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CCRE Neurosciences

NEWSLETTER Volume 1 2006

MEET SOME OF OUR PhD STUDENT RESEARCHERS

Co-ordinator's report

Much has been achieved since the multi-disciplinary Centre of Clinical Research Excellence in Neurosciences started three years ago. With two chief investigators from neurology specialties, one chief investigator and two associates from physiotherapy, one associate investigator from occupational therapy and one chief investigator and one associate from Nursing, the Centre could not be better placed to produce multi-disciplinary research that is translatable into clinical practice. The Centre has established a new training course in clinical neuroscience research for postgraduates and clinicians from all health disciplines. The Centre's research programs and associated projects now extend from early career researchers to a staggering 35 PhD and Masters students, advanced medical science and honours students across all disciplines. The Centre has published over 150 publications since 2003, ranging from stroke mechanisms to epilepsy genetics, rehabilitation, recovery, outcomes and public health. Multi-disciplinary publications by students have increased by 133% in this period, deserving our warm congratulations!

Kathy Lefevere PhD

CCRE 2006 Highlights

- New clinical neuroscience research course a success.
- Chief Investigator Professor Sam Berkovic awarded the 2005 Curtin Medal for outstanding contribution to Australian medical science.
- CCRE multi disciplinary team wins \$2.8 million for clinical trials with after stroke patients.
- Associate Investigator Dr Cathy Said, Physiotherapist, wins large grant for prevention of falls in collaboration with National Aging Research Institute.

For more details visit

www.ccre.neurosciences.unimelb.edu.au

CCRE Directors

Professor Geoffrey A. Donnan
Professor Samuel F. Berkovic
Professor Mary Galea
Professor Judy Parker

CCRE Associate Investigators

Professor Leeanne Carey
Dr Julie Bernhardt
Dr Anne McIntosh
Dr Cathy Said



Kim Miller

I am a PhD student based in the Rehabilitation Sciences Research Centre of the School of Physiotherapy at The University of Melbourne. As a clinical physiotherapist working with individuals with neurological conditions, I had recognised the need for clinical studies investigating the efficacy of the interventions provided to our patients. Under the supervision of Professor Mary Galea and Professor Tony Goodwin, I've recently completed a multi-centre randomized controlled trial of early intensive task-specific training (TST) of the arm and hand following stroke. The results of this study

demonstrate there is potential for significantly better function of the upper limb following stroke than was previously thought possible. Stroke survivors who received intensive training incorporating additional TST activities to their 'regular therapy' in a rehabilitation setting, experienced significantly better motor and sensory function. They also perceived a better quality of life compared to individuals who had received a similar intensity of control intervention. These results have been disseminated at multi-disciplinary international conferences and through my teaching in the School of Physiotherapy.



Henry Ma

I am a Neurologist and a full time PhD student based at the National Stroke Research Institute. I became interested in clinical research during my neurology training at Austin Health and Royal Melbourne Hospital. During my training, I was involved in a number of clinical trials related to stroke therapy. After completing my core clinical training, I enrolled in the PhD course at the University of Melbourne in 2004, under the supervision of Professor G Donnan, Professor S Davis, Professor J Zajac and Dr P Batchelor.

My research involves studying in acute stroke the various aspects of the ischemic penumbra (a specific area in the brain surrounding the core of the infarct), using different imaging techniques such as positron emission tomography (PET) and magnetic resonance imaging (MRI). The aim is to correlate clinical and imaging outcome, and ultimately to improve stroke treatment. I am also interested in the technical advances of MRI in acute stroke imaging. At the Neuroimaging Laboratory of the National Stroke Research Institute at Austin Health, I work with various researchers from Australia, Japan, Thailand and Brazil and a computer expert who solves our technical problems. I also attend the Royal Melbourne Hospital to work with Professor S Davis.

continued overleaf...

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Left: CCRE Neurosciences Austin Repatriation Campus, Heidelberg, Victoria, Australia

MEET SOME OF OUR PhD STUDENT RESEARCHERS

**Chris Derry**

I am a physician from the UK in the process of specializing in neurology. During my clinical work I developed an interest in epilepsy and decided to take this further through studies leading to a PhD. I was thrilled to be given the opportunity to work at the Epilepsy Research Centre, which has a great international reputation.

