



PNAHK Annual Scientific Meeting 2017

“Neuromodulation and Epilepsy”

October 7, 2017 (Sat)

Chairperson: Dr. Wai-lan YEUNG

Time	Topic	Speaker
1:30 – 1:40 pm	Opening Remarks	
1:40 – 2:20 pm	Invasive neuromodulation in epilepsy (35+5 min)	<i>Dr. Alexander Rotenberg</i>
2:20 – 3:00 pm	Non-invasive brain stimulation in neurology (35+5 min)	<i>Dr. Alexander Rotenberg</i>
3:00 – 3:40 pm	Local experience of neuromodulation in epilepsy: an adult neurologist ‘s perspective (35+5 min)	<i>Dr. Howan Leung</i>
3:40 – 4:10 pm	Coffee Break	
4:10 – 4:40 pm	Vagus Nerve Stimulation (VNS) Implanatation in Tuen Mun Hospital Local Case Presentation / Discussion	<i>Dr. Mario Chak Dr. Alvin Ho</i>
4:40 – 5:20 pm	Post-traumatic Epilepsy (35+5 min)	<i>Dr. Alexander Rotenberg</i>
5:20 – 5:30 pm	Q&A	
5:30 – 5:40 pm	Closing Remarks	



Alexander Rotenberg, M.D., Ph.D., is Associate Professor of Neurology at Boston Children’s Hospital and Harvard Medical School, and Director of the Boston Children’s Hospital Neuromodulation Program.

His laboratory's major focus is on the development of novel methods to treat brain injury, particularly the type of brain injury that leads to epilepsy. Dr. Rotenberg and his team work to identify biological targets which can stop or prevent seizures if manipulated by either brain stimulation or by novel drugs that we are testing in our lab. They have adapted methods for transcranial magnetic stimulation (TMS) and transcranial direct current stimulation (tDCS) to rodents, to in vitro brain slice preparations, and more recently to zebrafish (an emerging experimental tool in epilepsy). TMS and tDCS have in common the capacity to safely induce durable changes in neuronal activity. Limited experience with human patients, including those treated at Boston Children's Hospital, shows that TMS and tDCS have realistic prospects in suppressing seizures. Yet whether these techniques can prevent the onset of epilepsy after various forms of brain injury has not been tested. To characterize the cellular mechanisms by which TMS and tDCS exert their effect, and ultimately to optimize their clinical efficacy, we are testing these techniques in rodent epilepsy models, including models of traumatic brain injury (TBI). To determine how best to match the cellular changes induced by noninvasive brain stimulation those of brain injury and epilepsy, the Rotenberg Lab is also studying the molecular changes associated with TBI in rats. A second major focus has grown out of this work: testing novel pharmaceutical approaches to prevent brain injury and seizures after TBI. In parallel to our laboratory experiments, the Rotenberg Lab also runs clinical projects aimed to further develop techniques for noninvasive brain stimulation, particularly TMS and tDCS, as diagnostic and therapeutic tools in child neurology. Dr. Rotenberg is the recipient of the 2016 Dreifuss-Penry Epilepsy Award from the American Academy of Neurology.



Dr Howan Leung is currently Clinical Associate Professor at The Chinese University of Hong Kong. His main areas of interest included clinical epileptology, electrophysiology and presurgical evaluation of refractory epilepsy. He is a neurologist by training and after an elective study at University of Bonn, Germany, he obtained his Doctorate of Medicine in 2012. He has held funded studies by the General Research Fund, Health & Medical Research Fund, Innovation Technology Fund of the HKSAR. He has served in the Youth-Committee of The China Association Against Epilepsy and he is currently the Vice-President of The Hong Kong Epilepsy Society.

