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THE UNIVERSITY OF
MELBOURNE

Clinical Neurosciences

RESEARCH SHORT COURSES

ACADEMIC COORDINATOR

Professor Sam Berkovic AM MD FAA FRACP FRS

Professor Sam Berkovic is a clinical neurologist with over 20 years experience. He is an internationally recognised clinical researcher, with a special interest in establishing close research links with basic scientists. He is an Australia Fellow and Laureate Professor in the Department of Medicine Austin Health/Northern Health at The University of Melbourne. He is Director of the Comprehensive Epilepsy Program at Austin Health, Director of the Epilepsy Research Centre and Scientific Director of the Brain Research Institute and holds an Adjunct Chair in the Department of Neurology and Neurosurgery at McGill University, Montreal, Canada.



PRESENTERS INCLUDE

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|--------------------------------|--------------------------------|
| Professor Sam Berkovic | Professor Geoff Donnan |
| Professor Graeme Jackson | Professor Alan Connelly |
| Professor Trevor Kilpatrick | Professor Ingrid Scheffer |
| Professor Terry O'Brien | Professor Mary Galea |
| Assoc. Professor Helen Dewey | Assoc. Professor David Howells |
| Dr Steven Petrou | Professor Christopher Rowe |
| Assoc. Professor Amanda Thrift | Professor Richard Macdonell |
- and other leading experts

WHO SHOULD ATTEND?

People currently working in neurology, psychiatry, neurosurgery, radiology, neurorehabilitation or other health services. The course will be particularly useful to advanced trainees, new or emergent 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 NHMRC Centre of Clinical Research Excellence in Neurosciences in partnership with the Florey Neuroscience Institutes and the Faculty of Medicine, Dentistry and Health Sciences.

10 DAY SHORT COURSE

SPECIALIST CERTIFICATE IN CLINICAL RESEARCH (NEUROSCIENCE)

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 the 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. Areas covered here will be among others: genetics, mechanisms of disease, clinical trials, epidemiology, health economics, rehabilitation and translation into clinical practice.

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 multi-disciplinary 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 and grant applications. Advanced neuroscience research techniques in brain imaging and neurophysiology will be discussed here in the context of current research in major functional disorders of the brain and mind.

ENROL - www.ccre.neurosciences.unimelb.edu.au



NHMRC
National Health & Medical Research Council

NEUROSCIENCES

Centre of Clinical Research Excellence

FOR FURTHER INFORMATION AND REGISTRATIONS CONTACT:**Dr Kathy Lefevere,**

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Enrol - www.ccre.neurosciences.unimelb.edu.au**COURSE DATES****JULY 12 - 22, 2010****CLINICAL NEUROSCIENCE RESEARCH:****WEEK 1: JULY 12 - 16, 2010****On completion you will:**

- Have developed a high level of competency in clinical research methodologies applicable to neurological disorders
- Demonstrate an understanding of the current research questions in neuroscience and be able to discuss any clinical research topic or idea
- Have gained the essential skills to be able to formulate good research hypotheses and pose the 'right' questions in order to answer them appropriately
- Be able to read, understand and interpret the research literature critically
- Be able to generate new ideas and interact with experienced clinical researchers, as well as basic neuroscientists and research peers from other health disciplines
- Be able to communicate your research findings effectively

DAY 1

- Frontiers in clinical neuroscience research
- Stroke: The current clinical research questions
- Clinical trials methods
- 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

Includes Searching Electronic Databases Tutorial & Endnote Reference Management Tutorial (Half day, b/w Day 2 & 3)

NEUROIMAGING FOR CLINICAL RESEARCH:**WEEK 2: JULY 19 - 22, 2010****On completion you will:**

- Achieve a high level of competency enabling you to create and conduct quality clinical research from the original concept through to submission of competitive research proposals in a neuroscience area
- 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 techniques as a research tool or other advanced techniques
- Have developed the skills to write research proposals and prepare grant applications
- Be able to establish multi-disciplinary collaborations with experts in the field of clinical neuroscience to conduct innovative 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
- Schizophrenia and bipolar disorders: The 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

The course can be taken with or without assessment; either as one 10 - day course or each week separately as a 4 - day course.

Visit our website for details.