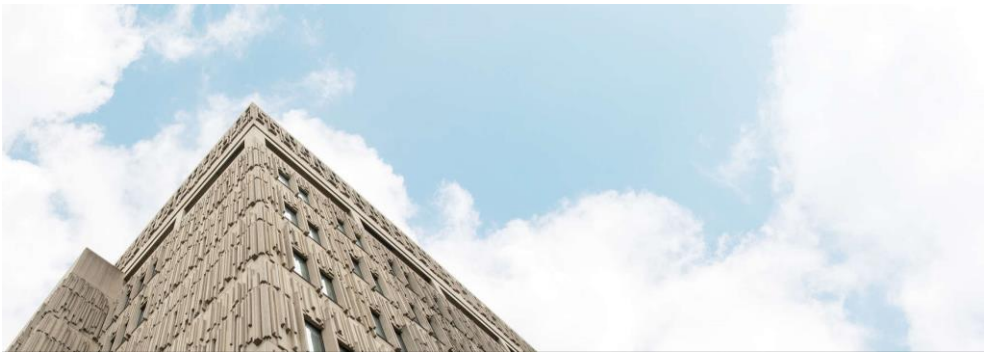
Institute of Medical Science
UNIVERSITY OF TORONTO



IMS Graduate Student Recruitment: September 2022

The Institute of Medical Science (IMS) is one of the largest graduate units at the University of Toronto. With over 600 active graduate faculty members, the IMS takes a leading role in translational research training that links fundamental discovery with patient-based research and clinical applications in health promotion and disease prevention with the intention of improving health outcomes for individuals and populations.

We are dedicated to training medical researchers and dissemination of new knowledge relevant to human biology and pathobiology within our Doctoral Stream Programs. The program includes both a Master of Science (MSc) and a Doctor of Philosophy (PhD) degree.

All applicants must identify an appropriate IMS faculty member as their research supervisor before initial registration in the IMS graduate program.

Within this document, you will find:

- available MSc and PhD positions (listed in order of: MSc only, MSc & PhD, PhD only)
- research summaries, keywords
- supervisor's funding information, and
- contact information

Interested students may contact the principal investigator or administrative assistants as listed.

To learn more, see Prospective Students, browse our full faculty list on our Faculty Directory.

**Last updated: March 4, 2022*

Principle Investigator:	*Darrell Tan*
Currently Accepting	**MSc**
Ideal Candidate	We are seeking students with an interest in advancing the development and implementation of evidence-based treatment and prevention modalities for HIV and other sexually transmitted infections. Strong skills in critical thinking, collaboration with community, and writing skills are essential; a background in biostatistics is particularly helpful. Candidates must also have a dedicated commitment to health equity issues, and experience working with sexual/gender minorities is an asset.
Research Summary	Darrell H. S. Tan is an infectious diseases physician and Clinician-Scientist at St. Michael's Hospital, where he leads the Options Collaboratory in HIV/STI Treatment and Prevention Science (www.optionslab.ca). His research focuses on clinical trials and implementation science in the areas of HIV prevention and treatment, sexually transmitted infections (STIs), and COVID-19. Dr. Tan holds a Tier 2 Canada Research Chair in HIV Prevention and STIs, is Co-Lead of the HIV Prevention Core of the CIHR Canadian HIV Trials Network and is a member of the Governing Council of the International AIDS Society.
Keywords	HIV, sexually transmitted infections, pre-exposure prophylaxis, post-exposure prophylaxis, implementation science
Lab location	St Michael's Hospital
Available Funding	Yes
Relevant Links	www.optionslab.ca
Contact Information	Cassandra Bertucci cassandra.bertucci@unityhealth.to 416-864-5568

Principle Investigator:	*Jean Wong*
Currently Accepting	**MSc**
Ideal Candidate	Student interested in clinical research, systematic reviews.
Research Summary	Prospective observational studies
Keywords	Perioperative outcomes Smoking Cessation Virtual patient assessments Older adults
Lab location	2MC-434, Toronto Western Hospital
Available Funding	Yes
Relevant Links	
Contact Information	jean.wong@uhn.ca

Principle Investigator:	*Gary Rodin*
Currently Accepting	**MSc**
Ideal Candidate	Background may be varied, but with strong interest in research and in the psychological and social dimensions of advanced disease.
Research Summary	Clinical research focused on the psychological impact of advanced and life threatening disease and on the development and testing of novel psychotherapeutic and and palliative interventions for individuals who are affected and for their caregivers in both adult and pediatric populations
Keywords	clinical research ;advanced cancer; palliative care; end-of-life; traumatic stress; psychotherapy;
Lab location	Princess Margaret Cancer Centre
Available Funding	Yes
Relevant Links	https://www.uhnresearch.ca/researcher/gary-m-rodin
Contact Information	Gary.Rodin@uhn.ca

Principle Investigator:	*Rinat Nissim*
Currently Accepting	**MSc**
Ideal Candidate	We are seeking a student with experience in qualitative research (e.g., conducting interviews or focus groups).
Research Summary	We have a number of ongoing mixed-method studies exploring the psychosocial distress and unmet needs of family members of cancer patients. The PIs are cancer psychologists and psychiatrists within the Psychosocial Oncology research group in the Department of Supportive Care (DSC) at the Princess Margaret Cancer Centre. The student's project will involve caregiver recruitment, conducting qualitative interviews, data analysis and write up. All study components can be completed virtually.
Keywords	Psychosocial oncology, qualitative research, mixed-method research, palliative care, caregiving, bereavement
Lab location	Princess Margaret Cancer Centre
Available Funding	Yes
Relevant Links	https://www.uhn.ca/PrincessMargaret/Clinics/Caring_for_the_Caregiver#tab3
Contact Information	rinat.nissim@uhn.ca

Principle Investigator:	*Tereza Martinu*
Currently Accepting	**MSc**
Ideal Candidate	The prospective student should be interested in clinically-relevant research in transplantation. They should be willing to work with large datasets but also perform (and learn) hands-on experiments, including multi-color flow cytometry.
Research Summary	We study mechanisms of lung rejection after lung transplantation. Chronic lung allograft rejection is the main cause of death in our lung transplant recipients. This chronic rejection process is not fully understood, but lymphocyte-mediated airway epithelial injury is thought to be an important mechanism. We study lymphocytes and epithelial cells in human and mouse model samples to better understand the immunobiology of rejection. Some of the mechanisms under study include Th17 pathways, B cells and antibodies, macrophages, and apoptosis of specific epithelial cell subsets.
Keywords	lung transplant, allograft rejection, T cells, B cells, macrophages, epithelial cells, club cells, apoptosis.
Lab location	UHN PMCRT
Available Funding	Yes
Relevant Links	
Contact Information	tereza.martinu@uhn.ca

Principle Investigator:	*Shiphra Ginsburg*
Currently Accepting	**MSc**
Ideal Candidate	N/A
Research Summary	Dr. Ginsburg's program of research involves two inter-related areas. The first explores how clinical supervisors conceptualize, assess and communicate about the performance and competence of their learners, with a focus on the language used in workplace-based assessment. The second area explores professionalism in medical education, from the perspective of learners, faculty and practicing physicians. Dr. Ginsburg's research involves the use of qualitative and mixed methods. She has projects related to feedback, implicit gender bias in assessment, the effect of context on assessment, and issues central to the field of medical education research in general, including academic publishing and dissemination.
Keywords	Medical education Assessment Qualitative research Mixed methods
Lab location	Sinai Health
Available Funding	Some funding may be available;
Relevant Links	sginsburg.com http://thewilsoncentre.ca/dr-shiphra-ginsburg
Contact Information	shiphra.ginsburg@utoronto.ca

Principle Investigator:	*Corinne Fischer*
Currently Accepting	**MSc**
Ideal Candidate	Statistical knowledge and training in neuroscience preferred.
Research Summary	The focus of my research is examining the link between psychosis and neurodegeneration.
Keywords	delusions, hallucinations, dementia, Alzheimer's disease
Lab location	St. Michaels Hospital
Available Funding	Yes
Relevant Links	http://stmichaelshospitalresearch.ca/researchers/corinne-e-fischer/
Contact Information	corinne.fischer@unityhealth.to

