THE UNIVERSITY OF MELBOURNE

Faculty of Medicine,
Dentistry and Health Sciences
Department of Physiotherapy

CHESM 2019 ANNUAL REPORT

Centre for Health, Exercise and Sports Medicine

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2019 CHESM SNAPSHOT

CHESM's education, research and translational activities focus on conservative strategies across the lifespan to improve health and wellbeing.

29 Researchers & Postgraduate Students

GRANTS

Total of grants commencing in 2019

$7,209,592

56 PUBLICATIONS

Research publications

Publications In the top quartile Journal Percentile **83%**

COLLABORATIONS

27 countries

115 institutions

311 authors

CHESM

The Centre for Health, Exercise and Sports Medicine (CHESM) is a multidisciplinary Centre established by the Department of Physiotherapy, Melbourne School of Health Sciences, Faculty of Medicine, Dentistry and Health Sciences at the University of Melbourne in 2000. Professor Kim Bennell is the Foundation Director.

CHESM combines high calibre researchers with experienced clinicians from the disciplines of physiotherapy, medicine, podiatry, engineering and exercise science and has several internationally recognised clinical associates and research collaborators.

CHESM and the Department of Physiotherapy staff are based in the Alan Gilbert Building on level 7, whilst the Movement Laboratory is at 202 Berkeley St. The Centre's activities fall within two main areas:

RESEARCH

Including post-doctoral training and research higher degree supervision

ENGAGEMENT

Ensuring research is informed by and impacts key stakeholders

Our main research focus is on the role of conservative strategies, particularly exercise, in promoting overall health and wellbeing and in preventing and managing the public health problems that are currently facing society. To do this, a lifespan approach is taken from childhood through to the elderly years targeting the prevention and management of musculoskeletal conditions such as osteoarthritis (OA) with a focus on large clinical trials. Implementation research has also been a developing area over the last several years.

Many of the staff and students also teach into the physiotherapy program.

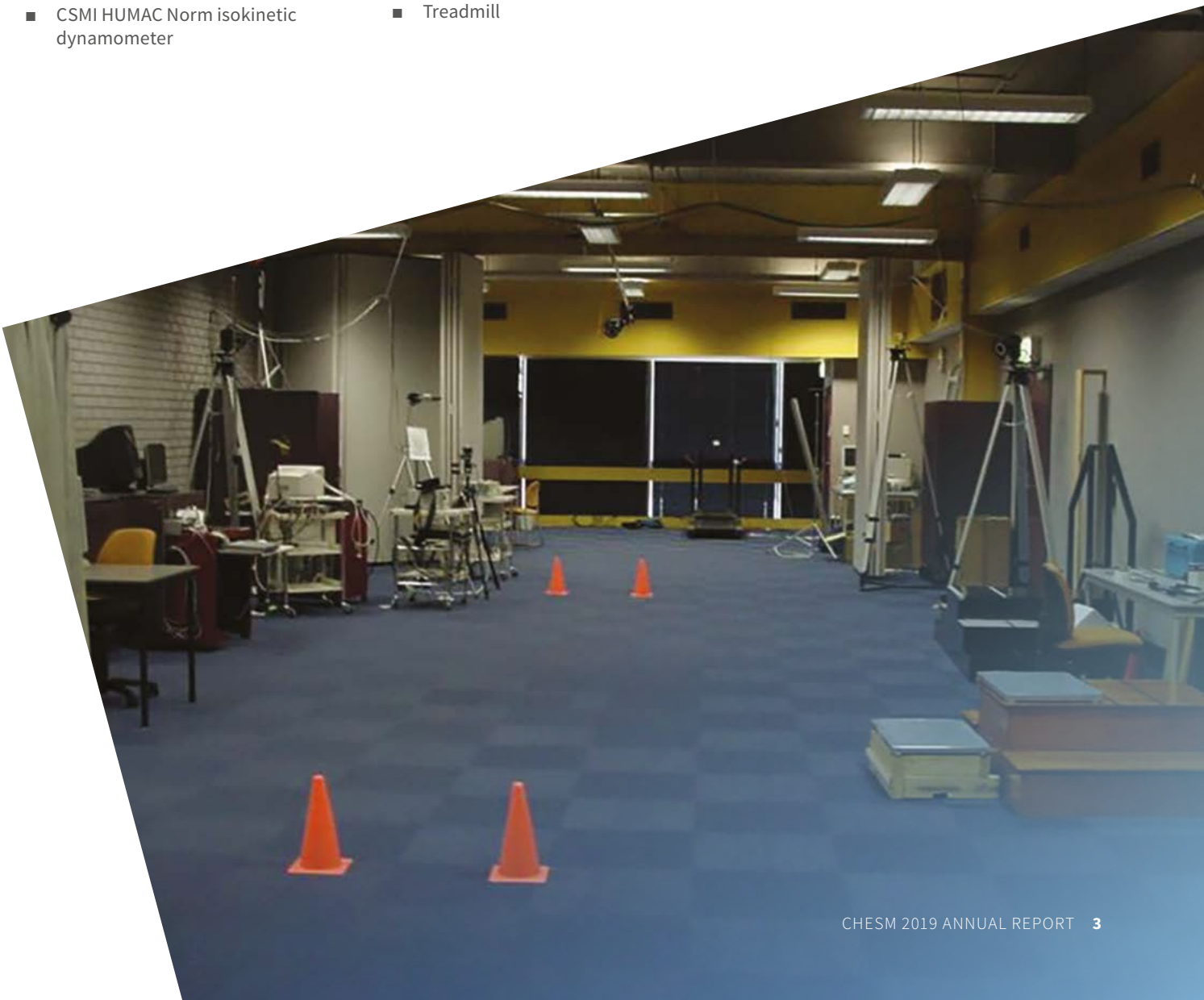
FACILITIES

CHESM houses a state-of-the-art movement research laboratory under the supervision of a full time Biomechanics Director, Mr Tim Wrigley. The laboratory has the following equipment:

- Vicon twelve MX camera motion analysis system with Nexus and BodyBuilder software
- Three AMTI force platforms
- Two Kistler portable force platforms
- Cambridge Electronic Design amplification and data acquisition system with Spike software
- ADInstruments Powerlab
- CSMI HUMAC Norm isokinetic dynamometer
- Digitimer DS7H constant current stimulator
- Noraxon and Glonner/Rackebrandt EMG telemetry systems
- Novel Pedar foot pressure sensors
- Force-instrumented walking cane
- KT-1000/KT-2000 knee arthrometers
- Isometric knee strength chair
- Somedic Quantitative Sensory Testing (QST)
- Mindray ultrasound scanners
- Various accelerometers, inertial measurements units (IMU), and force transducers
- Stratec pQCT (peripheral quantitative computed tomography) for human (XCT 3000) and small animal bone (XCT Research SA+)
- Treadmill
- Data processing and computing lab
- Mechanical and electronic workshop

Other relevant facilities at affiliated laboratories and institutions include:

- MRI, fMRI, Ultrasound, X-ray - various hospitals and radiology clinics



MESSAGE FROM THE DIRECTOR

It gives me great pleasure to summarise the achievements of 2019 and to outline our future plans.

This year CHESM comprised a strong team of 22 staff and 6 research higher degree students. We certainly are a multicultural group with individuals from the UK, Ireland, USA, Canada, China and Japan. We are also multidisciplinary with backgrounds in physiotherapy, medicine, exercise science, podiatry, engineering and biomechanics. I thank the CHESM team for their dedication and collegiality and congratulate them on their achievements throughout the year. Congratulations to Dr Thorlene Egerton, Dr Michelle Hall and Dr Kade Paterson who were successful in their applications for promotions to Senior Lecturer/ Senior Research Fellows. Supervisors were particularly busy this year with 6 PhD students including one student who converted from a Masters (MPhil) to PhD. We also welcomed a new PhD student, Pei Wei Chi (William) who previously worked with Nike Lab for 4 years and at CHESM will undertake research for his PhD on a project with industry partner ASICS under the supervision of A/Prof Adam Bryant.

We welcomed several new staff members to CHESM this year including 4 new research assistants: Stephanie Hawkins, Dave Mackenzie, Gabby Knox, and Dr Sarah Jones. We also said a temporary farewell to Dr Kim Allison who went on maternity leave in late-November and congratulate her on the birth of baby, Henry. I would also like to congratulate Dr Fiona Dobson who was promoted to Deputy Head of Department of Physiotherapy this year. Additionally, I would like to acknowledge the on-going support from the staff of the Department of Physiotherapy, particularly the Head of Department, Associate Professor Jenny McGinley, and the CHESM advisory board.

CHESM research findings were disseminated via 3 book chapters, 60 contributions to peer reviewed journal articles as well as 11 conference presentations and 19 keynote/invited presentations. The CHESM team was successful in receiving not one, but three highly competitive NHMRC Investigator Grants with myself as well as Dr Michelle Hall and Dr Kade Paterson receiving 5 years of funding through this scheme.

CHESM has extensive collaborative links working with researchers from the University of Queensland, University of Sydney, Griffith University, University of Southern Denmark, Duke University, Harvard University and Keele University in the UK amongst others. We hosted a highly esteemed visitor in Professor Nadine Foster from Keele University as the University Miegunyah Fellow, and were treated to a variety of beneficial and informative presentations given by Nadine. CHESM is committed to ensuring that research has an impact and works with numerous stakeholders such as Arthritis Australia, Musculoskeletal Australia, Health Change Australia, Medibank Private and ASICS to name a few. Input into our research projects is also provided by our consumer advisory group and clinician networks.

Finally, the Centre underwent a formal independent five-year review in May 2019 as part of the mandatory requirements for a University Centre. The review panel, Chaired by Professor Gordon Lynch, University of Melbourne, consisted of both internal and external academic research staff and stakeholders. The Review Panel identified the overall performance of CHESM to be outstanding, particularly in its research achievements. Undertaking the review was a valuable exercise providing us with some fresh insight and I am both pleased and proud that the review panel concluded by strongly recommending that CHESM continue to operate as a Centre within The Department of Physiotherapy. This was ratified by the University - a fantastic achievement by my CHESM colleagues!

As I sit here in the early part of 2020, the world is in the grip of the COVID-19 pandemic. Most of our clinical trials are on hold and we are all working from home and self-isolating. It's fair to say that the plans we had for 2020 have had to be revised. Nonetheless, the commitment of the team to adapt during this time has been impressive and I am sure that 2020 will also be a productive year.

Kim Bennell, PhD
Director, CHESM

OUR TEAM

CHESM DIRECTOR

- Professor Kim Bennell

SENIOR STAFF

- Professor Rana Hinman
- Associate Professor Adam Bryant
- Dr Fiona Dobson
- Tim Wrigley (leave in 2019)

POST-DOCTORAL STAFF

- Dr Kim Allison
- Dr Thorlene Egerton
- Dr Michelle Hall
- Dr Belinda Lawford
- Dr Kade Paterson
- Dr Wen Wu

RESEARCH PHYSIOTHERAPISTS

- Mary McMahon
- Sophie Heywood

BIOSTATISTICIAN

- Dr Jessica Kasza

RESEARCH ASSISTANTS

- Penny Campbell
- Stephanie Hawkins
- Dr. Sarah Jones
- Alex Kimp
- Gabby Knox
- Dave Mackenzie
- Ben Metcalf
- Sarah Schwartz
- Libby Spiers

PHD STUDENTS

- Pei Wei Chi
- Josh Farragher
- My-Linh Nguyen
- Rachel Nelligan
- Scott Starkey (converted from MPhil)
- Pek Ling Teo

The CHESM Team

ADVISORY BOARD

The CHESM Advisory Board was originally established in 2001 under University auspices. Its role is to provide advice and recommendations on research activities and future direction. As the Centre is evolving in terms of its multi-disciplinary research focus, it was time to revisit the Terms of Reference, and refresh our Advisory Board. In June 2014, a new Board, with stronger consumer representation and key discipline areas relevant to our research focus, was established. This year, the board membership was re-visited and updated to include new stakeholder, clinician, and consumer representatives.

