

CENTRE FOR HEALTH, ACTIVITY, AND REHABILITATION RESEARCH



Research Activity 2013



Centre for Health, Activity,
and Rehabilitation Research

Centre for Health, Activity, and Rehabilitation Research

RESEARCH ACTIVITY 2013

OVERVIEW

The *Centre for Health, Activity, and Rehabilitation Research* is based at the School of Physiotherapy on the University's main campus in Dunedin, but also has members in Wellington and in Christchurch. Currently, it comprises 14 research active staff and three dedicated research support staff.

We are committed to excellence in research, and to the transfer of research informed knowledge to our learning activities and clinical practice. Our research has expanded rapidly over the last ten years, during which our research outputs, funds, and research student numbers have more than trebled: we are the fastest growing research area within the University in terms of quantifiable indicators of research quality (these consist of the number of research outputs, research students, and research income).

RESEARCH DEVELOPMENT

The School of Physiotherapy moved back to the University from the Otago Polytechnic in 1996. At that time, none of the academic physiotherapy staff who transferred had a doctoral degree, and there was no culture of research. This has changed significantly in the intervening period: all of the academic staff now hold PhD degrees, and a strong research culture has been developed.

The School and the Centre for Health, Activity, and Rehabilitation Research are now recognised nationally as the pre-eminent centre for allied health research, evidenced by PBRF ratings, the Centre's leadership role in the University's Rehabilitation and Disability Research Theme (2007-2011), and Professor Baxter's appointment to the TEC-funded STAR Advisory Panel.

In 2013 the Centre changed its title to the Centre for Health, Activity, and Rehabilitation Research, to better reflect the expansion of its research activities and its multidisciplinary engagement. CHARR has also developed a strong network of

research partners, ranging from community groups (through its group-based exercise and physical activity programmes) to commercial partners nationally and internationally.

2013 research highlights included success in PBRF. CHARR is the top rated research group in this area in New Zealand and improved its overall rating from a 3.6 to a 4.1. The Centre also celebrated the employment of three new academic members of staff: Dr Cathy Chapple, Dr Ram Mani, and Dr Dan Ribeiro. Notably, all three new members of staff were successful in applying for research grant funding in 2013.

RESEARCH NETWORKS AND THEMES

We have developed strong linkages with colleagues and research groups nationally and internationally, as well as across the University.

In 2013, CHARR led the development of two research networks; Physical Activity and Health, and the Caregivers network:

The *Physical Activity and Health network* brings together established researchers from departments around the University, and maintains links with collaborators around the world. The activity of this network culminated in a one and half day meeting in December 2013 to set a collaborative research agenda for the future.

The *Caregivers network* works with researchers from the University and Otago Polytechnic, as well as with relevant support services. CHARR hosted a one day symposium in the middle of 2013 to discuss the diverse issues facing Caregiving in today's society.

We have contributed to two additional University Research Themes: *The Arthritis Research Theme*, (Director: Associate Professor Lisa Stamp) and – particularly – the *Health of Veterans, Serving Personnel and Their Families* (Director: Associate Professor David McBride, Deputy and Acting Director Professor David Baxter); this has served to increase our engagement and collaboration with departments within the University, and key agencies externally (including Arthritis New Zealand, and the New Zealand Defence Force).

INTERNATIONAL: COLLABORATIONS AND ADVISORY BOARD

We have 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; concussion, sports medicine); 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).

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.

In 2013 the following were visitors to the School:

- Professor Louise Ada, University of Sydney, Australia (Neurological rehabilitation, stroke)
- Professor Elizabeth Dean, University of Vancouver (William Evans Fellow)

CONFERENCES AND EVENTS

PhysioForward April 2013: This conference showcased innovative and thought-provoking research in the areas of physiotherapy and rehabilitation from across the world and New Zealand. The fundamental theme of the conference was the future of physiotherapy practice in a changing health delivery climate. The conference was divided into four presentation themes key to the physiotherapy and rehabilitation professions both clinically and at a research and policy level. These themes were: prevention, intervention, participation, and evaluation.

100 Years of Physiotherapy April 2013: The School of Physiotherapy celebrated 100 years in April 2013. The anniversary was marked by two days of celebration attended by Alumni.

Reaching Out: Celebrating 100 Years of Otago Physiotherapy Graduates 1913-2013. There was an exhibition, supporting the centenary, in the De Beer Gallery Special Collections, Library, University of Otago from 27th September –13th December 2013. <http://www.otago.ac.nz/library/exhibitions/physio100/>

RESEARCH LEADERS

Professor David Baxter

BSc (Hons), DPhil, MBA

Position: Dean and Professor

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. Recently participated as a team member on a major HRC-funded trial of non-pharmacological management of osteoarthritis (MOA Trial), with several multinational network projects focused on the use of activity monitors in rehabilitation (including UK, Ireland, Sweden), and non-pharmacological pain management (including Korea, USA, UK and Ireland).