Principle Investigator:	*Nadia Minian (Co-Supervising with Dr. Selby)*
Currently Accepting	**MSc**
Ideal Candidate	Experience in both qualitative and quantitative methods; ideally some experience with mixed methods
Research Summary	We are starting a new multi-methods feasibility study to co-create and evaluate an evidence based, patient centered chatbot aimed at helping people adhere to their varenicline regimen
Keywords	Medication Adherence. Smoking Cessation, Cancer Prevention, Implementation Science
Lab location	CAMH- 1025 Queen St W., Toronto ON, M6H 1H4
Available Funding	Yes
Relevant Links	https://www.nicotinedependenceclinic.com/en https://pubmed.ncbi.nlm.nih.gov/?term=Minian+N&filter=years.2021-2021
Contact Information	Vanessa Ballarino Please email both: Nadia.Minian2@camh.ca and Vanessa.Ballarino@camh.ca

Principle Investigator:	*Stefan Kloiber*
Currently Accepting	**MSc**
Ideal Candidate	Mental Health Clinical Research Neuroimaging
Research Summary	Clinical research is to investigate novel neurobiological systems including the brain endocannabinoid system in mood and anxiety disorders and explore biomarkers and novel treatment approaches through clinical trials with a specific interest in neurobiological and clinical effects of cannabinoids.
Keywords	Clinical research Mood and Anxiety Disorders Neurobiology Neuroimaging Endocannabinoid system Cannabinoids Biomarker research
Lab location	CAMH
Available Funding	Yes
Relevant Links	https://psychiatry.utoronto.ca/faculty/stefan-kloiber
Contact Information	stefan.kloiber@camh.ca

Principle Investigator:	*Frances Chung MBBS, MD, FRCPC*
Currently Accepting	**MSc**
Ideal Candidate	I am looking to recruit enthusiastic students who are hard-working, highly-motivated, excellent team players with strong writing skills. Candidates with excellent marks and previous research experience are preferred
Research Summary	Dr. Frances Chung's is the inaugural ResMed Chair in Anesthesia, Sleep, and Perioperative Medicine at University Health Network. The mandate of her Lab is to advance the study of anesthesiology, sleep, and peri-operative medicine and to foster research, education, and scientific progress in anesthesia, sleep, and peri-operative medicine. Perioperative medicine provides a new opportunity to provide primary and secondary screening and to initiate general health interventions. Essentially perioperative medicine can impact on postoperative outcomes. Importantly, it is a vital opportunity to improve quality of life in the long term. The multi-disciplinary research team Dr Frances Chung leads at Toronto Western Hospital, University Health Network contributed to several key areas of research: perioperative medicine, cognitive screening, sleep apnea, patient safety, pain, and monitoring. As the proportion of the population aged 65 year and older increases, the prevalence of cognitive impairment increases. Elderly with cognitive impairment is more likely to use health care services. Lack of screening in surgical patients can compromise the safety and increase postoperative complications. This can result in reduced trajectory of function and decrease in daily activities.
Keywords	Perioperative medicine, cognition, adverse outcomes, sleep apnea, patient safety, monitoring
Lab location	Dept of Anesthesiology and Pain Medicine, Toronto Western Hospital, University Health Network, 399 Bathurst Street, Toronto, Ontario M5T2S8

Available	Yes
Funding	
Relevant Links	http://www.stopbang.ca/ Sleep Apnea Screening Tool http://orcid.org/0000-0001-9576-3606 http://aspom.ca
Contact Information	frances.chung@uhn.ca 416 670 4253

Principle Investigator:	*Vincenzo De Luca*
Currently Accepting	**MSc**
Ideal Candidate	N/A
Research Summary	The proposed research aims at identifying the genes that confer risk for suicidal ideation in patients with severe mental illness (i.e., schizophrenia) and testing whether genes and stress modulate this risk. The grant further aims to analyze the interplay between genes and stressful events in modulating the risk for suicidal ideation. Being diagnosed with schizophrenia significantly increases the risk for suicide. Furthermore, exposure to stressful life events is a significant risk factor for suicide. Recently, several studies have shown that genes involved in the stress response can change their expression in reaction to life adversities, thus triggering suicidal behavior. More specifically, the expression change in these genes is determined by non-sequence changes at DNA level (epigenetics). Our hypothesis is that epigenetic changes in response to stressful events may trigger suicidal ideation. We plan to analyze a sample of 1,130 patients with schizophrenia recruited from two teaching hospitals in Toronto. The study participants will be evaluated for stress exposure and suicidal ideation during a 1-year follow-up study. Any change in stress exposure or suicidal ideation over one year will be monitored. Additionally, DNA and RNA will be extracted from blood collected at study entry and 1-year follow-up to measure epigenetic changes (DNA methylation) and gene activity (RNA analysis) of all known human genes. This study will allow for the systematic evaluation of genome-wide DNA methylation, RNA expression and stress exposure in conferring risk for suicidal ideation. The interplay between stressful events and gene methylation and expression changes may allow us to understand the molecular mechanisms that trigger suicidal ideation. Elucidating these mechanisms will identify novel molecular targets for future drug therapies intended to reduce suicidal ideation.
Keywords	schizophrenia, suicide, genetics, MRI, EEG

Lab location	CAMH
Available	Yes
Funding	
Relevant Links	
Contact Information	Vincenzo.deluca@camh.ca 416 5358501 x34421

Principle Investigator:	*Abhishek Pratap*
Currently Accepting	**MSc**
Ideal Candidate	able to code in python/R some stats experience
Research Summary	We are unique in design, as are our lives. Be it sleep and exercise; or occupation and recreation, we have our own blend of day-to-day experiences. And every one of these little things we do has an impact on our mental health. At AID 4 Mental Health lab, we focus on understanding the individualized real-world experience of mental health by developing people-centered AI & digital tech-enabled solutions. We also assess ways in which technology can be optimally deployed in the real world that is what works for whom, when and for how long. AID 4 Mental Health is a not-for-profit research lab at Krembil Center for Neuroinformatics at The Centre for Addiction and Mental Health (CAMH) in Toronto.
Keywords	digital health mental health Machine learning User experience policy governance
Lab location	CAMH
Available Funding	Yes
Relevant Links	https://aid4mental.health/ https://scholar.google.com/citations?hl=en&user=qt2AE_4AAAAJ
Contact Information	Sophie Lafaille sophie.lafaille@camh.ca

Principle Investigator:	*Amanda Ricciuto*
Currently Accepting	**MSc**
Ideal Candidate	N/A
Research Summary	Subjects: inflammatory bowel disease, primary sclerosing cholangitis, primarily paediatric; precision medicine, predicting treatment response, elucidating disease pathogenesis Methods: clinical epidemiology, including prospective and retrospective cohort studies, health services research using administrative datasets; translational research, biospecimen collection and analysis (planned for future omics investigation/analysis/integration); systematic reviews/meta-analysis Examples of ongoing studies: WES in children with IBD and primary sclerosing cholangitis; prospective study to identify clinical/biomarker predictors and early markers of treatment response to infliximab in paediatric IBD; health services research study to build a national paediatric/adult cohort of patients with IBD and PSC to characterize outcomes (cancer, surgery, death, transplant) and prognostic markers
Keywords	inflammatory bowel disease; primary sclerosing cholangitis; paediatric; precision medicine; clinical epidemiology
Lab location	SickKids
Available Funding	Yes
Relevant Links	
Contact Information	amanda.ricciuto@sickkids.ca 416-813-7654 Ext 224845

Principle Investigator:	*Dr. Mark Boulos*
Currently Accepting	**MSc**
Ideal Candidate	I am seeking a hard-working individual who is interested in exploring the relationship between sleep disorders and various neurological conditions. A prior background in statistics, neuroscience, and/or psychology would be an asset. Prior experience with another research laboratory would also be valuable.
Research Summary	My research laboratory explores the association between sleep disorders with various neurological conditions such as stroke, dementia, cognitive impairment, spinal cord injury, myasthenia gravis, and eye disease.
Keywords	sleep disorders, neurology, ambulatory monitoring, neurophysiology, brain imaging
Lab location	Sunnybrook Health Sciences Centre
Available Funding	Yes;Awaiting results;
Relevant Links	https://sunnybrook.ca/research/team/member.asp?t=10&m=586&page=527 https://sunnybrook.ca/team/member.asp?t=19&page=24392&m=533
Contact Information	mark.boulos@utoronto.ca