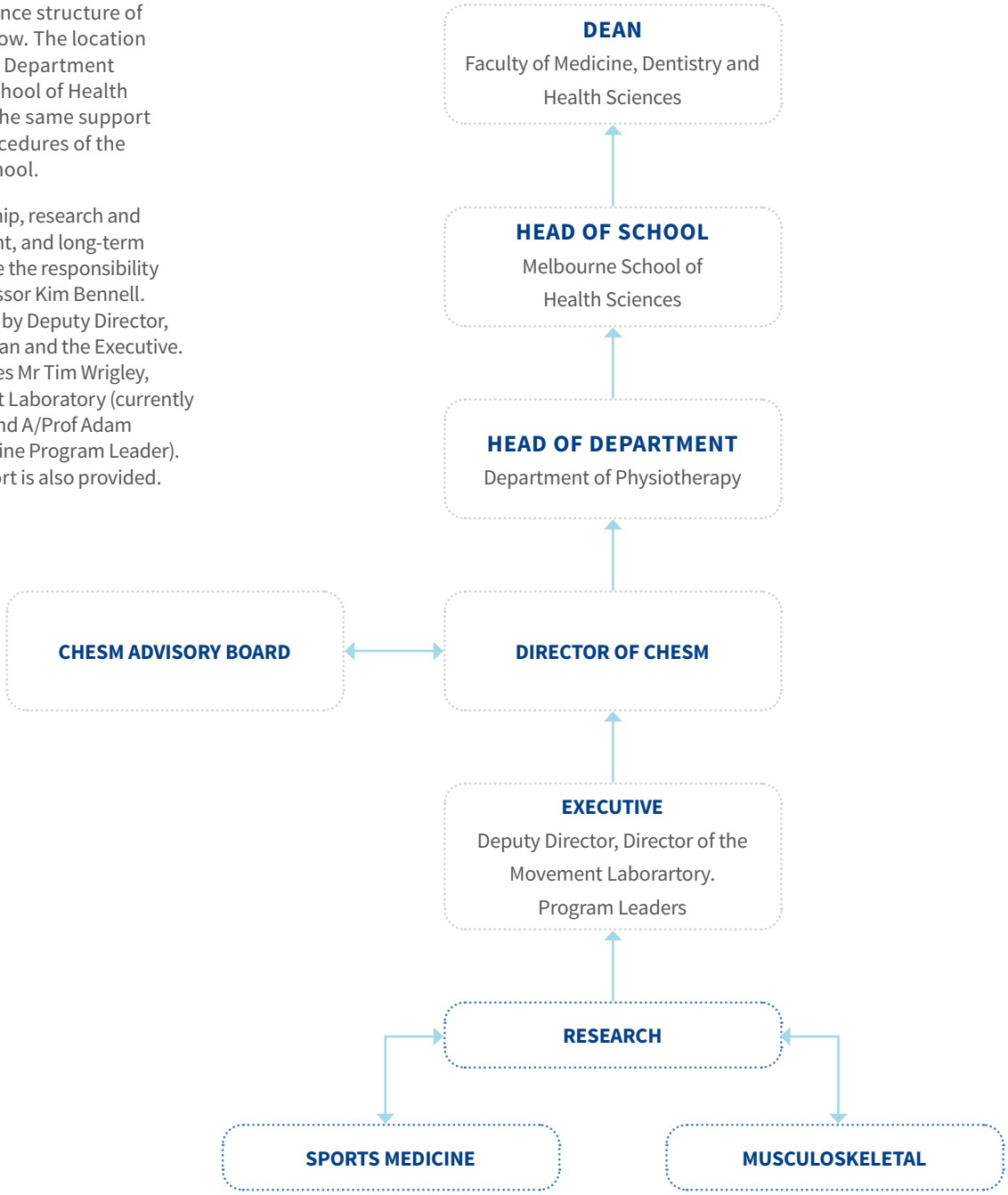
CHESM ADVISORY BOARD MEMBERSHIP IN 2019

Composition	Position	Member
Department of Physiotherapy	Head of Department	A/Prof Jennifer McGinley
CHESM	Director	Prof Kim Bennell
MDHS Faculty	Snr Executive	Prof Mark Hargreaves
MDHS Faculty	Head Dept Surgery	Prof Peter Choong
Stakeholder Rep	Consultant, Health Research & Evaluation, Medibank Private	Dr Stephen Bunker
Stakeholder Rep	CEO, Arthritis Australia	Mr Andrew Mills
Stakeholder Rep	Chief Allied Health Advisor in Victorian Dept of Health	Ms Donna Markham
Clinician Rep	Physiotherapist, McConnell Institute	Dr Jenny McConnell
Clinician Rep	Sports Physician	Dr Andrew Franklyn-Miller
Consumer Rep	Chronic musculoskeletal conditions	Maria Rosa Papalia

GOVERNANCE STRUCTURE

The current governance structure of CHESM is shown below. The location of CHESM within the Department of Physiotherapy, School of Health Sciences, affords it the same support and governance procedures of the Department and School.

The Centre's leadership, research and financial management, and long-term strategic planning are the responsibility of the Director, Professor Kim Bennell. Her role is supported by Deputy Director, Professor Rana Hinman and the Executive. The Executive includes Mr Tim Wrigley, Director of Movement Laboratory (currently on extended leave) and A/Prof Adam Bryant, Sports Medicine Program Leader). Administrative support is also provided.



CHESM 5-YEAR REVIEW (2014 – 2018)

On 23 May 2019, the Centre underwent a formal independent five-year review in accordance with University Policy. The review panel was chaired by Professor Gordon Lynch, University of Melbourne, and consisted of both internal and external members:

Professor Gordon Lynch
The University of Melbourne
Chair

Professor Sandra Kentish
The University of Melbourne
Panel Member

Ms Franca Marine
Arthritis Australia
Panel Member

Professor Michele Sterling
University of Queensland
Panel Member

Professor Garry Allison
Curtin University
Panel Member

The Review Panel undertook a rigorous and comprehensive evaluation of CHESM based on submitted (extensive) documentation that covered the Centre's current activities and future planning, through interviews with administrative leaders of the Department and School, CHESM's leadership, staff and students, and collaborators in academia and industry.

REVIEW PANEL FINDINGS AND RECOMMENDATIONS

The review panel's report stated:

- Under the Terms of Reference, the review panel's comments and recommendations identified the overall performance of CHESM to be outstanding, particularly in its research achievements.
- The Centre's culture was reported to be outstanding with excellent leadership and integrity across research and research training activities.
- The panel reported positively on the evidence of extensive funding from the NHMRC, the ARC through Linkage Projects collaborating with industry (e.g. ASICS), as well as sustained engagement with, and funding from, government and commercial organizations such as Medibank Private and patient support groups including Arthritis Australia.
- There is clear evidence of many high-quality research publications and research training outcomes through Ph.D. completions and multiple awards, especially scholarships and prizes. CHESM's leadership, Prof. Bennell and Prof. Hinman, should be commended for their research performance and leadership during the review period.

The Centre was then formally approved for continuation for a further 5 years by the Vice-Chancellor, Professor Duncan Maskell with the next strategic review to be undertaken in June 2024.

KEY RESEARCH PROJECTS

The primary focus of research at CHESM is on the role of conservative strategies, particularly exercise, in promoting overall health and wellbeing, and in promoting and managing the public health problems facing society. CHESM is committed to improving the wellbeing of all people through their musculoskeletal research initiatives.

In 2019, CHESM ran the following key research projects:

FULL RANDOMISED CONTROLLED TRIAL OF ARTHROSCOPIC SURGERY FOR HIP IMPINGEMENT VERSUS BEST CONSERVATIVE CARE: FASHION

Hip impingement, also known as femoroacetabular impingement or FAI, is a condition in which the bones of the hip joint press against each other and may cause pain. It often affects young active adults. There has been a rapid increase in the use of keyhole surgery (hip arthroscopy) to manage this condition. This clinical trial aims to compare the clinical and cost effectiveness of hip arthroscopy versus physiotherapist-supervised exercise will follow up at 12 months after treatment. The project is being conducted in conjunction with Chief Investigator, Prof. David Hunter at the University of Sydney. The FASHIoN study 12-month data collection (biomechanics and specialized MRI) continued into 2019 until its conclusion in March '19. The study was extended to collect quality of life information to 3 and 5 years.

FOOTWEAR FOR SELF-MANAGING KNEE OSTEOARTHRITIS SYMPTOMS: THE FOOTSTEP TRIAL

It is recommended that clinicians provide advice on "appropriate" footwear for people with knee osteoarthritis. However, there is little evidence from clinical trials to determine which shoes are best for self-managing knee osteoarthritis. This research study is comparing two classes of readily available off-the-shelf shoes on knee osteoarthritis symptoms. People are randomly allocated into two different groups. Participants in each group are provided with 2 pairs of different shoes to wear daily for 6 months. To ensure this is a fair and unbiased evaluation, we do not disclose the differences in the shoe classes between the two groups until the study end. A total of 156 participants were recruited by the end of 2019 with only another 8 to reach its target of 164 participants in 2020.

FOOTWEAR FOR OSTEOARTHRITIS OF THE LATERAL KNEE: THE FOLK TRIAL

Osteoarthritis affects the outer (lateral) compartment of the knee in a small a but significant subset of people. Unfortunately, there has been little research to evaluate which treatments can be beneficial in people with lateral compartment osteoarthritis. Footwear is an option with great potential. This research study is comparing the effects of two types of readily available off-the-shelf walking shoes on knee osteoarthritis symptoms in people with osteoarthritis in the outer (lateral) compartment of the knee joint. A total of 92 participants will be allocated into two different groups. Participants in each group will be provided with a pair of study shoes to wear daily for 6 months. In 2019, a total of 37 participants were recruited into the study, bringing the total to 40.

MY KNEE EXERCISE

My Knee Exercise Trial: a two-arm, assessor- and participant-blinded randomised controlled trial. This trial recruited 206 people aged 45 years and older, with a clinical diagnosis of knee OA from the Australian-wide community. Eligible and consenting participants were enrolled and randomised to receive access to either i) 'My Knee Education', an education control website containing osteoarthritis and exercise information only or ii) a combined intervention that includes a website, 'My Knee Exercise', containing the same educational information as the control, guidance to increase physical activity, and the prescription of a 24-week self-directed home-based lower-limb strengthening program in addition to a 24-week behaviour change SMS exercise adherence program. Outcome measures were collected at baseline and 24-weeks. Primary outcomes were self-reported knee pain and physical function. Data collection was completed in January 2020.

PLATELET-RICH PLASMA AS A SYMPTOM- AND DISEASE-MODIFYING TREATMENT FOR KNEE OSTEOARTHRITIS - THE RESTORE TRIAL

Safe and effective treatments that reduce symptoms of knee osteoarthritis and slow structural disease progression are needed. Platelet-rich plasma (PRP), an autologous blood product that contains an elevated concentration of platelets, has biologic potential. However, there is a lack of randomized controlled trials in knee osteoarthritis, with those available at high risk of bias, and none investigating the structural effects of PRP. This novel study will provide high-quality evidence to ascertain whether PRP is beneficial for treating knee osteoarthritis and will inform clinical guidelines. This study aims to find out whether a series of three PRP injections into the knee joint is effective in reducing pain and slowing loss of cartilage in the knee joint. By the end of 2019, 288 participants were randomized into the study and had completed injection appointments. 233 of these participants had also completed their final 12-month outcome follow-ups.

PARTNER PROJECT: OPTIMISING PRIMARY CARE MANAGEMENT OF KNEE OSTEOARTHRITIS

Osteoarthritis affects approximately 1.4 million Australians with the vast majority managed in primary care by General Practitioners, allied health professionals and most importantly by the patients themselves. Optimal management of knee osteoarthritis often requires challenging lifestyle changes for people with the condition, and General Practitioners face challenges in guiding and supporting their patients to make these changes. The objective of PARTNER is to develop and evaluate a model of care for primary care management of knee osteoarthritis that supports both General Practitioners and patients to uptake the key clinical guideline recommendations and achieve improvements in pain and function. It is being conducted in conjunction with Prof Hunter at the University of Sydney. The trial officially commenced in September 2018. Recruitment of GPs is underway, and it is anticipated that the study will be complete by mid-2020.

PEAK STUDY

People with knee osteoarthritis often consult a physiotherapist for their knee problems. Physiotherapy management typically involves delivery of a structured strengthening exercise program, and advice about how to manage and increase physical activity levels. This non-inferiority trial will compare two different modes of physiotherapy service delivery and their effect on knee pain and physical function in people with knee osteoarthritis.

Participants will undergo five one-on-one i) face-to-face or; ii) video consultations with a physiotherapist over 3 months. The consultations will involve prescription of a home-based strengthening exercise program and physical activity plan (to be conducted independently at home), as well as OA education. Participants will be reassessed remotely via questionnaires at 3, 6 and 9 months after randomisation. This large-scale trial has been in preparation throughout 2019 and officially began recruitment in December. The first participant has been enrolled out of a total of 394, across VIC and QLD.

TARGET STUDY: EXERCISE FOR KNEE OSTEOARTHRITIS TARGETING HIGH RISK PHYSICAL CHARACTERISTICS

In people with knee OA, being above a healthy weight range is associated with poorer outcomes and increased risk of disease progression. Exercise is recommended for management of OA, yet very little is known about the challenges that people with OA and obesity face when implementing a home-based strengthening exercise program. This qualitative study aimed to explore challenges amongst people with knee osteoarthritis and obesity who participated in a randomised controlled trial comparing two home-based strengthening programs (weight bearing functional exercise versus non-weight bearing quadriceps strengthening exercise). Interviews were conducted with 22 patients after trial completion, and all seven physiotherapists who delivered interventions in the trial. This study found that this patient group face many psychological and physical challenges to strengthening exercise. Physiotherapists should ensure that they provide reassurance and education about pain and the safety of exercise and are also not afraid to challenge patients to progress their exercise program.

EXERCISE FOR PEOPLE WITH HIP OSTEOARTHRITIS

Hip osteoarthritis affects one in four adults over their lifetime. It is understood that exercise can help reduce pain and improve physical function in people with hip osteoarthritis however further research is needed to better understand which type of exercise is most beneficial. The PHOENIX study is a randomised controlled trial investigating the effects of two different 9-month exercise programs on pain and physical dysfunction in people with hip osteoarthritis. This study will recruit 196 people with a clinical diagnosis of hip osteoarthritis, who will be randomly allocated into two groups. Participants in both groups will be allocated to a physiotherapist for nine sessions over the first three months and will be asked to perform weekly exercises. Participants will be re-assessed at 3 months and will then be encouraged to continue their exercise program without supervision from the physiotherapist. Primary outcomes are pain and function and will be assessed at 3-month and 9-month timepoints. Recruitment started in October 2019, twenty one people had been clinically screened in 2019 and 7 of those were enrolled into the study.

BETTER KNEE, BETTER ME STUDY™: EFFECTIVENESS OF TWO SCALABLE HEALTHCARE INTERVENTIONS SUPPORTING SELF-MANAGEMENT FOR KNEE OSTEOARTHRITIS

Although education, exercise, and weight loss are recommended for management of knee osteoarthritis, the additional benefits of incorporating weight loss strategies into exercise therapy interventions is currently unclear. The aim of the *Better Knee, Better Me* study is to compare the clinical and cost effectiveness of a remotely-delivered intervention targeting exercise and self-management (Exercise intervention), with the same intervention plus active weight management (Exercise and weight management intervention), and with an information-only control group for people with knee OA and overweight and obesity. Physiotherapists delivered the exercise component and dietitians delivered a very low calorie ketogenic diet. The study is being conducted with Medibank Private in their members. Findings will inform development and implementation of future remotely-delivered services. Recruitment to the *Better Knee, Better Me* study took place over 18 months with 1001 people phone screened and with the 415th and final participant randomised into the study in February 2020.

