

Successful Program Grants for funding commencing in 2011

Chief Investigator A: Professor Sam Berkovic

Title: Neurobiology of human epilepsy: Genes, cellular mechanisms, networks and whole brain

Application ID: 628952

Location: The University of Melbourne, VIC

Funding: \$16,450,000 over 5 years

Chief Investigators: Professor Graeme Jackson, Professor Jozef Gécz., Professor Alan Connelly, Professor Ingrid Scheffer, Professor David Reutens, Dr. Steven Petrou, Dr. Leanne Dibbens, Dr. Fernando Calamante, Associate Professor Paul Thomas,

The team is comprised of neurologists, molecular geneticists, physiologists and brain imaging specialists and leads the world in the discovery of the genetic causes of epilepsy. They will continue to identify genes underlying epilepsy and study how genetic variations result in development of seizures. Advanced brain imaging will be used to understand the effects of genetic variation on brain structure and function. This study may lead to new diagnostic methods and treatments for epilepsy.

Chief Investigator A: Professor Alan Cowman

Title: Interaction of malaria parasites with the host: disease, pathogenesis and control

Application ID: 637406

Location: The Walter and Eliza Hall Institute of Medical Research, VIC

Funding: \$12,735,000 over 5 years

Chief Investigators: Professor Brendan S Crabb, Dr Terence P Speed, Dr Geoffrey I McFadden, Dr Louis Schofield, Dr James G Beeson

The program will investigate malaria, a parasitic disease that kills over 2 million people a year. The team will explore how the parasite identifies, invades and remodels the host cells in which it lives, scavenging nutrients and hiding from the immune system. They will characterize the proteins involved in these critical events, as they are potential targets for drugs and vaccines. The program also looks at how parasites cause disease and how the host responds to infection. They will explore the consequences of the body's attempts to fight off disease, and how the immune system achieves this.

Chief Investigator A: Professor Paul Hodges

Title: Musculoskeletal pain, injury and health: improving outcomes through conservative management

Application ID: 631717

Location: The University of Queensland, QLD

Funding: \$7,570,000 over 5 years

Chief Investigators: Professor Kim Bennell, Professor Gwendolen Jull, Professor Bill Vicenzino

Musculoskeletal pain and injury is a major health issue facing our ageing society. The cost in terms of health care and lost productivity is second only to cardiovascular disease. This Program will address the major musculoskeletal disorders such as spinal pain and osteoarthritis. The team will undertake research with the potential for real and enduring impact on these conditions - from the physiological basis for their occurrence, to trials of innovative drug-free conservative treatments.

Chief Investigator A: Associate Professor Stuart Hooper

Title: Improved respiratory support and outcomes for very preterm babies

Application ID: 606789

Location: Monash University, VIC

Funding: \$8,560,000 over 5 years

Chief Investigators: Associate Professor Peter G Davis, Professor Lex W Doyle, Professor Richard Harding, Associate Professor Timothy J Cole, Dr Timothy JM Moss

Premature babies are born with lungs that are not developed enough to sustain their breathing needs after birth. As a result, they need intensive care which is the most costly and challenging problem in newborn medicine as these infants can suffer life-long diseases because of their early birth. This programs study will help to understand the causes of lung disease in premature babies and develop better ways of caring for them to improve their chances of survival without ongoing illness and disability.

Chief Investigator A: Professor Les Irwig

Title: Screening and Test Evaluation Program: improving the evaluation and use of tests for screening, diagnosis and monitoring in healthcare

Application ID: 633003

Location: University of Sydney, NSW

Funding: \$8,915,000 over 5 years

Chief Investigators: Professor Paul Glasziou, Professor Jonathan Craig, Professor Glenn Salkeld, Associate Professor Petra Macaskill

Medical tests - for screening, diagnosis, and monitoring - are often poorly evaluated and poorly used. This program, run by an established team with skills in public health, clinical epidemiology, biostatistics, health economics and behavioural science, addresses the under-researched issues of whether, when and how to use medical tests. The elements of the program follow the sequence in which testing is often done: for screening

(early detection), for diagnosis on which to base treatment decisions, and for monitoring the effects of treatment. A common approach throughout is the identification of the benefits and harms of testing and assessing their trade-offs; how benefits weigh up against harms. This research is relevant to all partners in healthcare - consumers, clinicians and policymakers - who currently are being tested or implementing tests without being fully informed about the accuracy and effects of these tests.

