

Postdoctoral research in circuit mechanisms of dementia

Postdoctoral positions are available to determine the circuit mechanisms underlying dementia. The goals are to (1) use optogenetic circuit mapping technology in brain slices to identify brain circuitry defects in several mouse models of dementia; (2) use behavioural assays, in combination with *in vivo* optogenetics, to determine the roles of these circuit defects in dementia; and (3) determine the cellular, synaptic and molecular mechanisms underlying these circuit defects.

These positions are offered as part of a 5-year, multi-institutional program in the dynamic neuroscience research environment of Singapore. Participating laboratories include:

G.J. Augustine – optogenetic mapping of cerebellar circuit defects associated with dementia. (email: George.augustine@ntu.edu.sg)

A. Chen – effects of dementia on circuits in deep cerebellar nuclei (albert.chen@ntu.edu.sg)

T.H. Ch'ng – molecular changes in nuclear signaling associated with dementia. (thchng@ntu.edu.sg)

G. Dawe – cellular/molecular mechanisms of hippocampal circuit defects in dementia. (gavin_dawe@nuhs.edu.sg)

E. Goh - neurogenesis defects underlying hippocampal circuit dysfunction. (eyleen.goh@duke-nus.edu.sg)

N. Kandiah – neuroimaging and fluid biomarker research in Alzheimer's disease and vascular dementia (nagaendran.kandiah@singhealth.com.sg)

S. Khanna - septo-hippocampal circuit defects in dementia. (sanjay_khanna@nuhs.edu.sg)

C. Libedinsky – dementia-associated defects in cortical circuits of macaques. (camilo@nus.edu.sg)

K.L. Lim – cellular/molecular mechanisms of dementia studied in patient-derived iPSCs. (kahleong.lim@duke-nus.edu.sg)

H. Makino – dementia-associated circuit defects in the prefrontal cortex. (hmakino@ntu.edu.sg)

R. Mitra – mechanisms of stress-related dementia. (RMitra@ntu.edu.sg)

D. Nizetic - dementia-related cellular defects in iPSC-derived neurons from human dementia patients. (d.nizetic@ntu.edu.sg)

J.C.G. Sng – epigenetics mechanisms underlying dementia-associated circuit defects. (phcsngj@nus.edu.sg)

S. Sreedharan - synaptic plasticity changes underlying circuit defects in dementia. (phssks@nus.edu.sg)

A. Tashiro - hippocampal circuit defects in dementia. (atashiro@ntu.edu.sg)

A. Vyas – Optogenetic control of dementia-associated behaviors. (avyas@ntu.edu.sg)

S.-C. Yen – changes in neural coding and cortical circuitry associated with dementia. (shihcheng@nus.edu.sg)

Candidates should have a doctoral degree and experience in one or more of the following techniques: electrophysiology, optogenetics, *in vivo* imaging, iPSC technology, behavioural analysis and/or molecular biology, neuroimaging post-processing.

Please send curriculum vitae and names of three references to any of the PIs listed above or to the Program Director, George J. Augustine. While there is no formal application deadline, we are eager to have outstanding candidates join us as soon as possible.