ADHERE STUDY: THE EFFECT OF ADDING A BEHAVIOUR CHANGE, SHORT MESSAGE SERVICE (SMS) INTERVENTION TO FACILITATE ADHERENCE TO A HOME-BASED EXERCISE PROGRAM IN PEOPLE WITH KNEE OSTEOARTHRITIS.

The primary objective of this study is to evaluate the efficacy of an automated, semi-personalised SMS/text message intervention, embedded in behaviour change theory, for adherence to a home-based exercise program in people with knee osteoarthritis. This study will utilise participants who are involved in a concurrent clinical trial, the TARGET Study. All participants who complete the TARGET Study follow up assessment (12 weeks) will automatically commence the ADHERE Study. Participants are allocated to receive either: i) An automated, semi-personalised, mobile phone text message intervention for 24 weeks to promote exercise adherence, or; ii) No adherence support control - a home based exercise program completed three times weekly for 24 weeks with no adherence support. A total of 79 participants have been enrolled into this study, with 25 currently participating.

HIP EXCOMBO: PILOT STUDY

This study has been piloting the effects of a combined exercise program including aerobic and strengthening exercises on pain and function in people with hip osteoarthritis. This study is particularly novel as most exercise programs for hip osteoarthritis include strengthening only. In addition to evaluating pain and function outcomes, a qualitative study was completed which explored the experiences of both patients and physiotherapists in the pilot study to better understand how this program can be implemented in a broader RCT scale. In 2018, 60 people completed online screening for the study, with 45 proceeding to phone screening. 23 of those were found suitable to attend clinical (physical) screening. 16 of those were found eligible for the study and completed questionnaires as well as physical tests of their function and muscle strength. They then saw a physiotherapist every week for 12 weeks and were asked to carry out a strengthening and aerobic exercise program at home. 12 participants attended reassessment and took part in a qualitative interview about their experiences. The physiotherapists who delivered the sessions also completed an interview with the researchers.

MY KNEE GROUP

My Knee Group is a feasibility trial investigating the use of physiotherapist-led group sessions conducted via videoconferencing and a digital resource (The My Knee Exercise website) to help people self-manage their knee osteoarthritis using exercise and physical activity. The aim is to explore the feasibility and acceptability of these physiotherapist-led group sessions via videoconference and through a qualitative evaluation of participants' and physiotherapists' experiences, gain a greater understanding of the acceptability of the "My Knee Group" sessions with regards to specific components such as duration, frequency, length and timing of sessions, size of the group, facilitation strategies employed, interactions between group members, content of the group sessions and ease of use of the videoconferencing technology. It is anticipated that such analyses will help to improve the intervention and optimise facilitator training to inform a future randomised controlled trial. This study recruited 11 people with a clinical diagnosis of knee OA from the Australian community. Six sessions were conducted among each group and groups varied in size of 4 and 7 people. The trial results are being presented to external stakeholders for future collaborative opportunities for an informed RCT.

RELIABILITY OF QUANTITATIVE SENSORY TESTING AND INDICATORS OF INFLAMMATION IN PEOPLE WITH HIP OSTEOARTHRITIS

It is known that people with osteoarthritis will have some degree of increased inflammation, which is the body's response to changes in the hip joint and can occur locally in the joint as well as being detected more generally in the blood stream. Some people with osteoarthritis will also have increased pain sensitivity, which means they may feel a greater sensation of pain or feel pain more readily. Inflammation and pain sensitivity are increasingly being measured by clinicians and researchers to help better understand the condition. However, little is known about how stable these measures are in people whose hip pain is consistent with hip osteoarthritis, making it very difficult to interpret any changes seen in these measures over time. The REQUEST study will ask people with persistent hip pain that is consistent with osteoarthritis to take part in two testing sessions over a 28-day period. The reliability of pain sensitivity and stability of levels of inflammation in the blood will be measured. In 2019 the ethics application had been submitted for review and the study is expected to commence in February 2020.

EXERCISE AND DIET FOR PEOPLE WITH HIP OSTEOARTHRITIS: THE ECHO FEASIBILITY STUDY

Osteoarthritis of the hip is a common condition in adults. It is thought that exercise and weight loss can help to reduce pain and improve function and general well-being in people with hip osteoarthritis. The overall aims of this study are to pilot a 6-month intervention that includes a diet and exercise program delivered by a dietitian and physiotherapist in people with hip OA who are overweight or obese, and qualitatively explore participants' perspective of participation in and the delivery of the intervention. 160 people completed screening for the study, and 18 participants met eligibility criteria and enrolled during a six-week enrolment period in 2019. Over six months, participants receive six consultations via videoconference from a physiotherapist and six from a dietitian. Participants encouraged to aim to lose at least 10% body weight using a Very Low Energy, low-carbohydrate diet incorporating meal replacement products. 6-month data collection, including questionnaires, body composition scans and qualitative interviews, is anticipated to be completed by April 2020.

FOOT ORTHOSES FOR BIG TOE JOINT OSTEOARTHRITIS – A RANDOMISED CONTROLLED TRIAL

The FORT study is looking at orthoses for osteoarthritis of the first metatarsophalangeal (MTP) joint (big toe), with a recruitment target of 88 participants across VIC, NSW and QLD. Participants undergo online, phone and radiographic screening to establish the presence of MTP joint OA before being enrolled into the study. Participants are randomized into one of two treatment groups, all of whom attend two podiatry appointments. One group receives a contoured orthotic modified by the podiatrist to have a first ray cut out designed to add range of motion at the first MTP joint, and reduce hallux plantar pressure. The other group receive a sham insole (a flat 3mm Formthotic with no contouring). All participants wear their allocated insoles at all times whilst wearing shoes and for a minimum of 6 hours a day for 12 weeks, at which point outcome measures are collected. It is hypothesized that the modified contoured orthotic will improve foot biomechanics and a reduce in pain on walking for those suffering OA in their MTP joint.

EFFECTS OF A PHYSIOTHERAPIST-DELIVERED DIETARY WEIGHT LOSS PROGRAM IN ADDITION TO EXERCISE IN PEOPLE WITH KNEE OSTEOARTHRITIS WHO ARE OVERWEIGHT OR OBESE – A RANDOMISED CONTROLLED TRIAL

The overall aim of this research is to evaluate the effects of a physiotherapist-delivered dietary weight loss program in addition to exercise, on weight loss and clinical outcomes among people with knee osteoarthritis who are overweight or obese. The primary objective is to determine whether a physiotherapist-delivered dietary weight loss plus exercise program leads to greater weight loss than a physiotherapist-delivered exercise program alone at 6 months. The exercise and weight-loss programs will be modelled on those used in the BKBM intervention deliveries.

THE PRE-POWER STUDY: EFFECTS OF A TRAINING PROGRAM ON PHYSIOTHERAPISTS' KNOWLEDGE AND CLINICAL SKILLS FOR WEIGHT MANAGEMENT INTERVENTIONS FOR PEOPLE WITH OSTEOARTHRITIS. A RANDOMISED CONTROLLED TRIAL

The overarching aim of this project is to evaluate the effectiveness of a pragmatic online training program to upskill physiotherapists in weight management interventions for people with osteoarthritis who are overweight or obese. The primary objective is to evaluate the effects of the training program on physiotherapist's confidence in (1) their knowledge about, and (2) their clinical skills in implementation of, weight management interventions for people with osteoarthritis who are overweight or obese.

VALIDITY AND RELIABILITY OF A SELF-REPORTED OUTCOME MEASURE TO EVALUATE CONFIDENCE AND KNOWLEDGE AND CLINICAL SKILLS IN WEIGHT MANAGEMENT IN PHYSIOTHERAPISTS

The overarching aim of this project is to establish the clinometric properties of an expert-developed, customized self-reported questionnaire to explore physiotherapists' perceived confidence in knowledge and clinical skills in weight management in osteoarthritis. The primary objectives are to: (1) explore the content validity of an expert-developed, customized self-reported questionnaire exploring physiotherapists' perceived confidence in knowledge and clinical skills in weight management in osteoarthritis. (2) To evaluate the concurrent validity of an expert-developed, customized self-reported questionnaire exploring physiotherapists' perceived confidence in knowledge and clinical skills in weight management in osteoarthritis to distinguish between professional dietary experts (dieticians) and practicing physiotherapists (physical therapy specialists). (3) To evaluate the criterion validity of an expert-developed, customized self-reported questionnaire exploring physiotherapists' perceived confidence in knowledge and clinical skills in weight management in osteoarthritis with the only validated self-reported competence tool in nutrition care (the NUTCOMP). (4) To evaluate the reliability (stability of scores over time when no change is expected) of a customized self-reported questionnaire exploring physiotherapists' perceived confidence in knowledge and clinical skills in weight management in osteoarthritis.

Online Support Group Pilot Study

ONLINE SUPPORT GROUP PILOT AND FEASIBILITY RCT

This study is a collaboration between early career researchers from the University of Melbourne, University of Queensland, University of Sydney and Macquarie University, and lead by Dr Thorlene Egerton. Other co-investigators from CHESM are Prof Kim Bennell, Dr Jess Kasza and Dr Belinda Lawford. The study investigates the feasibility, acceptability and effectiveness of an expert-moderated peer-to-peer online support group versus an information website alone for people with knee osteoarthritis. Participant recruitment for this study is underway.

INFO VIDEO STUDY

The aim of this mixed-methods study is to explore the perspectives of people with clinically-diagnosed knee osteoarthritis regarding a short (9 minute) psycho-educational video that explains knee osteoarthritis (OA) with novel holistic, biopsychosocial content and a focus on positive messaging and optimistic outlook. The study is being led by Dr Thorlene Egerton. The primary study aim is to explore the perceptions of people who experience the condition after watching the video to determine if they engage with the novel content and how they react to the positive messaging included. The study also investigated the perceived relevance, credibility and acceptability of the video, plus any perceived benefits or impact. The data is currently being analysed and the study written up for publication.

PARTNERSHIPS & COLLABORATIONS

CHESM benefits from association with prominent members of academia, industry, government, and community organisations. Our Associates are innovative thought leaders and change agents, striving for the management of musculoskeletal conditions. They help promote CHESM externally and transfer knowledge back into the Centre. CHESM recognizes that academic and scientific knowledge improves clinical practice and makes a difference in our community, therefore requires collaboration with experts and leaders in the field. The following is a list of main partners and collaborators that CHESM have worked with throughout 2019.

NATIONAL COLLABORATORS

Dr David Ackland
Department of Biomedical Engineering
The University of Melbourne

Dr Jason Bonacci
Senior Lecturer
School of Exercise and Nutrition Science
Deakin University

Professor Andrew Briggs
Curtin University

Professor Rachelle Buchbinder
Director, Monash Department of Clinical Epidemiology
Monash University

Dr Stephen Bunker
Clinical Research Consultant
Medibank Private

Professor Peter Choong
Chair of Surgery
University of Melbourne
St. Vincent's Hospital

Professor Flavia Cicuttini
Head, Musculoskeletal Unit
Monash University

A/Prof Ross Clark
Sunshine Coast University

Professor Kay Crossley
La Trobe Sport and Exercise Medicine Research Centre, La Trobe University

Associate Professor Clare Delany
Department of Medical Education
University of Melbourne

Dr Laura Diamond
Griffith University

Associate Professor Michelle Dowsey
Research Group Leader - Epidemiology, University of Melbourne
St. Vincent's Hospital

Professor Julian Feller
OrthoSport Victoria, Epworth Richmond
Melbourne, VIC, Australia

Professor Andrew Forbes
Department of Epidemiology and Preventive Medicine
Monash University

Dr Aaron Fox
Dean's Postdoctoral Research Fellow
School of Exercise and Nutrition Science
Deakin University

Ms Janette Gale
Managing Director
HealthChange Australia

Dr Alison Grimaldi
Principal Physiotherapist
PhysioTec

Professor Anthony Harris
Director Health Economics Unit
Monash University

Professor Paul Hodges
NHMRC Senior Principal Research Fellow
University of Queensland

Professor David Hunter
Royal North Shore Hospital
Rheumatology Department and Kolling Institute
University of Sydney

Emeritus Professor Gwendolen Jull
School of Health and Rehabilitation Science, The University of Queensland

Dr Catherine Keating
Head of Health Outcomes
Medibank Private

Ms Ornella Klavisi
Research and Operations Manager
MOVE muscle, bone & joint health

Dr Gavin Lenton
Research Fellow
School of Health Sciences
Griffith University

Professor David Lloyd
Director and Professor
Musculoskeletal Research Program
Griffith University

Ms Franca Marine
Policy & Government Relations Manager
Arthritis Australia

Professor Hylton Menz
La Trobe Sport and Exercise Medicine Research Centre, La Trobe University

Mr Andrew Mills
CEO
Arthritis Australia

Associate Professor Shannon Munteanu
La Trobe Sport and Exercise Medicine Research Centre, La Trobe University

Professor Michael Nicholas
Pain Management & Research Centre
University of Sydney

Associate Professor John O'Donnell
Bond University

Ms Carolyn Page
Physiotherapist
St Vincent's Hospital

Associate Professor Marie Pirotta
Department of General Practice
The University of Melbourne

Associate Professor Peter Pivonka
St Vincent's Hospital
The University of Melbourne

Dr Claudio Pizzolato
Research Fellow
Menzies Health Institute Centre for Musculoskeletal Research
Griffith University

Dr Melanie Plinsinga
Research Fellow
RECOVER Injury Research Centre
University of Queensland

Dr Amanda Rebar
Senior Lecturer
School of Health, Medical and Applied Sciences, Central Queensland University

