MONASH University

Dr Leo Lui

ARC DECRA Fellow

Head, Lui Research Group

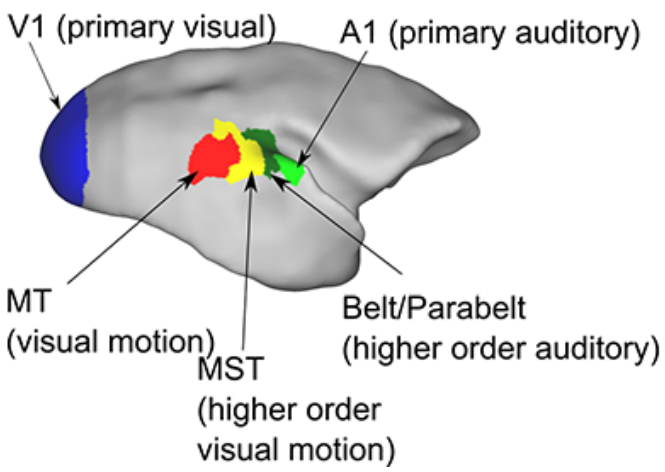
Monash Biomedicine Discovery Institute
Neuroscience Program

EMAIL	leo.lui@monash.edu
TELEPHONE	+61 3 9905 8398
WEB	med.monash.edu/physiology/staff/lui.html

Sensory systems have historically provided some of the most robust insights into brain function. These experiments have been used as a tool to study higher-order function; our work extends this to multi-sensory (audiovisual) integration and neural plasticity. Different parts of the brain initially represent information from the different senses (see brain below), however very little is known about how these areas interact to give a unified percept. We also study how the activity of different parts of the brain (MT) changes after damage to another (V1), and we will extend this to the neural basis of how training with simple perceptual tasks can improve sensory function after damage. We believe uncovering these processes will provide insights into mechanisms of higher-order brain function. Our laboratory operates within the Sensory and Cognitive Neuroscience Group in the Department of Physiology.

Research Projects

1. **Neural mechanisms of audiovisual integration**
2. **Neural plasticity underlying visual motion perception after damage to the primary visual cortex (V1)**
3. **Representations of complex motion in the primate brain**



Selected significant publications:

1. Pasternak T, **Lui LL**, Spinelli PM. 2015. Unilateral prefrontal lesions impair memory-guided comparisons of contralateral visual motion. *J Neurosci.* 35: 7095-105.
2. **Lui LL**, Morkri Y, Reser DH, Rosa MGP, Rajan R. 2015. Responses of neurons in the marmoset primary auditory cortex to interaural level differences: Comparison of pure tones and vocalizations. *Front Neurosci.* 9:132
3. **Lui LL**, Dobiecki AE, Bourne JA, Rosa MGP. 2012. Breaking camouflage: Responses of neurons in the middle temporal area to stimuli defined by coherent motion. *Eur J Neurosci.* 36:2063-76.
4. **Lui LL**, Pasternak T. 2011. Representation of comparison signals in cortical area MT during a delayed discrimination task. *J Neurophy.* 106:1260-73.
5. **Lui LL**, Bourne JA, Rosa MGP. 2006. Functional response properties of neurons in the dorsomedial visual area of New World monkeys (*Callithrix Jacchus*). *Cereb Cortex.* 16:162-77.