participation test of movement quality predict injury in sport and exercise? Systematic reviews of reliability and validity of the 'Functional Movement Screen'.

**Moran, R.W.,** Schneiders, A.G., Mason, J., Major, K., & **Sullivan, S.J.** (2016) Can a Pre-Participation Test of Movement Quality Predict Injury in Sport and Exercise? Systematic Reviews of Reliability and Validity of the Moran, R,W. 'Functional Movement Screen'. Paper presented at Sport and Exercise Science New Zealand Annual Conference: Changing NZ Perspectives on Active Health and Human Performance, AvantiDome, Cambridge, New Zealand. October, 2016.

Pinfold, J., Salmon, J., **Sullivan, S.J.** & Gray, A. (2016) Descriptive analysis of linear and angular acceleration forces at the head during simulated Rugby Union tackle. Rugby Science Live 2016. Sept 13-14 2016 (web-based conference).

Salmon, D., Pinfold, J., **Sullivan, S.J.,** Cheung, M., Osborne, H., Murphy, I & Bloxham, K. (2016) A baseline profile of brain health in a semi-professional Rugby Union team. Rugby Science Live 2016. Sept 13-14 2016 (web-based conference).

**Skinner M,** McMeeken J, Stewart A, Xerri de Caro J, Sykes C. (2016) Raising the standard of physiotherapy education worldwide: WCPT's accreditation service eS24 The 4th European Congress of the ER-WCPT / Physiotherapy 102S (2016) eS1–eS42

**Sullivan, S.J.** (2016) Sport-related concussion research @ Otago. Presented at the NZ International Science Festival Lecture - Sport Concussion: Big issue or should we just shake it off? Dunedin, July 2016 (Invited).

**Waters, D.** (2016, September). *Writing for scholarly journals: Getting published in a regional ageing journal*. Workshop presentation at the New Zealand Association of Gerontology Conference: Making Active Ageing a Reality, Wellington, New Zealand.

**Waters, D.** (2016, September). *Self-help: For the community by the community: An exploration of the value of community leaders*. Verbal presentation at the New Zealand Association of Gerontology Conference: Making Active Ageing a Reality, Wellington, New Zealand.