manitoba neuroscience network

Microglia prevent spontaneous and recurrent central nervous system demyelination

SEMINAR & VISITING SPEAKER SERIES

DATE Thursday, May 15th, 2025

TIME 12:00 PM to 1:00 PM

LOCATION APOTEX THEATRE 050

SPEAKER

Veronique Miron, PhD

Full Professor in the Department of Immunology, John David Eaton Chair of Multiple Sclerosis Research at the Keenan Research Centre for Biomedical Science, Unity Health Toronto, University of Toronto.

BIO

Veronique Miron is the John David Eaton Chair in Multiple Sclerosis at The Keenan Research Centre for Biomedical Science, and Full Professor in the Department of Immunology at the University of Toronto. She completed her PhD with Jack Antel at the Montreal Neurological Institute, and her postdoctoral studies with Charles ffrench-Constant at the Scottish Centre for Regenerative Medicine. Dr. Miron then started up her lab at the University of Edinburgh in 2014, and in 2022 relocated to Toronto. Her lab focuses on understanding the glial and immune interactions that regulate myelin health, pathology, and regeneration across the lifespan, including in Multiple Sclerosis. Her work in this area has been recognized by prestigious fellowships from the UK Medical Research Council, being awarded the Suffrage Science Award in Life Sciences and the Unity Health Toronto Legacy Award, and recently being elected into the Royal Society of Canada.

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ABSTRACT

Multiple sclerosis (MS) is a neurodegenerative disease with typical onset in young adulthood to middle age, characterized by recurrent central nervous system (CNS) demyelination associated with altered oligodendrocyte heterogeneity and loss. Although blood-derived immune cells are considered to contribute to demyelination, changes in neural cells in MS white matter prior to lesion formation suggests a potential role in lesion initiation. Accordingly, in MS microglia lose homeostatic signatures suggestive of loss of function, particularly at focal sites of demyelination initiation. However, the role of microglia in maintaining or dysregulating myelin health in young adulthood to middle age is unclear. Here, I will discuss our unpublished data identifying that microglia are required to prevent age-dependent pathological oligodendrocyte responses that cause spontaneous recurrent white matter demyelination, pointing to loss of microglial homeostasis as a promising therapeutic target for MS.

OBJECTIVES

- Discuss the requirement for microglia in maintenance of white matter health throughout the lifespan.
- Identify cellular and molecular mechanisms by which microglia influence oligodendrocyte and myelin pathology.
- Discuss the implications of our findings for recurrent age-dependent pathology in multiple sclerosis.

MNN Zoom Meeting- Dr. Miron Seminar

https://umanitoba.zoom.us/j/63430397571?pwd=YprVwAmhe54R-PLRw5YnSa6B0B0jzFx.1

Meeting ID: 634 3039 7571
Passcode: 771195

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