Associate Professor Leigh Hale

BSc (Physio), MSc, PhD (WITS)

Position: Associate Professor, Associate Dean for Research

Leigh's work has focused on the needs of people with disabilities, 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, diabetes)

Professor S. John Sullivan

DipPhEd (Otago)MSc PhD (Wat)

Position: Professor

John's international research has led to publications in the areas of: clinical neurophysiology and motor control; therapeutic massage; traumatic brain injury and physical activity; sports-related concussion; sports injury and the use of the world wide web and apps in sports concussion and sports medicine. Professor Sullivan and his collaborators are focusing their sports concussion research 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 protocol and sideline screening assessment tools.

KEY AND EMERGING STAFF

Dr Cathy Chapple

BSc (Hons), Grad Dip Phty, Post Grad Dip Phty, MManipPhty, PhD (Otago)
Position: Lecturer

Research Interests

Cathy's research focuses on Osteoarthritis of the knee and hip focusing on: effectiveness of physiotherapy intervention, predictors of treatment outcome; models of care, patient consulting behaviour, levels of physical activity, and pain with osteoarthritis. She has an interest in translating research into physiotherapy clinical practice by exploring: facilitators and barriers to implementation of research findings, and alternative/new models of physiotherapy practice e.g. working in orthopaedic clinics. Her interest in clinical education focuses on the use of simulation to augment clinical practice, models of clinical practice, and clinical reasoning in students and experienced physiotherapists.

Dr Gill Johnson

Dip Phty, MSc, PhD (Otago)
Position: Senior Lecturer

Research Interests

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.

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 encompass modern pain sciences [centrally mediated neurophysiological mechanisms, and psychosocial factors] in routine clinical assessment and intervention. Other key research interests include sedentary behaviours and structured physical activity in health and disease, rural occupational health (injury prevention-quad bikes) and clinimetrics. He is a member of various national and international professional organisations such as International Association for 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: 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 has an interest in the development of relationships between health care providers and their clients particularly in the area of primary health, chronic conditions (including low back pain) and health behaviours, particularly with respect to the design of physical activity interventions, inter-professional learning, and older adult's recovery following orthopaedic surgery. She has experience in qualitative and mixed methods research.

Dr Daniel Ribeiro

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

Position: 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 a 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.

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

Dr A. G. Schneiders

DipPhty (Otago), PGCertTertT (Otago), PGDipManipTh (Curtin), MSc (Curtin), PhD (Otago)

Position: Senior Lecturer

Research Interests

Tony has a focus on sports and manipulative physiotherapy. His specific research interests include sports injury prevention, sports-related concussion, complementary and alternative medicine for sports injury and chronic condition management, biomechanics (3D motion analysis and electromyography), exercise prescription, exercise compliance/adherence issues, balance, proprioception and laterality.

Dr Margot Skinner

Dip Phty, MPhEd, PhD (Otago)

Position: Deputy Dean, Associate Dean of Undergraduate Studies, Senior Lecturer

Research Interests

Margot had developed her interest in the conservative management of patients with obstructive sleep apnoea, and comparison of posture and 3D movement of the cervicothoracic region to include a wider range of participants such as young female rowers, those with asthma, with obesity and other non-communicable diseases. She also has an interest in research into 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: Associate Dean Graduate Research, 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)

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 contributing towards research on the association of shoulder pain and various functional limitations.

Dr Steve Tumilty

GradDipPhys (Northumbria); PGDipPhy(Manip), PGCertTertT, MPhy (Otago), PhD (Otago)

Position: Associate Dean for Postgraduate Studies, Senior Lecturer

Research Interests

Steve's passion is for clinically applicable musculoskeletal research. His recent focus has been exploring the use of low level laser therapy in the treatment of tendinopathies. His research directions include translational research projects that will bring new knowledge to the profession. Current projects include Anterior Cruciate Ligament rehabilitation, the use of outcome measures to monitor progress in a rehabilitation setting, and the incidence of low back pain in the amputee population.

