ACADEMIC COORDINATOR
PROFESSOR SAM BERKOVIC
Professor Berkovic AM MD FAA FRACP FRSS is an internationally recognised clinical neurologist and researcher. He is an Australia Fellow and Laureate Professor in the Department of Medicine Austin Health/Northern Health at The University of Melbourne, Director of the Comprehensive Epilepsy Program at Austin Health and the Epilepsy Research Centre at The University of Melbourne.

Other presenters include: Profs Geoff Donnan, Graeme Jackson, Alan Connelly, Trevor Kilpatrick, Terry O’Brien, Ingrid Scheffer, Mary Galea, Christopher Rowe, Richard Macdonell, A/Profs David Howells, Helen Dewey, Amanda Thrift, Leonid Churilov, and Dr Steven Petrou

WEEK 1: CLINICAL NEUROSCIENCE RESEARCH -OUTCOMES
Developing a high level of competency in clinical research relies on two main capacities: 1) being able to read, understand and interpret the research literature and 2) asking the ‘right’ questions in order to formulate adequate research hypotheses and answer them appropriately. By exploring a range of specific research methodologies applicable to neurological disorders you will develop the skills to pose relevant questions to produce quality clinical research. Through stimulating discussions of the current research questions with expert researchers in clinical neuroscience and your peers, you will develop the ability to critically appraise the literature and formulate new research questions. You will build confidence to communicate your research and interact with basic neuroscientists, as well as researchers in other health disciplines. Topics covered include: genetics, mechanisms of disease, clinical trials, epidemiology, health economics, rehabilitation and translation into clinical practice.

WEEK 2: NEUROIMAGING FOR CLINICAL RESEARCH -OUTCOMES
Professor Graeme Jackson (Director, Brain Research Institute, Florey Neuroscience Institutes) heads this more advanced subject which builds on clinical research methodology and skills acquired in Week 1. A major emphasis is on cutting-edge human brain imaging techniques. Through face-to-face interaction with multidisciplinary researchers, you will develop the understanding and confidence to design your own research project involving neuroimaging or other advanced techniques in clinical neuroscience. Through individual feedback, you will be able to write a good research proposal, an essential skill for preparing research projects.

WHO SHOULD ATTEND?
Anyone currently working or studying in neurology, psychiatry, neurosurgery, radiology, neurorehabilitation or other health services. This course will prove useful to advanced trainees, new or emerging clinical researchers, allied health and clinical trial coordinators. More experienced clinical researchers, scientists or those working in the pharmaceutical industry are also welcome. This course has been developed by the NHRMC Centre of Clinical Research Excellence in Neurosciences in partnership with the Florey Neuroscience Institutes and The University of Melbourne’s Faculty of Medicine, Dentistry and Health Sciences.

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Centre of Clinical Research Excellence in Neurosciences, Florey Neuroscience Institutes Austin, Burgundy Street, Heidelberg VIC 3084
COURSE DATES: JUNE 6-16, 2011

WEEK 1
CLINICAL NEUROSCIENCE RESEARCH

DAY 1
• Stroke: The current clinical research questions
• Clinical trials methods
• Statistics essentials for good study design
• Of mice and men: meta-analysis and the interplay of basic and clinical research
• Critical appraisal and research literature review

DAY 2
• Epilepsy: The current clinical research questions
• Genetics in clinical neurological research
• Interface of basic science with clinical research: from basic scientist perspective
• Clinical neuropharmacology research methodology
• Neurorehabilitation research methodology

DAY 3
• Neuro-epidemiology: disease burden and measures
• Neuro-epidemiology: study types
• Neuro-epidemiology: disease causation and prevention
• An introduction to health economics
• Translating clinical research findings into practice

DAY 4
• Multiple sclerosis: The current clinical research questions
• Research methods of neuromuscular disorders
• Clinical research applications of TMS
• Current clinical research questions and methodology of autism and intellectual disability
• Group presentations

Additional half day includes: Searching Electronic Databases Tutorial & Endnote Reference Management Tutorial (b/w Day 2 & 3)

ON COMPLETION YOU WILL
• Achieve a high level of competency enabling you to design and conduct quality clinical neuroscience research from the original concept through to submission of competitive research proposals
• Demonstrate a high level of understanding of advanced clinical research techniques in neuroimaging and neurophysiology, with broad applications in neuroscience
• Be able to design research projects using cutting-edge brain imaging or other advanced techniques as research tools
• Have developed the skills to write quality research proposals and grant applications
• Be able to establish multi-disciplinary collaborations with experts in the field of clinical neuroscience to conduct innovative clinical research

WEEK 2
NEUROIMAGING FOR CLINICAL RESEARCH

DAY 1
• Frontiers of Neuroimaging
• How does MRI work?
• What can we see with MRI?
• Quantitative imaging in neuroscience research
• EEG/MEG and clinical research applications

DAY 2
• Neurodegenerative diseases: The current clinical research questions
• Cognitive functioning and behavioural research methods
• Principles of MRI: How can we image brain function?
• Designing functional Neuroimaging paradigms and interpretation (cognitive perspective)
• Designing functional MRI studies for allied health research

DAY 3
• Clinical research methodology and applications of PET/SPECT imaging
• Psychiatry: current clinical research questions
• Simultaneous electrophysiology and Neuroimaging
• Using Ultrasound methodologies in clinical research
• Practical MR demonstration: MR safety, Language fMRI & MR demonstration questions

DAY 4
• Diffusion imaging - How does it work and what can it tell us?
• Measuring tracts with diffusion fibre tracking
• Measuring blood perfusion through brain tissue
• Interactive Functional MRI workshop
• Research design group activity
• Grantmanship workshop

Each week can be taken separately as a 4-day short course, with or without assessment.

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