

# Modulating myelin

## Post-doctoral Fellowship research

**Earlier this year (Next 6) we reported on the recipients of research grants from a variety of new scholarships and fellowships, also giving some detail of their research.**

This issue looks at one of those awarded a Betty Cuthbert Post-doctoral Fellowship, Dr Junhua Xiao at the University of Melbourne. Her work looks at the cellular mechanisms in the production of myelin – the layered tissue protecting nerve cells, or neurons.

This process is called **myelination**. How it is modulated is one of the critical areas of study in understanding what goes wrong in MS. Because myelin provides the protective coating of brain cells (neurons) it is important to ensure efficient function of our nervous systems.

Dr Xiao, together with her supervisor Dr Simon Murray, is particularly interested in a protein (neurotrophin) that prevents neuron cell death. Specifically they are looking at a growth factor (Brain Derived Neurotrophic Factor – BDNF) which is important in adjusting or modulating the production of myelin, both in normal development and after injury.

As neurons allow messages/impulses to be carried through the body, they are essential in a person's ability to be able to move when an instruction from the brain is given.

Dr Xiao's fellowship is also called the Hunt Family Foundation Fellowship created by financial advisor Peter Hunt and his wife Ellie Hunt, who are jointly funding this Fellowship with MSRA and the NHMRC over four years.

'Our foundation supports a whole range of not-for-profit organisations including medical research. Having one very close friend and one extended family member with MS does tend to get you focused,' said Peter Hunt.

'Dr Xiao is an extraordinarily bright young researcher and we're very lucky to have her in Australia working on MS. I believe it [myelin modulation] is a very fertile area for research.'

Both Peter Hunt and Dr Xiao hope results from this research may help to develop specific drugs which would prevent demyelination or promote remyelination in the long term.



► DR JUNHUA XIAO (CENTRE) WITH PETER HUNT (RIGHT) AND DR BILL CARROLL (CHAIR OF MSRA'S RESEARCH COMMITTEE).

## A pregnant pause in MS

**An Australian researcher is among many who believe that being pregnant has benefits for women with MS.**

'But we say that with caution. After the baby is delivered some women may have more relapses than prior to pregnancy. The net effect is pretty neutral but the good news is it's okay to get pregnant with MS,' said Dr Pam McCombe.

'Our research at the University of Queensland looked at a particular protein chaperonin 10 which is found at increased levels in women during pregnancy,' she said

Other studies have looked at oestrogen and others at hormones like prolactin. Worldwide there maybe a handful of factors in pregnancy that are being studied in relation to MS. A recent study at the University of Calgary indicated that the hormone prolactin – encourages production of myelin.

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## A pregnant pause in MS

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'I think the pregnancy side of things is a wide avenue for research – all hormones in pregnancy are growth hormones – so I wouldn't be surprised if prolactin helps myelin growth,' Dr McCombe said.

'However, there is a problem with suggesting the use of hormones to treat people, as the doses would have to be very high. For example you would have to give 10 times the dose of oestrogen in the pill to have much effect on MS and this would have many ill effects.'

Dr McCombe's work has clearly interested the pharmaceutical industry and a company, CBio, has taken her research to the licence and patent stage. CBio recently conducted a Phase 1 clinical trial with Dr Simon Broadley on the Gold Coast.

Since pregnancy seems to reduce relapses of MS this seems to offer a significant clue to future strategies for researchers to follow.

▶ PREGNANCY OFFERS SOME CLUES FOR MS RESEARCH.

## More funds for scholarships

**At their conference recently on the Gold Coast, members of the Association of Financial Advisors (AFA) generously raised a further \$25,000 for MS Research Australia (MSRA).**

AFA donations total \$127,000 so we are now in a position to fund a second PhD Betty Cuthbert Scholarship to commence at the beginning of 2008. This means another young, talented researcher will be undertaking valuable MS research.