Dr Trudy Rebbeck
Faculty of Health Sciences
The University of Sydney

Prof Colin Royce
MDHS Academic Director, Custom and Professional Education
Ultrasound Education Group
Melbourne Medical School
Uni of Melbourne

Prof Alistair Royse
Ultrasound Education Group
Melbourne Medical School
Uni of Melbourne

Dr David Saxby
Lecturer
Menzies Health Institute Queensland
Griffith University

Professor Cathie Sherrington
Faculty of Health Sciences
The University of Sydney

A/Professor Milena Simic
Faculty of Health Sciences
The University of Sydney

Dr Christopher Vertullo
Orthopaedic Surgery and Sports Medicine Centre, The Gold Coast
QLD, Australia

Professor Bill Vicenzino
Division of Physiotherapy,
University of Queensland

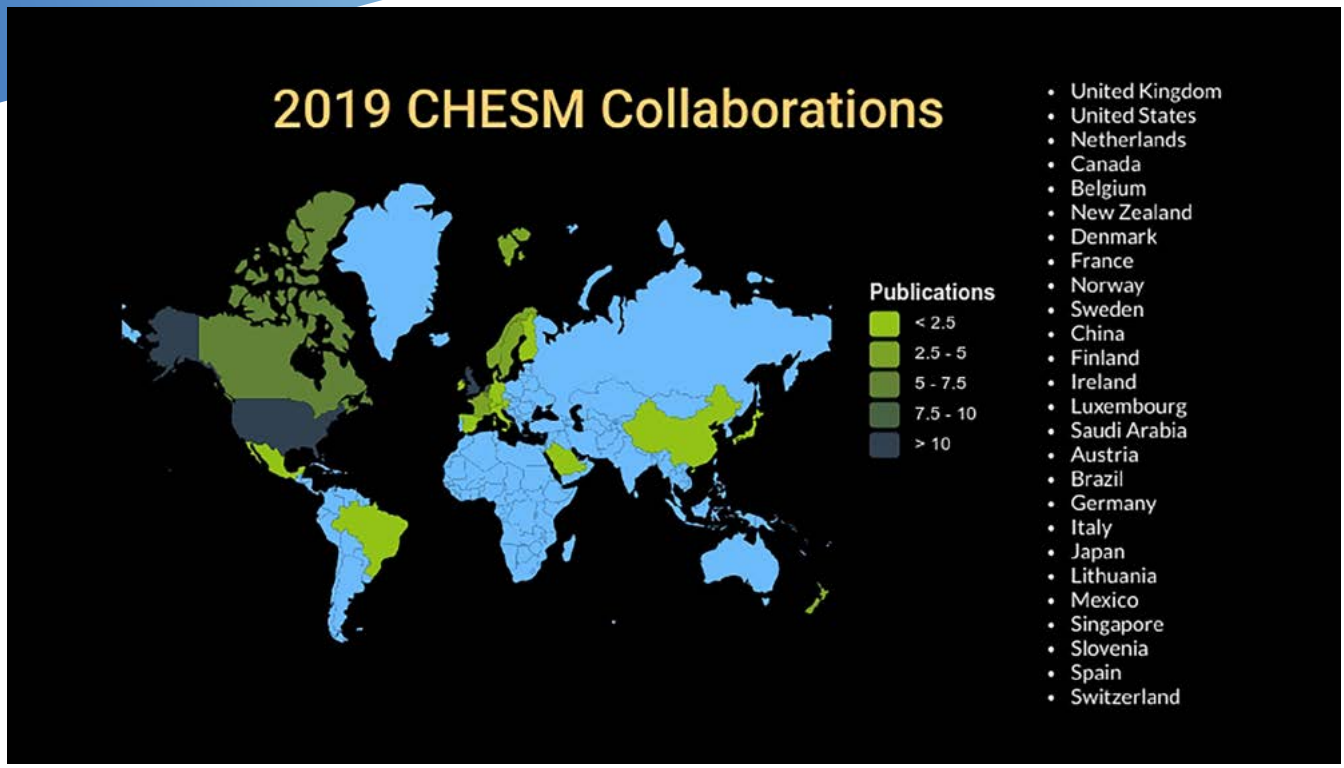
Associate Professor Bing Wang
Epidemiology & Preventative Medicine
Monash University

Dr Yuanyan Wang
Epidemiology & Preventative Medicine
Monash University

Dr Tim Whitehead
OrthoSport Victoria, Epworth Richmond
Melbourne, VIC, Australia

Associate Professor Cylie Williams
Department of Physiotherapy
Monash University

INTERNATIONAL COLLABORATIONS



Associate Professor Haxby Abbott
Dunedin School of Medicine
The University of Otago, New Zealand

Dr Lou Atkins
Senior Teaching Fellow
University College London

Professor Astrid Bergland
Health Sciences
Oslo Metropolitan University, Norwa

Professor Catherine Bowen
University of Southampton, UK

Dr Martin Van der Esch
Reade Centre for Rehabilitation Medicine & Rheumatology
Amsterdam, Netherlands

Professor Nadine Foster
Primary Care and Health Sciences Research Institute
Keele University, UK

Assistant Professor Kharma Foucher
Department of Kinesiology and Nutrition
University of Illinois at Chicago

Dr Lucy Gates
University of Southampton

Dr Ans Van Ginckel
Senior Research Fellow
Ghent University

Professor Marian Hannan
Harvard Medical School, US

Dr Melanie Holden
Primary Care and Health Sciences Research Institute
Keele University, UK

Dr Michael Hunt
Department of Physical Therapy
University of British Columbia, Canada

Professor Jeff Katz
Associate Physician
Brigham and Women's Hospital
Harvard Medical School, Boston, USA

Professor Francis Keefe
Duke University, USA

Professor Stephen Messier
Director J.B Snow Biomechanics Laboratory
Wake Forest University, North Carolina

Dr Jonathan Quicke
Primary Care and Health Sciences Research Institute
Keele University, UK

Associate Professor Christine Rini
Social/health psychologist
The University of North Carolina at Chapel Hill

CENTRE OF RESEARCH EXCELLENCE

In October 2014, the National Health and Medical Research Council awarded $2.5 million funding over five years to establish the Centre for Research Excellence - Translational Research in Musculoskeletal Pain (Osteoarthritis and Low Back Pain). CHESM are proud to lead this collaborative research opportunity.

The CRE is being led by Professor Kim Bennell and 9 other chief investigators from institutes including: University of Melbourne, University of Sydney, University of Queensland, Monash University, Keele University and University College London, UK.

Since its establishment, this CRE has brought together over 20 institutes and industry partners from around the world. Ten chief investigators, 10 associate investigators, 20+ research staff and over 30 PhD students have contributed to a range of research projects since its launch in September 2015. Its formal governance structure comprised of two committees have each contributed to and facilitated the research.

Since its establishment the CRE has:

- Commenced a range of research projects into the effectiveness of innovative models of care for OA and LBP to address the evidence-practice gaps,
- Published over 200 scientific articles in peer-reviewed journals
- Maintained training & mentoring activities for early career researchers via monthly workshops/seminars
- Maintained community engagement via workshops and through its website

Major achievements for each of the research streams within the CRE during 2019 are outlined as follows:

STREAM 1 - IMPROVING PRIMARY CARE MANAGEMENT OF OSTEOARTHRITIS

The key project in this stream is the large RCT 'Optimising primary care management of knee osteoarthritis: the PARTNER project', which is evaluating the effectiveness and cost-effectiveness of a novel multifaceted model of care targeting both the GP and patient, compared to usual care in people with knee OA in the primary care setting. The study will be completed at the end of 2020. Program evaluation is also underway. This will include development of the qualitative interviews and elaborate on the existing outcomes written into the primary protocol.

STREAM 2- EMPOWERING AND SUPPORTING CONSUMERS

A web-based resource for people with low back pain has been created, and the corresponding RCT that commenced in April 2018 has now been completed and the data undergoing analysis. The website, MyBackPain, was launched by Arthritis Australia in 2019 (www.MyBackPain.org.au).

STREAM 3- IMPROVING UPTAKE AND ADHERENCE TO EXERCISE AND PHYSICAL ACTIVITY

The 'Telecare' trial, which evaluated the clinical and cost-effectiveness of telephone-delivered exercise advice and behaviour change support by physiotherapists in people with knee OA, recruited 175 participants nation-wide. The manuscript was published in the British Journal of Sports Medicine in November 2019. All qualitative studies under this stream have now been completed and published. Two PhD students passed and graduated from their studies, and two new students confirmed their candidature.

An RCT in partnership with Medibank comparing: i) remote consultations with a physiotherapist to ii) remote consultations with physiotherapist plus dietician to iii) an educational website, called 'Better Knee, Better Me™' is now well underway. Recruitment commenced in August 2018 with the 415th and final participant recruited on 27 February 2020 from Medibank members Australia-wide.

NHMRC PROGRAM GRANT/ CRE TRAINING AND MENTORING PROGRAM

A Training and Mentoring program was established across CHESM's NHMRC Program grant and CRE involving Universities of Melbourne, Queensland, Sydney and Monash and approximately 65 early career researchers, both students and post-doctoral fellows. Activities within this program are coordinated by a Training and Mentoring Committee which comprises 11 members ranging from PhD students to Program CI (from both the CRE and Program Grant). This committee is responsible for supporting the training and mentoring of the ECRs (PhD, post doc and research assistants), formulating training and mentoring strategies, providing recommendations to the Executive Advisory Board on budget for activities, co-ordinating training & mentoring activities and evaluating outcomes of training and mentoring. The committee meet quarterly, and within the group an ECR committee meet monthly with the primary aim of directing and scheduling monthly seminars & workshops. In 2019 there were 6 seminars held across three sites via Zoom (University of Queensland, University of Sydney and the University of Melbourne) with an average attendance of 23 individuals per session.

Some of the other activities initiated by this committee in 2019 included:

- Mentoring scheme
  - The primary purpose of the mentoring scheme is to provide mentoring to all ECRs & professional staff in order to develop the broader skills needed or a successful research career.
  - This year 18 mentees opted in for the scheme.
- Annual small grants scheme (up to $1,000)
  - In 2019 there were 16 applications – all of which were funded for a total of $16,000.00.

- Infographics competition
  - The winner awarded $800 for research-related activities; three runners up were awarded $100.00.
- Evaluation via feedback surveys
- ECR retreat and subsequent research outputs
- Data repository

CHESM staff have been involved in the ECR and MCR group projects that resulted from the ECR retreat.

Michelle Hall and Rachel Nelligan, as part of the Mechanisms of Exercise Efficacy group, have continued working on two manuscripts throughout 2019:

- 1) "Effect of exercise on pain processing and motor output in people with knee osteoarthritis: a systematic review and meta-analysis" under review in *Sports Medicine*
- 2) "Effect of types of exercise on psychological impairments in people with knee osteoarthritis: a systematic review and network meta-analysis" in preparation

Samantha Teo, Belinda Lawford, and Thorlene Egerton have been involved in the Knowledge Translation Group. In 2019, they have continued investigating an online support for people with OA of the hip/knee via:

Publications

- Systematic review Under Review (Journal of Medical Internet Research)
- Survey study- submitted & accepted (Journal of Medical Internet Research)

New study

- Pilot online support group study and online community forum has commenced - live platform with real users.

As a result of their participation in group projects, Dr Thorlene Egerton and Dr Belinda Lawford, alongside Professor Kim Bennell, Libby Spiers, Dave Mackenzie, and Dr Jess Kasza are also involved in the development of a pilot RCT that is being leading from Melbourne for an online support group (OSG) for people with knee OA. Additionally, an online-forum – My Knee Community - has been created and developed for people with knee OA to join and digitally interact with each other online and share their experiences and tips on how they manage their symptoms. Recruitment for the OSG commenced in December 2019.

MYKNEE COMMUNITY

VISITORS TO CHESM

CHESM hosts various visiting international collaborators throughout the year. Typically, visitors participate in research seminars for University academics, roundtable discussions and mentoring with graduate students, and free lectures delivered to the public.

This year we were fortunate to have a highly esteemed visitor, Professor Nadine Foster, spend 6 weeks at CHESM to work with us on a range of projects, conduct workshops and further develop our collaborative relationship with researchers from Keele University, England.

Professor Nadine Foster
Research Professor of Musculoskeletal Health in Primary Care, Keele University, England.

Primary Presentation: *"Miegunyah Public Lecture – Managing the Global Burden of Chronic Musculoskeletal Pain".*
05 March 2019

During February and March 2019, CHESM hosted one of the CRE Chief Investigators, Professor Nadine Foster, as the 2019 Miegunyah Distinguished Visiting Fellow.

The Miegunyah Distinguished Visiting Fellowship Program enables international scholars to make an extended visit to the University and contribute to the University's academic, intellectual and cultural life.

Professor Foster participated in many events at the University and other organizations, both within Victoria and interstate, during her fellowship visit. These included:

- Participating as a mentor and speaker at the professional retreat for CHESM staff retreat.
- Meeting with Department of Physiotherapy PhD students for mentorship.

Professor Nadine Foster

- Collaborating with researchers at the University of Sydney on the PACE project which is built on stratified care research undertaken by Prof Foster. The PACE project is a collaboration between the University of Sydney, University of Queensland, University of Melbourne, and Curtin University. Representatives from all institutions met in Sydney along with Professor Foster during her visit. During this time Prof Foster was involved in informing and filming research-based advice for practitioners and patients with MSK conditions, which will be utilised as part of the PACE study.
- Speaking engagements at St. Vincent's Hospital and within the Department of General Practice.
- Delivering the Miegunyah Fellowship Public Lecture.

The visit has further strengthened the existing collaboration between Keele and the University of Melbourne, and has led to new collaborations in key areas of interest for future research applications including telehealth, rehabilitation, patient and public involvement in research, implementation research and impact acceleration.

