

## ABOUT MS RESEARCH AUSTRALIA

MS Research Australia is the largest national not for profit organisation dedicated to funding and coordinating multiple sclerosis research in Australia, as part of the worldwide effort to solve MS. Its goal is to accelerate research into the cause, better treatments and prevention, with the aim of ultimately finding a cure for MS. There is a small team of dedicated individuals responsible for all aspects of the operations, ensuring overheads are low so that more of the fundraised dollar can be directed straight to the best MS research projects.

## ABOUT MS RESEARCH AUSTRALIA GRANTS

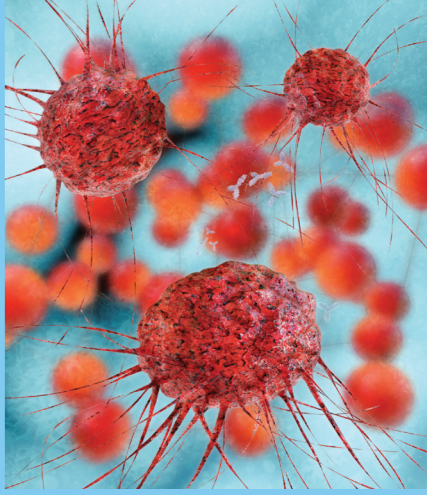


MS Research Australia operates with a robust and transparent research strategy, ensuring that scientific expertise guides the funding model. The International Research Review Board serves as the main scientific advisory group to MS Research Australia. They assist in identifying the strengths of Australian research ensuring that MS Research Australia's research strategy complements the global research effort. In addition, the Research Management Council consists of a multidisciplinary team overseeing the peer-review process of all funding applications and allocations for investigator-driven research. Research applications are evaluated on both their scientific merit and high relevance to MS. The grant process is conducted with integrity and transparency, and is modelled on the most stringent grant review systems worldwide, including the Australian Government's National Health and Medical Research Council review process.

For more information on the scientific committees, research strategy and funded projects please visit [www.msra.org.au](http://www.msra.org.au)



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## PROJECTS STARTED IN 2015 FUNDED BY MS RESEARCH AUSTRALIA

|                                      | IDENTIFYING THE TRIGGERS FOR MS  | DEVELOPING BETTER TREATMENTS   | A CURE FOR MS VIA REPAIR OR REGENERATION OF CELLS  |
|--------------------------------------|--|--|--|
| <b>GENETICS &amp; EPIDEMIOLOGY</b>   | <p><b>Hunter Medical Research Institute, NSW</b><br/>Associate Professor Jeanette Lechner-Scott is looking at how the environment affects gene activity in the immune system.</p> <p><b>Telethon Kids Institute, WA</b><br/>Professor Robyn Lucas will profile the role of components of the Vitamin D pathway in risk of MS.</p> <p><b>Westmead Clinical School, University of Sydney, NSW</b><br/>Dr Sanjay Swaminathan is exploring the mechanisms of how the Epstein-Barr Virus (EBV) may lead to the development of MS.</p> <p><b>University of Sydney, NSW</b><br/>Dr Fiona McKay is investigating how MS risk genes may interact with EBV infection to contribute to the development of MS.</p> | <p><b>University of Melbourne, VIC</b><br/>Dr Melissa Gresle is testing how MS risk genes influence the activity of other known immune system genes.</p> <p>Associate Professor Helmut Butzkueven will investigate how key genes of interest affect the immune system in MS.</p>   |   |
| <b>NEUROBIOLOGY</b>                  | <p><b>Brain and Mind Research Institute, NSW</b><br/>Dr Cheryl Li will use the MS Research Australia Ian Ballard Travel Award to visit the lab of Professor Jonathan Mill at the Institute of Psychiatry, King's College London, to learn new techniques for analysing DNA in brain tissue.</p>   | <p><b>University of Melbourne, VIC</b><br/>Ms Sanuji Gajamange is testing a new type of brain scanning technique that is very sensitive to identifying neurodegeneration.</p> <p><b>Baker IDI Heart &amp; Diabetes Institute, VIC</b><br/>Professor Karlheinz Peter is investigating the role of platelets in MS inflammation and the potential use of platelet imaging for the early detection of MS.</p> | <p><b>University of Melbourne, VIC</b><br/>Dr Holly Cate will study novel ways to create a more conducive environment for myelin repair in the brain.</p> <p>Dr Jessica Fletcher is searching for new ways to increase myelin production in MS.</p> <p><b>University of Adelaide, SA</b><br/>Ms Jasmine Wilson will investigate ways that tooth stem cells may assist repair in MS.</p> <p><b>Australian Regenerative Medicine Institute, VIC</b><br/>Dr Natalie Payne is profiling reprogrammed stem cells to harness the genes that are expressed during development to promote repair.</p> <p><b>Florey Institute of Neuroscience and Mental Health, VIC</b><br/>Professor Trevor Kilpatrick is profiling a specific nerve cell receptor to understand its role in encouraging myelin repair.</p> |
| <b>IMMUNOLOGY &amp; VIROLOGY</b>     | <p><b>Institute for Immunology and Infectious Diseases, WA</b><br/>Dr David Nolan is researching how the EBV interacts with the immune system in MS.</p> <p><b>University of Sydney, NSW</b><br/>Mr Sherman Siu is analysing antibodies to identify different subtypes of demyelinating disorders.</p> <p><b>University of New South Wales, NSW</b><br/>Mr Paul Wilcox is studying the immune system to understand the mechanisms behind the 'remission' period in relapsing-remitting MS.</p>   | <p><b>Kids Research Institute, NSW</b><br/>Dr Fabienne Brilot-Turville is developing a diagnostic tool for bilateral and relapsing optic neuritis.</p> <p><b>Telethon Kids Institute, WA</b><br/>Mr Will Kermode will examine the effects of exposure to UV radiation on the immune system via bone marrow cells in mice.</p>  |   |
| <b>SOCIAL &amp; APPLIED RESEARCH</b> | <p><b>Menzies Institute for Medical Research, TAS</b><br/>Associate Professor Ingrid van der Mei is investigating the risk factors for Primary Progressive MS.</p>   | <p><b>Menzies Institute for Medical Research, TAS</b><br/>Professor Andrew Palmer will develop a tool to identify the treatments that are greatest value for money for relapsing-remitting MS.</p> <p><b>University of Sydney, NSW</b><br/>Dr Ollie Jay will employ novel techniques to study heat regulation in people with MS during physical activity.</p>  |  |

