Bionics Institute Special Lecture

Friday March 23, 4:00-5:00 pm

Location: Michael Chamberlin lecture theatre, Aikenhead Wing, St Vincent’s Hospital Melbourne, Fitzroy. (corner Victoria Parade and Nicholson St, enter from Victoria Parade).

Registration: Limited seating available (165 people). Please register your attendance at: https://register.eventarc.com/event/view/7940/tickets/bionics-institute-special-lecture

Professor Andres M Lozano

Title: Electrical Stimulation to Adjust the Activity of Circuits and Networks in the Human Brain.

Abstract: Brain functions are segregated across multiple circuits and it is becoming increasingly clear that several neurological and psychiatric disorders are characterized by abnormal activity within these circuits. The introduction and widespread use of implantable electrical stimulation techniques – a form of “brain pacemaker” is allowing the modulation of activity within these circuits. There are an increasing number of examples of electrical stimulation of various brain circuits to treat disorders of movement such as Parkinson’s disease, disorders of mood such as depression, with a number of other neurologic and psychiatric disorders also being examined.

To date, the evidence points to the ability to alter the activity and function of various brain areas and to improve a number of symptoms. A surprising finding is that electrical stimulation may also influence not only the activity but also the structure of circuits and may give rise to neurogenesis and rewiring of connections. Advances in these techniques and the development implants with more capabilities coupled with increases in the understanding of the function of brain circuits are opening new therapeutic frontiers. This work is multidisciplinary in nature and offers the opportunity for extensive cross talk at the interface of disciplines as diverse as cell biology, engineering, brain imaging, and neuroscience.

Professor Andres M Lozano, BSc, MD, BMedSci, FRCSC, PhD, University of Toronto

A graduate of the University of Ottawa, Faculty of Medicine in 1983, Dr Lozano underwent Neurosurgical Training at McGill University. He became a Fellow of the Royal College of Physicians and Surgeons of Canada in 1990. During his residency in Montreal, Dr Lozano earned his Ph.D. in Experimental Medicine in 1989. Dr Lozano joined the Neurosurgical Staff at the Toronto Western Hospital in 1991.

He is currently Professor in the Department of Surgery, and inaugural Chair Holder of the Ron Tasker Chair in Stereotactic and Functional Neurosurgery at the University Health Network. He also holds a Tier I Canada Research Chair in Neuroscience. His main research and clinical interests lie in the field of the neurosurgical treatment of movement disorders and micro-electrode recordings of the human brain.