Principle Investigator:	*Urban Emmenegger*
Currently Accepting	**MSc**
Ideal Candidate	Looking for highly motivated candidate interested in cancer care and translational research; prior experience with data extraction/analysis or clinical research beneficial but not a must; basic statistical analysis skills helpful.
Research Summary	Analyzing real-world evidence to improve the care of men with advanced prostate cancer, with special emphasis on maintaining bone health, preventing sarcopenia, integrating genetic testing in day-to-day practice, and improving the care of men with prostate cancer brain metastases. Methods used: retrospective chart analyses; biobanking; genetic testing; option to be involved in clinical trials.
Keywords	prostate cancer, metastasis, drug resistance, sarcopenia, osteoporosis, genetic testing
Lab location	Odette Cancer Centre, Sunnybrook Health Sciences Centre, 2075 Bayview Avenue, Toronto, ON, M4N3M5
Available Funding	Yes
Relevant Links	N/A
Contact Information	Karen Corbett karen.corbett@sunnybrook.ca 416-480-4928

Principle Investigator:	*Dr. Arun Ravindran*
Currently Accepting	**MSc**
Ideal Candidate	A background in neuroscience, psychology, and research statistics is an asset.
Research Summary	The lab focuses on the neuropsychopharmacology of mood and anxiety disorders, including clinical trials of depression, bipolar disorder, and ADHD. They also conduct global mental health work in low- and middle-income countries with a focus on mental health education for youth.
Keywords	mental health education, positive youth development, pharmaceutical treatments, mood and anxiety disorders
Lab location	Centre for Addiction and Mental Health, Queen Street
Available Funding	Yes
Relevant Links	https://www.researchgate.net/profile/Arun-Ravindran-3
Contact Information	Angela Paric angela.paric@camh.ca 416-535-8501 x 36408

Principle Investigator:	*Dmitry Rozenberg*
Currently Accepting	**MSc**
Ideal Candidate	I am looking to recruit 1 to 2 Master's students interested in clinical and translational research evaluating physical function and clinical outcomes in chronic lung disease and lung transplant populations. Previous clinical research experience with data collection and analysis would be an asset.
Research Summary	My research team aims to understand the impact of physical fitness and skeletal muscle function on daily physical function, quality of life, frailty, health care use, and survival before and after lung transplantation. Dr. Rozenberg is applying novel imaging techniques and non-invasive measures to quantify muscle mass, strength and physical function to gain a greater understanding of the functional impairments experienced by transplant patients and their response to rehabilitation.
Keywords	Chronic Lung Disease, Skeletal Muscle, Physical Function, Frailty, Physical Activity
Lab location	Toronto General Hospital Research Institute
Available Funding	Yes
Relevant Links	https://www.uhnresearch.ca/researcher/dmitry-rozenberg
Contact Information	Dmitry.Rozenberg@uhn.ca

Principle Investigator:	*James J. Jung*
Currently Accepting	**MSc**
Ideal Candidate	Looking to work with students interested in data science and machine learning to solve complex problems in surgery using big data and advanced analytics. Working knowledge of R is preferred. Must be fluent in written and spoken English.
Research Summary	1. Artificial Intelligence Early Warning System This is a collaborative study with Data Science and Advanced Analytics at St. Michael's Hospital (led by Dr. Mamdani) and Healthy ML at Massachusetts Institute of Technology (led by Dr. Ghassemi) that focuses on the development, evaluation, and implementation of an early warning system that performs real-time detection of clinical deterioration among hospitalized surgical patients in advance of 12-48 hours or earlier. This state-of-the-art AI platform utilizes recurrent neural network that analyzes electronic medical records to make real-time predictions. Residents involved in this project will learn about how to evaluate a novel intervention in healthcare setting and have opportunities to learn about machine learning in healthcare from a multidisciplinary group of clinical scientists, data scientists, and computer scientists. 2. Development and Evaluation of a Novel Instrument to Measure Quality of Interaction between Human Clinicians and Artificial Intelligence Tools While the number of AI-enabled platforms in healthcare continues to increase, integration of these platforms into the clinical environment has been limited. One barrier to the integration is a lack of understanding how clinicians perceive the AI platforms in their workflow. A preliminary literature search reveals that no standardized tool exists to measure this interaction between human clinicians and the machine, making it difficult to investigate this critical barrier to AI implementation. This project aims to develop a standardized tool to measure the quality of clinician's interaction with AI-enabled systems in healthcare. The involved residents will learn about the processes involved in developing and evaluating a novel measurement tool and providing reliability and validity evidence.

	3. Obesity as a barrier to quality care It is predicted that by 2030, half of Americans will suffer from obesity and a quarter will suffer from severe obesity. Severe obesity (BMI 40 or greater) will be the most prevalent BMI category for significant factions of the population, including women, non-Hispanic black adults, and low-income adults. Yet, hospital equipment, infrastructure, and human resources are designed for persons with “normal” BMI. Furthermore, clinical protocols, clinical calculations, and normative lab values are derived from non-obese populations. We hypothesize that obesity is a barrier to receiving quality care. Involved residents will learn about health services research and to use large administrative and clinical datasets to test hypotheses.
Keywords	Machine learning, artificial intelligence, outcome prediction, patient safety, obesity, surgery
Lab location	St. Michael's Hospital, Li Ka Shing Knowledge Institute
Available Funding	Yes
Relevant Links	https://scholar.google.ca/citations?user=SMVxKq0AAAAJ&hl=en
Contact Information	james.jung@mail.utoronto.ca 416 864 5622

Principle Investigator:	*Linda Mah*
Currently Accepting	**MSc**
Ideal Candidate	Strong analytic background, previous full-time work experience in a psychology or clinical research lab, strong writing skills, experience with clinical populations or older adults in a clinical or research setting
Research Summary	The Mah Lab focuses on advancing our understanding of the relationship between cognition and emotion in healthy aging and in disorders of older adults, and on applying this knowledge to improve diagnosis and treatment of disorders associated with later life. Research tools include behavioural task paradigms, neuropsychological assessment, structural and functional neuroimaging, non-invasive neurostimulation, and physiological assessment, including measures of heart rate variability.
Keywords	Alzheimer's disease, dementia, depression, biomarkers, neuroimaging, neuropsychological assessment, heart rate variability
Lab location	Rotman Research Institute, Baycrest
Available Funding	Yes
Relevant Links	https://pubmed.ncbi.nlm.nih.gov/?term=Mah+Linda
Contact Information	lmah@research.baycrest.org 416 785 2500 ext 3365

Principle Investigator:	*Tulin Cil*
Currently Accepting	**MSc**
Ideal Candidate	We have a mix of research methods but an ideal candidate is interested/knowledgeable in epidemiology and population data. Any other research experience is also an asset (statistics, qualitative methods, etc.) .
Research Summary	Dr. Cil leads a variety of studies in the field of health services research, with a focus on breast cancer. Research topics include robotic surgical techniques, psychosocial impacts of breast cancer, and medical education.
Keywords	surgical oncology; breast cancer; patient reported outcomes; mixed methods research; systematic reviews; medical education research
Lab location	UHN
Available Funding	Yes
Relevant Links	www.drtulincil.ca
Contact Information	Emma Reel (Research Coordinator) Emma.reel@uhnresearch.ca 416-323-6400 x 4319

Principle Investigator:	*Daphne Korczak MD MSc FRCPC*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Students with a background in psychology, neuroscience, pathophysiology are preferred. Strong academic performance, including a minimum of 2 undergraduate level courses in statistics, is required. Previous research experience is essential, mental health research experience is preferred.
Research Summary	My research activities focus on depression and suicidality among children and adolescents. In our clinical research program in depression, we seek to understand whether adolescents with depression demonstrate early signs of cardiometabolic disease, and to identify biomarkers of cardiometabolic risk that may be amenable to new interventions. We are now testing the effectiveness of the intervention in a multi-site randomized control trial (RCT) at several sites, including SickKids My established team is comprised of cross-disciplinary researchers in child health, graduate and postgraduate trainees, research staff, and collaborators. Students are expected to participate in regular meetings, determine a feasible research question and analytical plan, conduct data analyses, and summarize results for oral and written dissemination in the form of scientific publication(s).
Keywords	child and adolescent mental health; youth suicide prevention; depression; cardiovascular risk; cardiometabolic risk;
Lab location	SickKids
Available Funding	Yes
Relevant Links	https://www.korczaklab.com/
Contact Information	daphne.korczak@sickkids.ca 416 813 8923