IDENTIFYING THE TRIGGERS FOR MS

### GENETICS & EPIDEMIOLOGY

#### University of Tasmania, TAS

Professor Heinrich Körner is studying how MS risk genes involved in the Vitamin D pathway influence the function of the immune system.

#### Florey Institute of Neuroscience and Mental Health, VIC

Professor Trevor Kilpatrick is investigating functional implications of genetic variation in a specific gene called MERTK and its role in MS susceptibility.

#### Hunter Medical Research Institute, NSW

Dr Vicki Maltby is profiling molecules that control gene activity in the immune cells of people with MS, to identify factors contributing to disease onset and prognosis.

Dr Rod Lea is providing bioinformatics support primarily to the MS Research Australia platforms, ANZgene and Proteomics, working across Australia and New Zealand.

#### Working across Australia and NZ

ANZgene is a major collaboration mapping the genetic make-up of people with MS to identify which genes influence MS susceptibility and why.

DEVELOPING BETTER TREATMENTS

#### Bond University, QLD

Ms Katherine Sanders is profiling molecules that control gene activity in tissue taken from MS lesions in the brain and body fluids to develop biomarkers for MS prognosis.

#### Working across Australia and NZ

The PrevANZ Vitamin D Prevention Trial is measuring whether vitamin D can prevent MS in people at high risk of developing the disease.

#### James Cook University, QLD

Dr Margaret Jordan is determining how genetic risk factors affect the function of immune cells in MS.

#### Menzies Institute for Medical Research, TAS

Dr Steve Simpson Jr is creating an algorithm to predict disease activity and disease course for people with MS.

A CURE FOR MS VIA REPAIR OR REGENERATION OF CELLS



### NEUROBIOLOGY

#### Working across Australia

The MS Research Australia Brain Bank based at the University of Sydney is securing valuable MS tissue from donors across Australia, for researchers to advance our understanding of the neuropathology of MS.

#### Deakin University, VIC

Dr Stuart Smith is profiling the gut bacteria of people with MS to identify new mechanisms underlying disease.



#### Monash Institute of Pharmaceutical Sciences, VIC

Dr Charles Galea is exploring potential new therapeutic compounds derived from cone snail venom.

