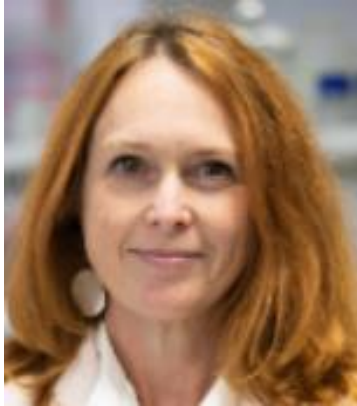


Psychiatry and Neuroscience Seminar Series 2024



Pr Elisa HILL-YARDIN

(Host H Rebholz)

RMIT University, Australia

Mind over fecal matter: neurons in the gut and autism

Friday, June 14th, 2024, noon

Room D Levy, 102-108 rue de la santé - 75014 Paris

Pr Elisa HILL-YARDIN

School of Health and Biomedical Sciences, RMIT University, Australia

Prof Elisa Hill-Yardin leads the Gut–Brain Axis Laboratory at RMIT University, which focuses on (i) identifying the cause of gut dysfunction in transgenic mouse models of neurological disease, (ii) determining how neurons communicate with the lymphoid system and inflammation, and (iii) understanding interactions between the nervous system and bacteria.

She has shown that gene mutations associated with autism in patients alter the numbers of neuron populations in the mouse enteric nervous system as well as gut motility and permeability. She found that these nervous system changes also disrupt the microbiome, modify responses to inflammation and increase aggression and repetitive behaviours in mice. The team are expert in detecting changes in gut contraction patterns and gut permeability in rodents. Video-imaging assays detect subtle changes in gut motility caused by impairments in the gut nervous system and we're enhancing this capability in collaboration with software engineers. We routinely assess for changes in neuron numbers and immune cells of the gut and brain using immunofluorescence in rodent models. We've built our capability to record neuronal activity in gut tissue using whole cell patch clamp electrophysiological recording. This is a powerful way to profile neuronal subtypes in gastrointestinal tissue.

This work aims to clarify how the gut and microbes influence the brain and behaviour and identify new therapeutic targets to improve gut health.

Keywords:

Electrophysiology

Neurobiology

Neurophysiology

Neuroscience

Autism Spectrum Disorders

Autism

Physiology

Neurobiology and Brain Physiology

Neuropharmacology

Cellular Neuroscience

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