

VT School of Neuroscience Faculty Recruitment Seminar

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**“High-resolution dissection of neural circuits for
memory, space and time”**

November 30, 2017
11:00am – 12:00pm
Kelly Hall, Room 310*

Hippocampal circuits are essential to episodic memory, and generate internal representations of the external world independent of direct sensory inputs. These representations include those of location in space (‘place cells’) and time (‘time cells’). My research is focused on understanding the physiology of hippocampal circuits at the level of synaptic interactions between ensembles of identified neurons. Working *in vivo*, in awake-behaving rodents, I develop and utilize electrophysiological and optogenetic methods to actively monitor and manipulate neural activity to probe physiological function. My talk will primarily focus on two projects, including both neuroscientific findings and the technical developments which made them possible: (1) understanding the generation and organization of sharp-wave ripple oscillations (neural population events critical for memory consolidation) at the level of single neuron membrane potential dynamics; and (2) elucidating the organization and activity dynamics of microcircuits composed of excitatory (pyramidal cell) and inhibitory (interneuron) neurons, with an emphasis on functions related to cell assemblies.

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***PLEASE NOTE THE CHANGE IN VENUE**