Principle Investigator:	*Karen Davis*
Currently Accepting	**MSc; PhD**
Ideal Candidate	n/a
Research Summary	My lab examines individual differences in pain sensitivity, pain-attention interactions, and plasticity in healthy and chronic pain conditions. We use brain imaging (MRI, MEG), psychophysics, and machine learning.
Keywords	pain, attention, fMRI, MEG, psychophysics, connectivity
Lab location	UHN-TWH Krembil Brain Institute
Available Funding	Yes
Relevant Links	https://www.uhnresearch.ca/researcher/karen-d-davis
Contact Information	karen.davis@uhnresearch.ca

Principle Investigator:	*Maryam Faiz*
Currently Accepting	**MSc; PhD**
Ideal Candidate	I want an enthusiastic student who loves brain development or injury and is interested in single cell omics.
Research Summary	My lab is interested in astrocyte heterogeneity and how it is established, the roles of astrocytes in the injured/diseased brain, and how this knowledge can inform future therapeutic interventions. Some areas of research in the Faiz Lab include: direct lineage reprogramming of astrocytes to other neural cell types (neurons and oligodendrocytes), the role of neural stem cell derived reactive astrocytes after injury, and the development of cortical astrocytes from neural stem cells. She is also fascinated by the gut-brain axis, and how the gut can mediate recovery from brain injury, which may also involve astrocytes!
Keywords	astrocytes, reprogramming, single cell transcriptomics, microbiome, cortical development
Lab location	Medical Sciences Building
Available Funding	Yes; Awaiting results
Relevant Links	www.faiz-lab.com
Contact Information	maryam.faiz@utoronto.ca 416 978 2287

Principle Investigator:	*David Castle*
Currently Accepting	**MSc; PhD**
Ideal Candidate	We seek students eager to learn, who work hard and want to succeed but who always hold patient care at the centre of their value system
Research Summary	We have a series of projects applying the MRC Framework for Complex Interventions to mental health and substance abuse problems. We seek to develop and test these interventions using a range of methods.
Keywords	severe mental illness, mental health, substance use, metabolic syndrome, diabetes
Lab location	CAMH
Available Funding	Yes
Relevant Links	CAMH website
Contact Information	david.castle@camh.ca

Principle Investigator:	*Beverley A. Orser, MD, PhD*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Highly motivated candidate(s) should have taken some neuroscience courses preferably with lab experience.
Research Summary	Targeting a subtype of GABAA receptors in the brain to treat cognitive deficits in neurological and neuropsychiatric disorders. Electrophysiological recording, biochemical and behavioral assays are used in mice models.
Keywords	GABAA receptors, tonic inhibition, perioperative neurocognitive disorders, depression, cognition
Lab location	Department of Physiology, MSB Room 3318
Available Funding	Yes
Relevant Links	http://orserlab.com/ http://perioperativebrainhealth.com/
Contact Information	Dianshi Wang, MD, PhD dianshi.wang@utoronto.ca 416-9781518

Principle Investigator:	*Lena Serghides*
Currently Accepting	**MSc; PhD**
Ideal Candidate	N/A
Research Summary	To investigate the impact of different HIV antiretroviral classes on nutrient transporter expression and activity in the placenta and its relation to fetal growth restriction seen in pregnancies affected by HIV. This is a collaborative project between the Serghides Lab and the Bendayan Lab.
Keywords	HIV, antiretroviral safety, placenta, nutrient transport, fetal growth, pregnancy
Lab location	PMCRT - Toronto General Hospital
Available Funding	Yes
Relevant Links	www.serghides.ca www.uhnresearch.ca/researcher/lena-serghides
Contact Information	lena.serghides@utoronto.ca

Principle Investigator:	*Ajoy Vincent*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Looking for a motivated student with background knowledge in genetics. Wet lab experience in various genetics techniques and a strong background in statistics will be preferred.
Research Summary	Research focus 1: In our lab, we recently discovered key genetic disorders that affect the polyunsaturated fatty acid (PUFA) metabolism leading to Hereditary Macular Dystrophy. We are actively studying them to uncover the role of lipid dysregulation in macular dystrophy and macular/retinal degeneration. We are using patient derived cell line approaches (lymphoblast and fibroblast) and transgenic mouse model. Research focus 2: Missing heritability in Inherited Retinal Dystrophies (IRDs) continue to be the research focus of the lab. Our lab continues to recruit unsolved cases from the eye genetics clinic. We aim to do whole genome sequencing (with or without RNA sequencing and linkage analysis) in about 5-10 pedigrees each year to identify missing genes/variants. We have an excellent track record of identifying missing heritability in IRDs and the graduate students have opportunity to study such pedigrees and perform functional assays. Our hypothesis is that a significant portion of missing heritability will be explained by deep intronic variants and structural variants that have not yet been thoroughly explored in IRDs.
Keywords	Inherited Retinal dystrophy; Hereditary Macular Dystrophy; Lipid metabolism; genome sequencing; RNA sequencing; mice models
Lab location	Sickkids (PGCRL -14 floor)
Available Funding	Awaiting results
Relevant Links	
Contact Information	Dr. Kashif Ahmed Kashif.Ahmed@sickkids.ca

Principle Investigator:	*Bernard Le Foll*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Clinical training background preferred
Research Summary	The main goal of the research is to improve treatment of drug addiction. For this purpose, several clinical trials and lab-based studies have been implemented to test novel treatment interventions for various substance use disorders. Various drugs of abuse (cannabis, alcohol, tobacco, opiates) are being studied. Several studies have been implemented to study the negative impact of cannabis (for ex, addictive potential, impact on driving abilities) and the possible positive impact (studying the medical potential of cannabis). The impact of substance use is also studied with basic research approaches (notably brain imaging) and epidemiological studies in large cohorts of subjects.
Keywords	opioid, alcohol, tobacco, cannabis, psychostimulant, obesity
Lab location	CAMH
Available Funding	Yes;
Relevant Links	https://www.camh.ca/en/science-and-research/science-and-research-staff-directory/bernardlefoll
Contact Information	Bernard.lefoll@camh.ca

Principle Investigator:	*Linda Hiraki, MD, ScD - Clinician Scientist*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Students will join a SickKids research team working with patient data, conducting research to improve the lives of children and families with rheumatologic diagnoses. Experience and knowledge with genetics and epidemiology or biostatistics is highly encouraged. Programming skills are an asset.
Research Summary	Dr. Hiraki's current research interests include examining the genetic contribution to complex, rheumatic diseases and their associated long-term outcomes. She is applying methods that take advantage of rich, longitudinally collected clinical data along with both common and low-frequency genetic variants to discover new genetic associations with manifestations and complications of the complex disease. Hiraki is also employing novel methods to transethnic studies of admixed populations with complex diseases. She is also studying rare monogenic systemic inflammatory diseases and neonatal lupus.
Keywords	Genetic epidemiology, Rare disease, biostatistics, Lupus, Paediatrics, Outcomes
Lab location	SickKids - Genetics & Genome Biology, Research Institute and the Division of Rheumatology
Available Funding	Project dependent. Encourage trainees to also seek funding.;
Relevant Links	https://www.sickkids.ca/en/staff/h/linda-hiraki/
Contact Information	Tiffany Lagman tiffany.lagman@sickkids.ca 416-813-7654 x228108

