



Trinity College Dublin
Institute of Neuroscience and School of Psychology
3-year PhD Studentship

Applications are invited for a PhD studentship in cognitive neuroscience to be held in Trinity College Dublin Institute of Neuroscience and School of Psychology. This is funded under the EU Marie Curie Initial Training Network 'INDIREA' which is co-ordinated by Prof Glyn Humphries of University of Oxford.

This project, to be run in collaboration with a range of European partners, involves the development of a new and fully integrated approach to understanding and rehabilitating attentional disorders in human volunteers and patients – going from the measurement and modelling of basic brain processes through to the creation of linked, clinically applicable, neuropsychological assessments and attentional training.

The studentship will focus on dissociating components of attention using novel paradigms combined with EEG/ERP investigations. Protocols employing non-invasive brain stimulation and biofeedback will be used in an attempt to enhance different facets of attention in elderly people with memory difficulties.

Candidates should ideally have undergraduate or Master's-level experience with cognitive neuroscience. They should have experience with human EEG/ERP testing, data analysis, preferably including Matlab skills.

Candidates should also have excellent statistical and presentation skills and should not have been resident in the Republic of Ireland for more than one out of three of the previous three years.

Trinity College Institute of Neuroscience (www.tcd.ie/neuroscience) is Ireland's only dedicated neuroscience institute, with over 220 staff and students, 40 Principal Investigators and world class brain imaging (3T and small bore 7T research only MRI, with scan-compatible eye-tracking and pupillometry), EEG/ERP (multiple rigs), and Non-invasive Brain Stimulation (TMS, TDCS, TACS).

Its NIEL (www.tcd.ie/neuroscience/neil) programme on aging includes a Memory Research Unit with over one thousand volunteers and which will provide the participants for the current study.

The positions are tenable from **March 2014**.

For further information contact Professor Ian Robertson email iroberts@tcd.ie or Professor Paul Dockree, email dockreep@tcd.ie

The closing date for applications is **December 15th 2013**

Recent publications from the TCIN cognitive neuroscience group include the following:

- O'Connell, RG, Dockree PM, Kelly SP (2012) A supramodal accumulation-to-bound signal that determines perceptual decisions in humans. *Nature Neuroscience* **15**, 1729–1735 (2012)
- Balsters, J. H., R. G. O'Connell, A. Galli, H. Nolan, E. Greco, S. M. Kilcullen, A. L. W. Bokde, R. Lai, N. Upton and I. H. Robertson (in press) "Changes in resting connectivity with age: a simultaneous electroencephalogram and functional magnetic resonance imaging investigation." *Neurobiology of Aging*
- Balsters JH, O'Connell RG, Galli A, Nolan H, Greco E, Kilcullen SM, Bokde AW, Upton N and Robertson IH (in press) Changes in resting connectivity with age: A simultaneous EEG/fMRI Investigation. *Neurobiology of Aging*.
- Hoerold D, Pender, N and Robertson IH (2013) Metacognitive and Online Error Awareness Deficits after Prefrontal Cortex Lesions. *Neuropsychologia* **51**, 385-391.
- Balsters, J., O'Connell, R. G., Martin, M., Galli, A., Cassidy, S. M., Kilcullen, S. M ... Robertson IH (2011). Donepezil Impairs Memory in Healthy Older Subjects: Behavioural, EEG and simultaneous EEG/fMRI biomarkers. *Plos One* **6**, 9, e24126
- Finnigan S, Robertson IH (2011) Resting EEG theta power correlates with cognitive performance in healthy older adults. *Psychophysiology*, **48**, 1083–1087
- Finnigan S, O'Connell RG, Cummins TDR, Broughton M and Robertson IH (2011) ERP measures indicate both attention and working memory encoding decrements in aging. *Psychophysiology* **48**, 601-611.
- O'Connell, R. G., Dockree, P. M., Robertson, I H., Bellgrove, M. A., Foxe, J. J., & Kelly, S. P. (2009). Uncovering the Neural Signature of Lapsing Attention: Electrophysiological Signals Predict Errors up to 20 s before They Occur. *Journal of Neuroscience* **29** 8604-8611.