

March 11th (Friday)

11:30 am-1:00 pm

[WebEx \(Click here\)](#)

Dr. Yasser Iturria Medina, PhD.

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Multifactorial brain modeling for better understanding of disease mechanisms and treatment needs in neurodegeneration

Abstract

Most neurodegenerative disorders are highly complex and heterogeneous, presenting alterations at multiple biological entities. We will present our work on integrating several biological scales and data modalities (from molecular omics to multimodal neuroimaging and clinical data) via empirical and mechanistic brain models. These models allow to track disease progression and heterogeneity while clarifying the underlying path mechanisms. They also focus on providing individually-tailored predictions of therapeutic needs and potential response to treatments.

About the Speaker

Dr. Yasser Iturria-Medina is an Assistant Professor in the Montreal Neurological Institute (McGill), holding a Canada Research Chair in Multimodal Data Integration in Neurodegeneration. He is also an associate member of the Ludmer Centre for Neuroinformatics and Mental Health, and the McConnell Brain Imaging Centre (McGill). Iturria-Medina's Lab – Neuroinformatics for Personalized Medicine – pursues primarily the goal of making precision medicine in Neurology a reality. It focuses on defining and implementing multiscale and multifactorial brain models for further understanding neurological disorders from a multifactorial perspective and identifying effective personalized interventions. The lab combines molecular, imaging and cognitive data using integrative mathematical/computational approaches to create both individual and population-based mechanistic brain models. These approaches underpin his work in precision medicine aimed at identifying individual brain signatures – personalized therapeutic fingerprints for the human brain.