Professor Lora Giangregorio

A/Prof Shinya Ogaya

Leah Morris

OTHER VISITORS:

Professor Lora Giangregorio

CHESM were fortunate to have international guest researcher, Professor Lora Giangregorio visit on **Monday 11th February.**

Prof Giangregorio is a Professor in the Department of Kinesiology at the University of Waterloo, Canada, and a Schlegel Research Chair in Mobility and Aging.

She leads the Bone Health and Exercise Science Lab (BonES lab), which studies how to reduce the risk of osteoporotic fracture through better risk assessment and safe and effective physical activity interventions.

Her talk titled *"Moving from clinical trials to implementation in bone health and exercise"* covered:

- What do we know about the effects of exercise on health outcomes in people with osteoporosis, including those with vertebral fracture?
- Discordance between what patients want to know and what randomized trials and guidelines can answer – development and implementation of Too Fit To Fracture initiative
- New and emerging research: guidelines, trials and implementation

We welcomed Associate Professor Shinya Ogaya, physiotherapist and researcher, from the Department of Physical Therapy, at Saitama Prefectural University, Japan.

Shinya spent 3 weeks in August at CHESM to further develop his research skills, learn about our physiotherapy courses and delivery of classes and observe clinical work

His study themes and interests are in interventions to osteoarthritis patients, biomechanics and stroke.

Leah Morris, a PhD Student from The University of the West of England, BRISTOL, UK visited CHESM on 21 and 22 October. Leah presented her findings from her study investigating patient's acceptability of the role of the physiotherapist as first contact practitioner.

TEACHING AND LEARNING

CHESM staff and students were actively involved in a wide variety of teaching and learning activities throughout 2019.

A/Prof Adam Bryant coordinated an online subject as part of the online Masters program: 'Innovation and Emerging Technologies' (3rd Semester, 2019). Focus on the role of new/emerging technologies in sporting/performance and rehabilitation settings.

- Co-coordinator of DPT subject Research & Evidence 3 (2nd Semester, 2019).
- Completed series of guest lectures (as per previous years). These included:

i) *'Young people with old knee's: ACL rupture and its consequences':* DPT 1st year

ii) *'Factors influencing the mechanical properties of ligaments and tendons':* DPT 1st year

Dr Fiona Dobson was the Subject Coordinator of Research and Evidence 1, 2, 3 across the DPT program. Subject designer of Research and Evidence and Capstone for revised DPT program 2021 onwards.

Dr Thorlene Egerton co-ordinated and taught the subjects as part the Master of Rehabilitation Science in 2019 including Health Behaviour Change (Term 1), Rehabilitation, Activity & Exercise (Terms 2 and 4), Evaluation (Term 3) and the Research Project (Semester 1 and Semester 2). Dr Egerton also coordinated the Rehabilitation Sciences program which offers Masters, Post Graduate Diploma, Post Graduate Certificate and Specialist certificate in Rehabilitation Science. Thorlene and Dr Kim Allison also co-hosted two Doctorate of Physiotherapy (DPT) students for a research placement

Dr Kade Paterson was the lecturer/tutor for Masters of Sports Medicine Unit: Biomechanics & Sports Injury Prevention. He also provided guest lectures for the Doctor of Physiotherapy units, Exercise Sports & Manual Therapy, plus Sports and Musculoskeletal Physiotherapy.

Dr Kim Allsion was the subject co-ordinator Doctor of Physiotherapy 3rd year 12.5 credit point subject; Sports and Manual Therapy, 2nd year 12.5 credit point subject Physical Activity and Exercise. Dr Allison also developed the Postgraduate Masters of Sports Medicine subject Biomechanics and Sports Injury Prevention subject.

CHESM research higher degree students also participated in postgraduate tutoring & lecturing throughout 2019 for the following subjects:

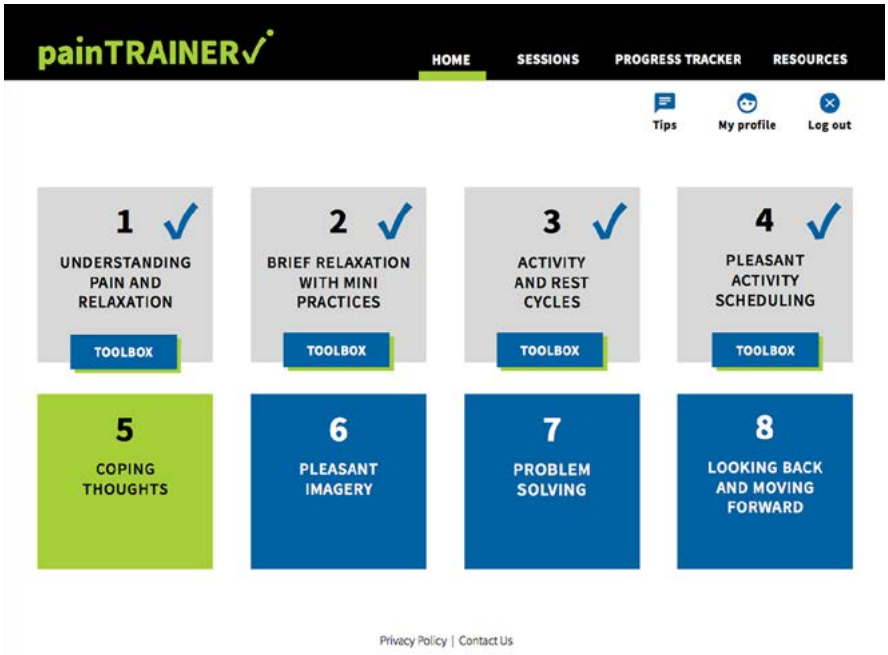
- Implementation Science in Theory
- Implementation Science in Practice
- Physiotherapy Practice
- Chronic Disease and Disability
- Research and Evidence
- Sport and Manual Therapy

ENGAGEMENT

KEY ENGAGEMENT ACTIVITY

painTRAINER

Evidence has supported the use of pain-coping skills training (PCST), an approach that is based on cognitive behavioural principles that are directed at psychological factors such as low self-efficacy, poor pain coping, and pain catastrophizing, which are common in people living with chronic pain with conditions such as osteoarthritis. CHESM collaborated with researchers from the United States, Dr Christine Rini and Dr Francis Keefe, to create an Australian version of an online pain-coping skills program which comprised 8 x 45 minute modules. CHESM further consulted a digital communications agency, String Theory Creative, based in Melbourne to help modernize the platform and re-branded the program to become painTRAINER. It was released as a freely available resource in May 2019 and by December 2019 had registered 413 users across the world. It is also being used in three projects by researchers at University of North Carolina at Chapel Hill - Thurston Arthritis Research Center, Wake Forest University and University of Sydney as well as included in physiotherapy curricula in Australia and the USA.



painTRAINER

BOARD MEMBERSHIP

WITHIN THE UNIVERSITY

Prof Kim Bennell

- Florey Promotions Committee
- Deans Fellowship Group
- Driving Research Momentum Panel member

Prof Rana Hinman

- MDHS MRFF Functional Brief Dry Lab User Advisory Group
- Physiotherapy Department NHMRC/ ARC Grant Mentor
- Faculty of Medicine, Dentistry & Health Sciences (MDHS) Appointments & Promotions Committee
- MDHS Academic Careers @ Melbourne Advisory Group
- Faculty MDHS Level D Promotions Committee
- Faculty MDHS Dame Kate Campbell Fellowships (Level D) Judging Panel

Dr Fiona Dobson

- SHS Research & Research Training Committee
- Department of Physiotherapy Social Committee
- Doctor of Physiotherapy Curriculum Working Party
- Doctor of Physiotherapy Assessment Working Party

A/Prof Adam Bryant

Continued in his role as MSHS Director of Research (DoR; 0.3 FTE) until mid 2019 when his term finished.

Role involved:

- Chair and member of MSHS Research and Research Training and Ethics Committees (monthly meetings).
- Member, MDHS Research Training Committee (4 meetings per year).
- Member, MSHS Executive Committee (monthly meetings)
- Member, MSHS Faculty Research Committee (when MSHS representative is required)
- In his capacity as DoR, he also:
- Lead development of MSHS ECR-MCR Network. Terms of reference are complete and steering committee working to implement initiative in 2020
- Member, MSHS Colloquium Organising Team (monthly meetings)

Dr Thorlene Egerton

- Member of the School Human Ethics Advisory Group.

Dr Belinda Lawford

- Member, NHMRC CRE and Program Grant Training and Mentoring Committee (Uni Melb, Uni Syd, Uni Queensland)
- Chair, NHMRC CRE and Program Grant (Uni Melb, Uni Syd, Uni Queensland) Early Career Researcher Seminar Series

EXTERNALLY

Prof Kim Bennell

- Member of the Cochrane Collaboration
- Secretary-General, Executive Board, Osteoarthritis Research Society International (2015-May 2019)
- Member, Australian Academy of Health and Medical Sciences, Victorian Group Events Committee (2019)
- Cochrane Collaboration Musculoskeletal Group
- Member of the Royal Australian College of General Practitioners project team for 'Handbook of Non-Drug Interventions (HANDI) Shared decision-making: patient decision support tools for non-drug treatment of common musculoskeletal conditions
- Physiotherapy Research Foundation, Australian Physiotherapy Association – member of strategic review panel
- Member of the Scientific Advisory Committee for the Australian Government Department of Veterans Affairs project 'Measuring occupational exposures to osteoarthritis in the lower limb in Australian Defence Force job categories
- Chair 'Living well' Group of the National OA Strategy
- Co-Chair Australia & New Zealand musculoskeletal clinical trials network OA special interest group
- Chair OARSI Rehabilitation Discussion Group
- Member of OARSI Clinical Guidelines for the management of hip and knee OA steering group
- Member of Advisory Board, Centre for Health, Activity and Rehabilitation Research, University of Otago, New Zealand (2017-current)
- Taskforce, Models of Care Outcome Measures, Osteoarthritis Research Society International (OARSI) Osteoarthritis Management Programs: Joint Effort Initiative (2019-current)
- Taskforce, Implementation of Models of Care, OARSI Osteoarthritis Management Programs: Joint Effort Initiative (2019-current)
- Expert member, Telehealth Advisory Committee, APA
- Editorial Board; Chiropractic & Manual Therapies
- Invited member, NHMRC Centre of Research Excellence panel
- Steering Committee, OARSI Osteoarthritis Management Programs: Joint Effort Initiative (2018-current)

Prof Rana Hinman

- Expert member, Telehealth Advisory Committee, APA
- Editorial Board; Chiropractic & Manual Therapies
- Invited member, NHMRC Investigator Grant panel
- Diagnosis and Early Care Working Group, National Osteoarthritis Strategy
- Steering Committee, Osteoarthritis Research Society International (OARSI) Osteoarthritis Management Programs: Joint Effort Initiative
- Chair, Working Group of the OARSI Joint Effort Initiative, to develop core capabilities for health professionals

managing people with OA

- Steering Committee, OARSI Exercise & Rehabilitation Discussion Group
- Australia & New Zealand Musculoskeletal (ANZMUSC) Clinical Trials Network Executive Committee
- Steering Committee, Osteoarthritis Special Interest Group, ANZMUSC

A/Prof Adam Bryant

- Member, MSHS Ethics Committee
- Member, unsatisfactory progress committee for MSHS PhD student (Chaired by ADRT, Prof Alex Boussioutas)
- Member, Graduate Research Selection and Scholarship Committee (monthly meetings per year)
- Member, Review Panel for Professional and Practice Based RTP-DOMs (1-2 meetings per year)
- Member, Melbourne Neuroscience PhD Program steering committee
- Member, Central Queensland University Honours Course Reference Committee

Dr Michelle Hall

- Communication Committee, Osteoarthritis Research Society International
- Musculoskeletal Physiotherapy Association Scientific Committee Member
- Member, Bath Institute for Rheumatic Diseases, UK Grant Review Panel
- Member, Steering committee Australian New Zealand Society of Biomechanics Early & Mid-Career Network
- Member, University of Melbourne, Faculty of MDHS Fellowship Review Panel
- Member, NHMRC Ideas Grants Review Panel
- Member, Melbourne School of Health Sciences Expert panel, Session for NHMRC 2020 Applications, University of Melbourne
- Member, Australian & New Zealand Musculoskeletal Clinical Trials Network, Osteoarthritis Special Interest Group

Dr Kim Allison

- NHMRC Centre for Research Excellence Musculoskeletal Health Teaching and Mentoring Committee Co-Chair
- CRE Mentoring Program Leader
- Member, Steering committee School of Health Science Early & Mid-Career Researchers group
- Member, Human Ethics Advisory Group, University of Melbourne
- Member, PhD advisory Committee x2, Department of Physiotherapy, University of Melbourne
- Member, PhD advisory Committee, Department of Physiotherapy, University of Melbourne
- Member, Communications Committee, Osteoarthritis Research Society International
- Member, Diversity and Inclusion Advisory Committee, MDHS Faculty, University of Melbourne

Dr Kade Paterson

- Executive Board member and Victorian director for the Australasian Academy of Podiatric Sports Medicine
- Victorian Council Member for Member Sports Medicine Australia
- Member of Australasian Podiatry Association's national sports podiatry specialization group
- Member of 2019 Australasian Podiatry Conference organizing committee; Chair of conference rheumatology/ musculoskeletal session; Chair of judging committee (Australasian Podiatry Association and Australasian Academy of Podiatric Sports Medicine)
- Chair of Australasian Academy of Podiatric Sports Medicine Symposium

GRANT APPLICATION ASSESSMENTS

Prof Kim Bennell

- Swiss National Science Foundation
- Versus Arthritis UK
- NIH and US Department of Health and Human Services
- NHMRC Centre of Research Excellence reviewer

