



## Information coding and calcium dynamics in hippocampal

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### SEMINAR & VISITING SPEAKER SERIES

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#### DATE

Friday, February 9th, 2018  
12:00noon

#### LOCATION

Apotex 071  
Bannatyne Campus

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#### SPEAKER

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#### ABSTRACT:

Neurons encode and transmit information in the frequency and temporal precision of action potentials (APs) they discharge. Presynaptic terminals are key elements involved in the translation of electrical signals to neurotransmitter release. The differential spatial assembly of a myriad of voltage-gated channels, calcium buffers and calcium sensors confers specific properties to presynaptic terminals. The dynamic modulation of neurotransmitter release is thought to support the neuronal code used to transfer information. We use electrophysiological measurements in acute hippocampal slices with rapid presynaptic two-photon calcium imaging and experimentally-constrained modelling to study the mechanism by which mossy fiber terminals in the hippocampus translate granule cell firing to postsynaptic signals. Our aim is to elucidate how a mossy fiber bouton integrates incoming bursts of action potentials to propagate information to CA3 pyramidal neurones.

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