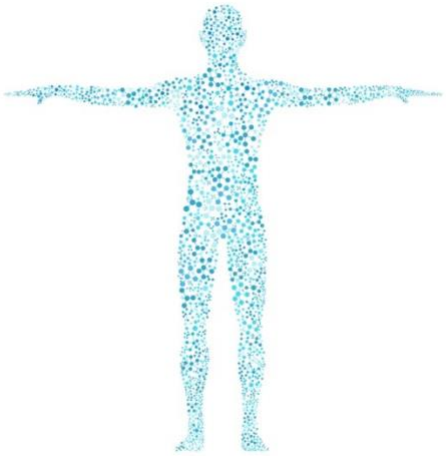
Institute of Medical Science
UNIVERSITY OF TORONTO

IMS Graduate Student Recruitment: September 2025



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
- research summaries, keywords
- supervisor's contact information

This is **not** an exhaustive list of faculty members taking students. We recommend you browse our full faculty list from our Faculty Directory.

Principal Investigator: *Albert Yee*

Currently Accepting	**MSc**
Ideal Candidate	students interested in spinal and orthopaedic conditions. research theme spanning translational research, clinical and education
Research Summary	orthopaedic and spine, translational research, education, pre-clinical models of surgery
Keywords	spine
Lab location	Sunnybrook
Relevant Links	https://sunnybrook.ca/research/team/member.asp?m=187&page=530
Contact Information	albert.yee@sunnybrook.ca 416-480-6815 (Admin Assistant = Ala (Katarzyna) Bankowska

Principal Investigator: *Andrew Beckett*

Currently Accepting	**MSc**
Ideal Candidate	
Research Summary	Lieutenant-Colonel Beckett is also a trauma surgeon and the current Medical Director of the Trauma Program at St. Michael's Hospital, a Level 1 Trauma Centre, in downtown Toronto. His research interests include massive transfusion and resuscitation in the austere setting, combat casualty database management and military simulation training. He is currently an Associate Professor of Surgery at the University of Toronto.
Keywords	Trauma, resuscitation, blood products, combat casualty care,
Lab location	SMH
Relevant Links	
Contact Information	andrew.beckett@unityhealth.to 647-446-9404

Principal Investigator: *Anne Bassett*

Currently Accepting	**MSc; PhD**
Ideal Candidate	The student will have the opportunity to formulate a feasible research question of interest give our existing patient populations and data resources. Suggested topics include delineating multi-system expression in genetic subtypes of tetralogy of Fallot or schizophrenia and studying genetic and developmental risk pathways. Responsibilities will include designing 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	There is a large genetic component to risk for developmental conditions, including congenital heart disease and neuropsychiatric illness. We study adults with these conditions. Many have multi-system involvement thus wide clinical learning opportunities. Our patient populations and extensive data allow the potential discover new genetic and other insights into patient outcomes. Patients with specific genetic variants provide human models of common diseases. We work at the University Health Network and Centre for Addiction and Mental Health, with renowned local and international collaborators, including geneticists, cardiologists, endocrinologists, neurologists and other specialists. Resources include DNA sequencing data, comprehensive and long-term outcome data, and clinical data across the lifespan for patient populations with tetralogy of Fallot, other congenital heart diseases, treatable psychiatric illness including schizophrenia, and with multi-system genetic conditions. Our clinical and bioinformatics-based research results have the potential to be immediately translated into clinical practice and have public health implications.

Keywords	Genetics; Developmental diseases of the heart and brain; Multi-system disease; 22q11.2 Deletion Syndrome
Lab location	CAMH and TGH
Relevant Links	22q.ca
Contact Information	anne.bassett@utoronto.ca 416-535-8501 x32734

Principal Investigator: *April Khademi*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Engineering background preferred (EE, CE, BME)
Research Summary	AI for Medical Imaging (radiology and pathology images)
Keywords	AI, medical imaging, radiology, pathology, neurology, cancer
Lab location	TMU
Relevant Links	https://www.torontomu.ca/akhademi
Contact Information	akhademi@torontomu.ca 416 979 5000

Principal Investigator: *Behdin Nowrouzi-Kia*

Currently Accepting	**MSc, PhD**
Ideal Candidate	Applicants with an interest in occupational therapy, return to work, vocational rehabilitation are welcome to contact me and learn more about my research program.
Research Summary	The mission of the ReSTORE lab is to identify and assess risk and develop occupation-based interventions for preventing high-risk behaviours, optimizing functioning and improving mental and physical health in the workplace. Please see our website www.restore.rehab
Keywords	workplace mental health, return to work, vocational rehabilitation, occupational therapy, occupational science
Lab location	UofT
Relevant Links	www.restore.rehab
Contact Information	behdin.nowrouzi.kia@utoronto.ca 416-946-3249

Principal Investigator: *Brian Ballios*

Currently Accepting	**PhD**
Ideal Candidate	
Research Summary	The overall goal of our work is to cure retinal blindness by discovering new therapies for inherited and acquired disease. New therapies for retinal degeneration are focused on the next generation of regenerative medicines. These include gene and cell-based therapeutics, including stem cells
Keywords	vision, retina, stem cells, inherited retinal diseases, regenerative medicine
Lab location	Krembil Research Institute, UHN
Relevant Links	https://ballioslab.com/
Contact Information	brian.ballios@mail.utoronto.ca

