

“Breast cancer hijacks the brain via inflammation to cause memory impairment”

Speaker: Dr Adam Walker, Laboratory of ImmunoPsychiatry, Neuroscience Research Australia School of Psychiatry, UNSW



Dr Adam Walker is a Senior Research Fellow in the School of Psychiatry at UNSW and leads the Laboratory of ImmunoPsychiatry at NeuRA since August 2018. He completed his PhD at the University of Newcastle in 2011 and completed postdoctoral fellowships at the University of Illinois – Urbana-Champaign and The University of Texas MD Anderson Cancer Center. He returned to Australia in 2015 and joined Monash University as a National Breast Cancer Foundation Research Fellow, investigating the mechanisms underlying cognitive and psychiatric side-effects of cancer and its treatment. Located in the School of Psychiatry at UNSW and at NeuRA since 2018, Adam leads the Laboratory of ImmunoPsychiatry. His team investigates the mechanisms responsible for inflammation-associated psychiatric and neurodevelopmental disorders, as well as when symptoms of depression and cognitive impairment occur in patients with chronic inflammatory illness such as cancer (known as ‘chemobrain’). Using preclinical mouse models of inflammation-induced

depression and cancer-associated cognitive impairment, he has pioneered discovery of available drugs that may be repurposed to prevent and treat inflammation-induced depression (ketamine, leucine) and cancer-associated cognitive impairment (aspirin).

Synopsis:

Adam’s talk will focus on his current work focusing on cancer-associated cognitive impairment. 70% of cancer patients report cognitive symptoms and 40% have measurable learning, concentration, and memory deficits. Up to 30% of survivors report sustained cognitive impairment even after becoming cancer free. While traditionally thought to be caused solely by chemotherapy, it is now believed that multiple events throughout a patient’s cancer career can cause cognitive impairment. However, no treatment has been identified. Nor has the cumulative impact of multiple events during cancer treatment on cognition and the brain been determined. Using syngenic, orthotopic mouse models of metastatic and non-metastatic breast cancer, Adam will demonstrate how solid non-CNS tumours can hijack the brain and cause memory impairment by inducing (neuro)inflammation, which can be prevented using the anti-inflammatory drug aspirin. Adam will discuss findings and models of breast cancer surgery and chemotherapy and outline their impact on the brain and behaviour. Adam will also discuss how his team is developing the first “cancer survivorship mouse model” by examining the combined effects of breast cancer, breast cancer surgery and chemotherapy treatment to determine the cumulative impact of cancer and cancer treatment on the brain.

All welcome!

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