



The Immunology Group of Victoria

A branch of the Australian and New Zealand Society for Immunology



2019 Masterclass in Neuroimmunology *Programme*

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Introductory Remarks

9:30am

Session 1:

9:40-11:00am

"Neural regulation of leukocyte behaviour and function"

A/Prof Scott Mueller – Doherty Institute



Associate Professor Scott Mueller is an NHMRC Senior Research Fellow and laboratory head in the Department of Microbiology and Immunology, The University of Melbourne, at the Doherty Institute. Scott is a world leader in basic immunology research, using advanced microscopy methods to visualise the cells of the immune system. His research interests include dissecting crosstalk between the immune system and the nervous system and identifying the roles of mesenchymal stromal cells in immunity to infection and cancer.

"Mapping the brain tumour immune microenvironment"

Dr Theo Mantamadiotis - Doherty Institute



Dr Theo Mantamadiotis has a background in biomedical research and joined the Department of Microbiology and Immunology in 2018, from the Department of Pathology. His major focus is understanding the molecular and cellular biology of brain cancer and he has a background in neural stem cell biology and brain development. His group aims to understand how the tumour microenvironment, including immune cells, contribute to oncogenesis and how to modulate the immune system to improve current brain cancer therapy.

Morning Tea

11:00-11:20am

Session 2:

11:20-12:40pm

"Targeting neural-immune signalling in cancer"

A/Prof Erica Sloan - the Monash Institute of Pharmaceutical Sciences



Dr Sloan's laboratory investigates the bi-directional interaction between the brain (or nervous system) and the tumour microenvironment using advanced imaging technology in animal models of cancer to investigate how stress signalling affects the progression of cancer and its response to therapy. Her research examines the impact of stress signalling that is initiated in the brain on cancer progression and how the tumour talks to the brain to disrupt memory and learning, which in turn increases stress.

"Inflammation and degeneration of the enteric nervous system in Prion and Parkinson's diseases"

A/Prof Vicki Lawson - Doherty Institute



Dr Lawson's research is focused on understanding the pathogenesis of transmissible diseases. She is primarily focused on understanding the nature of disease caused by prions (transmissible proteins) with an expanding interest in other neurodegenerative disease, including Parkinson's Disease.

Lunch

12:40-1:40pm

Session 3:

1:40-3:00pm



"The mechanism for inflammation in motor neuron disease"

A/Prof Seth Masters – Walter and Eliza Hall Institute

Seth Master's lab studies inflammation generated by the innate immune system, which occurs during infection, when cells die, or when genetic mutations activate innate immune pathways causing autoinflammatory disease. His work contributes to our understanding of the development of many chronic inflammatory diseases including rheumatoid arthritis, inflammatory bowel disease, amyotrophic lateral sclerosis (ALS) and type 2 diabetes.



"Platelets: villains and assassins in neuroinflammation"

Dr Jacqueline Orian – La Trobe University

Jacqueline Orian completed a PhD at Monash University and post-doctoral fellowships at The University of Melbourne and Imperial College. She joined La Trobe University in 2001 where she focuses on neurodegenerative disease, especially Multiple Sclerosis (MS). Her current major research areas include the mapping of early changes in the experimental autoimmune encephalomyelitis (EAE) model of MS, comparison of white and grey matter pathology in EAE, molecular profiling of cerebral endothelial cells in EAE and the role of astrocytes in neuroinflammation.

Afternoon Tea

3:00-3:20pm

Session 4:

3:20-4:30pm



"Type-I interferons and microglia: influencing chronic neuropathologies"

Dr Juliet Taylor – University of Melbourne

Juliet Taylor completed a PhD at Monash University. Her research interests focus on the role of neuroinflammation in neurodegenerative diseases such as Alzheimer's and Parkinson's Disease and role that Type I interferons and microglia play in neuroinflammation and injury.



"Brain-immunity axis in stroke"

Dr Connie Wong – Monash University

After completing her PhD at Monash University in 2008, Connie Wong was trained in the Snyder Institute for Chronic Diseases at the University of Calgary in Canada (2008-2012) and the Department of Immunology (Clayton) at Monash University as a Postdoctoral Fellow (2012-2014). Dr Connie Wong is a current recipient of the CSL Centenary and Heart Foundation Future Leader Fellowship, and head of Neuroinflammation Research Group at Centre for Inflammatory Diseases, Department of Medicine.

Closing Remarks

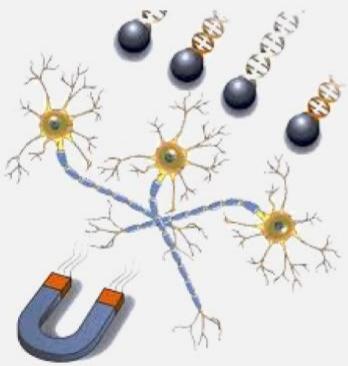


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Human Neuroinflammation Panel 1

Human Macrophage/Microglia Panels

Human Proinflammatory Chemokine Panel

Target
VILIP-1
CCL2 (MCP-1)
sTREM-2
BDNF
TGF-β1 (Free Active)
VEGF
IL-6
sTREM-1
β-NGF
IL-18
TNF-α
sRAGE
CX3CL1 (Fractalkine)

Target
IL-12p70
TNF-α
IL-6
IL-4
IL-10
IL-1β
Arginase
CCL17 (TARC)
IL-1RA
IL-12p40
IL-23
IFN-γ
CXCL10 (IP-10)

Target
CXCL8 (IL-8)
CXCL10 (IP-10)
CCL11 (Eotaxin)
CCL17 (TARC)
CCL2 (MCP-1)
CCL5 (RANTES)
CCL3 (MIP-1α)
CXCL9 (MIG)
CXCL5 (ENA-78)
CCL20 (MIP-3α)
CXCL1 (GROα)
CXCL11 (I-TAC)
CCL4 (MIP-1β)



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