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Sansom Institute Visiting Researcher Seminar

Date: Wednesday 23rd March 2011

Time: 4:00pm – 5:00pm

Place: PM-06 (northern stairwell mezzanine between floors 2 & 3)
Playford Building
City East Campus
University of South Australia
Frome Road, Adelaide

RSVP: 22nd March 2011
sansominstitute@unisa.edu.au

The Sansom Institute for Health Research is pleased to invite you to a Visiting Researcher Seminar.

Professor John Rothwell

Professor of Neurophysiology, Institute of Neurology, London

Is it possible to improve the response to physical therapy after stroke by stimulating the brain?

After receiving a PhD from the University of London, UK, in 1980, Prof. Rothwell worked in London as a Royal Society University Research Fellow in Professor Charles Marsden's Neurology Department at the Institute of Psychiatry until 1988. Before moving, as a Senior Scientist, to the Medical Research Council (MRC) Human Movement and Balance Unit at the Institute of Neurology. It was during this time he developed his interest in the pathophysiology of human movement disorders, with particular attention to Parkinson's disease, dystonia and myoclonus. The early years at the MRC Unit were times of great expansion in the new technique of transcranial magnetic stimulation, which he and others developed for the study of the human cortical motor system. He became Acting Director of the Unit in 1998 before being appointed to be Head of the Sobell Department of Motor Neuroscience and Movement Disorders at the UCL Institute of Neurology in London and was elected a Fellow of the Academy of Medical Sciences in 1994. He is currently Professor of Human Neurophysiology at UCL Institute of Neurology.

Current research projects include using neurophysiological techniques to study the mechanisms of neural plasticity that underpin motor learning, and using this knowledge to devise new therapeutic interventions for rehabilitation after stroke.

It is now possible to stimulate the human brain through the intact scalp without discomfort. The stimulus changes the activity of neurones at the site of stimulation and even at distant anatomically connected sites. Experiments have shown it is possible to stimulate repeatedly, and cause long term changes in, the excitability of synaptic connections between cells, a process usually termed "neural plasticity". Since such plasticity is crucial for memory and learning, how likely is it that the effects can be usefully harnessed, for example, in patients recovering from brain injury, or even in enhancing cognitive performance in healthy individuals?