Prof Rana Hinman

- Arthritis Australia Grants Review Panel member
- ANZMUSC seeding grants
- Arthritis UK Research Campaign
- Hong Kong Innovation & Technology Commission
- Hong Kong Health & Medical research Fund

A/Prof Adam Bryant

- ARC Discovery Projects & Discovery Fellowships
- NHMRC Investigator Grants Peer reviewer and panel member

Dr Michelle Hall

- Bath Institute for Rheumatic Diseases, UK
- National Health, Medical Research Council | Ideas Grant Review Panel
- NHMRC Investigator Grants Peer reviewer
- and panel member
- ARC Future Fellowships and Early Career Fellowships
- Swiss National Science Foundation
- University of Melbourne Faculty Trust Fellowships

CHESM IN THE MEDIA

- Professor Bennell was interviewed by Channel 7 News for the Medibank Health Update in January 2019.
- "Osteoarthritis cases on the rise in Australia" Channel 7 News segment - 28 January 2019
- Professor Bennell featured in SBS Life online on Better Knee Better Me Study "It can help your knee pain" in February 2019.
- On 05 June 2019, an article authored by Professors Kim Bennell and David Hunter, with input from CHESM research assistant, Libby Spiers, was published in the Australian Doctor Magazine entitled, "A GP's guide to the non-surgical treatment of hip and knee OA: A non-surgical approach to osteoarthritis is recognized as the cornerstone of management." The article also featured on ausdoc.com.au
- Dr Kade Paterson featured in 4 radio interviews and live talkback on foot and knee pain for ABC Radio Melbourne Afternoons program with Jacinta Parsons – from July 2019.
- Dr Michelle Hall gave 2 interviews for House of Wellness (edited by News Ltd for Chemist Warehouse), on the topic of 'Strengthening Exercise for Women' & 'Exercising in Winter'.
- Dr Paterson gave an interview on running footwear for the Sydney Morning Heard, that was published online and in all SMH affiliated sites and newspapers including; The Age, SMH, Brisbane Times, and WA Today.
- In October, Prof Rana Hinman was interviewed on Channel 10 regarding participants progress on The Better Knee, Better Me study
- Dr Paterson was interview for Channel 9 TV news (see below) regarding the FORT RCT: Qld, Syd, Melb, Perth, National, Adelaide, regional and online on 16 December 2019. This report was also available with embedded video on msn.com

PODCASTS

Penny Campbell - Co-host and Contributor, HeyOA027 Podcast. July 2019.

Dr Kade Paterson filming a segment for Channel 9 News, December 2019

OTHER ENGAGEMENT ACTIVITIES

Prof Kim Bennell

- Updated the Exercise and Osteoarthritis Position Statement 2019, Exercise and Sports Science Australia, Exercise is Medicine Australia.
- Invited member of the panel providing a strategic review of the Physiotherapy Research Foundation 2018-2019.

Prof Rana Hinman

- Australian Clinical Trials Alliance
- Provided independent referee reports:
  - Promotion to Associate professor, University of Western Sydney
  - Promotion to Senior Lecturer, Central Queensland University
  - Promotion to Associate professor, University of the Sunshine Coast

A/Prof Adam Bryant

- Presenter, UoM ARC Linkage Information Sessions 'Developing Relationships with Partner Organisations'; 'Writing Rejoinders'. Both sessions were attended by >100 researchers from across UoM. Invitations from RIC.
- Associate Editor: BMC Musculoskeletal Disorders (2015-current)
- Doctoral Thesis Reviews:
  - University of Sydney
  - University of Otago

Dr Fiona Dobson

- Collaboration with Victorian College of Arts - to evaluate the "Step in Time" program (Year 1 DPT Physio). Students dancing with residents in Aged-care).

Dr Michelle Hall

- Mentor, Access connections mentoring program, University of Melbourne
- Mentor, BrainSTEM

Dr Kade Paterson

- Current partnerships with Formthotics, Ossur and ASICS Oceania.

Dr Thorlene Egerton

- Continued to collaborate as part of the KT Group of early career researchers in musculoskeletal research from the University of Melbourne, Queensland, Sydney and Macquarie University. The group achieved their first publication in 2019: Exploring the characteristics and preferences for online support groups: Mixed method study. J Med Internet Res, 21(12).
- Worked with research assistants Dave Mackenzie and Libby Spiers to create and develop the My Knee Community, an online support group for people with knee OA, the membership of which is currently 170. The project involves collaboration with Arthritis Australia and CHESM provides ongoing expert moderator input into the My Knee Community forum.

Dr Belinda Lawford

- Industry collaboration and trial coordination of the Better Knee, Better Me study with Medibank.
- NHMRC CRE Early-Mid Career Researcher Collaborative Group Project run within the NHMRC Centre for Research Excellence between The Universities of Melbourne, Sydney, and Queensland.

INNOVATION / COMMERCIALISATION

Rachel Nelligan pictured above presenting at TRaM

From left above, Alex Kimp and Rachel Nelligan pictured with Professors Bennell and Hinman at TRaM

TRAM TRACK PROGRAM - TRANSLATING RESEARCH AT MELBOURNE' – MY KNEE OA TEAM

In June 2019, CHESM participated in the Translating Research at Melbourne (TRaM) Track program.

***My Knee OA*: A digital health platform providing education and exercise guidance to osteoarthritis sufferers, aiming to prevent or delay surgery (MDHS)**

The 'My Knee OA' team led by PhD student Rachel Nelligan pitched their research involving digital resources increasing access to evidence-based exercise for people with knee osteoarthritis at the TRaM event evening on Tuesday 18 June. Other team members consisted of research assistant, Alex Kimp, and Professors Kim Bennell and Rana Hinman.

TRaM is one of the three pillars of the Melbourne Entrepreneurial Centre in the Faculty of Business and Economics and the TRaM Track program is provided over 8 weeks to help researchers understand more about whether the problem their research addresses actually matters.

This was done through market validation and business model generation based on interactive customer interviews. The My Knee OA team conducted 35 customer interviews across different sectors including people living with knee osteoarthritis, public hospitals across Victoria and New South Wales, Primary Health Networks, the Department of Health and Human Services, health care practitioners, and private health insurance funds.

RESEARCH RETREAT

CHESM RED HILL RETREAT

On 21-22 February 2019, CHESM staff and students attended a 2-day research retreat which was held at the Lindenderry, Red Hill on the Mornington Peninsula. The aim of the retreat was to develop an action plan for the coming year that aligns with the relevant areas of the Faculty of Medicine, Dentistry and Health Sciences' strategic plan. It presented an opportunity to come together as a team and review progress with a view to holding workshops to develop the CHESM action plan and to discuss the forthcoming 5-Year review that CHESM would undergo in May 2019, whilst also preparing and discussing future directions for the coming year and beyond. Sessions covered topics such as: engagement, mentoring and student supervision, and reviewing the team profile. Day 2 was structured around the 5 key areas of the strategic plan: People and Culture, Research/Research Training, Engagement, Innovation and Enterprise and Financial Sustainability.

We were extremely fortunate that the 2019 retreat coincided with the visit of Professor Nadine Foster, (pictured left), who gave an excellent presentation on the work she and her team have been undertaking at Keele University in the UK, (Research & research training - Learning from the UK), work which has led to new collaborations with CHESM in key areas of interest for future research applications including telehealth, rehabilitation, patient and public involvement in research, implementation research and impact acceleration.

CHESM staff and students pictured above at Lindenderry Red Hill with Professor Nadine Foster

Lindenderry Red Hill

Professor Nadine Foster, presenting at the 2019 Red Hill CHESM retreat

POSTGRADUATE STUDENTS

CURRENT STUDENTS

Name	Title	Supervisors	Anticipated completion date (COVID-19 delays expected)
My-Linh Nguyen	Using behavioural economics and health behaviour theory to improve participation in physical activity	Prof Rana Hinman Prof Kim Bennell Prof Anthony Harris Dr Michelle Hall Dr Amanda Rebar	March 2020
Pek Ling Teo	Physiotherapy management for hip and/or knee osteoarthritis	Prof Kim Bennell Prof Rana Hinman Dr Thorlene Egerton Prof Krysia Dziedzic	March 2020
Rachel Nelligan	E-health to increase uptake of exercise and physical activity in people with knee osteoarthritis	Prof Kim Bennell Prof Rana Hinman	September 2020
Josh Farragher	The effects of novel force control exercise on disability, biomechanical and neuromuscular adaptations in people with chronic low back pain	A/Prof Adam Bryant A/Prof Gavin Williams Dr Doa El-Ansary Dr Selina Parry Dr Adrian Pranata	November 2020
Scott Starkey	Effect of neuromuscular exercise on joint contact forces in at risk and established knee osteoarthritis: secondary analyses of two randomized controlled trials	Prof Rana Hinman Dr Michelle Hall Dr David Saxby Mr Tim Wrigley	February 2021
Pei Wei Chi	Effect of modifiable athletic footwear features on knee joint contact forces in healthy young females and older adults with knee osteoarthritis	A/Prof Adam Bryant Prof Rana Hinman Dr Kade Patterson Dr Wen Wu	June 2022

CONVERSION SEMINAR

Name	Title	Supervisors	Date
Scott Starkey	“Effect of neuromuscular exercise on joint contact forces in at risk and established knee osteoarthritis: secondary analyses of two randomized controlled trials”	Prof Rana Hinman Dr Michelle Hall Dr David Saxby Mr Tim Wrigley	12 March 2019

RESEARCH GRANTS

NEW GRANTS COMMENCING

Newly awarded grants commencing in 2019 totalled $7,207,592. CHESM Researchers are indicated in bold.

Granting body	Investigators	Project title	Duration	Total grant
National Health and Medical Research Council Senior Research Fellowship #1154217	**Hinman RS**	Lifestyle management of knee osteoarthritis: closing the gaps to reduce disease burden	2019 – 2023	$724,175
National Health and Medical Research Council 2019 Project Grant # 1157977	**Hinman RS** Russell T Foster N **Kasza J** Harris A	Technology vs tradition: a non-inferiority trial comparing video to face-to-face consultations with a physiotherapist for people with knee osteoarthritis.	2019 - 2023	$1.24 million
National Health and Medical Research Council 2019 Project Grant	**Hall M** **Dobson F** **Allison K**	Strengthening exercise or combined strengthening and aerobic exercise for hip osteoarthritis: a RCT	2019 - 2222	$868,134
Foundation for Prader-Willi Research (FPWR), Prader-Willi Research Foundation of Australia (PWFRA) and La Trobe University (LTU)	Shields, N Taylor, N **Bennell, K** Rice, L Markovic, T	Improving muscle strength and muscle mass in people with Prader-Willi syndrome.	2019-2020	$160,000AUD and $60,000USD
Versus Arthritis UK (formerly Arthritis Research UK)	Conaghan P McHugh G Kingsbury S Hensor E **Bennell K** Comer C	Evaluation and implemention of electronic rehabilitation programmes for chronic knee pain in the UK	February 2021	GBP £238,317 $437,503AUD
NHMRC Medical Research Future Fund (MRFF) Grant	Shields N **Bennell K** Taylor N Rice L Markovic T Bigby C Watts J Prendergast L	Improving muscle strength in young people with Prader-Willi syndrome	2019-2023	$869,140
Griffith University Health Groups Seed Grant	Diamond L Saxby DJ **Hinman RS** Barrett R Hall M Pizzolato C Lloyd D	Personalised hip joint load modification using real-time biofeedback: a new intervention to slow hip osteoarthritis progression.	2019-2020	$43, 010
Griffith University Health Groups Seed Grant	Saxby DJ Diamond L Pizzolato C Lloyd D Barrett R, Bryant A, **Hinman RS** Paterson K Kelly L Vertullo C	Effects of commercially-available footwear on anterior cruciate ligament forces during provocative sporting tasks	2019-2020	$55,729
Industry - Physiotherapy Research Fund Project Grant	**Allison K** Setchell J Holden M Bennell K	Addressing obesity: physiotherapist delivery of evidence-based care in osteoarthritis	2019	$15, 695

CONTINUING GRANTS

Granting body	Investigators	Project title	Duration	Total grant
National Health and Medical Research Council Principal Research Fellowship #APP1058440	**Bennell K**	Improving conservative management of knee osteoarthritis	2014-2019	$727,610.00
National Health and Medical Research Council Centre of Research Excellence scheme	**Bennell K** Hunter D Hodges P Buchbinder R Pirotta M **Hinman R** Foster N Michie S Vicenzino B	Centre of Research Excellence in Translation of Research into Improved Outcomes in Musculoskeletal Pain and Health (CRE TRIUMPH) (App 1079078)	2015-2019	$2.5 million AUD
National Health and Medical Research Council Project Grant #1106274	**Bennell K** Buchbinder R Wang Y Forbes A	Hype or Hope? platelet-Rich plasma as a symptom- and disEaSe-modifying Treatment fOR knee ostEoarthritis - the RESTORE trial	2016-2019	$1,400,359
National Health and Medical Research Council Partnership grant #1115720	Hunter DJ **Bennell K** **Hinman R** Zwar N Pirotta M Briggs A Schofield D Forbes A Bunker S French S	Optimising primary care management of knee osteoarthritis: the PARTNER project	2017-2019	$1,155,444
Australian Research Council Linkage Grant LP170100569	**Bryant A** **Hinman R** **Bennell K** **Paterson K** **Kasza J**	Athletic footwear for reducing knee loads in girls and women.	2018-2019	$202,000
Canadian Institutes of Health Research	Hunt MA **Hinman RS** Goldsmith M	Shoe insoles designed to target foot and knee symptoms in people with knee osteoarthritis: a randomized controlled study.	2018-2019	$CAN100,000
Medibank Health Research Fund	Groombridge S Glasziou P Hoffman T **Bennell K**	Shared decision-making: patient information and decision support tools for non-drug treatment of common musculoskeletal conditions – Royal Australian College of General Practitioners Handbook of Non-Drug Interventions (HANDI)	2018-2019	$80,000
University of Sydney eHealth Seed Research Fund	Ferreira P Simic M Ferreira M **Bennell K** Luscombe G Bauman A	E-health to empower patients with Musculoskeletal Pain in Rural Australia (EMPoweR)	2018-2019	$20,000