FULL PUBLICATIONS (2013)

Chapter in Book

Peplow, P. V., & **Baxter, G. D.** (2013). Translational approach to treating diabetes using acupuncture or electroacupuncture. In J. D. Adams Jr & E. J. Lien (Eds.), *Traditional Chinese medicine: Scientific basis for its use* (pp. 313-338). Cambridge, UK: Royal Society of Chemistry

Journal – Research article

Abbott, J. H., Robertson, M. C., Chapple, C., Pinto, D., Wright, A. A., Leon de la Barra, S., **Baxter, G. D.**, Theis, J.-C., Campbell, A. J., on behalf of the MOA Trial Team. (2013). Manual therapy, exercise therapy, or both, in addition to usual care, for osteoarthritis of the hip or knee: A randomized controlled trial. I: Clinical effectiveness. *Osteoarthritis & Cartilage*, (4), 525-534

Adhia DB, Bussey MD, **Ribeiro DC, Tumilty S**, Milosavljevic S. (2013) Validity and reliability of palpation-digitization for non-invasive kinematic measurement - a systematic review.) *Manual Therapy* Feb;18(1):26-34.

Ahmed, O., **Sullivan, S. J., Schneiders, A.**, Moon, S., & McCrory, P. (2013). Exploring the opinions and perspectives of general practitioners towards the use of social networking sites for concussion management. *Journal of Primary Health Care*, (1), 36-42.

Ahuja, S. S., Clark, S., Morahan, E. M., Ono, M., **Mulligan, H., & Hale, L.** (2013). The journey to recovery: Experiences and perceptions of individuals following stroke [ML Roberts Prize]. *New Zealand Journal of Physiotherapy*,(1), 36-43.

Al Nezari, N. H., **Schneiders, A. G.**, & Hendrick, P. A. (2013). Neurological examination of the peripheral nervous system to diagnose lumbar spinal disc herniation with suspected radiculopathy: A systematic review and meta-analysis. *Spine Journal*. Advance online publication.

Angelo, J. K., Egan, R., & Reid, K. (2013). Essential knowledge for family caregivers: A qualitative study. *International Journal of Palliative Nursing*, (8), 383-388.

- Balasundaram, A. P., Sullivan, S. J.,** Schneiders, A. G., & Athens, J. (2013). Symptom response following acute bouts of exercise in concussed and non-concussed individuals: A systematic narrative review. *Physical Therapy in Sport*. Advance online publication. doi: 10.1016/j.ptsp.2013.06.002
- Bell, R., Carman, A., & **Tumilty, S.** (2013). Sports injury profile of competitive Waka Ama (outrigger canoe) paddlers in New Zealand. *New Zealand Journal of Physiotherapy*, (1), 30-35."
- Calder, A. M., & **Mulligan, H. F.** (2013). Measurement properties of instruments that assess inclusive access to fitness and recreational sports centers: A systematic review. *Disability & Health Journal*. Advance online publication. doi: 10.1016/j.dhjo.2013.06.003
- Chang, V., Hiller, C., Keast, E., Nicholas, P., Su, M., & **Hale, L.** (2013). Musculoskeletal disorders in support workers in the aged care sector. *Physical Therapy Reviews*, (3), 185-206.
- Clay, L.,** Treharne, G. J., Hay-Smith, E. J. C., & Milosavljevic, S. (2013). Is workplace satisfaction associated with self-reported quad bike loss of control events among farm workers in New Zealand? *Applied Ergonomics*. Advance online publication. doi: 10.1016/j.apergo.2013.07.003
- Cury Ribeiro, D., Sole, G.,** Abbott, J. H., & Milosavljevic, S. (2013). Validity and reliability of the Spineangel lumbo-pelvic postural monitor. *Ergonomics*. Advance online publication. doi: 10.1080/00140139.2013.781233
- Darlow, B., Dowell, A., **Baxter, G. D.,** Mathieson, F., Perry, M., & Dean, S. (2013). The enduring impact of what clinicians say to people with low back pain. *Annals of Family Medicine*, (6), 527-534.
- de Toledo, J. M., **Ribeiro, D. C.,** de Castro, M. P., Forte, F. C., Körbes, T. S., Rusch, M. W., & Loss, J. F. (2013). Comparison of shoulder resultant net moment between three different exercises and load conditions. *Physiotherapy Theory & Practice* (2), 124-132.
- Devan, H.,** Hendrick, P., **Cury Ribeiro, D., Hale, L. A.,** & Carman, A. (2013). Asymmetrical movements of the lumbopelvic region: Is this a potential mechanism

for low back pain in people with lower limb amputation? Medical Hypotheses. Advance online publication. doi: 10.1016/j.mehy.2013.11.012

Hale, LA, Mulligan, HF, Treharne, GJ, Smith CM. The feasibility and short-term benefits of Blue Prescription: a novel intervention to enable physical activity for people with multiple sclerosis. *Disability and Rehabilitation* 2013; 35 (14): 1213-20.

