School of Medical Sciences Seminar Series

Wednesday 11th of November 2020

3:00 – 4:00pm on Microsoft Teams

We ask all attendees to mute and turn off their video

Professor Lynne Bilston

"Upper airway muscle function in obstructive sleep apnoea, and a potential new optogenetic stimulation therapy"

Bio: Lynne Bilston is a biomechanical engineer whose research encompasses injury biomechanics, soft tissue biomechanics, and the development of novel imaging methods for making biomechanical measurements in vivo, including applications of these to understand the biomechanical mechanisms of obstructive sleep apnoea. She has a PhD in bioengineering from the University of Pennsylvania and is a National Health and Medical Research Council of Australia Investigator fellow. She is a Senior Principal Research Fellow at Neuroscience Research Australia.

Talk: Obstructive sleep apnoea (OSA) is a common respiratory sleep disorder where the upper airway collapses, either partially or completely during sleep. This leads to oxygen desaturation, frequent arousals, autonomic activation, and fragmented sleep. The consequences of this include an increased risk of motor vehicle crashes and industrial accidents, and cardiovascular disease and stroke. Current treatments are either poorly tolerated by patients (e.g. CPAP) or only effective for a subset of patients. In this talk, Professor Bilston will present an overview of the neural and biomechanical function of the upper airway muscles in healthy adults and those with OSA, based on neurophysiology, imaging and biomechanical studies, and outline preclinical studies of a novel approach to restoring airway patency by optogenetic stimulation of the upper airway dilator muscles.