Asics Oceania Pty Ltd (Industry funding)	**Bryant A** **Hinman RS** **Bennell KL** **Paterson K** **Kasza J**	Athletic footwear for reducing knee loads in girls and women	2018-2020	$80,000
Medibank Health Research Fund and Medibank Private	**Bennell K** **Hinman R** Keating C **Egerton T** **Kasza J** Briggs A Harris A Page C Fuller N Keefe F Rini C	"CareOA" linking Australians with specialised knee osteoarthritis treatment and support across the osteoarthritis trajectory - a randomised controlled trial evaluating two remotely-delivered scalable health services tested in the private health insurance setting.	2018-2020	$953,081
National Health and Medical Research Council Project Grant #1145739	Sherrington C **Hinman R** Crotty M Hoffman T Harvey L Taylor N Hassett L Tiedemann A	Physical activity coaching for adults with physical disabilities: a pragmatic randomised trial.	2018-2021	$1.371 million
National Health and Medical Research Council Program Grant #1091302	Hodges P **Bennell K** Hunter D Vicenzino B	Musculoskeletal pain and disability: improving outcomes through conservative management	2016-2020	$8,268,140
National Health and Medical Research Council Project Grant #1124418	**Hodges P** **Bennell K** **Hunter D** **Vicenzino B**	Footwear for self-managing knee osteoarthritis: the Footstep Trial.	2017 – 2020	$590,532
National Health and Medical Research Council Centre of Research Excellence (CRE) #1134856	Buchbinder R Maher C March L Day R **Hinman R** Harris I Ferreira M Glasziou P Green S Billot L	Australia & New Zealand Musculoskeletal (ANZMUSC) Clinical Trials Network	2018-2022	$2.5 million

FUTURE GRANTS

Newly awarded grants announced in 2019 that commence in 2020 totaled $4,608,915.41. CHESM Researchers are indicated in bold.

Granting body	Investigators	Project title	Duration	Total grant
MSHS Mid career Research Grant Scheme, University of Melbourne.	**Dobson F, (CI-A)** Kusljic S	The effect of exercise on inflammatory biomarkers linked to disease progression in people with hip osteoarthritis.	2019	$24,656
NHMRC 2019 Project Grant over 4 years. Role CI-B	**Hall M** **Dobson F** **Allison K**	Strengthening exercise or combined strengthening and aerobic exercise for hip osteoarthritis: a RCT.	2019-2023	$868,134
NHMRC Emerging Leadership Investigator Grant.	**Paterson K**	Closing the evidence gaps to boost clinical outcomes for people living with disabling foot osteoarthritis.	2019-2023	$632,475.41
Össur Australia (industry)	**Dr Michelle Hall (CIA)** AIs: Dr Laura Diamond Dr David Saxby Dr Claudio Pizzolato	Mechanisms of response to valgus knee bracing in patients with medial knee osteoarthritis	2019-2020	$67,000 + $45,000 in-kind
Innovations Connections Grant, Dept. of Industry, Innovation & Science	**Dr Michelle Hall (CIA)** AIs: Dr David Saxby Dr Laura Diamond, Dr Claudio Pizzolato	Mechanisms of response to valgus knee bracing in patients with medial knee osteoarthritis	2019-2020	$50,000
Health Group Seed Grant Scheme	Dr Laura Diamond (CIA) **Dr Michelle Hall** Dr David Saxby Dr Claudio Pizzolato **Prof Rana Hinman** Prof David Lloyd	Personalised hip joint load modification using real-time biofeedback: a new intervention to slow hip osteoarthritis progression	2019-2020	$43,010
Australia & New Zealand Musculoskeletal Clinical Trials Network	**Dr Michelle Hall (CIA)** **Prof Rana Hinman** **Prof Kim Bennell**	Combined diet and exercise for hip osteoarthritis: feasibility study	2019-2020	$10,000
Arthritis Australia	Dr Laura Diamond (CIA) **Dr Michelle Hall** Dr David Saxby **Prof Rana Hinman**	Personalised hip joint load modification using real-time biofeedback	2020	$20,000
NHMRC Investigator Grant (1174431)	Bennell K	Improving outcomes for people with knee osteoarthritis: overcoming patient and clinician barriers	2020-2024	$2,848,640

AWARD HIGHLIGHTS

MARCH 2019 TRANSLATING RESEARCH AT MELBOURNE AWARD

Translating Research at Melbourne is the pathway for research impact at the University of Melbourne. The TRaM Bootcamp is a two-day experiential workshop that serves as a key part of the selection process for the Track research commercialisation program, exposing potential Track candidates to key approaches and frameworks for success. On 18 March 2019, PhD candidate, Rachel Nelligan, pitched the MyKneeExercise and SMS program and won the much sought after Gold Dinosaur trophy at the end of the TRaM Bootcamp for best articulated problem and translatable solution.

Rachel Nelligan, pictured third from left at back, with her much sought after Gold Dinosaur trophy

OCTOBER 2019 MDHS DAME KATE CAMPBELL FELLOWSHIP AWARD

In October 2019 Prof Kim Bennell & Dr Michelle Hall were appointed as MDHS Dame Kate Campbell Fellows. These are highly competitive fellowships that recognise outstanding research excellence and contribution.

OCTOBER 2019 YOUNG TALL POPPY AWARD

Dr Michelle Hall received a Young Tall Poppy Award at a ceremony held at Swinburne University on 11 October 2019. Eleven Young Tall Poppies were announced in Victoria, selected from over 85 applicants. The awards recognize excellence in research across all fields as well as community engagement and leadership.

Dr Michelle Hall pictured speaking at the Young Tall Poppy Award event

OCTOBER 2019 PEDro AWARD

On 21 October at the 2019 Australian Physiotherapy Association conference in Adelaide, the TELECARE team won the PEDro (Physiotherapy Evidence Database) prize for best randomised controlled trial presented at the conference. TELECARE was selected after shortlisting the robust randomised controlled trials reporting primary results that were submitted as free papers (not invited speakers) to the conference.

Presentation of the shortlisted papers was judged by a panel of experienced trialists at the conference. Professor Hinman did a fantastic job with the presentation and congratulations must go to all the TELECARE team which included: Rana, Penny, Belinda and myself from CHESM, plus collaborators, Prof Andrew Briggs, and Dr Jessica Kasza. A particular big thanks to Penny for all her work in co-ordinating this trial.

On 01 November, it was announced that Telecare had been awarded another prize at the 2019 APA conference for: Best Paper Overall for the Gerontology stream by the Transform Scientific Program Committee for: Telephone-delivered exercise advice and behaviour change support by physiotherapists for people with knee osteoarthritis: the telecare pragmatic randomised controlled trial. **Hinman RS, Campbell PK, Lawford BJ**, Briggs AM, Gale J, Bills C, Kasza J, Harris A, French SD, Forbes A, Bunker SJ, **Bennell KL**.

OCTOBER 2019 MDHS EXCELLENCE AWARDS

On 21 October 2019, Professor Kim Bennell and Dr Michelle Hall added another achievement to a truly fantastic year when they each received the MDHS Faculty's award for excellence in research by an early-career researcher. A wonderful achievement by both.

Dr Michelle Hall pictured accepting her MDHS Excellence Award from Dean of Faculty, Professor Shitij Kapur

NOVEMBER 2019
MDHS STAFF EXCELLENCE IN INDUSTRY-ENGAGED RESEARCH

On 27 November 2019, a team of CHESM staff were successful in winning the MDHS award for industry-engaged research. Congratulations to Kim, Rana, Thor, Belinda, Ben, Penny and Alex on our longstanding collaboration over 10 years and multiple research projects with Medibank.

DECEMBER 2019
SCHOOL OF HEALTH SCIENCES AWARD

On 10 December, Dr Michelle Hall capped off a truly remarkable year of achievements when it was announced that she had been awarded the School of Health Sciences award for Excellence in Research & Research Training for 2019.

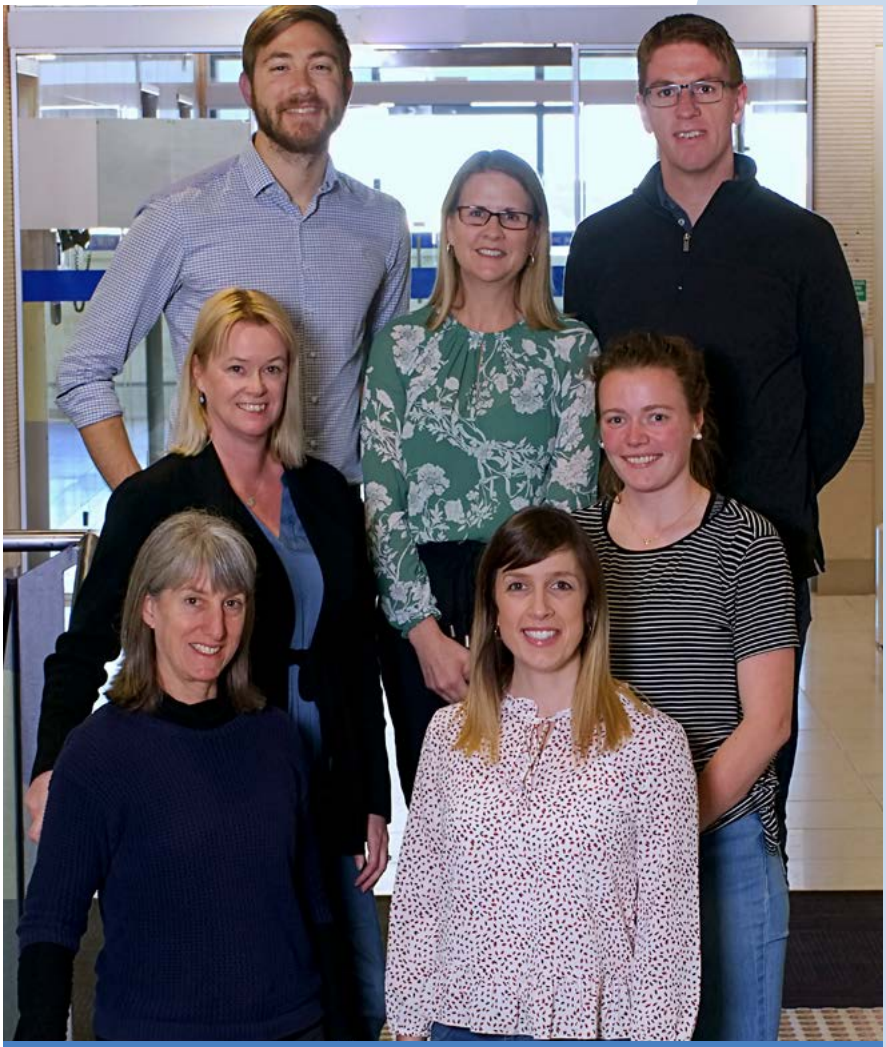
OTHER AWARDS

Business Higher Education Round Table, *Shortlisted for the Research and Development Award for partnership with ASICS Oceania – Professors Bennell and Hinman.*

Winner, Best Abstract Prize-Rehabilitation, Osteoarthritis Research Society International Congress for: Van Ginckel A, Hinman RS, Wrigley TV, Hunter DJ, Marshall C, Duryea J, Melo L, Simic M, Kasza J, Robbins S, Wallis J, Bennell KL. Effect of cane use on bone marrow lesion volume in people with medial tibiofemoral knee osteoarthritis: randomized clinical trial.

Winner, ECR Travel Award, OPUS CRE Forum, Rachel Nelligan (PhD student) for: Nelligan RK, Hinman RS, Atkins L, Bennell KL. Design of a text message intervention to support home exercise for people with knee osteoarthritis.

From left above; Prof Kim Bennell, Dr Belinda Lawford and Prof Rana Hinman accepting the award on behalf of the team from Dean of Faculty, Professor Shitij Kapur



The MDHS staff excellence award team, pictured from back left; Alex Kimp, Prof Kim Bennell, Ben Metcalf, Prof Rana Hinman, Dr Belinda Lawford, Dr Thorlene Egerton and Penny Campbell

KEYNOTE ADDRESSES AND INVITED PRESENTATIONS

PROFESSOR KIM BENNELL

2019 April
21st Asia Pacific League of Associations for Rheumatology (APLAR)/ Australian Rheumatology Association Congress. 'Online approaches to the delivery of lifestyle treatments for osteoarthritis'.

2019 May
World Confederation of Physical Therapy Congress, Geneva Switzerland, Invited symposium speaker. "Incorporating psychological strategies into physical therapy to optimize outcomes".

2019 August
XXVII Congress of the International Society of Biomechanics and American Society of Biomechanics Annual Conference, Calgary, Canada. 'Applying biomechanical research to inform clinical management of musculoskeletal conditions'.

2019 September
Peking University International Osteoarthritis Forum. "Exercise for the management of osteoarthritis".

PROFESSOR RANA HINMAN

2019 May
*Osteoarthritis Research Society International Congress, Toronto, C anada, May 2-5. Key-note speaker: "Optimizing adherence in osteoarthritis rehabilitation trials".

World Confederation of Physical Therapy Congress, Geneva Switzerland, May 10-13. Invited symposium speaker: "Physical therapy in knee-hip osteoarthritis. Meeting the needs of people living remotely: alternative models of delivering exercise management".

2019 November
American College of Rheumatology, Atlanta USA, November 9-13. Invited speaker "Core capabilities for health professionals to optimise care for people with osteoarthritis".