Principle Investigator:	*Mark Sinyor*
Currently Accepting	**MSc; PhD**
Ideal Candidate	I am looking for enthusiastic students with a passion for gaining new knowledge, a desire to help advance the field of suicide prevention, a strong academic track record including demonstrated research skills, and who works well in teams. Experience with SPSS, REDCap, qualitative coding, and school-based research are all potential assets depending on the specific graduate project.
Research Summary	My lab focuses on investigations of suicide prevention at a population-level. Much of my research relates to public messaging about suicide. Specifically, I conduct quantitative and qualitative studies examining suicide-related mainstream and/or social media content and its impact on suicide rates. I also have access to a large coroner's database which we use to identify the specific factors and clinical characteristics involved in suicide in order to inform prevention efforts such as means restriction strategies (e.g. barriers on bridges). I also do some research into translational efforts. For example, we have a large ongoing study examining a school-based intervention I created for suicide prevention in which middle-schoolers read a Harry Potter novel and learn how to cope with distress. Lastly, I have some ongoing studies examining the impact of the COVID-19 pandemic on suicide outcomes.
Keywords	suicide; suicide prevention; media; social media; school-based studies; COVID-19
Lab location	Sunnybrook Health Sciences Centre
Available Funding	Yes
Relevant Links	https://www.bmj.com/content/341/bmj.c2884 https://www.bmj.com/content/368/bmj.m575 https://www.bmj.com/content/375/bmj-2021-067726 myowl.org

Contact Information	Samara Frankel samara.frankel@sunnybrook.ca 416-480-4070

Principle Investigator:	*Etienne Sibille*
Currently Accepting	**MSc; PhD**
Ideal Candidate	wetlab experience in cell and/or molecular biology computational biology rodent models
Research Summary	We investigate the cellular and molecular mechanisms of depression and age-related disorders, using human postmortem brains and genetic/environmental mouse models. We then design and test innovative therapeutic strategies, including novel small molecules, for clinical development.
Keywords	depression, aging, molecular, models, mechanisms, theurapeutics
Lab location	CAMH college street campus
Available Funding	Awaiting results
Relevant Links	https://nda-sibille.ca/ Publications - Search pubmed for "Sibille e"
Contact Information	etienne.sibille@camh.ca

Principle Investigator:	*Katalin Szaszi*
Currently Accepting	**MSc; PhD**
Ideal Candidate	I am looking for students interested in basic experimental research aiming at uncovering molecular mechanisms of disease. Prior experience in cell culture work, biochemical and cell biology approaches and/or work with animal tissues is an advantage.
Research Summary	We investigate the molecular responses of kidney tubular epithelial cells to inflammation, a key factor leading to the development of chronic kidney disease. We use cell biology and biochemical approaches in cultured tubular cells, and validate findings in mouse kidney disease models.
Keywords	kidney disease, inflammatory signalling, epithelial cell biology, molecular mechanisms, tubular epithelium, mouse kidney disease model
Lab location	St Michaels' Hospital (Keenan Research Center)
Available Funding	Yes
Relevant Links	http://stmichaelshospitalresearch.ca/researchers/katalin-szaszi/
Contact Information	katalin.szaszi@unityhealth.to

Principle Investigator:	*Carmela Tartaglia*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Imaging and psychology background is an asset
Research Summary	1. Clinical research for discovery of biomarkers to better detect neurodegenerative diseases 2. Discovery of biomarkers for concussion and delayed effects of concussion
Keywords	biomarkers, neurodegeneration, concussion, persisting symptoms of concussion, imaging
Lab location	Tanz Centre for Research in Neurodegenerative Diseases, University of Toronto
Available Funding	Yes
Relevant Links	https://tanz.med.utoronto.ca/faculty/carmela-tartaglia https://www.uhn.ca/Krembil/Research/Projects/Canadian_Concussion_Centre https://www.uhn.ca/PatientsFamilies/Search_Doctors/Pages/doctor_detail.aspx?doctor=266
Contact Information	carmela.tartaglia@utoronto.ca

Principle Investigator:	*Istvan Mucsi*
Currently Accepting	**MSc; PhD**
Ideal Candidate	N/A
Research Summary	clinical epidemiology; administrative data; cohort studies; validation studies; qualitative research
Keywords	living donor kidney transplantation, access to care, ethnocultural disparities, patient reported measures, quality of life, integrated care models
Lab location	University Health Network
Available Funding	Yes
Relevant Links	https://nefros.net/
Contact Information	Lidiia Iunashko Lidiia.Iunashko@uhn.ca 416-340-4084

Principle Investigator:	*Sheena josselyn*
Currently Accepting	**MSc; PhD**
Ideal Candidate	I am looking for all types of motivated students, especially those with a computational background.
Research Summary	My lab is interested in understanding how the brain encodes, stores and retrieves information. We primarily use mouse models.
Keywords	optogenetics, memory, two-photon calcium imaging, amygdala, hippocampus
Lab location	SickKids
Available Funding	Yes
Relevant Links	www.jflab.ca
Contact Information	sheena.josselyn@sickkids.ca

Principle Investigator:	*Venkat Bhat*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Neuroscience/related disciplines, team is interdisciplinary, other pertinent backgrounds are considered. http://stmichaelshospitalresearch.ca/research-programs/interventional-psychiatry/the-team/
Research Summary	Novel pharmacology/neurostimulation/digital interventions Brain mechanisms of treatment response Clinical trials and database analysis Interdisciplinary research
Keywords	Interventional Psychiatry-Pharmacology/anaesthetics, neurostimulation, digital
Lab location	St. Michael's Hospital & Toronto Western Hospital
Available Funding	Yes
Relevant Links	http://stmichaelshospitalresearch.ca/research-programs/interventional-psychiatry/
Contact Information	Interested students can contact me at venkat.bhat@utoronto.ca

Principle Investigator:	*Wilton van Klei*
Currently Accepting	**MSc; PhD**
Ideal Candidate	This is a CIHR funded project on improving (Covid-related) surgical wait list management. Some (basic) knowledge on clinical epidemiology / health services and outcomes research would help.
Research Summary	Perioperative clinical epidemiology (both retrospective-database and prospective) and health services research.
Keywords	Perioperative, anesthesia, surgery, clinical epidemiology
Lab location	UHN - Toronto General
Available Funding	Yes
Relevant Links	https://www.uhnresearch.ca/researcher/wilton-van-klei
Contact Information	Sarah Russell Sarah.Russell@uhn.ca

Principle Investigator:	*Trung Le*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Prefer to have at least 12 months of bench-work hands-on experience outside of undergraduate lectures or courses. Must have comfortable and excellent handling skills for different animal models (mice, rats, guinea pigs). Prefer to have competitive GPA (>3.7) to apply for scholarship. Application should be sent with 3 reference letters.
Research Summary	Our lab focuses on therapeutic delivery to the inner ear to treat different types of hearing loss and vestibular disorders. We're interested in both local and systemic delivery that are safe and effective as the inner ear is a deep, fragile and complex structure to explore. Magnetic targeting and manipulation of Blood-labyrinth barrier are promising delivery techniques to be validated and can be potentially applied to clinical setting.
Keywords	hearing loss, gene therapy, drug delivery, blood labyrinth barrier, magnetic targeting, clinical trial
Lab location	Sunnybrook Research Institute
Available Funding	Awaiting results;
Relevant Links	https://sunnybrook.ca/team/member.asp?t=14&page=2152&m=754 https://scholar.google.com/citations?user=g_00Zu0AAAAJ&hl=en
Contact Information	Jennifer Nguyen trung.le@sunnybrook.ca 416-480-4141

Principle Investigator:	*Dr. Mojgan Hodaie*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Background in neuroscience, biology, neuroanatomy. Previous expertise in coding (Python, R), AI machine learning, and MR imaging processing frameworks (Freesurfer, FSL, MRTrix) will be considered an asset.
Research Summary	The Hodaie Lab utilizes neuroimaging techniques (e.g. MRI) to study the clinical pathology of chronic neuropathic facial pain, especially trigeminal neuralgia (TN). We investigate the structural nerve and brain abnormalities in TN patients by analyzing brain imaging data, including the microstructure of trigeminal nerve, brain gray matter and white matter, and their connectivity. We also examine the analgesic mechanism of neurosurgical interventions (e.g. microvascular decompression surgery, Gamma Knife radiosurgery) on nerve and brain of TN patients. Advanced statistical and computational approaches, such as machine learning and artificial neural networks, are performed for data analyses. We use the artificial intelligence (AI) models to reconstruct MRI sequences, classify neurological conditions including TN, and characterize the brain signatures of chronic facial pain. We utilize several machine learning approaches to predict the successful surgical outcome for TN patients. More recent focus includes understanding of brain aging, memory and cognition in trigeminal neuralgia and chronic neuropathic pain.
Keywords	Structural brain imaging, tractography, functional neurosurgery, neuropathic pain, Gamma knife radiosurgery, AI machine learning
Lab location	Toronto Western Hospital
Available Funding	Yes
Relevant Links	https://www.hodaielab.com/
Contact Information	mojgan.hodaie@uhn.ca or HodaieLab@gmail.com 416-603-6441