Hale, L., van der Meer, J., Rutherford, G., Clay, L., Janssen, J., & Powell, D. (2013). Exploring the integration of disability awareness into tertiary teaching and learning activities. *Journal of Education and Learning*, 147-157

Hendrick, P., Milosavljevic, S., **Hale, L., Hurley, D. A., McDonough, S. M., Herbison, P., & Baxter, G. D.** (2013). Does a patient's physical activity predict recovery from an episode of acute low back pain? A prospective cohort study. *BMC Musculoskeletal Disorders*, (1), 126.

Janssen, J., **Hale, L., Mirfin-Veitch, B. F., & Harland, T.** (2013). Building the research capacity of clinical physical therapists using a participatory action research approach. *Physical Therapy*, Advance online publication. doi: 10.2522/ptj.20120030

Jayakaran, P., Johnson, G. M., & Sullivan, S. J. (2013). Turning performance in persons with a dysvascular transtibial amputation. *Prosthetics & Orthotics International*. Advance online publication. doi: 10.1177/0309364613485114

Jordan, K., King, M., Hellersteth, S., Wiren, A., & **Mulligan, H.** (2013). Feasibility of using a humanoid robot for enhancing attention and social skills in adolescents with autism spectrum disorder. *International Journal of Rehabilitation Research*. Advance online publication. doi: 10.1097/MRR.0b013e32835d0b43

Kanagasabai, P. S., Mohan, D., Lewis, L. E., Kamash, A., & Rao, B. K. (2013). Effect of multisensory stimulation on neuromotor development in preterm infants. *Indian Journal of Pediatrics*. Advance online publication. doi: 10.1007/s12098-012-0945-z

Keith, K. G. M., & Johnson, G. M. (2013). Ultrasound measurement of a single acupuncture point with respect to De Qi: An observational cross sectional study. *Medical Acupuncture*, (2), 149-153.

McDonough, S. M., Tully, M. A., Boyd, A., O'Connor, S. R., Kerr, D. P., O'Neill, S. M., ... **Baxter, G. D., Hurley, D. A.** (2013). Pedometer-driven

walking for chronic low back pain: A feasibility randomized controlled trial. *Clinical Journal of Pain*. Advance online publication. doi: 10.1097/AJP.0b013e31827f9d81

McDowell, J. M., **Johnson, G. M.**, & **Hale, L.** (2013). Adverse reactions to acupuncture: Policy recommendations based on practitioner opinion in New Zealand. *New Zealand Journal of Physiotherapy*, (3), 94-101.

Melloh, M., Elfering, A., **Chapple, C. M.**, Käser, A., Rolli Salathé, C., Barz, T., ... Theis, J.-C. (2013). Prognostic occupational factors for persistent low back pain in primary care. *International Archives of Occupational & Environmental Health*, (3), 261-269.

Mulligan, H., & Polkinghorne, A. (2013). Community use of a hospital pool by people with disabilities. *Disability & Health Journal*. Advance online publication. doi: 10.1016/j.dhjo.2013.04.004

Mulligan, H., Treharne, G. J., **Hale, L. A.**, & **Smith, C.** (2013). Combining self-help and professional help to minimize barriers to physical activity in persons with multiple sclerosis: A trial of the Blue Prescription approach in New Zealand. *Journal of Neurologic Physical Therapy*, 51-57.

Newton, J. D., White, P. E., Ewing, M. T., Makdissi, M., Davis, G. A., Donaldson, A., **Sullivan, S. J.**, ... Finch, C. F. (2013). Intention to use sport concussion guidelines among community-level coaches and sports trainers. *Journal of Science & Medicine in Sport*. Advance online publication.

Pal, J., **Hale, L.**, & Mirfin-Veitch, B. (2013). Experiences of therapists trying to reduce falls risk for people with intellectual disability. *Journal of Policy & Practice in Intellectual Disabilities*, (4), 314-320.

Pal, J., **Hale, L.**, Mirfin-Veitch, B. & Claydon, L. (2013) Injuries and falls among adults with intellectual disability: A prospective New Zealand cohort study. *Journal of Intellectual and Developmental Disability*

Peplow, P. V., & **Baxter, G. D.** (2013). Testing infrared laser phototherapy (810 nm) to ameliorate diabetes: Irradiation on body parts of diabetic mice. *Lasers in Surgery & Medicine*, (4), 240-245.

Pullon, S., McKinlay, E., Beckingsale, L., **Perry, M.**, Darlow, B., Gray, B., Gallagher, P., Hoare, K., Morgan, S. (2013). Interprofessional education for physiotherapy, medical and dietetics students: A pilot programme. *Journal of Primary Health Care* (1), 52-58.

Smith, C. M., Hale, L. A., Olson, K., **Baxter, G. D., & Schneiders, A. G.** (2013). Healthcare provider beliefs about exercise and fatigue in people with multiple sclerosis. *Journal of Rehabilitation Research & Development*, (5), 733-744.

