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**Success of Christchurch researchers in latest HRC funding round**

University of Otago, Christchurch researchers have won more than $8 million of Health Research Council 2014 funding.

The funded projects are:

1. Testing a potentially safer and more effective treatment for osteoarthritis pain.
2. Trialing a suite of new tests for heart failure and related conditions.
3. Investigating whether Parkinson’s disease patients with disruption to a certain brain network are more likely to develop dementia.
4. Implementing nationwide a strategy developed in Christchurch to test the real burden of Legionnaires’ disease.
5. Studying Parkinson’s disease patients with a higher risk of developing dementia to better understand risk and disease progress.

A lay summary of each project follows:

**HRC Project Grant to Dr Ben Hudson ($1,190,921)**

*A randomised controlled trial of nortriptyline in knee osteoarthritis*

Osteoarthritis (OA) is a very common and painful condition. Medicines currently available for treating OA pain are not ideal: they are either inadequately effective or cause unpleasant or dangerous side effects. Recent research has shown how the brain processes pain in OA and this has opened up the possibility of using different types of medicines for OA pain.

Nortriptyline (an antidepressant) has been used to treat persistent pain in other conditions, and other antidepressants may reduce pain in knee OA. It is not known whether nortriptyline is useful in this condition. We plan to test this effect by randomly allocating participants to treatment with nortriptyline or placebo and to measure changes in their pain before and after a period on the medication. We hope that this will tell us whether nortriptyline will be helpful. If it is, then we believe that many people may benefit from taking this medicine.
**HRC Programme Grant to Professor Mark Richards ($4,980,858)**

*Heart Failure: markers and management*

Heart failure (HF) will affect 20% of people now aged 40 years and confers high rates of early readmission and death. Professor Richards and his team will implement an integrated programme addressing unmet needs in HF including: (1) The IMPERATIVE-HF controlled trial of intensified immediate post-discharge management using special blood tests to individually grade risk and guide intervention with rapid adjustments to treatment to improve outcomes. (2) Testing of candidate kidney damage markers for early warning of this frequent and dangerous complication of HF. (3) Establishing correct sampling times for novel markers for best prediction of early and long term outcomes in HF. (4) Testing our newly discovered markers for early warning of pneumonia complicating HF. (5) Clarification of diagnoses and testing management plans for patients in the Emergency Department with breathlessness or chest pain who do not have clear-cut HF or heart attacks but who nevertheless have elevated blood biomarkers and a poor outlook.

**HRC Emerging Researcher First Grant to Dr Tracy Melzer ($149,943)**

*Imaging markers of imminent cognitive decline in Parkinson’s disease.*

Most Parkinson’s disease (PD) patients eventually develop dementia, which is the most burdensome aspect of this progressively worsening condition. Mild cognitive impairments often indicate imminent dementia, but the two to 20 year time course poses a major problem for medical interventions, as brain changes associated with dementia in PD are still poorly understood. Recent evidence suggests that neurodegenerative diseases such as PD progress along discrete brain networks. One important network, known as the ‘default mode network’ appears particularly susceptible to neurodegeneration. Dr Melzer and his team will examine this network to determine if its disruption can specify which PD patients are vulnerable to progression to dementia within the next two years. A sophisticated but readily available brain imaging technique, called resting state functional imaging, will be used. These measures will assist in the selection of the most suitable patients for new treatments that may delay or prevent subsequent dementia in this vulnerable population.

**HRC Project Grant to Professor David Murdoch ($999,467)**

*Legionnaires' disease in New Zealand: improving diagnostics and treatment*

Legionnaires’ disease is a severe type of pneumonia that is under-diagnosed in New Zealand. Special tests are required to make a diagnosis of legionnaires’ disease, but there are no clear guidelines about which patients to test. An enhanced testing system for legionnaires’ disease was developed in Canterbury and has been used there since 2010. The system involves targeted use of the current best test for legionnaires’ disease: PCR (polymerase chain reaction), which detects bacterial DNA. This approach has uncovered many cases of legionnaires’ disease that would have otherwise gone undetected. This study will roll out this same testing strategy across New Zealand for one year in order to measure the national burden of legionnaires’ disease, to improve patient treatment, to identify cost-effective ways to test for legionnaires’ disease in the future, and to create better guidelines for the treatment of pneumonia.
Many people with Parkinson’s are at risk of dementia but scientists and clinicians have been unable to predict when that will occur. Professor Tim Anderson and his team will do advanced brain scans (MRI and PET) gene testing and clinical evaluations in 85 Parkinson’s patients who have mild cognitive impairments, who are known to be at higher risk, and then determine whether they progress to dementia over the subsequent three years. By identifying characteristics present in the scans and genetic tests of those who develop dementia, compared to those who do not, Professor Anderson and his team can advance understanding of this important issue and establish a useful and reliable tool for researchers and clinicians. It is critical to do this so that preventative treatments to protect against dementia can be targeted at the most appropriate patients when that treatment becomes available and also to select the right ‘at risk’ Parkinson’s patients for trials of new treatments.

To arrange an interview ring Senior Communications Advisor Kim Thomas on 027 222 6016