KCNI Summer Academy 2023 Virtual School

When: June 19-23, 2023

Intended Audience: Open to learners worldwide! Undergraduate Learners, Graduate Students, Post-Graduate Research and Clinical Fellows, as well as Early-Career Scientists with interest in learning more about Clinical Research and Neuroinformatics are encoraged to join!

Course Format: Virtual Webinar Series

Cost: Free

Contact: kcni.school@camh.ca

See full schedule and register at: https://crowdcast.io/c/kcni-virtual-summer-academy-2023

(spaces open for all!)

The Krembil Centre for Neuroinformatics is excited to **publish a free, globally accessible,** webinar series about working with the clinic to perform integrative multi-scale neuroscience data. The series will start with a discussion of clinical research questions in mental health, and how to work with the clinic to perform research. This series will then introduce participants to the concepts and methods behind psychiatric neuroinformatics - encompassing genetics, brain structure and function, and cognition. In addition, participants will uncover the links between modalities of human genomics, neuronal electrophysiology, structural and functional neuroimaging, and observed behaviour that KCNI scientists are integrating through a series of virtual modules and a group-based project using real-world data types to study mental illness. The series will conclude with a discussion about how to return value to the clinic, emcompassing issues of ethics and fairness in Artificiall inteligence to tools of implementation science.

This unique learning opportunity will prepare participants to handle and analyze multiple data types in hopes that their own research may benefit from collaborative, multi-modal approaches. Critically, participants will also learn about best practices for data management and quality control in the context of integrative analysis.

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Topics and Instructors

Date /Time EST	Title/Speaker
June 19 10-11am	**A *Multiscale Approach to Brain Disorders*** - Sean Hill, Director, CAMH KCNI
June 19 11:30-noon	***Problems and opportunities in the diagnosis and treatment of major depression -*** Dr Brett Jones
June 19, 1-3pm	***Data extraction from the electronic health record and clinical-decision making*** - Drs Sara Ling, Marta Maslej, Gillian Strudwick & Ryan Chan
Tues, June 20, 10-11:30am	***Transcriptomics at the single-cell and bulk level level*** - Dr. Shreejoy Tripathy
Tues, June 20, 1pm-3:30pm	***Simulating brain microcircuit activity in mental health*** - Dr. Etay Hay ***In-silico EEG biomarkers of cell-specific inhibition in depression and schizophrenia*** - Dr. Etay Hay
Wed, June 21, 10-11:30am	***Modelling Cognition using Bayesian Inference and Neurocomputational models of EEG and fMRI Data*** - Dr. Andreea Diaconescu & Colleen Charlton
Wed, June 21, 1-2:30pm	***Recent Advances in the Information-Theoretic Analysis of EEG and MEG Data: From Entropy to Mutual Information and High Order Interactions*** - Dr. Hamed Azami, Scientific Associate in Geriatric Mental Health Services, CAMH

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Wed, June 21, 3-4:30pm	*Computational modelling of noninvasive brain stimulation: connectivity, plasticity, and in-silico testing of personalized therapeutic interventions* - Dr John Griffiths
Thurs, June 22, 10-12am &2-4pm	*Transdisciplinary Mental Health Modeling with Machine Learning* - Drs Dan Felsky, Peter Zhukovsky, Samar Elsheikh, Tara Henechowicz & Mohamed Abdelhack
Fri, June 23, 9-11am	*Applied Ethics in Machine Learning and Mental Health: Evaluating model bias* - Drs Marta Maslej, Laura Sikstrom, James Anderson
Fri, June 23, 1-3pm	*Why does it take so long for my research to be integrated into practice?* - Drs Danielle Shin, Iman Kassam, Gillian Strudwick & Victor Tang

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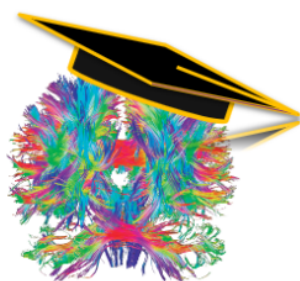
Interested in learning more in-person?

Consider applying to join us at the **KCNI Academy Project Week!**

Interested in learning more (on-line)?

 Click here to see videos recorded from previous years.