#### University of Sydney, NSW

Dr Ben Crossett is analysing protein fragments using specialised techniques to compare neuromyelitis optica and MS.

Dr Heidi Beadnall is exploring the use of magnetic resonance imaging (MRI) to measure brain tissue loss in people with MS in clinical practice.

#### Working across Australia

Professor Allan Kermode at the Sir Charles Gairdner Hospital, WA, works with Professor Jim Wiley and colleagues around Australia on the Australian MS Haematopoietic Stem Cell Treatments Register. They track the efficacy of Autologous haematopoietic stem cell treatments (bone marrow transplants) to treat MS.

#### University of Melbourne, VIC

Dr Simon Murray is looking at novel ways to promote remyelination and repair in the MS damaged brain and spinal cord.

Dr Stanislaw Mitew is investigating the normal turnover of myelin in the healthy and MS brain and investigating ways to improve remyelination for repair.

#### Working across Australia

Professor Shaun McColl at the University of Adelaide leads the Proteomics research platform in a national collaboration to identify the key proteins involved in MS.

#### Monash Immunology and Stem Cell Laboratories, VIC

Mr Jae Lee, under the supervision of Dr Steven Petratos, is blocking a molecule known to cause axonal damage in MS, as an option for repair.

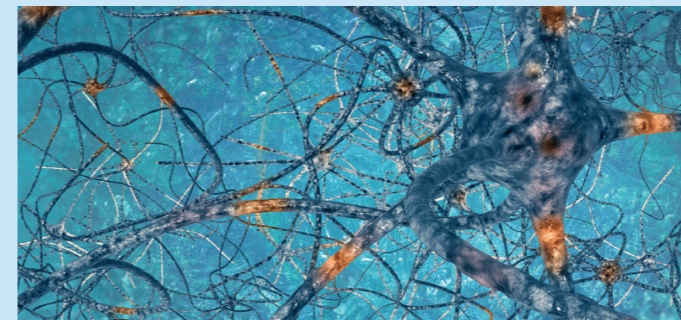
### IMMUNOLOGY & VIROLOGY

#### University of Sydney, NSW

Dr Scott Byrne is investigating the mechanisms behind UV suppression of the immune system, particularly the role of B regulatory cells.

#### University of Queensland, QLD

Professor Michael Pender continues his work on immune cells and the role of infection with Epstein-Barr Virus (EBV) in the development of MS.



#### Working across Australia and internationally

MS Research Australia has committed funds to the International Progressive MS Alliance to accelerate treatments for progressive MS.

#### University of New South Wales, NSW

Associate Professor David Brown is investigating a specific molecule that can modulate the innate immune system and may provide a new treatment option for progressive MS.

#### University of Adelaide, SA

Dr Iain Comerford is studying the role of white blood cell signalling in MS with the aim of preventing neuroinflammation.

#### Garvan Institute of Medical Research, NSW

Dr Sue Liu is identifying ways to improve immune defence against infections in people with MS receiving B cell depleting therapies.



### SOCIAL & APPLIED RESEARCH

#### Menzies Institute for Medical Research, TAS

Associate Professor Ingrid van der Mei manages the Australian MS Longitudinal Study, which is tracking the issues of practical importance in the lives of people affected by MS including quality of life, economic impact and employment.



#### Western Australian Neuroscience Research Institute, WA

Dr Souyma Ghosh is looking to improve balance and walking in people with MS using computer controlled balance training and brain stimulation.

#### University of Sydney, NSW

Dr Ché Fornusek is evaluating the benefits of an electrical stimulation cycling exercise program for people with advanced MS.

#### University of Adelaide, SA

Dr Diana Dorstyn is running a trial to test the delivery of job-seeking skills training using internet technology, to help people with MS.

#### University of New South Wales, NSW

Dr Phu Hoang is running a clinical trial to test an interactive training system to reduce falls in people with MS.

#### University of Queensland, QLD

Dr Anna Hatton is running a clinical trial to test whether wearing textured shoe insoles may improve the gait of people with MS.

#### Monash University, VIC

Professor Helmut Butzkueven will investigate the prevalence of bladder and bowel symptoms using their recently validated screening tool.

#### Working across Australia

The MS Research Australia Clinical Trials Network coordinates information about MS trials for the MS community.



KEY



INCUBATOR GRANT



FELLOWSHIP



MAJOR COLLABORATIONS / PLATFORMS



SCHOLARSHIP



PROJECT GRANT