



Multiple approach - multiple funds for MS research

MS Research Australia (MSRA) has shown the way forward in how disease-specific research can be funded. By investing at the start of a research cycle there is great potential to attract further funds as the research shows promise.

Set up to raise funds and direct research, MSRA has this year committed over \$3.1 million to new research specifically into MS. The project areas include genetics, neurobiology, immunology and neuropsychology (the full list is detailed on page 2).

Meanwhile research into MS has also recently received four new grants of some \$2.025 million funding from the National Health and Medical Research Council (NHMRC), the federal government's medical research funding agency.

'It is rewarding to note that projects we previously backed have now attracted NHMRC grants for 2010 and 2011 (see article on page 4). So we kick-started them by our own peer-reviewed grant process and there is then a multiplier factor that generates more funds as they develop'



said Jeremy Wright, Executive Director of MS Research Australia.

Grants from NHMRC are competitive and many projects across the whole area of health are deserving. However MSRA's goals are to specifically push hard for more MS-specific research. 'We must be single-minded about it and feel our results show this,' Mr Wright said.

He went on, 'in 2011, MSRA will continue to accelerate the pace of MS research in Australia. This is reflective of the increasing community support to find a cure.' ■

Australian Awards

This year's Australia Day came with the news of Simon McKeon being recognised as Australian of the Year 2011.

Simon was the Founding Chair of MS Research Australia until August 2010, when he stepped down to take on the Chairman's role at the CSIRO. Simon has guided and inspired MSRA to a position as Australia's peak body for MS research and made it one of MS Australia's most successful initiatives.

Australia Day honours were also awarded to two people who have considerably advanced the cause of MS research;

Prof John Prineas AO was awarded an Officer of the Order of Australia for distinguished service to medicine in the field of neurology as an academic, researcher and mentor, to improving the lives of people with Multiple Sclerosis, and to medical education.

Niall King OAM was awarded a Medal of the Order of Australia for service to the community. Niall has been an active fundraiser with F5m and the Trish MS Research Foundation for a number of years as well as a volunteer with MS Australia.

Congratulations on your awards and amazing contributions to MS research in Australia. ■



AUSTRALIAN OF THE YEAR, SIMON MCKEON.

SNAPSHOT of MSRA-funded projects starting in 2011



Genetics & Epidemiology

Identifying the triggers for MS

At the University of Melbourne

- Prof Trevor Kilpatrick is using biomarkers to predict the likelihood of ongoing disease activity in patients with the earliest signs of MS.

At Westmead Millennium Institute

- A/Prof David Booth is unravelling the biological mechanisms that known MS susceptibility genes use to influence the onset of MS.

Developing better treatments

At the University of Queensland

- Dr Jun Yan will determine whether mutations in a specific gene influence the severity of MS in individuals.

In an Australian and New Zealand Collaboration

- Dr Mark Slee (Flinders University) and his colleagues will assess a diagnostic test to identify between Neuromyelitis optica (NMO), MS and other related diseases.

At the Murdoch Children's Research Institute

- A/Prof Anne-Louise Ponsonby, as part of the International Paediatric MS Study Group, is undertaking the first study testing two novel biomarkers in childhood MS.

A cure for MS via repair or regeneration of cells



Neurobiology

At the University of Sydney

- Prof Simon Hawke is looking to see if chronic inflammation in very small brain blood vessels can lead to disease progression in the absence of new lesions.

At the University of NSW

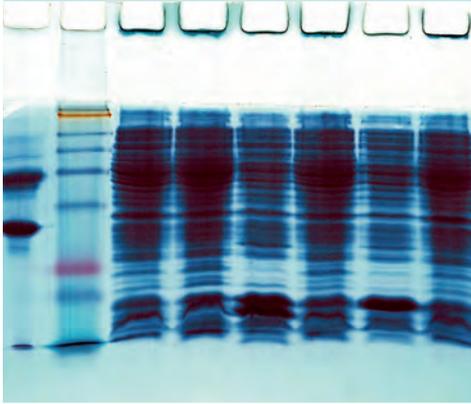
- Biyi Chen under the guidance of Dr John Parratt is exploring the earliest changes that occur to supporting immune cells that might lead to new ways of treating it.

