

Successful Program Grants for funding commencing in 2013

Chief Investigator A: Professor Scott O'Neill

Chief Investigators: Professor Ary Hoffman, Professor Cameron Simmons

Title: Optimisation of *Wolbachia* based control strategies to reduce dengue incidence and disease

Application ID: APP1037003

Location: Monash University

Funding: \$6,073,640.00 over 5 years

The project will build on recent advances in the use of *Wolbachia* infected mosquitoes to limit dengue transmission. Key outcomes will include improved understanding of *Wolbachia* spread after release, development of techniques for regional spread, understanding the epidemiology of dengue transmission in Vietnam and preparing a panel of new *Wolbachia:A. aegypti* strain combinations for evaluation for implementation programs.

Chief Investigator A: Professor Paul Keall

Chief Investigators: Professor Michael Barton, Professor Stuart Crozier

Title: The Australian MRI-Linac Program: Improving cancer treatment through real-time image guided radiotherapy

Application ID: APP1036078

Location: University of Sydney

Funding: \$5,705,380.00 over 5 years

Radiation therapy is used to treat 40% of cancer patients in Australia. The problem with current therapy is that during treatment the tumours are moving. To solve this problem, this team built a research program around a novel MRI-linear accelerator in which the cancer will be imaged - and treated - as it is moving. Successful completion of this program will have a direct impact on the treatment, overall survival and quality of life for Australian cancer patients in the foreseeable future.

Chief Investigator A: Professor Glenda Halliday

Chief Investigators: Professor Jürgen Götz, Professor Lars Ittner, Professor Jillian Kril, Professor John Hodges, Professor Matthew Kiernan

Title: Frontotemporal dementia and motor neurodegenerative syndromes

Application ID: APP1037746

Location: University of New South Wales

Funding: \$11,011,390.00 over 5 years

Frontotemporal degeneration of the brain is a leading cause of morbidity. It is a pathologically heterogeneous group of rapidly-progressive disorders with behavioural, language and motor deficits. This research program brings together international leaders in clinical, pathological and biological research of these syndromes, aiming to fast track new knowledge and innovations to develop the necessary tools and therapies to effectively diagnose, manage and treat these disorders.

Chief Investigator A: Professor Michael Good

Chief Investigators: Professor Don McManus, Professor Istvan Toth, Professor Nicholas Anstey, Professor Denise Doolan, Doctor Christian Engwerda, Professor Alexander Loukas, Professor James McCarthy, Professor Richard Price

Title: Tropical Disease - Immunity, pathogenesis and vaccine development: global translation

Application ID: APP1037304

Location: Griffith University

Funding: \$17,100,585.00 over 5 years

Tropical diseases create a significant human and economic burden worldwide - particularly in resource-poor settings. Around half of the world's population is at risk of malaria. In Australia, Streptococcal and parasitic worm infections are particularly common in indigenous communities. This Program brings together leading experts to tackle these major health challenges. They are investigating how the body reacts to infection and creating new drugs and vaccines to eradicate these diseases.

Chief Investigator A: Professor Thomas Kay

Chief Investigators: Professor Leonard Harrison, A/Prof Andrew Lew, Professor Philip O'Connell, Professor Grant Morahan, Doctor Helen Thomas

Title: Pathogenesis-based treatment of type 1 diabetes

Application ID: APP1037321

Location: St Vincents Institute of Medical Research

Funding: \$10,274,870.00 over 5 years

At least 6 young Australians are diagnosed each day with type 1 diabetes. This Program aims to change the way type 1 diabetes is managed by proactively treating its underlying mechanisms. The team will develop safer and more effective immune therapies, develop islet transplantation, look for better markers of disease, and identify ways to preserve insulin-producing cells. The Program aims to propel type 1 diabetes research forward to reach the goals of prevention and cure.

Chief Investigator A: Professor Philip Barter

Chief Investigators: Professor David Celermajer, Professor Kerry-Anne Rye, Professor Leonard Kritharides, Professor Wendy Jessup

Title: Atherosclerosis - the key roles of HDL, cell cholesterol metabolism and vascular function

Application ID: APP1037903

Location: University of Sydney

Funding: \$7,085,050.00 over 5 years

Atherosclerosis, an accumulation of cholesterol in the artery wall, is a major cause of illness and premature death worldwide. It is caused by conditions such as low levels of the protective high density lipoproteins (HDLs), diabetes, smoking and abnormal function of arteries, all of which are linked to disorders of cholesterol metabolism. With the team's expertise in HDLs, cholesterol metabolism and artery function, this research will lead to the development of novel strategies for early detection and prevention of atherosclerosis and heart disease.

Chief Investigator A: Professor Philip Mitchell

Chief Investigators: Professor Peter Schofield, Professor Gordon Parker, Professor Michael Breakspear

Title: Depressive and bipolar disorders: Pathophysiology, phenotypes and treatment innovations

Application ID: APP1037196

Location: University of New South Wales

Funding: \$7,100,605.00 over 5 years

Depression and bipolar disorder are two of Australia's leading causes of disease burden, with 3-4 million Australians affected during their lifetime. However, despite being such a serious health burden, there are major shortcomings to current understanding and management. This research program aims to further our knowledge of the causes and presentations of the mood disorders, and to improve and "tailor" treatment for the many Australians who suffer from these highly disabling illnesses.

Chief Investigator A: Professor John Simes

Chief Investigators: Professor Anthony Keech, Professor Val Gebski, Associate Professor Martin Stockler, Professor Ian Caterson, Professor Stephen Colagiuri, Professor Deborah Schofield, Professor Ian Marschner

Title: Advancing the Evidence Base for Care and Policy in Priority Health Areas

Application ID: APP1037786

Location: University of Sydney

Funding: \$10,643,130.00 over 5 years

This program will improve health care and policy through clinical trials research and better methods for combining trial evidence. The team will tackle priority health areas to reduce death and serious disability: in particular in cancer, cardiovascular disease, diabetes, obesity and neonatal diseases. The program team includes clinicians, epidemiologists, trialists, biostatisticians, and health economists and collaborative networks of clinical investigators in each disease area.

Chief Investigator A: Professor Robert Parton

Chief Investigators: Professor Alpha Yap, Professor Kirill Alexandrov, A/Professor Katharina Gaus

Title: Program in Membrane Interface Biology

Application ID: APP1037320

Location: University of Queensland

Funding: \$7,100,605.00 over 5 years

This research program aims to gain a detailed understanding of the organisation of the cell surface at the molecular level. The cell surface is organised into domains with distinct functions. Visualisation of these domains, identifying their important components, and understanding how they form and function will have huge importance for therapeutic strategies aimed at combatting the changes associated with cell transformation in cancer and in other human diseases such as muscular dystrophy.

Chief Investigator A: Professor David Kaye

Chief Investigators: Professor Gary Jennings, Professor Murray Esler, Professor Anthony Dart, Professor Bronwyn Kingwell. Professor Jaye Chin-Dusting, A/Prof Dmitri Sviridov

Title: A Program of Translational Cardiovascular Medicine: Identifying New Targets for Prevention and Treatment

Application ID: APP1036352

Location: Baker IDI Heart and Diabetes Institute

Funding: \$12,406,615.00

Cardiovascular disease (CVD) is the major cause of death and disability in Australia and worldwide, despite significant advances in treatment. This team has an international reputation for developing innovative approaches for the treatment of patients with CVD. This team will work collaboratively to improve outcomes for people suffering from hypertension, heart attack, heart failure & other serious forms of CVD.