Smith, CM, Hale, LA, Mulligan, HF, Treharne, GJ. Participant perceptions of a novel physiotherapy approach ("Blue Prescription") for increasing levels of physical activity in people with multiple sclerosis: a qualitative study following intervention. *Disability and Rehabilitation* 2013;35(14): 1174-81.

Sole, G., Schneiders, A., Hébert-Losier, K., & Perry, M. (2013). Perceptions by physiotherapy students and faculty staff of a multimedia learning resource for musculoskeletal practical skills teaching. *New Zealand Journal of Physiotherapy*, (2), 58-64.

Ward, L. (2013). Yoga: A useful and effective therapy for musculoskeletal disorders? *Physical Therapy Reviews*, (4), 235-238.

Ward, L., Stebbings, S., Cherkin, D., & Baxter, G. D. (2013). Yoga for functional ability, pain and psychosocial outcomes in musculoskeletal conditions: A systematic review and meta-analysis. *Musculoskeletal Care*. Advance online publication. doi: 10.1002/msc.1042

Wassinger, C. A., **Sole, G., & Osborne, H.** (2013). Clinical measurement of scapular upward rotation in response to acute subacromial pain. *Journal of Orthopaedic & Sports Physical Therapy*, (4), 199-203.

Williams, D., **Sullivan, S. J., Schneiders, A. G.,** Ahmed, O. H., Lee, H., **Balasundaram, A. P., & McCrory, P. R.** (2013). Big hits on the small screen: An evaluation of concussion-related videos on YouTube. *British Journal of Sports Medicine*. Advance online publication. doi: 10.1136/bjsports-2012-091853

Winser, S. J., Hale, L., Claydon, L. S., & Smith, C. (2013). Outcome measures for the assessment of balance and posture control in cerebellar ataxia. *Physical Therapy Reviews*, (2), 117-133.

Journal – Research other

Ahmed, O. H., **Sullivan, S. J., Schneiders, A. G.**, Anderson, L., Paton, C., & McCrory, P. R. (2013). Ethical considerations in using Facebook for health care support: A case study using concussion management. (4), 328-334.

Baxter, G. D. (2013). 100 years of education, research, and clinical practice: The University of Otago School of Physiotherapy in 2013 [Invited review]. *New Zealand Journal of Physiotherapy*(1), 2-3.

Baxter, M. (2013). Response to the commentary on ;Do orthotics work as an injury prevention strategy for the military? A systematic review; *Physical Therapy Reviews*(1), 51.

Darlow **B, Perry M, & Chapple C** (2013) Water based exercise for people with arthritis. University of Otago and Arthritis New Zealand.

Dean E, de Andrade AD, O'Donoghue G, **Skinner M** et al. The Second Physical Therapy Summit on Global Health: Developing an Action Plan to Promote Health in Daily Practice and Reduce the Burden of Non-communicable Diseases. *Physiotherapy Theory and Practice* Nov 19 2013
<http://www.ncbi.nlm.nih.gov/pubmed/24252072>

Hale, L. (2013). Celebrating 100 years of physiotherapy education in New Zealand [Editorial]. *New Zealand Journal of Physiotherapy*, (1), 1.

Horton, S. J., & Wade, K. J. (2013). Exercise intervention for a musculoskeletal disorder in an oral health student: A case report. *New Zealand Dental Journal* (1), 12-16.

Mansi, S., Milosavljevic, S., Tumilty, S., Hendrick, P., & Baxter, G. D. (2013). Use of pedometer-driven walking to promote physical activity and improve health-related quality of life among meat processing workers: A feasibility trial. *Health & Quality of Life Outcomes*, 185.

Sampath, K. K., **Mani, R., & Tumilty, S.** (2013). Effectiveness of manual therapy (MT) or exercise therapy (ET) or both on pain, physical function and quality of life in patients with hip osteoarthritis (OA): A systematic review and meta-analysis. PROSPERO: International Prospective Register of Systematic Reviews

Schneiders, T. (2013). Physical sideline tests for the assessment of sports concussion: A clinician's guide to the SCAT3. *Sport Health*, (1), 45-49.

Skinner, M. A. (2013). The influence of epidemics on the role of physiotherapists in rehabilitation. *New Zealand Journal of Physiotherapy*, (1), 22-25.

William, J. R., Srikantaiah, S., & **Mani, R.** (2013). Cryotherapy for acute non-specific neck pain (Protocol). *Cochrane Database of Systematic Reviews*, CD010711.