At La Trobe University

- Roisin Briscoe under the guidance of Dr Jacqueline Orian is assessing if nerve damage across the brain can cause 'leaks' of immune cells that go on to cause MS.

At the Florey Neuroscience Institutes

- Dr Holly Cate will test if blocking specific biological signalling can enhance myelination.



At the University of Sydney

- A/Prof Alexander Klistorner will validate an inexpensive and sensitive method to measure remyelination. This technology will help assess if new medication's help the body repair are working even before symptoms appear.

At Macquarie University

- Dr Stuart Graham will determine the relationship between a lesion and the effect on nerve function along the optic nerve. The results will form part of a test bed to measure the benefits of new treatments that can repair nerve damage before symptoms arise.

Immunology & Virology

At La Trobe University

- Leana Downs under the supervision of Dr Jacqueline Orian is developing an animal model that mimics the lesion activity in the brain to use as a testing site for MRI studies.

At the University of Western Australia

- Kirsten Bennett under the supervision of Prof Allan Kermode is studying clinical information to determine if *H. pylori* can protect Australians from developing MS.

At the University of New South Wales

- Edwin Lim is interrogating a specific biological pathway known to regulate the body's inflammatory processes that may slow down MS progression.
- Dr David Brown's research will reveal the role of immune cells in MS leading to better treatments for MS.

At the University of Melbourne

- Dr Jerome Staal will investigate the role of a specific cellular deficit in MS leading to new treatments.

At Monash University

- Dr Christopher Siatskas is using regenerative approaches to permanently eliminate MS and reverse the neural damage caused during disease.



Social & Applied Research



At MS Australia - ACT/NSW/VIC

- Wendy Longley is assessing the potential direct clinical benefits of a neuropsychological assessment and will identify the characteristics of patients and caregivers who benefit most.

At the Menzies Research Institute

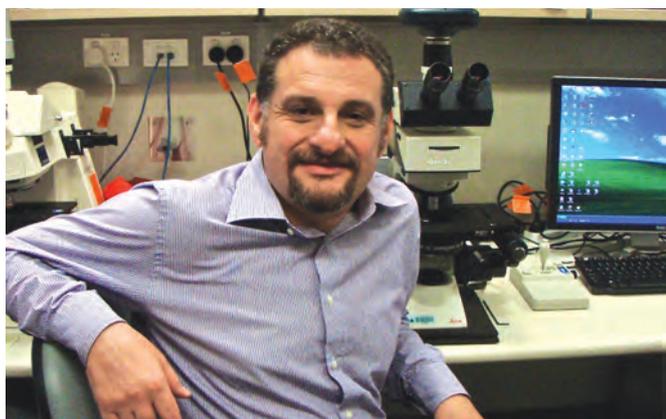
- Prof Andrew Palmer is assessing the economic impact of MS on Australians.



Communicating to restore the peace

Immunologist Dr David Brown, from the University of NSW, is one of MSRA's new grant recipients. He has been awarded \$300,000 to investigate how the lines of communication can be re-established to treat MS.

It is a desire to understand how the brain talks to the immune system that drives this clinician scientist at St Vincent's hospital. This interest translates perfectly to multiple sclerosis research as understanding this dialogue will have major implications not only for MS, but also other inflammatory diseases of the brain. 'My ultimate aim,' says Dr Brown, 'is to



DR DAVID BROWN FROM THE UNIVERSITY OF NSW.

turn this understanding into new therapies that will reverse the changes in conversation that leads to MS.' A good place to start is to address the 'damaging argument between the immune system and the brain' before the damage is done.

Over the next three years, Dr Brown will examine the interaction between dendritic cells and T-cells and the role they play in the development of MS. The T-cell is an immune cell that in one form can cause damage to brain cells in MS, however, in some circumstances another form of T-cell might help repair the brain. For these good and bad cells to get into the brain they need to be activated by the dendritic cells. When the dendritic cells turn the T-cells on, they essentially tell them how to behave; i.e. help the brain recover or injure it. Dr Brown has established that the key site where this conversation happens is just outside the brain in lymph nodes in the neck.