Principle Investigator:	*Elise Heon*
Currently Accepting	**MSc; PhD**
Ideal Candidate	student should be resourceful with some genetic/molecular biology knowledge. Student must be curious and motivated to make a difference.
Research Summary	Our Lab focusses on deciphering the molecular aspects underlying inherited retinal diseases. We focus on cases that have not been solved using clinical genetic testing using genome sequence and/or RNAseq. New variants are rare and often non-coding. we developed a strategy to analyse the non-coding genome, assessing the epigenome, copy number variants, transposon etc. Different functional assays follow to validate the variants identified. This work is very important as some of these condition are amenable to novel therapies.
Keywords	blindness, inherited retinal disease, genome sequencing, variants, non-coding
Lab location	Sickkids, PGCRL 14th floor
Available Funding	Yes
Relevant Links	Elise Heon
Contact Information	Erika Tavares Lab Manager erika.tavares@sickkids.ca 416-813-7654 xt 1510

e Investigator:	*Nomazulu Dlamini*
Currently Accepting	**MSc;PhD;**
Ideal Candidate	I am looking for students with an interest in Pediatric Stroke Research. Some areas of expertise and interest includes analyzing and working with Longitudinal (registry) data, working with data from international cohorts, analyzing and interpreting brain imaging data (MRI and MRA), Genetics discovery (genetics related to stroke susceptibility).
Research Summary	I am a Staff Paediatric Neurologist at The Hospital for Sick Children with an academic appointment as an Assistant Professor at the University of Toronto. My sub-specialty expertise is in Paediatric Stroke. In my clinic and academic capacity as an Associate Scientist in the Research Institute, Associate Director of the Stroke Research Program and Director of Education for the Stroke Program I am interested in directly supervising M.Sc and/or Ph.D. students, and being involved in academic activities. My preferred appointment level is as a Full Member. The Sickkids Research Institute is headquartered in the Peter Gilgan Centre for Research and Learning (PGCRL). Completed in 2013, the PGCRL is the largest high-rise research facility in Canada. My lab is located on the 12th floor of the PGCRL. Here, I have a private office and study desks for my research staff members and trainees use. Contemporary PGCRL facilities that are available to me and my team include conference and meeting rooms, high performance computing and storage, specialized tele-networking systems and equipment infrastructure. The PGCRL also houses one of Canada's most complete suites of research core facilities and services. These include: professional mentoring, research ethics, financial and budget management, legal expertise and grant development. These facilities are partly subsidized, and offer training and tutorials for students, post-doctoral fellows and technicians.
Keywords	pediatric stroke, Stroke Imaging Lab for Children. International Pediatric Stroke Study, Sickkids Stroke Registry

Lab location	Sickkids
Available Funding	Yes;
Relevant Links	https://www.sickkids.ca/en/staff/d/noma-dlamini/
Contact Information	Administrative Assistant - Jennifer Hyde- jennifer.hyde@sickkids.ca 416-813-7721 X207721

Principle Investigator:	*Kathryn Howe*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Ideally seeking a PhD student, who would be co-supervised by Dr. Jason Fish. Serious MSc candidates also welcome to apply. This can be discussed further during an informal meeting as required. Ideal if the student (MSc or PhD) has previous wet lab research in cell culture, molecular biology, and mouse models. These are not pre-requisites, but would be an advantage for understanding and driving the project. Person should be open-minded, inclusive, team-oriented, and self-motivated. Our lab is highly collaborative and works cohesively with many in the Cardiovascular group within TGHRI.
Research Summary	We are investigating the role of endothelial communication in atherosclerotic plaques. Specifically, our lab is looking at extracellular vesicle-derived microRNA and proteins that regulate the function of other cells (macrophages and vascular smooth muscle cells). We have translational work that is looking at human carotid plaques to better identify the vulnerable plaques so that we can reduce stroke risk. We have obtained exciting preliminary findings showing that EVs produced by cells lining blood vessels contain distinct markers that might distinguish patients at risk of stroke compared to those who remain well. These markers are microRNAs, which are fragments of genetic material that prevent the production of proteins, and thus are capable of modulating the function of cells. EVs are taken up by other cells and in this way, act as "communicators of disease" or "distress signals". Our laboratory uses cell culture models, animal models, and human tissue from carotid endarterectomies. The proposed project is to be part of exciting new research based upon a novel mouse model for tracking EVs in atherosclerotic plaques.
Keywords	endothelial cells, extracellular vesicles, atherosclerotic plaques, carotid artery disease, stroke, microRNA
Lab location	PMCRT 3-801G
Available Funding	Yes
Relevant	https://surgery.utoronto.ca/faculty/kathryn-howe

Links	https://www.uhnresearch.ca/researcher/kathryn-l-howe
Contact Information	Kathryn.howe@uhn.ca

Principle Investigator:	*Farooq Naeem*
Currently Accepting	**MSc; PhD**
Ideal Candidate	N/A
Research Summary	Cognitive Therapy Culture
Keywords	cognitive therapy culture cultural psychiatry
Lab location	33 Ursala Franklin St
Available Funding	Awaiting results
Relevant Links	
Contact Information	farooq.naeem@camh.ca

Principle Investigator:	*Mingyao Liu*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Candidates with interests and experience in bioinformatics, cell culture, animal modeling, or biochemistry/histology/lung physiology will be considered.
Research Summary	We focus on acute lung injury, repair and regeneration in lung transplants. In particular, we have used bioinformatics to determine the cellular molecular mechanisms of ischemia-reperfusion injury in lung transplants and their relationship with early clinical outcome post-transplantation. Transcriptomics (microarray, RNA-seq, sc-RNA-seq) and metabolomics are our major tools. We are developing new preservation solutions for donor lungs and new techniques (e.g., dialysis) and new perfusates to improve ex vivo lung perfusion (EVLP) for donor lung repair and reconditioning. Cell culture models and pig/human EVLP models are used, in collaboration with our surgical team. We also study different types of inflammatory cell death (e.g., necroptosis, pyroptosis and ferroptosis) in lung transplants.
Keywords	Lung transplantation, bioinformatics, cell death, cell culture, lung preservation, ex vivo lung perfusion
Lab location	UHN
Available Funding	Yes
Relevant Links	https://www.uhnresearch.ca/researcher/mingyao-liu
Contact Information	mingyao.liu@utoronto.ca

Principle Investigator:	*Cynthia T. Luk*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Candidates should have a strong interest in basic science laboratory-based medical research related to diabetes, obesity, cardiovascular disease or related health problems. We value a strong sense of responsibility, initiative, teamwork and good communication skills.
Research Summary	Our work focuses on basic science research identifying novel links between obesity and diabetes, and determining the role of adipose tissue in metabolic syndrome. We study fundamental cell death or related signaling pathways to determine their role in obesity, diabetes, cardiovascular disease or related health problems, to help us better understand and address these conditions. Common techniques that we use include studying mouse models of diabetes, obesity and cardiovascular disease and generating conditional knockout animals. Our lab uses many basic molecular biology techniques such as Western blotting, PCR, qPCR, histology and cell culture. We are a small group and students are encouraged and expected to participate in lab meetings, talks, preparing manuscripts, award applications and general help in the lab.
Keywords	diabetes, obesity, metabolic syndrome, adipose tissue, molecular biology, knockout mice
Lab location	St. Michael's Hospital (Li Ka Shing Knowledge Institute)
Available Funding	Yes
Relevant Links	https://www.nature.com/articles/ncomms14360?origin=ppub
Contact Information	Dr. Rukhsana Aslam Rukshana.Aslam@unityhealth.to

