



RESEARCH SCHOLAR PROGRAM – 2018

SUPERVISOR & PROJECT INFORMATION FORM

Please complete and return, via email only (crems.programs@utoronto.ca) by **November 3rd 2017** (forms received after this date will not be posted).

Supervisor Information

Name: **James L. Kennedy**

Email: jim.kennedy@camh.ca

Degree: **MSc, MD**

SGS Appointment (IMS, IHPME, LMP etc.): **IMS, SGS**

Academic Rank: **Professor**

Field of Research:

neuroscience, clinical psychiatry, molecular genetics

Research Institution Affiliation (if applicable): **Centre for Addiction and Mental Health**

Allocation of student contact time (number of hours per week YOU are available to the student for any concerns or to review progress): **2hrs/wk**

Project Information

Title: Pharmacogenetics of Medication Treatment in Neuropsychiatry

Description (max 500 words):

Our research aims to revolutionize the way that doctors write prescriptions. The data generated in the IMPACT (Individualized Medicine: Pharmacogenetic Assessment & Clinical Treatment) study will provide new genetic discoveries that will continuously improve the clinical validity and utility of pharmacogenetic testing to guide treatment with psychiatric and other medications. In addition to current investigations, we will use new genomic methods including DNA variant function from novel remote enhancers, 3D chromatin structure, and DNA methylation studies to develop the new area of pharmaco-epigenetics. We will test these discoveries for validity and utility in large patient populations and clinical trials. We have already tested over 7000 patients via our Ontario IMPACT study (<http://impact.camhx.ca/en/home.php>) and we are completing the largest randomized controlled trial in Canada of a pharmacogenetic test via Genome Canada funds (2014-17). More information on this randomized controlled trial can be found at <https://clinicaltrials.gov/ct2/show/NCT02466477> for depression and <https://clinicaltrials.gov/ct2/show/NCT02573168> for schizophrenia.

If human subjects are involved, have Ethics been obtained?

YES NO Application Submitted N/A

Do you expect this work will be published within the 20 months?

YES NO Uncertain

Student's roles and responsibilities (please be specific)

The student's roles and responsibilities will include:

1. Use DNA sequencing & methylation in our current patient collections to find new variants relevant to drug response
2. Link genetic variants to serious side effects such as movement disorders and treatment-emergent suicidal ideas
3. Investigate health care cost savings from pharmacogenetic testing
4. Complete a literature review, write a manuscript and submit for publication.

In terms of resources and environment, we have a well-established research program here in the Neuroscience Research Department that includes 20 scientists who provide a superb range of expertise in molecular biology, electrophysiology and transgenics. More specifically for this project, the student will have support and training from my full staff of lab technicians, clinical assessment personnel, graduate students, and post-docs and Fellows who are conducting research in psychiatric genetics and epigenetics.