Professional and other non-research articles

Jones, A., & **Skinner, M. A.** (2013). The current status of physical therapy in China. *Chinese Journal of Rehabilitation Medicine*, (6), 493-501.

Tumilty, S., McDonough, S., Hurley-Osing, D. A., & **Baxter, G. D.** (2013). The authors respond [Letter to the editor]. *Archives of Physical Medicine & Rehabilitation*(2), 408.

Published proceedings – full paper

Croft, H., & **Cury Ribeiro, D.** (2013). Developing and applying a tri-axial accelerometer sensor for measuring real time kayak cadence. *Procedia Engineering*, (pp. 16-21).

Croft, H., & **Cury Ribeiro, D.** (2013). The development and application of a live transmitting head camera for video feedback in rugby decision making. *Procedia Engineering*, (pp. 10-15).

Tumilty, S. (2013). Eccentric exercise for Achilles tendinopathy: Lack of a dose-response relationship. *Proceedings of the 2012 Hirosaki University International Symposium: The 1st International Sports Medical Science Symposium: The Current State and Future of the Sports Medical Science*, (pp. 12-17). Japan: Hirosaki University Press.

Published proceedings - abstract

Baxter, M., McBride, D., Hendrick, P., and **Cury Ribeiro, D.** (2013) What is the inter and intra rater reliability among physiotherapists, sports medics and military

nurses conducting functional assessments of injury risk? Asics Conference of Science and Medicine in Sport – 2013

Mani, R. (2013). Potential use of VR as an intervention for individuals with movement-related fear (phobia). Proceedings of the Mixed Reality Exposure Therapy and Rehabilitation Workshop Retrieved from http://www.hci.otago.ac.nz/research_MRETR.html.

Salmon, D., Handcock, P., **Sullivan, J.**, & Rehrer, N. (2013). The efficacy of a neck strength intervention on a professional rugby union team. *Medicine & Science in Sports & Exercise*, (5, Suppl. 1), (pp. 553).

Sole, G. (2013). Proprioception and neuromuscular control for musculoskeletal disorders: A role for virtual reality? Proceedings of the Mixed Reality Exposure Therapy and Rehabilitation Workshop Retrieved from http://www.hci.otago.ac.nz/research_MRETR.html.

Trehanne, G. J., & **Hale, L.** (2013). Motivation and the challenges of falls prevention exercise for people with intellectual disability. Proceedings of the International Society of Critical Health Psychology (ISCHP) 8th Biennial Conference, (pp. 91). Retrieved from <http://www.bradford.ac.uk/ssis/ischp>.

Conference contribution – verbal presentation and other Conference outputs

Arumugam, A. (2013, April). Effects of application of a pelvic compression belt on isokinetic strength of the thigh muscles in healthy sportsmen. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Ashby, J., & Morey, S. (2013, August). Healthy food is yum! It's good for your tum! Verbal presentation at the ECE Research Hui, Dunedin, New Zealand.

Ashby, J., & **Johnson, G.** (2013, April) Body position preferences of women in the later stages of pregnancy with respect to manual therapy for lumbo-pelvic pain. Poster presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Baxter, D. (2013, April). Electrophysical agents: Current evidence and future trends. Invited speaker at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Bryant, K. (2013, April). Using Kaupapa Maori Research principles to guide the development of the Haua Maori project. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Buick, A. R., **Mulligan, H. F., & Smith, C.** (2013, March). How can individuals with chronic disability participate in physical activity? Verbal presentation at the New Zealand Rehabilitation Conference: Connecting, Living, Rebuilding, Nelson, New Zealand.

Clay, L. (2013, April). Quad bike accidents on NZ farms: ""She'll be 'right', it won't happen to me""! Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Darlow, B. (2013, April). The attitudes and beliefs of New Zealanders about low back pain. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Devan, H. (2013, April). Physical activity and low back pain in persons with traumatic transfemoral amputation: A national cross-sectional survey. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Hale, L. (2013, April). Facilitating long-term physical activity for people with multiple sclerosis. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Higgs, C. (2013, April). Evaluation of clinical outcomes from a pilot education and exercise programme for people with chronic health conditions. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Johnson, G. M., & **Skinner, M.A.** (2013) Health, postural and rowing-related predictors of back pain in adolescent female rowers. Verbal presentation at the Australian Physiotherapy Conference, Melbourne, Australia.

Jones AYM and **Skinner MA.** The development of education in cardiopulmonary physiotherapy in China. APA Conference, Melbourne, 17-22 October, 2013.