Principle Investigator:	*Tarek Rajji*
Currently Accepting	**MSc; PhD**
Ideal Candidate	
Research Summary	Brain stimulation, neurophysiology and cognitive disorders
Keywords	Alzheimer's, cognition, EEG, TMS, cognition
Lab location	CAMH
Available Funding	Yes
Relevant Links	www.tdra.utoronto.ca
Contact Information	tarek.rajji@camh.ca

Principle Investigator:	*Moumita Barua*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Students with aptitude in programming are particularly suited for our human genetic studies. Other assets are previous experience with mouse husbandry but is not required.
Research Summary	The starting point of our research is to perform genetic studies in adults with kidney disease using patient and population based cohorts. We use our genetic discoveries to prioritize clinically relevant models, in which we study disease mechanisms. The lab is currently funded by 2 CIHR and an Alport syndrome grant. The 3 main projects in the lab are: 1. Genome-wide association studies of renal outcomes, including FSGS, albuminuria and hematuria - funded by CIHR and Alport syndrome foundation 2. Pax2 mediates glomerular repair - funded by CIHR 3. Mechanisms in Alport syndrome - an emerging project in the lab We are looking for highly motivated trainees to join our team on any one of these projects.
Keywords	kidney disease, statistical genetics, molecular genetics, disease models
Lab location	Toronto General Hospital
Available Funding	Yes;
Relevant Links	https://facdir.deptmedicine.utoronto.ca/Detail.aspx?id=2557&showdivisiontitle=1&division_id=N02
Contact Information	Sarah Wilson sarah.wilson@uhnresearch.ca 416-340-4800 ext 8007

Principle Investigator:	*Robert Chen*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Experience in neuroscience, biomedical signal processing or neuroengineering
Research Summary	Our laboratory investigates human motor control and movement disorders, and develops new treatments using novel invasive and non-invasive neuromodulation methods
Keywords	transcranial magnetic stimulation, transcranial ultrasound stimulation, deep brain stimulation, electroencephalography, magnetoencephalography, MRI
Lab location	Krembil Research Institute, University Health Network
Available Funding	Yes
Relevant Links	https://www.uhnresearch.ca/researcher/robert-e-w-chen
Contact Information	robert.chen@uhn.ca

Principle Investigator:	*Robert Kridel*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Looking for a student with experience in (or willingness to learn) computational biology (R, Python, bash).
Research Summary	We have an interest in B-cell lymphomas and are focusing on scenarios that are associated with poor outcome such as early progression after treatment, transformation to aggressive lymphoma and relapse in the central nervous system. We are applying cutting-edge tools to primary patient samples to unravel tumour heterogeneity and to develop novel, innovative biomarkers to predict outcome in lymphoma. Furthermore, we are leveraging novel findings from discovery platforms to elucidate mechanisms of lymphoma pathogenesis, tumour evolution and treatment resistance. Our ultimate goal is to improve patient outcomes through a better understanding of the diversity of responses to treatment and by tailoring therapy to each individual patient.
Keywords	Lymphoma genomics, translational research
Lab location	Princess Margaret Cancer Research Tower
Available Funding	Yes
Relevant Links	http://kridel-lab.ca/
Contact Information	robert.kridel@uhn.ca

Principle Investigator:	*Dr. Anne S. Bassett*
Currently Accepting	**MSc; PhD**
Ideal Candidate	The student will have the opportunity to formulate a feasible research question of interest within the framework of our existing patient populations and data resources. Suggested topics include delineating the multi-system expression in genetic subtypes of tetralogy of Fallot or schizophrenia, studying genetic pathways to abnormal cardiac or brain development and related diseases, and identifying prenatal and obstetrical risk factors related to developmental disorders of the heart or brain. Responsibilities will include designing the specific details of the project, coordinating data collection and analysis, presenting results at local and/or international venues, and writing a manuscript suitable for publication in a peer-reviewed medical journal. The student will have the option to participate in an academic clinic where we see relevant patients with diagnosed and yet to be diagnosed genetic conditions, and to hone assessment and related skills. The student will report directly to the PI who provides substantial mentorship and guidance with regular weekly or biweekly meetings. Expert collaborators and senior students and trainees are also available to the student.
Research Summary	Ours is a clinical research lab. We study the genetic architecture that underlies developmental conditions, focusing on those involving the heart and the brain, but also other systems. The identification of clinical and genetic markers for these diseases allows for earlier diagnosis and the potential for improved outcomes. We pursue this pioneering research of human genetic diseases at the Centre for Addiction and Mental Health, at the Toronto General Hospital, and with colleagues at The Centre for Applied Genomics (SickKids). Our extensive genetic and clinical data offer the opportunity to discover new pathways to fundamental disease mechanisms and to improve clinical outcomes. We also study the burden of illness on patients, families and the healthcare system. Resources include whole genome sequencing and microarray data, comprehensive clinical and long-term outcome data, and patient populations with congenital cardiac disease, schizophrenia, endocrine/metabolic disorders, intellectual disability, early-onset Parkinson's disease, and multi-system disease. Together with the student, we will choose a feasible study that fits the student's interests and skill set. Examples of recent

	projects include mortality in adults with tetralogy of Fallot, and diabetes in adults with 22q11.2 deletion syndrome. Students likeliest to succeed are those with a background, skills and interest in genetics, clinical phenotypes and mechanisms, bioinformatics, biostatistics and/or programming (e.g., in R). Our research results demonstrate the potential to be translated into clinical practice, and/or have public health implications.
Keywords	Genetics; Brain; Heart; Developmental; Sequencing; Congenital defects; Schizophrenia; Bioinformatics
Lab location	CAMH & TGH
Available Funding	Yes;
Relevant Links	www.22q.ca
Contact Information	Gladys Wong Gladys.wong@camh.ca 416-535-8501 x32734

Principle Investigator:	*Daniel Felsky*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Experience with statistics and statistical computing (R/Python) is required. Experiential assets: machine learning, bioinformatics, population modelling, human genetics (computational), neuroimaging.
Research Summary	The Whole Person and Population Modelling Group specializes in computational modelling of mental health outcomes using multi-disciplinary biopsychosocial data types and machine learning
Keywords	Mental Health, Integrative modelling, genetic risk, epidemiology, multi-disciplinary
Lab location	Krembil Centre for Neuroinformatics, CAMH
Available Funding	Yes
Relevant Links	www.felskylab.com
Contact Information	daniel.felsky@camh.ca

Principle Investigator:	*Russell Schachar*
Currently Accepting	**MSc; PhD**
Ideal Candidate	excellent academic, publication and written skills required
Research Summary	Genetic, phenotypic, cognitive and environmental research into neurodevelopmental disorders (ADHD, OCD, ASD)
Keywords	genetics, cognitive neurosciences, environmental risk
Lab location	The Hospital for Sick Children
Available Funding	Yes
Relevant Links	https://lab.research.sickkids.ca/schachar/
Contact Information	russell.schachar@sickkids.ca

Principle Investigator:	*Reina Bendayan*
Currently Accepting	**MSc; PhD**
Ideal Candidate	A student with a strong academic background in the biological/biochemical/biomedical sciences and preferably with some relevant research experience acquired in undergraduate research courses and/or summer undergraduate program. Students with a Master's degree wanting to complete a PhD program are preferred.
Research Summary	Our research is focused on the field of regulation of drug transport at several mammalian blood-tissue barriers, in particular, in the context of HIV and COVID-19 pharmacotherapy.
Keywords	Pharmacology, Pharmacokinetics, HIV-Pharmacotherapy, Drug Transport, Regulation of Drug Transporters, Folate Transport
Lab location	Leslie Dan Faculty of Pharmacy, U of T St-George Campus
Available Funding	Yes
Relevant Links	https://www.pharmacy.utoronto.ca/faculty/reina-bendayan-professor
Contact Information	r.bendayan@utoronto.ca