As understanding of the conversation between dendritic cells and T-cells develops and how T-cells circulate between neck lymph nodes and the brain, it may be possible to change this process to make more helpful T-cells instead. 'We hope to target therapies to inflammatory cells that will then travel to the brain, allowing localised treatment for MS' says Dr Brown, enthusiastically. 'This could lead to lower drug requirements than current therapies and therefore have fewer side effects.' ■

Thank you for banking with us!



With more people promoting the MSRA Brain Bank, over 1,300 people with MS in Australia have now shown interest in registering.

Last year, brain donors and their supporters formed Brain Bank teams to participate in the MS Walk and Fun Run and the 24 hour Mega Swim held in Sydney. Together they raised nearly \$6,000 for MS Australia by recruiting sponsors from family, friends, and their community.

According to Pearl Champion, captain of the MS Walk Brain Bank team, not even the brief shower on the day could dampen the enthusiasm of the walkers. As Pearl says, 'More brain donors mean a larger database which will hasten and improve identifying the cause, process and treatment of MS. So each additional donor helps bring the cure closer.'

Katie Butler enjoyed the day on her electric scooter and thought the experience was physically and emotionally invigorating. 'I would do anything to help anyone else with a brain disease. Even if nothing can be done for us, at the very least we are helping future generations with MS.' said Katie.

Project manager of the MSRA Brain Bank, Dr Teresa Wong, has been part of the Brain Bank team in the past two Mega Swims. 'It was wonderful to feel the team spirit of so many people swimming for the same cause. Everyone was so keen to get in the water we almost had to fight for our turn to swim,

even through the late-night/early-morning shift!' she said.

If you would like to represent the MSRA Brain Bank in any MS awareness or fundraising events in 2011, please contact us to start a team in your city. You will be provided with brain donor ambassador information and receive a free MSRA Brain Bank t-shirt. Please call 1300 672 265 or go to www.msbrainbank.org.au for more information. ■



MSRA BRAIN BANK TEAM AT THE MS WALK AND FUN RUN.

Investigating the immune system

Dr Christopher Siatskas, from Monash University, has recently been funded \$290,000 by MSRA in a project that will see him working throughout the next 36 months on a giant task: Reprogramming the immune system.

Although a number of therapeutic options exist to treat MS patients, these therapies are not particularly effective at preventing the disease from progressing. It is thought that for a cure to eventuate, three fundamental processes will need to be established: 1) suppress the inflammatory response, 2) restore immunological self tolerance, and 3) regenerate damaged cell and tissues. Today, clinical practice at best addresses the first problem but there are no clear strategies for the other two.

Combining immune regeneration and gene therapy approaches, Dr Siatskas' research will look into addressing the second process. Specifically he will investigate ways to re-educate the immune system, by way of genetically modifying the function of the thymus – an essential organ involved in the development of white blood cells called T-cells. Many studies have shown that autoimmune diseases can develop because the thymic education process can become faulty leading to the production and release of T-cells in the blood. By restoring normal thymic function and reversing this imbalance, Dr Siatskas believes that this approach may overcome some of the devastating effects of MS.

Relatively new to the world of MS research, Dr Siatskas brings new ideas and new expertise to the hunt for an answer to MS. Having received his PhD in immunology at Monash University, Dr Siatskas pursued post doctoral studies at the University of Illinois at Chicago and the Ontario Cancer Institute in Toronto. During this time he applied gene therapy techniques to understand basic cell biology but also used this cutting edge tool in the treatment of patients with genetic diseases. 'The potential that comes



■ DR CHRISTOPHER SIATSKAS FROM MONASH UNIVERSITY.

with such an approach is exciting and has been used with some success.'

Dr Siatskas appreciates the challenge ahead of him, 'Although the disease has been known for a long time, there is still much we need to learn. Because the disease is notoriously complex, in all likelihood, it will take many different approaches to develop a cure.'

