

DATE / VENUE

2019

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CELS-01-06 - CELS SEMINAR ROOM 1



## NUS Physiology Research Seminar

# Lightening the Cerebellum from P/Q-type Calcium Channel Specific Diseases.

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The main focus of my group is to understand the modulation of the P/Q type calcium channel and its role in debilitating, neurodegenerative diseases, such as Episodic ataxia type 2 and Spinocerebellar ataxia type 6. P/Q type channels are the main voltage gated  $\text{Ca}^{2+}$  channel in the brain and are involved in synaptic plasticity, action potential firing and synaptic transmitter release. Many mutations in this channel have been described in humans, which are associated with various diseases such as migraine, epilepsy, ataxia and dystonia. I created genetic mouse models representing the human diseases Episodic Ataxia type 2 and Spinocerebellar Ataxia type 6 to aid in understanding the contribution of the cerebellum to diseased states such as ataxia, stress induced dystonia and absence epilepsy. Unfortunately, individuals suffering from ataxia have no means of therapeutic relief. Using our mouse models we hope to identify second messenger pathways and specific neurons in the cerebellum involved in these diseased states, in order to design more effective therapeutic tools either pharmacological, optogenetic or genetic to help affected individuals.