Principle Investigator:	*Osami Honjo*
Currently Accepting	**MSc; PhD**
Ideal Candidate	N/A
Research Summary	Our research has 2 platforms: one is translational research focusing on ex-vivo heart perfusion to optimize heart transplant donor organ and the other is clinical research regarding decision-making and outcome of congenital heart surgery.
Keywords	Congenital heart surgery; pediatric cardiovascular surgery; heart transplantation; decision science; ex-vivo heart perfusion
Lab location	SickKids
Available Funding	Yes
Relevant Links	https://www.sickkids.ca/en/staff/h/osami-honjo/ https://www.utcardiacsurgery.com/index.php/faculty/our-faculty?id=68
Contact Information	Elizabeth Kim elizabethi.kim@sickkids.ca 416-813-6420

Principle Investigator:	*Tanja Gonska*
Currently Accepting	**PhD; MSc**
Ideal Candidate	I am looking for ideally a PhD student to conduct this very interesting and highly rewarding translational research project. While always being technically supported, the student is expected to work independently at one point as well as collaboratively in lab and clinical team. Student should have some basic lab experience, basic epithelial physiology knowledge and need to be open to learn new methodology.
Research Summary	We are assessing CFTR function in airway and intestinal epithelial tissue generated from biopsies of individual CF patients. Current research will target patients with a CFTR-related disorder to understand association between degree of dysfunction and clinical phenotype and to assess response to new CFTR modulator drugs.
Keywords	Cystic Fibrosis, translational research, epithelial physiology, CFTR function, pre-clinical testing
Lab location	SickKids PGRL
Available Funding	Yes
Relevant Links	https://www.sickkids.ca/en/news/archive/2021/study-identifies-potential-predictor-for-developing-cystic-fibrosis-for-children-with-inconclusive-diagnosis/
Contact Information	tanja.gonska@sickkids.ca 416 813 7735 Sandra Layno

Principle Investigator:	*Sharmistha Mishra*
Currently Accepting	**PhD; MSc**
Ideal Candidate	We welcome discussions for potential MSc thesis and PhD thesis projects with motivated trainees with experience/training and skills/aptitude in epidemiology, statistical analyses, coding; who like problem-solving and methodological challenges, and answering new questions and developing new scholarly knowledge (breaking new ground) in the study of epidemics.
Research Summary	Our research focuses on answering questions about the biological, behavioural, and environmental (health systems and structural) mechanisms that underpin epidemics of infectious diseases (HIV/STIs and emerging and re-emerging infectious diseases such as SARS-CoV-2, Ebola) in different geo-social contexts. We develop and use statistical and epidemic (transmission) models to test hypotheses, and conduct simulation studies to examine epidemiological biases and data uncertainty. A central theme of our work is around heterogeneity in risks of acquisition and transmission, as mediated by social and economic marginalization.
Keywords	Mathematical models; Transmission models; Epidemics; Causal inference; Bias analysis; Predictive models; Impact evaluation; Implementation Science; Program Science
Lab location	St. Michael's Hospital Li Ka Shing Knowledge Institute
Available Funding	Yes
Relevant Links	https://mishra-lab.ca/
Contact Information	Julie Veitch julie.veitch@unityhealth.to

Principle Investigator:	*Aaron Schimmer*
Currently Accepting	**PhD; MSc**
Ideal Candidate	We are searching for bright and energetic students who are interested in pursuing PhD graduate studies. Prior wet lab research experience in cell and molecular biology is required.
Research Summary	Our research focuses on developing new therapeutic strategies for Acute Myeloid Leukemia with an emphasis on mitochondrial pathways and leukemia stem cells
Keywords	AML, translational research, drug discovery, stem cells, mitochondria, metabolism
Lab location	Princess Margaret Cancer Centre
Available Funding	Yes
Relevant Links	
Contact Information	aaron.schimmer@utoronto.ca

Principle Investigator:	*Benjamin Goldstein*
Currently Accepting	**PhD; MSc**
Ideal Candidate	N/A
Research Summary	Dr. Goldstein's research encompasses three aims: 1. to identify biomarkers which enhance clinical decision-making for adolescents with bipolar disorder 2. to advance the understanding of shared biological factors underlying the links between bipolar disorder and cardiovascular disease 3. to examine the impact of novel pharmacological and behavioral treatments on psychiatric and cardiovascular outcomes among youth with bipolar disorder.
Keywords	Bipolar disorder; neuroimaging; vascular; youth; biomarkers
Lab location	CAMH
Available Funding	Awaiting results;
Relevant Links	https://psychiatry.utoronto.ca/faculty/benjamin-goldstein
Contact Information	benjamin.goldstein@camh.ca

Principle Investigator:	*Mario Masellis*
Currently Accepting	**PhD**
Ideal Candidate	Trainees with background knowledge in computer programing and statistics.
Research Summary	Genomics, neuroimaging, cognitive and biomarker evaluation in neurodegenerative diseases, including Alzheimer's disease, Parkinson's disease, dementia with Lewy bodies and frontotemporal dementia.
Keywords	genomics, neurodegenerative disease, neuroimaging, neuropsychological testing, biomarkers
Lab location	Sunnybrook Health Sciences Centre
Available Funding	Yes
Relevant Links	
Contact Information	Flavia Saad flavia.saad@sri.utoronto.ca

Principle Investigator:	*Dr. Ana Konvalinka*
Currently Accepting	**PhD**
Ideal Candidate	I am looking for keen and energetic students, who are detail oriented, excellent team players and communicators, and strong finishers. Any experience in molecular methods or programming will be an asset.
Research Summary	As a clinician scientist and transplant nephrologist, I address unmet clinical needs through basic and translational research. Although my lab works on a broad range of projects, our key areas of interest include antibody mediated rejection and fibrosis in the kidney transplant. We utilize molecular high-throughput approaches on patient-derived tissues, cells and biological fluids to better understand disease mechanisms, followed by focused hypothesis testing in cells, tissues, animals, and ex vivo models. Techniques that we use include: proteomics, bulk and single cell RNA sequencing, metabolic function assessment and data mining. We collaborate broadly.
Keywords	kidney transplant, antibody mediated rejection, fibrosis, proteomics, systems biology
Lab location	MaRS building, PMCC tower, Toronto General Hospital
Available Funding	Yes
Relevant Links	https://www.uhnresearch.ca/researcher/ana-konvalinka https://pubmed.ncbi.nlm.nih.gov/?term=konvalinka+a+%5BAU%5D&sort=date
Contact Information	ana.konvalinka@uhn.ca

Principle Investigator:	*Rupert Kaul*
Currently Accepting	**PhD**
Ideal Candidate	Enthusiastic students with an interest in combining mucosal immunology, community based research and global health.
Research Summary	The Kaul lab performs translational studies of mucosal HIV susceptibility and pathogenesis, together with participant cohorts from Toronto, Kenya and Uganda.
Keywords	HIV transmission; genital immunology; microbiome
Lab location	Medical Sciences Building
Available Funding	Yes
Relevant Links	N/A
Contact Information	rupert.kaul@utoronto.ca 416-316-5704

Principle Investigator:	*Jason Fish*
Currently Accepting	**PhD**
Ideal Candidate	N/A
Research Summary	The Fish lab studies the mechanisms of gene regulation in endothelial cells in health and disease. This includes diseases such as arteriovenous malformation, diabetic cardiomyopathy and chemotherapy-related cardiac dysfunction.
Keywords	cardiovascular disease, endothelial cells, gene regulation, microRNA, inflammation
Lab location	Toronto General Hospital Research Institute
Available Funding	Yes
Relevant Links	https://www.uhnresearch.ca/researcher/jason-fish
Contact Information	jason.fish@utoronto.ca

Principle Investigator:	*Jamie Feusner*
Currently Accepting	**PhD**
Ideal Candidate	Essential: interest in clinical neuroscience and desire for a research career. Desired: 1) experience with neuroimaging, or a strong commitment to learning; 2) familiarity with computing languages such as unix, python, and/or MATLAB.
Research Summary	Our neuroscience research investigates perception, emotion, and reward across conditions involving body image and obsessions and compulsions. We also study gender identity and own body perception. We use neuroimaging, TMS, and novel digital tools.
Keywords	Body dysmorphic disorder, anorexia nervosa, gender dysphoria, body processing, visual processing, transcranial magnetic stimulation
Lab location	CAMH
Available Funding	Yes
Relevant Links	https://www.ncbi.nlm.nih.gov/myncbi/jamie.feusner.1/bibliography/public/ https://bbp.lab.utoronto.ca/
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