THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

CREATE CHANGE

PhD position in Biomedical Sciences

Hypothalamus development and disease laboratory

Hypothalamus Development and Disease Laboratory

Sleep is an essential activity and something most animals spend half of their life doing. In mammals, sleep is controlled by the hypothalamus, a tiny part of the mature brain containing a staggering number of different cell types. The control of sleep-wake states is heavily dependent upon specific cells referred to as "sleep neurons". Loss of sleep neurons triggers narcolepsy in mice, dogs and humans, underscoring the evolutionary conservation of the sleep system. Yet, despite its importance, there are major knowledge gaps in our understanding of how the sleep system develops and how its remarkable cell specificity is achieved.

This PhD project will use the latest arsenal of transcriptomics technologies and bioinformatics analysis to decode the development of the hypothalamic sleep neurons. This knowledge will be used to generate sleep neurons from human induced pluripotent stem cell cells in culture. By applying our emerging insight of sleep neuron generation to human stem cell cultures we will generate sleep neurons in-a-dish, allowing for physiological in vitro studies and for cell transplantation experiments aimed at combating sleep deficits in narcolepsy and other sleep-wake disorders.

The School of Biomedical Sciences

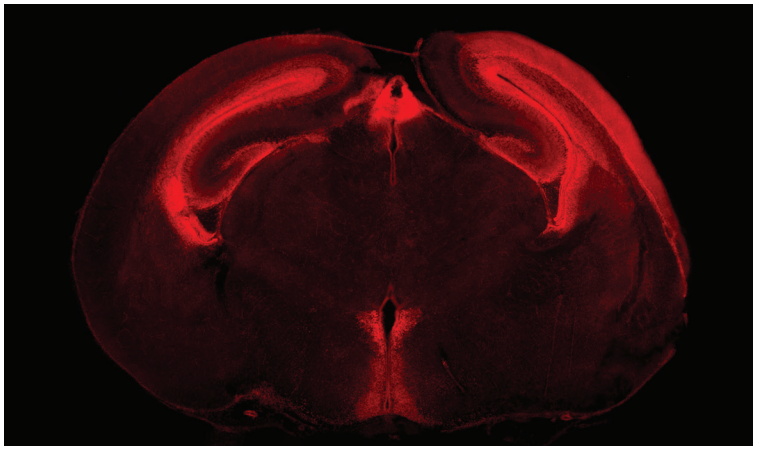
SBMS is a multi-disciplinary teaching and research School within the Faculty of Medicine at the University of Queensland. SBMS teaches over 16,000 students each year across a number of science, health and medical courses.

The University of Queensland

Ranked in the world's top 50, The University of Queensland is one of Australia's leading research and teaching institutions.

In 2018, UQ again topped Australia in the prestigious Nature Index, which rates institutions and countries according to the number and quality of research publications.

In 2019, the UQ had more than 55,300 students including 16,000 international students from 134 countries. UQ's more than 18,600 postgraduate students include one of Australia's largest PhD cohorts, celebrating its 15,400th PhD graduation in 2020.



Expression of Tead1, a potential sleep neuron transcription factor in the developing mouse cortex and hypothalamus

4 clinical trials underway based on discoveries from our School

$8 million core research facilities

53 modern PC2 research laboratories

16,000 students in science, medicine and health

100 honours and 100 higher degree research students

$53 million research and teaching income

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