The Singapore Bioimaging Consortium (SBIC)
presents a seminar on

"Triple Network activity regulation mediated by the Insular Cortex in the mouse brain"

Speaker: **Dr Joanes Grandjean**
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Host : **Professor Kishore Bhakoo**
Date : **Wednesday, 24 April 2019**
Time : **11.00am – 12.00pm**
Venue : **SBIC Seminar Room**
11 Biopolis Way
Level 2, Helios Building, Singapore 138667
(Please enter via Level 1)

Abstract

The triple-network model is a contemporary theoretical framework derived by empirical neuroimaging data to explain a wide range of observations stemming from multiple psychopathologies. Central to the model are interactions between the salience, default-mode, and central executive networks, collective ensembles of distributed neuronal circuits interactive with one another. The insula area is a central node of the salience network and a major hub highlighted in several psychopathology. Using acute optogenetics photostimulation, we put in evidence the functional distribution of the salience network in mice. We expose the role of this network in positive valence mapping. Further, by using sustained optogenetic neuromodulation, we show that inhibition of the insular area mediates functional deactivation on several distributed neuronal networks, confirming the presence of a triple-network system in mice. Understanding the function of the insula cortex and how it is integrated into distributed networks offers avenues to understand the mechanisms behind several psychopathologies.

About the Speaker

Dr Grandjean obtained his Master in Neuroscience and PhD in Biomedical Engineering from the ETH Zürich, Switzerland, where he pioneered mouse resting-state functional imaging. He joined the Singapore Bioimaging Consortium (A*STAR) in 2016 as a Research Fellow and is now at the Donders Institute and Radiology department at Radboud University Medical Centre, the Netherlands. Dr Grandjean uses high-field rodent MRI techniques and other imaging modalities to study the dynamics of large-scale circuit organization involved in affective and neurodegenerative disorders and in circuits regulating energy homeostasis. Dr Grandjean has been one of the first actors in the field of resting-state imaging in the mouse and has published on the topic of Alzheimer's disease and depressive disorder. He is currently leading a

consortium involving the major preclinical MRI labs to compare and improve and standardize functional imaging in rodents.

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