Adding impetus to the cause, delegates heard about MS research from Professor Lyn Griffiths, a researcher at Griffith University in Queensland. Lyn outlined current projects supported by MSRA, with particular focus on the importance of genetic research. In addition, an F5m champion Rob Williams talked about his experiences living with MS, in an interview with MSRA's Executive Director Jeremy Wright. Rob's personal account moved the audience and helped raise further awareness about the impact on the lives of those with MS and their families.



▶ JEREMY WRIGHT AND ROB WILLIAMS TALK MS.

The AFA's relationship with MSRA continues to generate funds and awareness at a range of national and state based events and we thank them for their ongoing support.

## People and Progress in MS

**The 'Progress in MS Research' conference (November 15-16, Walter and Eliza Hall Institute) drew 150 clinicians and MS supporters to hear three international speakers who joined Australian MS researchers to share insights into the disease.**

**Professor John Prineas and Dr Peter Patrikios** from the MS Brain Bank, Sydney, were among many notable speakers invited by MSRA. Dr Patrikios updated delegates on the MS Brain Bank. He expects it to have passed all formalities and be ready to sign up donors from early next year. Professor Prineas, of University of Sydney, told the conference of results of his work on the role of inflammation in the chain of events leading to newly-forming MS lesions.

**Professor Jun-ichi Kira, Chairman of the Department of Neurology**, Kyushu University in Japan, talked about a protein found in the central nervous system

that appears to be intimately linked with the frequency of relapse rates and brain lesions in Asians with MS.

**Professor Chris Linington**, Professor of Immunobiology and Senior Research Fellow in Multiple Sclerosis at Aberdeen University, Scotland, has shed light on mechanisms that result in the MS-like animal models. His work suggests that specific antibodies to a human protein play a role in the inhibition of signals along the long stem-like structure of neurons. The inability for neurons to communicate with each other results in the disabilities observed in people with MS. Professor Linington has received several prestigious awards for his contributions to MS research.

The third international guest was **Professor Richard Ransohoff**, Director of the Neuroinflammation Research Center of the Lerner Research Institute and a neurologist at

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## New blood

Supporters worth their weight in gold continue to be attracted to F5m's mission to 'do it for themselves' by fundraising for research into MS. The purpose and spirit of F5m has spread well beyond NSW where it was launched and now embraces all states in Australia.

Two remarkable new members are Gilli Barnard in Tasmania and Rob Williams in Queensland. Rob has become Queensland's F5m team leader for a group of more than 30 supporters. He's confident Queensland will soon overtake F5m NSW in the fundraising stakes – so the challenge is on the table!

Rob, from Yimbun north-west of Brisbane, ran his own environmental consultancy but found he couldn't drive to inspect sites any more.

'So I was feeling like a bit of a fifth wheel ... I then contacted Neil Robertson at F5m and we discussed some corporate fundraising ideas,' said Rob.

He used to be scared of public speaking, but spoke at the Association of Financial Advisors conference on the Gold Coast in October.

'I spoke about how MS has affected me and my hopes for the future. Afterwards, people came up to me, introduced themselves and were very positive – so I hope they'll donate towards MS research. I came home on a real high believing good will come from it,' he said.



▶ THE BURKHARDT FAMILY AT THEIR SUCCESSFUL MYSTIC MS DINNER IN YEPPON.

Rob also raised money at the Esk picnic day races and through Brisbane Grammar School. He sees F5m as a great network and support structure to raise funds and promote the cause. 'But it's more like a family than anything else. They're passionate and make you want to do even more.' Anyone interested in joining Rob to raise Queensland's total can contact him via F5m on 1300 356 467.

Another passionate new recruit is Gilli Barnard from Claremont in Hobart. Gilli is a street spruiker on behalf of MS from way back. When she lived in the Top End, she worked for MS Northern Territory.

'Heat and humidity are not good for people with MS so I moved to the other end of the country,' said Gilli. 'One of the things we did very successfully in the Northern Territory was small raffles and selling merchandise in shopping centres,' she said.