Chief Investigator A: Professor Richard Kefford

Title: Molecular determinants of risk, progression and treatment response in melanoma

Application ID: 633004

Location: University of Sydney, NSW

Funding: \$12,065,000 over 5 years

Chief Investigators: Professor John F Thompson, Professor Peter Hersey, Associate Professor Graham J Mann, Professor Richard A Scolyer, Professor Nicholas K Hayward

Melanoma is a major Australian health problem. It is the third most common cancer in men and women and has a disproportionately heavy impact on productive years of life because it is the common cause of cancer death in younger adults. The investigators are all associated with the Melanoma Institute Australia, incorporating the Sydney Melanoma Unit (SMU). MIA is the world's largest clinical service dedicated to the treatment of melanoma, treating >1500 new melanoma patients annually and maintains a repository of clinical data on melanoma and a large melanoma tissue bank. The Program has also recruited large numbers of people from the community, as well as people with a strong family history of melanoma, in order to study its causes. It aims to utilise these internationally-recognised resources to develop a scientific basis for 1) improved management of individuals at high risk for development and progression of melanoma, and 2) improved treatment of patients with early and disseminated melanoma, in an era of rapid change in the prospects of successfully treating this dangerous cancer. The Program will do this by consolidating and extending its existing collaborative research, supported by NHMRC since 2006.

Chief Investigator A: Professor Trevor Lithgow

Title: Fighting infection: exploiting host-pathogen interactions

Application ID: 606788

Location: Monash University, VIC

Funding: \$8,900,000 over 5 years

Chief Investigators: Professor Jennifer Stow, Dr. Rohan Teasdale, Dr. Elizabeth Hartland, Professor Richard Strugnell

This program will investigate the strategies used by pathogenic bacteria to cause human diseases. The research will focus on how bacteria initiate infections, how they invade, cause cell and tissue damage and respond to their human host. It will also examine how the host's innate

immune system interacts with these bacteria. The results will provide new insights into host-pathogen interactions and reveal new targets for the development of novel antibacterial drugs and vaccines.

Chief Investigator A: Professor Colin Masters

Title: Neurodegeneration in the aging brain: how the pathways leading to aggregated protein cause disease

Application ID: 628946

Location: The University of Melbourne, VIC

Funding: \$14,025,000 over 5 years

Chief Investigators: Associate Professor Kevin Barnham, Professor Ashley Bush, Associate Professor Roberto Cappai, Associate Professor Robert Cherny, Associate Professor Steven Collins, Associate Professor Andrew Hill, Dr. Anthony White

The Neurodegeneration Program is discovering the basic pathways that cause Alzheimer's disease and related diseases of the aging brain; from these discoveries the team are finding new methods for early diagnosis and therapeutic interventions which will allow them to determine whether it is possible to delay the onset or improve the way in which the brain copes with these diseases.

Chief Investigator A: Professor Mark Onslow

Title: From Discovery to Innovation in Stuttering Treatment

Application ID: 633007

Location: University of Sydney, NSW

Funding: \$4,775,000 over 5 years

Chief Investigators: Associate Professor Ann Packman, Associate Professor Ross Menzies

Stuttering starts in 2-3-year olds and if not controlled causes a lifetime of social anxiety, and hinders educational and vocational achievement. Recent discoveries by the current team and colleagues have shown the disorder to be far more prevalent, and more of a public health problem, than previously thought. The team has developed efficacious treatments for stuttering children and adults. However, no country can afford the health care needed for all who stutter. The present research is designed to solve this problem by developing standalone Internet based stuttering treatments. These will be evaluated in a stepped care treatment approach for people who stutter, in Australia and internationally.

Chief Investigator A: Professor Kerin O'Dea

Title: Improving chronic disease outcomes for Indigenous Australians: Causes, Interventions, System Change

Application ID: 631947

Location: University of South Australia, SA

Funding: \$8,190,000 over 5 years

Chief Investigators: Professor Robyn McDermott, Dr Kevin Rowley, Professor John Lynch, Professor Leonie Segal

Diabetes and cardiovascular diseases occur in epidemic proportions among Indigenous Australians, with very early age of onset and high rates of preventable complications. This Program will bring together a multi skilled team of researchers with Indigenous partners to better understand the development of these conditions, and to guide the development of diet, lifestyle, clinical and health system interventions in order to minimise their adverse impacts and improve health overall.