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LIFE SCIENCES INSTITUTE

Distinguished Lecture Series

DATE:

**Thursday,
23 October 2008**

VENUE:

**Centre for Life Sciences
Auditorium, Level 1**

TIME:

4.00 - 5.00 pm



Neurotechnology and Epilepsy

Professor Steven Craig Schachter

Professor of Neurology, Harvard Medical School
Director of Research, Department of Neurology and Director of Research
Subject Safety at Beth Israel Deaconess Medical Center (BIDMC), Boston

Host: Professor Barry Halliwell
Deputy President (Research & Technology)
Leader, LSI Neurobiology/Ageing Programme
National University of Singapore

Biography

Professor Steven Craig Schachter is professor of neurology at Harvard Medical School (HMS); Director of Research, Department of Neurology and Director of Research Subject Safety at Beth Israel Deaconess Medical Center (BIDMC), Boston; Associate Director of Clinical Research, Division for Research and Education in Complementary and Integrative Medical Therapies, HMS and Director of NeuroTechnology for the Center for Integration of Medicine and Innovative Technology, Boston. He trained in neurology at the Harvard-Longwood Neurological Training Program, and completed an epilepsy and EEG fellowship at BIDMC and HMS. Prof Schachter's research is focused on the development of new therapies for epilepsy. He has directed over 80 research projects involving antiepileptic therapies, and published over 200 articles and chapters.

Professor Schachter is first vice-president of the American Epilepsy Society. He is past Chair of the Professional Advisory Board of the Epilepsy Foundation and serves on their Board of Directors. He is a member of the Epilepsy Therapy Project's executive committee, and editor-in-chief of epilepsy.com. He compiled the 6-volume Brainstorms series (Oxford University Press), which has been distributed to over 150,000 patients and families worldwide in several languages. He has edited or written 19 other books on epilepsy and behavioral neurology and is also the founding editor and editor-in-chief of the medical journal Epilepsy & Behavior.

Abstract

Despite an unprecedented increase in the number of drugs for the treatment of epilepsy, seizures in approximately 25% of patients do not respond to pharmacological treatment. Only a small fraction of these patients qualify for therapeutic brain surgery or other non-pharmacological therapies.

The integration of engineering sciences with medicine has resulted in new opportunities to improve upon the diagnosis and treatment of epilepsy. Enhancements in methods for imaging the brain may reveal the anatomic source of seizures in patients for whom conventional radiographic techniques are unrevealing. Wearable seizure prediction and detection devices offer the potential to warn patients of impending seizures or to automatically trigger treatments that would prevent the seizure or lessen its severity. New methods for directly stimulating the brain are currently being tested in patients with pharmacologically resistant seizures as are novel intracranial treatment systems that sense seizures, alter brain temperature or release drugs directly to the brain tissue that gives rise to seizures.

These technological advances offer hope to patients for whom available therapies are inadequate. Challenges that need to be addressed include demonstration of safety and effectiveness, selection of patients most likely to benefit and costs.

ALL ARE WELCOME

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