She recently took MS merchandise to crowds at the North East River festival in Derby and is now responsible for most of F5m's fundraising in Tasmania. She has a golf business and sponsorship of golf prizes from Licorice Property For Allsorts. Next on her list are Tasmanian golf clubs – which she'd like to involve in raffles.

'I like F5m's aim to put money into research and I like the idea that people with MS can do whatever they can, whatever they fancy, to help, and it will all add up.'

To join Gilli with her fundraising in Tasmania, contact F5m on 1300 356 467.



## F5m's culture month!....

- Turkish embassy concert, when Mary Webb raised over \$4,000
- Dabblers of Dural, NSW – a collection of local artists' exhibition hosted by Jan Johnson Furness which raised over \$2,300
- Opera Cruise, Sydney Harbour, featuring Toni Powell, October raised \$24,000
- Canapes and Canvas Spring Luncheon in Brisbane when Natalie Walsh raised \$11,000
- Mystic MS Gala dinner, in Yeppoon, Queensland, when Karen Burkhardt raised \$25,000

**All up these events raised over \$66,000! Remember, it doesn't matter how big or small, it all adds up to a great total.**

October



▶ TONI POWELL. PHOTO COURTESY WHO WEEKLY, PHOTOGRAPHER TOM HOLLAND

## Upcoming F5m events

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|---------------------|--|
| <b>7 December</b>   | Millionaires Golf Day, Asquith Golf Club<br>SOLD OUT                                   |
| <b>February '08</b> | Happy birthday to Ainsley Forrest who has requested birthday gifts be donations to F5m |
| <b>March '08</b>    | Leura Golf Club Tournament hosted by Peter About                                       |
| <b>May '08</b>      | Mount Wilson Mother's Day weekend  |
| <b>June '08</b>     | Throw the Book at MS all book groups invited<br>contact: throw.the.book@hotmail.com    |

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People and Progress in MS

the Mellen Center for MS Treatment and Research. For the past decade, his research has focused on the signalling pathways of the immune system during MS and the mechanisms of action behind interferon-beta. His presentation on recent developments in immune systems set the scene for subsequent presentations during the meeting.

Other subjects discussed during the conference included:

- Immunopathology – the work undertaken to understand and modulate the immune system response during MS
- Myelin, oligodendrocytes and injury – focused on the processes that lead to damage and repair of myelin, and the myelin-producing cells (oligodendrocytes)
- Clinical research – included developments from the MS Life Study, rehabilitation research, MS Brain Bank and an update on MS therapeutics
- Genetics – outlined developments in the Australian genetic research effort, MS Gene Bank and the Ausimmune Study
- Physical and psychological aspects of MS were discussed including anxiety, depression and fatigue, dementia, gait and balance as indicators of disease progression and approaches to coping with MS.



▶ GUY SEBASTIAN.

# It was a ... starry starry night

**Celebrities were among the many supporters who rallied to the MS Trish Foundation's MS Gala Music Ball on 15th September at the Hilton Sydney.**

Master of Ceremonies Mike Willesee introduced speakers Dr Brendan Nelson and Professor Graeme Stewart. Performers included Guy Sebastian and Tom Jordan (who offered a future performance auctioned on the night), the Sydney Ensemble, Maxine Gourley and 'So What'. Legendary harmonica player Jim Conway also attended.

As parents of Trish Langsford, a young sportswoman sadly claimed by MS, Carol and Roy Langsford expressed deep appreciation to all for supporting the cause and remembering Trish. Contributors and sponsors included Symbion Lavery Pathology. The evening raised a massive \$160,000. To view more photos visit <http://www.trishmsresearch.org.au/news.htm>

## MSRA Partners



Blake Dawson



Deloitte.

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I want to support MS Research Australia on an ongoing basis, please charge \$ \_\_\_\_\_ to my credit card per month until notified.



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**To donate now go to [www.msra.org.au](http://www.msra.org.au) Donations over \$2 are tax deductible**

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