<http://www.physiotherapy.asn.au/>

Conference2013/Program/ebook/Conference2013/Program_/ebook.aspx p83

Accessed 22 Nov 2013

Kanagasabai, P. (2013, April). Effect of multisensory stimulation on neuromotor development in preterm infants. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Kannan, P. (2013, April). Systematic review and meta-analysis of randomized controlled trials of physiotherapy interventions for primary dysmenorrhea. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

La Grow, S., **Sullivan, S. J.**, & **Schneiders, T.** (2013, March). The impact of mobility scooter usage on perceived ability to get around and quality of life of those with a mobility limitation. Verbal presentation at the New Zealand Rehabilitation Conference: Connecting, Living, Rebuilding, Nelson, New Zealand.

Macznik, A. (2013, April). A review of the evidence for the use of acupuncture for sports injury management. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Mani, R. (2013, April). Adherence to low back pain guidelines and its perceived clinical utility among physiotherapists in New Zealand: A national survey. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Mehta, P. (2013, April). Outcome measures in randomized controlled trials of neuropathic pain conditions: A systematic review of systematic reviews. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Mulligan, H. (2013, April). Participatory Action Research to develop a programme for self-management of fatigue in multiple sclerosis. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Pal, J., **Hale, L.**, & Mirfin-Veitch, B. (2013, March). Insights into reducing falls risk for people with intellectual disability. Verbal presentation at the New Zealand Rehabilitation Conference: Connecting, Living, Rebuilding, Nelson, New Zealand.

Ribeiro, D. (2013, April). Dose-response relationship between work-related cumulative postural exposure and low back pain: A systematic review. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Schneiders, T. (2013, April). The homeostatic effect of acupuncture on systolic and diastolic blood pressure. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Skinner, M. (2013, April). Physiotherapy: Do we have the infrastructure to build global capacity? Invited speaker at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Skinner MA. The physical therapist's role in preventive education and rehabilitation for managing the global epidemic – non-communicable diseases (NCDs) 7th World Congress of the International Society of Physical and Rehabilitation Medicine. Beijing, China 16-20 June, 2013. Abstract SY-307AB-05 Journal of Rehabilitation Medicine S53 ISSN 1650-1969

Skinner MA Physical therapy in critical care – respiratory and rehabilitation management update. Symposium on Critical Care WCPT-Asia Western Pacific & ACPT Congress 6-8 September 2013, Taichung Taiwan.

Skinner MA Physical therapy entry level educational reforms in Asia Western Pacific countries WCPT Symposium. WCPT-Asia Western Pacific & ACPT Congress 6-8 September 2013, Taichung Taiwan

Skinner MA and Jones A. Invited speaker - Current development of Chinese rehabilitation therapist education 7th World Congress of the International Society of Physical and Rehabilitation Medicine. Beijing, China 16-20 June, 2013 SYC19-306B-03.

Smith, C. (2013, April). Effects of the Canterbury earthquakes on physiotherapists and physiotherapy service provision: A qualitative study. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Smith, C Invited speaker: Exploring health status of paid caregivers in NZ. Caregiver symposium, Centre for Health, Activity and Rehabilitation Research, June 2013

Smith, C Invited speaker: Control, choice, support: Could these three little words facilitate participation in exercise for life? Physiotherapy New Zealand Neurology group. June 2013, Wellington.

Sole, G. (2013, April). Compensatory changes and influence of footwear during stair ascent and descent following knee injury: A knee osteoarthritis perspective. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Sullivan, J. (2013, April). A new way of doing things: Exploring the potential uses of social media in disseminating physiotherapy knowledge to a worldwide audience. Invited speaker at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Tulloch, E. (2013, August). Can subgrouping exercise rehabilitation have an immediate effect on muscle performance and dynamic balance? Verbal presentation at the New Zealand Manipulative Physiotherapists Association (NZMPA) Biennial Scientific Conference, Rotorua, New Zealand.

Ward, L. (2013, April). Yoga for musculoskeletal conditions: A Delphi survey to establish international consensus of core intervention components. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Winser, S. (2013, April). Psychometric properties of clinical outcome measures for balance in cerebellar ataxia: A systematic review. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Wurzer, B. (2013, April). Community-based peer-led group exercise programme for older adults at-risk of falling: Types of injuries sustained at 12-month follow-up. Verbal presentation at the PhysioForward Scientific Conference, Dunedin, New Zealand.

Zulkifly, E., Johnson, G., & Ribeiro, D. (2013, October). Factors associated with mandibular kinematic variability in healthy adults: A systematic review. Verbal presentation at the 9th Biomouth Conference, Dunedin, New Zealand.

Yu, K. K., Hendrick, P., & **Tulloch, E.** (2013, October). Inter-rater reliability of a pilates movement-based classification system. Verbal presentation at the Australian Physiotherapy Association Conference, Melbourne, Australia.