ASSOCIATE PROFESSOR ADAM BRYANT

2019 August
The safety and feasibility of early resistance training following median sternotomy (The SAFE-ARMS Study): An interim analysis. Australian Cardiovascular Health & Rehabilitation Association (ACRA) ASM (*August 2019, Sydney*).

2019 November
The safety and feasibility of early resistance training following median sternotomy (The SAFE-ARMS Study): An interim analysis. Australian New Zealand Society of Cardiothoracic Surgeons ASM (*November 2019, Hobart*).

DR KADE PATERSON

2019 October
Podium presentation: Associations between static foot posture, in-shoe plantar forces and knee pain in people with medial knee osteoarthritis, October 2019, Sunshine Coast, Australia.

Invited workshop: Assessment and management of first MTP joint and midfoot osteoarthritis. Sports Medicine Australia, October 2019, Sunshine Coast, Australia.

2019 May
Podium presentation: A multi-faceted podiatry intervention compared to usual general practitioner care for first metatarsophalangeal joint osteoarthritis: a randomised controlled feasibility study. Australian Podiatry Conference, May, Adelaide, Australia.

Invited presentation: Towards a clinical definition of foot osteoarthritis: clinical assessments for first metatarsophalangeal joint and midfoot osteoarthritis. Osteoarthritis Research Society.

2019 April
Invited full-day workshop: Assessment and management of first metatarsophalangeal joint and midfoot osteoarthritis. Queensland Podiatry Association, 6 April 2019, Brisbane, Australia.

2019 February
Invited national live webinar: Foot pain, foot biomechanics and foot-based treatments for knee osteoarthritis. Australian Podiatry Association, 26 February 2019.

DR MICHELLE HALL

2019
Age Melbourne Research, The Royal Melbourne Hospital, Melbourne | Lower limb muscle strength and osteoarthritis: where to next?

DR THORLENE EGERTON

2019
Keynote address at the Indian Rheumatology Association's OA conference (OACON) 4-5 August, 2019. "Osteoarthritis: The role of physiotherapy and self-management".

DR KIM ALLISON

2019
Allison K, Setchell J, Delany C, Egerton T, Bennell K (2019) In theory yes, in practice uncertain: understanding physical therapists' attitudes towards their role in weight management in knee osteoarthritis World Congress of Physical Therapy, Geneva, Switzerland (Oral).

2019
Allison K, Delany C, Setchell J, Egerton T, Holden M, Quicke J, Bennell K (2019) A qualitative study exploring individuals with knee osteoarthritis' views on the role of physical therapists in weight management: a comlex issue requiring a sophisticated skill set World Congress of Physical Therapy, Geneva, Switzerland (Oral).

CONFERENCE PRESENTATIONS/ ABSTRACTS OARSI

CHESM staff and students attend a wide range of conferences each year, both nationally and internationally. In 2019, over 12 different conferences were attended.

A complete list of abstracts and presentations can be found on page 39.

OARSI 2019 WORLD CONGRESS – TORONTO, CANADA

From 02 to 05 May 2019, seven CHESM staff attended the annual Osteoarthritis Research Society International (OARSI) world congress on OA in Toronto, Canada. There were several abstract posters created by CHESM staff including researchers Dr's Michelle Hall and Belinda Lawford, plus research assistants Penny Campbell and Ben Metcalf.

Professor Rana Hinman delivered an insightful podium presentation *'Optimising adherence in OA Rehabilitation Trails',* and ex-CHESM PhD Student, Dr Laura Diamond, presented her work on comparing lower hip joint contact forces in individuals with hip OA to healthy controls.

Trial Coordinator, Penny Campbell, pictured to the right, presented her abstract entitled "Do individuals with knee osteoarthritis wear appropriate footwear? A cross sectional analysis of common footwear styles and features." Osteoarthritis Research Society International World Congress, Toronto, Canada. Campbell PK, Paterson KL, Metcalf BR, Bennell KL, Wrigley TV, Kazsa J, Hinman RS. (2019).

From left: CHESM Research assistants Penny Campbell and Ben Metcalf with Dr's Michelle Hall and Belinda Lawford, CHESM Director Professor Kim Bennell, ex-CHESM PhD student Dr Laura Diamond, and Professor Rana Hinman at the OARSI Conference, 2-5 May 2019.

From left: research assistants Penny Campbell and Ben Metcalf with Dr Belinda Lawford pictured with 2 of their poster presentations at the OARSI Conference, 2-5 May 2019.

INAUGURAL OARSI REHABILITATION DISCUSSION GROUP MEETING

During the OARSI World Congress in Toronto in May 2019, the inaugural OARSI Rehabilitation Discussion Group meeting was held, which brought together osteoarthritis experts, researchers and clinicians from around the globe with an interest in rehabilitation. The group primarily discussed the proposal of creating OARSI-endorsed exercise guidelines and ideas pertaining to mentoring activities. Since the inaugural meeting, the steering committee has expanded to 12 group members, and a young investigator sub-group has also been established. Additionally, the steering committee has created an exercise position statement protocol and completed a narrative review focussing on therapeutic exercise for osteoarthritis. An international multi-disciplinary expert panel that will be invited to participate in the statement generation and e-Delphi processes is now being assembled. Once consensus on the most important position statements regarding therapeutic exercise for hip and knee osteoarthritis has been established, an online toolbox containing a suite of practical resources to help clinicians implement therapeutic exercise will be developed.

CONFERENCE ABSTRACTS/ PRESENTATIONS

Campbell PK, Paterson KL, Metcalf BR, Bennell KL, Wrigley TV, Kazsa J, Hinman RS. (2019) Do individuals with knee osteoarthritis wear appropriate footwear? A cross sectional analysis of common footwear styles and features. Osteoarthritis Research Society International World Congress, Toronto, Canada 2019.

Cordner T, Weijesinghe TMQ, Schubert K, Egerton T, Williams G. Ballistic resistance training: safety, feasibility and effectiveness for improving muscle strength, muscle power generation and mobility in adults with neurological conditions - A systematic review. Australian Physiotherapy Association Conference 2019, Adelaide.

Hall M, Fox A, Bonacci J, Metcalf B, Pua YH, Wrigley TV, Bennell KL. Gait kinematics and coordination variability according to pain and structural disease severity in people with hip osteoarthritis. (2019) 26th International Society of Biomechanics Congress, Calgary, Canada.

Lawford, B. J., K. L. Bennell, P. K. Campbell, J. Kasza, R. S. Hinman: Therapeutic alliance between physiotherapists and patients with knee osteoarthritis consulting via telephone: a longitudinal study. Osteoarthritis Research Society International Conference. Toronto, Canada 2019.

Luong, M. L. N., Presented at the 2019 Society of Behavioural Medicine Conference, MDHS ECR conference, and SHS Student Colloquium.

Metcalf B, Paterson KL, Campbell PK, Wrigley TV, Kasza J, Bennell KL, Hinman RS. Relationship between static foot posture, in-shoe plantar forces and knee pain in people with medial knee osteoarthritis. World Congress of the Osteoarthritis Research Society International (OARSI); 2019; Toronto.

Paterson, KL. Invited national live webinar: Foot pain, foot biomechanics and foot-based treatments for knee osteoarthritis. Australian Podiatry Association, 26 February 2019.

Paterson, KL. Invited full-day workshop: Assessment and management of first metatarsophalangeal joint and midfoot osteoarthritis. Queensland Podiatry Association, 6 April 2019, Brisbane, Australia.

Paterson, KL. Podium presentation: A multi-faceted podiatry intervention compared to usual general practitioner care for first metatarsophalangeal joint osteoarthritis: a randomised controlled feasibility study. Australian Podiatry Conference, May 2019, Adelaide, Australia, Paterson, KL. Podium presentation: Associations between static foot posture, in-shoe plantar forces an knee pain in people with medial knee osteoarthritis. Sports Medicine Australia, October 2019, Sunshine Coast, Australia.

Teo, PL. 2019 poster presentation on “Development and evaluation of patient-reported quality indicators for physiotherapy management of hip and knee osteoarthritis (QUIPA) tool”. APA Transform & Student Colloquium 2019.

PUBLICATIONS

BOOK CHAPTERS

1. Dobson F, Allison K, Diamond L, Hall M. Contemporary non-surgical considerations in the management of people with extra- and intra-articular hip pathologies. In Hip Surgeries (ISBN 978-953-51-8141-5); 2019

2. Luong Nguyen ML, Hall M, Hinman RS. Challenges in conducting a systematic review and meta-analysis on the impact of financial incentives on physical activity participation for adults. In Sage Research Methods Cases. Medicine & Health. *Accepted 17-Oct-2019.*

REVIEW ARTICLES

Hinman, R. S., B. J. Lawford and K. L. Bennell (2018). "Harnessing technology to deliver care by physical therapists for people with persistent joint pain: Telephone and video-conferencing service models." *Journal of Applied Biobehavioural Research* **24** (2): e12150.

REFEREED JOURNAL ARTICLES

1. Albesher RA, Spittle AJ, McGinley JL, Dobson FL. Gait characteristics of children born preterm. NeoReviews. 2019; 20 (7): e397-e408.

2. Allison K, Delany C, Setchell J, Egerton T, Holden M, Quicke J and Bennell K (2019) A qualitative study exploring the views of individuals with knee osteoarthritis on the role of physiotherapists in weight management: A complex issue requiring a sophisticated skill set. *Musculoskeletal care, 17* (2), 206-214.

3. Allison, K, Setchell, J, Egerton, T, Delaney, C, & Bennell, KL. (2019). In theory, yes; in practice, uncertain: A qualitative study exploring physical therapists' attitudes to their role in weight management for people with knee osteoarthritis. *Physical Therapy.* 2019;99(5):601-611.

4. Bannuru R, Osani M, Vaysbrot E, Arden N, Bennell K, Bierma-Zeinstra S, Kraus V, Lohmander S, Abbott J, Bhandari M, Blanco F, Espinosa R, Haugen I, Lin J, Mandl L, Moilanen E, Nakamura N, Snyder-Mackler L, Trojian T, Underwood M, McAlindon T. OARSI guidelines for the non-surgical management of knee, hip and polyarticular osteoarthritis. *Osteoarthritis and Cartilage.* 2019;27(11):1578-1589

5. Bennell K, Marshall C, Dobson F, Kasza J, Lonsdale C, Hinman R. Does a web-based exercise programming system improve home exercise adherence for people with musculoskeletal conditions? Randomized controlled trial. *Am J Phys Med Rehab.* 2019;98(10):850-858

6. Bennell KL, Nelligan R, Kimp A, Wrigley TV, Metcalf BR, Kasza J, Hodges PW, Hinman RS. Comparison of weight bearing functional exercise and non-weight bearing quadriceps strengthening exercise on pain and function for people with knee osteoarthritis and obesity: protocol for the TARGET randomised controlled trial. *BMC Musculoskel Dis* 2019; 20(1): 291.

7. Briggs A, Hinman R, Darlow B, Bennell K, Leech M, Pizzari T, Greig A, MacKay C, Bendrups A, Larmer P, Francis-Cracknell A, Houlding E, Desmond L, Jordan J, Minaee N, Slater H. Confidence and attitudes towards osteoarthritis care among the current and emerging health workforce: A multi-national interprofessional study. *ACR Open Rheumatology.* 2019;1(4):219-235.

8. Briggs AM, Houlding E, Hinman RS, Darlow B, Bennell KL, Leech M, Pizzari T, Greig AM, MacKay C, Bendrups A, Larmer PJ, Francis-Cracknell A, Desmond LA, Jordan JE, Minaee N, Slater H. Health professionals and students encounter multi-level barriers to implementing high-value osteoarthritis care: A multi-national study. *Osteoarthritis Cartilage* 2019; 27(5): 788-804.

9. Cameron K, Allison K (2019) Dance PREEMIE: A Dance Participation Intervention for Extremely Pre-term children with Motor Impairment at pre-school age: a feasibility trial. *BMJ*

10. Collins NJ, Tan JM, Menz HB, Russell TG, Smith AJ, Vicenzino B, Munteanu SE, Hinman RS, Haines TP, Hart HF, Patterson BE, Cleary G, Donnar JW, Maclachlan LR, Crossley KM. The FOOTPATH Study: protocol for a multicentre, participant- and assessor-blind, parallel group randomised clinical trial of foot orthoses for patellofemoral osteoarthritis. *BMJ Open* 2019; 9(4):e025315.

11. Costa N, Ferreira ML, Setchell J, Makovey J, Dekroo T, Downie A, Diwan A, Koes B, Natvig B, Vicenzino B, Hunter D, Roseen E, Rasmussen-Barr E, Guillemin F, Hartvigsen J, Bennell K, Costa L, Macedo L, Pinheiro M, Underwood M, Van Tulder M, Johansson M, Enthoven P, Kent P, O'Sullivan P, Suri P, Genevay S, Hodges PW. A definition of flare in low back pain (LBP): A multiphase process involving perspectives of individuals with LBP and expert consensus. *J Pain.* 2019;20(11):1267-1275

12. de Valle K, McGinley JL, Woodcock I, Ryan MM, Dobson F. Measurement properties and utility of performance-based outcome measures of physical functioning in individuals with facioscapulohumeral dystrophy – A systematic review and evidence synthesis. Neuromuscular Disorders. 2019;29(11):881-894.

13. Diamond, L., Murphy, N., Eyles, J., Kim, Y., Linklater, J., Spiers, L., & Hunter, D. (2019). Patient factors predict severity of hip symptoms to a greater extent than abnormal bony hip morphology in femoroacetabular impingement syndrome. *Journal of Science & Medicine in Sport,* 22, S62–S63.

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Associate Professor Jennifer McGinley, Professor Rana Hinman, Professor Nadine Foster and Professor Kim Bennell at the Miegunyah Public Lecture, March 2019

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