



CLINICAL IMAGING RESEARCH CENTRE SINGAPORE

A joint venture between the Agency for Science, Technology And Research (A*STAR)
and the National University of Singapore (NUS)

The A*STAR-NUS Clinical Imaging Research Centre (CIRC) Presents Weekly Journal Club/Lab Meeting

April

Time: 2:00pm – 3:00pm, Wednesday

Venue: **CIRC Conference Room**
Clinical Imaging Research Centre (CIRC)
Centre for Translational Medicine (MD6)
14 Medical Drive, #B1-01
Singapore 117599

Date	Speakers	Topic
06/04/2016	Simon Eickhoff*	“Towards multi-modal mapping of regions and networks for executive functions”
13/04/2016	Sharmili Roy/Jamie Ho	SPIE /SCMR conferences
20/04/2016	Jingwei Li, Ruby Kong	“Individual-level & longitudinal cerebral cortex parcellation”
27/04/2016	no speaker	

* Venue: MD6-01-01B - CeTM - ACTIVE LEARNING RM (01-01B)



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Speaker Background

Professor Simon Eickhoff:

Heinrich-Heine University, Germany
(See the attached seminar notice)

Sharmili Roy/Jamie Ho:

Sharmili Roy is a Research Fellow in the Image Analysis team of the A*STAR-NUS Clinical Imaging Research Centre. She has done her PhD in Computer Science at the National University of Singapore. She is currently investigating image-based therapy response assessment in head and neck cancer and cancers of the pelvis such as cervical carcinoma, carcinoma of the prostate and colorectal cancer using Positron Emission Tomography/ Magnetic Resonance (PET/MR) imaging. This requires her to design advanced image analysis tools to solve registration and segmentation problems.

Jamie Ho is a Research Associate at CIRC. She has a MMagResonTech, University of Queensland, in Australia.

Ruby Kong/Jingwei Li:

Ruby Kong is a Ph.D. student at the Department of Electrical and Computer Engineering (National University of Singapore). And she received her B.S. from Shanghai Jiao Tong University, China in 2014. Her current interest is large-scale brain imaging analysis.

Jingwei Li is a Ph.D. student in the Department of Electrical and Computer Engineering, National University of Singapore. She received her B.S. degree from Shanghai Jiao Tong University, China in 2015. Her current research interest is longitudinal brain network estimation.

--- Admission is free and all are welcome ---



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The A*STAR-NUS Clinical Imaging Research Centre (CIRC)
presents a seminar
on

“Towards multi-modal mapping of regions and networks for executive functions”

Speaker: Professor Simon Eickhoff
Heinrich-Heine University
Germany

Date : Wednesday, April 6th, 2016

Time : 2:00pm – 3:00pm

Venue : MD6-01-01B - CeTM - ACTIVE LEARNING RM (01-01B)
14 Medical Drive #B1-01
Singapore(117599)

Abstract

Executive functions comprise a broad set of mental processes providing us with the possibility of handling situations outside of learned, automated schemata. While the prefrontal cortex (in particular the DLPFC) has received most attention as the neuronal substrate for executive functions, it has become increasingly obvious that these processes are also sustained by many regions outside of this structure forming distributed but closely interacting networks.

In addition, performance in tasks probing executive functions shows a high inter-individual variability with lower performance being consistently reported in many clinical conditions, such as schizophrenia and Parkinson’s disease, but also in the context of healthy aging. Focusing on the executive processes related to the cognitive control of actions, this talk will address the regions and networks underlying executive functions from a multi-modal perspective. Using both large-scale integration of the current neuroimaging literature on executive processes and the analysis of individual datasets including healthy young participants, population based samples of elderly subjects and patients with (in particular) schizophrenia, our work indicated several key aspects of the neuronal implementation of executive functions. As illustrated in this talk, these include a differentiated relationship between resting-state connectivity and



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activation findings, a medial frontal - insular core that is particularly related to inter-individual differences and the need for a more precise regional allocation of regional effects as currently prevalent by macroanatomical labels. Moreover, the illustrated results will highlight the need to investigate physiology, inter-individual differences and (multiple) pathological states in concert to arrive at a more complete picture of brain organization.

About the speaker

Simon Eickhoff studied medicine in Aachen, Sheffield, Sydney and London. He received his doctorate degree in neuroanatomy in 2006, following work on brain histology and structure-function correlations at the Heinrich-Heine University in Düsseldorf. He went on to work as a post-doctoral fellow in functional neuroanatomy at the Research Center Jülich, Germany before being appointed as assistant professor for Psychiatry at the RWTH Aachen in 2009. Here his work centered on functional MRI and network analysis. Since 2011 he is professor for cognitive neuroscience at the Heinrich-Heine University in Düsseldorf and deputy director of the Institute of Neuroscience and Medicine in Jülich, where he leads the Brain Network Modeling group.

He is furthermore a visiting professor at the Chinese Academy of Science Institute of Automation. His main research interest is the development and application of novel analysis tools and approaches for large-scale, multi-modal analysis of brain structure, function and connectivity. Simon Eickhoff has received numerous awards, among them the OHBM Wiley Young Investigator Awards 2015, the Nils-A-Lassen Award of the German Society of Clinical Neurophysiology 2013 and the Research Award from the German Psychiatric Association in 2009. He has recently been recognized as a „highly cited researcher“ by Thompson Reuters (ISI), having published more than 270 papers with an h-index of 57. He is the developer of the SPM Anatomy Toolbox and a major contributor to ALE and the BrainMap project.

--- Admission is free and all are welcome ---