My PhD addresses aspects of the relationship between sleep and epilepsy. Seizures arising from the frontal lobes of the brain have a predilection to occur during sleep, and often have unusual symptoms which may result in misdiagnosis. I have examined the clinical patterns of these seizures and the differences between them and so-called "benign parasomnias" such as sleepwalking and sleep terrors. Using a novel form of PET imaging, I have examined changes in serotonin release across the sleep-wake cycle in the human brain. I am also studying a number of large families with an inherited form of frontal lobe epilepsy (autosomal dominant nocturnal frontal lobe epilepsy or ADNFLE).

My principal supervisors are Professor Sam Berkovic and Professor John Duncan at University College London, but I have had additional support and guidance from Professor David Reutens, Professor Ingrid Scheffer and Dr Simon Harvey.

**Jannette Blennerhassett**

A physiotherapist with over 20 years of clinical experience in neurology, I am currently the senior clinician at Austin Health, Royal Talbot Rehabilitation Centre. My interest in research was driven by the clinical need to understand mechanisms that contribute to altered movement ability in order to deliver effective treatment and improve patient outcome. The role of altered

somatosensory function was a particular area of interest for handgrip function in people with stroke.

I am currently completing a PhD that explores the contribution of impaired somatosensory discrimination upon altered grip force control following stroke. My supervisors are Professor LeeAnne Carey and Associate Professor Thomas Matyas from La Trobe University. The findings so far highlight that clinicians need to integrate somatosensory feedback arising from the digit tips when training people with stroke how to grip and lift objects in daily tasks.

**Jill Stow**

I am a PhD candidate at the Epilepsy Research Centre, and academic in the School of Nursing at the University of Melbourne. My clinical nursing experience has largely been in neuroscience and critical care, and my teaching has covered undergraduate clinical nursing and postgraduate specialty neuroscience nursing. Early work as a research nurse in a trial comparing a new

medication with standard therapy for postoperative epidural pain management wetted my appetite for clinical research. Further study, including a coursework and minor thesis Masters, prepared me to undertake a PhD.

My PhD research, funded through a CCRE Scholarship, focuses on the development of knowledge and self-management practices in people newly diagnosed with epilepsy. This allows me to combine my interests in knowledge transfer, living with chronic illness and neuroscience nursing. Currently, little is known about the information needs and self-management practices of people diagnosed with epilepsy in adulthood, and this will assist in the development of educational support services tailored to meet the needs of people following diagnosis. My supervisors are Professor Trisha Dunning, Dr Anne McIntosh and Dr Peter Hudson. Dr Mark Newton, Consultant Neurologist and Coordinator of the First Seizure Clinic at Austin Health is a co-researcher on the project.

**Ian Mosley**

I completed my nursing training at the Royal Melbourne Hospital. From there I completed a Business Degree and progressed to positions managing private hospitals. Over the last 13 years I have been a member of the academic staff at RMIT University. During this time I also completed a Master of Business Degree and Graduate Diplomas in both Health Administration and Education.

Funded through a CCRE Scholarship, my PhD project combines both clinical research and health systems research. It investigates the process of pre-hospital care of acute stroke patients from the onset of symptoms to first medical assessment in the Emergency Department. For the first time in Australia, we analysed the calls for ambulance assistance to determine what symptoms were reported and if stroke was recognized as the problem. Based at the National Stroke Research Institute, my supervisors are Dr Helen Dewey, Dr Marcus Nicol and Professor Geoff Donnan. I find the institute provides a quality research environment with physical resources, access to clinical areas and most importantly advice and support from a diverse range of senior researchers and peers.

About the Centre of Clinical Research Excellence in Neurosciences (CCRE)

The Centre of Clinical Research Excellence in Neurosciences is an NHMRC funded national research centre based at Austin Health in Melbourne. It focuses on innovative patient - centred research into stroke, epilepsy and other neurological disorders.. A new clinical research model has been developed, which integrates the entire spectrum of health disciplines from medicine to nursing and allied health, together with basic science disciplines. The multi disciplinary model focuses on producing world class research, ultimately leading to improved translation of findings about health.