Available treatments for MS are only effective in delaying disease progression. So a regenerative and gene therapy-based approach has great potential. Indeed, re-establishing immune tolerance provides a genuine opportunity for researchers of not only multiple sclerosis, but other autoimmune diseases. Dr Siatskas states, 'by developing a more targeted strategy to permanently eliminate rogue immune cells that are at the centre of the pathogenic process, we can reverse autoimmune disease.' ■

MS researchers multiplying results

In 2010 MSRA and the Trish MS Research Foundation started funding two MS research projects at the University of Melbourne.

The first looked at a 'master' genetic switch that can potentially regulate myelination and repair neural damage caused during MS. Last year Dr Ben Emery was awarded \$150,000 by MSRA to undertake this research and has now been successful in gaining an NHMRC grant of \$555,185 for 2011 onwards for the direct continuation of this work.

'The MSRA/Trish Foundation support has been vital for getting the research project up and running,' Dr Emery said.

'The exciting results obtained with their support served as the basis for getting the NHMRC grant up, which will in turn fund the continuation of this research over the coming years.'

In addition, MSRA's support of Scott Kolbe's work – investigating the role of imaging (MRI) technology in the evaluation of potential neuroregenerative treatments – has attracted a significant contribution from the NHMRC of \$609,953 for 2011 onwards. The success of this project could see MRI used in trials of drugs which act to protect neurons before MS causes chronic and debilitating disability. ■



Foundation 5 Million Family



5 Million reasons to celebrate

Five years ago, the late Ian Ballard had a dream – to encourage people in the MS community to hold fundraising events, no matter how big or small, in order to raise \$5 million. This \$5 million would go directly to finding a cure for MS.

This would be achieved if people with MS, or their families or friends, held anything from a garage sale to a major ball. Ian's catchphrase was, 'Partying is good for you.' And he meant it!

The \$5 million is *now* within our reach. So, this time the party is a major celebration; to honour everyone in the F5m family.

All are invited; whether you participated in a fun-run or bike ride, launched an art exhibition, organised a gala ball, challenged your mind at trivia, threw the book at MS...or simply donated to F5M! We want to salute you, so please make a special effort and travel to Sydney where ever you are to join us in our special celebration.

Good food, fine wine, very special guests and funky tunes will be the order for the evening. It's all about saluting you and your efforts in helping us reach this milestone... and also to party, of course!

Invitations with details and ticket prices have been distributed via email, however if you missed your invitation, contact us at 1300 356 467 or go to www.F5m.org.au for more information.

The F5m Carnivale will be held at Doltone House, Darling Island Wharf, in Sydney on Friday, 15 April 2011 from 7pm. ■

Fiona gives a toss!

Throw the Book at MS has turned a new leaf and brought in some help from the ever enthusiastic Fiona Hall

She will be on the phone and encouraging more book groups (via libraries and our own networks) to take part in the easy-to-run trivia nights (or days) based on all topics relating to the world of books. Any F5m group of friends – small or large – may like to approach her about getting involved and running one. All material needed is supplied to make it a very easy event to run – the questions and answers, a suggested program, ideas for fundraising etc. You can email her at fiona@throwthebookatms.org.au ■

Miles for Myelin

It's great when one of the F5m clan raise money from a good challenge – but it's special when an MS researcher takes the initiative.

Dr Mark Slee from Flinders University did just that recently during the *Adelaide Tour Down Under* with a team of 'social riders' (mostly other medical professionals) raising \$8,700 for MS research. Mark was joined by Prof Rodney Scott (from the University of Newcastle), another MS researcher from Flinders University, Catherine O'Doherty and 6 others including MSRA's Executive Director, Jeremy Wright. They rode 132 km through the Adelaide Hills on January 21st, just before Lance Armstrong and the professionals came through at about twice the speed.

Everyone enjoyed the challenge and appreciated the support from families, friends and the F5m clan – so much so that they may do it again in 2012! ■



DR MARK SLEE (CENTRE), JEREMY WRIGHT (LEFT) AND SOME OF THE MILES FOR MYELIN TEAM.



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www.msra.org.au
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