Awarded Doctoral Degree

Ahmed, Osman (2013) The Development of an early education programme for adolescents with concussion.

Mani, Ramakrishnan (2013) Does all-terrain vehicle vibration (ATV) influence postural control in New Zealand farmers?

Ribeiro, Daniel (2013) The effectiveness of the spineangle as a real time biofeedback device for modifying trunk posture during daily activity.

Exhibition

Johnson G – Curator. Exhibition Title Reaching Out: Celebrating 100 Years of Otago Physiotherapy Graduates 1913-2013. De Beer Gallery Special Collections Library University of Otago 27th September –13th December 2013.

<http://www.otago.ac.nz/library/exhibitions/physio100/>

Appendix I: SIGNIFICANT FUNDING AWARDS 2013

PI			2013
Associate Professor Leigh Hale	Evaluation of a walking programme for people with rheumatoid arthritis	MPPT	\$9 019
Prof John Sullivan	Mobility Scooters: are they keeping older New Zealanders on the move?	Lotteries Health	\$49 500
Dr Gisela Sole	Framework for teaching clinical reasoning skills to undergraduate physiotherapy students and models for learning	CALT	\$9 867
Dr Cathy Chapple	Effects of aerobic training on menstrual pain in women with primary dysmenorrhea: A randomized controlled trial	PNZ	\$2 918
Dr Gisela Sole	Do footwear variations influence the magnitude and direction of forces across the knee in people who have sustained a knee injury?	PNZ	\$7 618
Dr Daniel Ribeiro	Can we optimize rotator cuff motor control? Exploring novel rehabilitation exercises for shoulder osteoarthritis treatment.	Jack Thompson Arthritis Fund	\$10 721
Associate Professor Leigh Hale	Blue Prescription: Enhancing physical activity for people living with disability.	PNZ	\$11 438
Dr Daniel Ribeiro	Spinal muscle activity patterns during functional tasks in persons with lower limb amputation: An exploratory study	NZALS	\$2 721
Dr Hilda Mulligan	Self-management of fatigue for people with multiple sclerosis: The Minimise Fatigue Maximise Life Project	UORG strategic	\$15 000
Dr Cath Smith	Are Mobile Methods a feasible way to ask people with chronic conditions about dog-walking and health?	UORG	\$6 091
Dr Ram Mani	Investigating visual performance of farmers who have a history of quad bike loss of control events	UORG	\$18 463

Appendix 2: PHD STUDENTS AND TOPICS

PhD Students (2013)

Primary Supervisor School of Physiotherapy

Alimansi, Suliman	Feasibility of a pedometer-driven walking programme in an occupational health setting
Arumugam, Ashokan	Exploring the interaction between the pelvic segment and gluteal and thigh muscles
Balasundaram, Arun	Are symptoms provoked by exercise/physical activity the same as those resulting from a sports concussion?
Baxter, Susan	Health and exercise psychology: walking for people with rheumatoid arthritis
Clay, Lynne	Psychological risk factors for quad bike accidents among rural workers in New Zealand
Devan, Hemakumar	Exploring the relationship between physical activity and low back pain in traumatic above-knee amputees
Diab, Abdulkareem	Body composition: balance in older adults with Parkinson's Disease
Donaldson, Gail	Does the use of silicon oil change the post-operative outcomes after Dupuytren's contracture release surgery?
Kanagasabai, Parimala	Participation of disabled children in New Zealand
Lui, Lizhou	Non-pharmacological interventions for knee osteoarthritis: evaluation of the effectiveness of walking versus walking plus laser acupuncture
Mabire, Leon	The influence of body weight on the effectiveness of brisk walking for the management of obesity in adults

Macznik, Aleksandra	Complementary and Alternative Medicine (CAM) in sports medicine
Mehta, Nidhi	Relationships between key lifestyle factors and back pain in New Zealand adolescent girls
Mehta, Poonam	Neuropathic pain: minimum clinically important changes (MCIC) in pain and functional outcome measures
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
Ward, Lesley	Feasibility of yoga practices for the management of chronic pain
Stanley, Winser	Clinical outcome measures for balance and postural control in cerebellar ataxia

Secondary Supervisor School of Physiotherapy

Adhia, Divya	Pelvic girdle pain disorders: innominate mobility test using hip abductor and external rotation
Aldabe, Daniela	A prospective study of muscle activity and innominate bone motion patterns during pregnancy
Baxter, Marian	What are the psychometric properties of the novel overuse injury screening protocol "FootFAST"
Darlow, Ben	Low back pain: reducing fear and anxiety to prevent disability.
Kermat Kar, Maryam	Nursing and physiotherapy [Working Title]
Quick, Andrew	The influence of orthognathic therapy on mandibular motion