

## Neuroscience Seminar Series

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**Friday, January 12<sup>th</sup>, 2018 at 11:30**

Salle des Conférences (R229)

Centre Universitaire des Saints-Pères

45 rue des Saints-Pères, 75006 Paris

# Troy Margrie

*Professor*

*Sainsbury Wellcome Centre, University College London, UK*

## *Into the deep: cellular dissection of circuit function in cortical layer 6*

*Our laboratory applies electrophysiological, imaging and viral tracing methods to dissect the function of neuronal circuits in the intact brain. We are particularly interested in understanding the relationship between the intrinsic diversity, connectivity and in vivo function of individual cells and cortical circuits. Neocortical networks carry multiple functions and underlie higher-order sensory-motor processing, integration and decision-making. We currently focus on the most understudied layer of the cortex, Layer 6, which contains two classes of principal cells: cortico-cortical and cortico-thalamic projecting neurons. I will present data that suggests a functional distinction in visual processing between these two cell types. Furthermore, our connectivity data indicate a profound top-down input from retrosplenial cortex that signals the direction of head motion. Behavioural and theoretical experiments indicate that these inputs, distributed over a network of 100 L6 neurons, provide a reliable estimate and physiological separation of head velocity signals. We propose that this vestibulo-visual L6 circuit provides V1 with an internal reference signal used to frame and detect motion events occurring in the visual world.*

Those interested in meeting with the speaker please contact

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