The Innovation & Precision Eye Health
Webinar Series 2024
11 June 2024, Tuesday
6:30 pm - 7:30 pm SGT | 10:30 am - 11:30 am GMT

How does being outdoors prevent the development of Myopia, and can we use this knowledge to develop novel clinical treatments?

About the speaker:
Dr Regan Ashby is an Associate Professor of Neuroscience at the University of Canberra (UC), Australia. He completed his PhD in 2008 at the Australian National University (ANU) studying the molecular pathways underlying myopia. Following his studies, Dr Ashby accepted a prestigious 2-year Marie-Curie, European Union, Postdoctoral Fellowship at the University of Tuebingen, Germany. He is a Visiting Fellow at the ANU and the University of New South Wales (UNSW). Dr Ashby’s research training is in developmental biology and neuroscience, with a strong focus on ocular development and the visual disorder myopia. He has substantial training in molecular neurobiology, pharmacology, analytical chemistry, and physiology, having applied such skills to understanding the cell signaling pathways governing eye growth and the development of myopia, primarily through the use of animal models. Dr Ashby is an internationally recognized leader in the myopia field. He is best known for his seminal work showing that light-induced stimulation of dopamine release inhibits the development of experimental myopia (Ashby R. et al., (2009), IOVS, DOI:10.1167/iovs.09-3419). This paradigm-shifting study helped explain the epidemiological finding that children who spend more time outdoors are less likely to develop myopia. His contributions to the field have been acknowledged by several prestigious awards, including the Attempto prize for Neuroscience (Germany) and the Carl-Zeiss Young Investigators Award (USA). Based on the work above, Dr Ashby and his team have developed a novel pharmacological treatment for myopia that has entered Phase II clinical trial.

About the Talk
Epidemiological studies have observed that spending greater amounts of time outdoors during childhood reduces the probability of developing myopia. Several hypotheses have been put forward to explain this protection, in what is most likely a multifactorial process. One suggested component is the greater luminance levels experienced outdoors. Therefore, this presentation will review the role of light in the regulation of ocular growth and myopia. It will examine the biochemical, perceptual, and circadian entrainment changes that occur in response to altered luminance levels, and their link to the development of myopia, with a particular focus on the role of the dopaminergic system. Finally, this talk will discuss how we are translating this knowledge into novel treatments for myopia.

Host
About the Host: Assistant Professor Raymond P. Najjar is a Visual Neuroscientist and Deputy Research Director at the Department of Ophthalmology, Yong Loo Lin School of Medicine, National University of Singapore (NUS). He is also Head of the Visual Neurosciences Group at the Singapore Eye Research Institute (SERI) and Assistant Professor at the Department of Biomedical Engineering and Duke-NUS School of Medicine. With his team, he is currently developing novel, implementable, and safe strategies utilizing light to prevent myopia in children, in addition to developing affordable custom-built devices for the detection of ocular diseases. Dr Najjar is currently leading project LightSPAN aiming to optimize light exposure in school-going children for better myopia prevention.

Please email vns.ophth@nus.edu.sg for more information.
Organised in collaboration with NUH and NUS Department of Ophthalmology