Principal Investigator: *Caleb Browne*

Currently Accepting	**MSc**
Ideal Candidate	Students with backgrounds in neuroscience, molecular biology, biochemistry, and psychology. Especially students with hands-on research experience with rodent behaviour and biological or circuit neuroscience techniques, as well as abilities with coding.
Research Summary	Neurobiology of motivation and addiction. We use behavioural testing in rats and mice combined with a variety of molecular, cellular, circuit, and imaging approaches.
Keywords	Motivation, addiction, molecular biology, epigenetics, circuits, behaviour
Lab location	CAMH - College Street
Relevant Links	https://www.camh.ca/en/science-and-research/science-and-research-staff-directory/calebbrowne
Contact Information	caleb.browne@camh.ca 4165358501 x34248

Principal Investigator: *Carmela Tartaglia*

Currently Accepting	**PhD**
Ideal Candidate	Magnetic resonance imaging and/or bio fluid assay expertise
Research Summary	I have a biomarker lab in neurodegenerative disease. I focus on bringing precision medicine to patients with Frontotemporal dementia and Alzheimer's disease. I also study the delayed effects of repeated head injury.
Keywords	neurodegeneration, dementia. frontotemporal dementia, CTE, Alzheimer's disease
Lab location	CRND-University of Toronto/UHN
Relevant Links	https://tanz.med.utoronto.ca/carmela-tartaglia
Contact Information	Carmela.tartaglia@utoronto.ca 416-603-5483

Principal Investigator: *Carol Swallow*

Currently Accepting	**MSc; PhD**
Ideal Candidate	I would like to recruit a student who has fundamental post-secondary knowledge of biochemistry, cell and molecular biology, ideally with some previous experience with basic wet lab techniques, and familiarity with principles of statistical analysis. The student should be able to think critically and creatively, problem solve, and present their ideas in a clear, coherent manner. We will work on enhancing these skills over the course of their graduate degree.
Research Summary	My lab focuses on the discovery and validation of biomarkers that reveal aggressive biologic behaviour and resistance to therapy in patients with gastrointestinal cancer. The aim is to improve risk stratification to guide patient selection for major extirpative surgery, and for novel treatment approaches. Projects span wet bench molecular biologic techniques, animal models, pathologic specimen analysis using multiplexed spatial RNA and protein probes, and assessment of clinical outcomes in cancer patients.
Keywords	invasion, metastasis, adenocarcinoma, recurrence, gastric, colorectal
Lab location	Lunenfeld Institute, Sinai Health
Relevant Links	
Contact Information	carol.swallow@sinaihealth.ca 416-586-1558 (Dionne, admin assistant)

Principal Investigator: *Chao Zheng*

Currently Accepting	**MSc; PhD**
Ideal Candidate	The candidate for this position is expected to be a highly self-motivated, with a strong background in organic chemistry and medicinal chemistry, or radiochemistry. Training in pharmacology, neuroscience, and in vivo PET neuroimaging is an asset. Additionally, the candidate is expected to have good written and oral communication skills and an independent ability to design and execute experiments. Candidates with additional experience in the following skills and areas will be preferred but not required: molecular imaging, genetic animal models, and A
Research Summary	Positron emission tomography (PET) is a cutting-edge molecular imaging technique that enables the noninvasive visualization, characterization, and quantification of biological processes at cellular and molecular levels. This course will include the applications of PET imaging in central nervous system (CNS) disorders, particularly focusing on Alzheimer's disease, multiple sclerosis, and neuropsychiatric disorders. The primary objectives of this course are twofold: 1) Discovery of cutting-edge radiopharmaceuticals for brain imaging applications: Students will explore the development and optimization of radiolabeled molecular probes specifically designed for brain imaging. They will learn about the synthesis and characterization of these radiopharmaceuticals and their potential applications in diagnosing and monitoring brain disorders. 2) Developing and applying novel PET imaging methods: Students will learn the design and implementation of innovative PET imaging methods that directly capture biochemical or phenotypic changes in vivo related to brain disorders, specifically for Alzheimer's disease and multiple sclerosis
Keywords	Positron emission tomography (PET), drug development, organic synthesis, neuroimaging, neuropsychiatric disorders
Lab location	CAMH

Relevant Links	https://sites.google.com/view/the-zheng-research-group/home
Contact Information	chao.zheng@camh.ca 4165358501

Principal Investigator: *Charlotte Probst*

Currently Accepting	**MSc**
Ideal Candidate	Looking for Master's students interested in quantitative public health research. Experience with statistical analysis software (preferably R) is advantageous
Research Summary	With my research I aim to understand the social determinants of mental health, alcohol use, and the alcohol-attributable burden of disease, from a global health perspective. Furthermore, I work on digital health solutions for improved surveillance of alcohol use at the population level
Keywords	alcohol use, burden of disease, addiction, inequality, social determinants of health
Lab location	CAMH
Relevant Links	https://www.camh.ca/simah
Contact Information	charlotte.probst@camh.ca 1-416-535-8501 ext. 30588

Principal Investigator: *Christoph Zrenner*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Interest and fundamental understanding of digital signal processing methods. Able to program in MATLAB Interested in working with human study participants to study brain dynamics
Research Summary	The aim of our research is to develop a next generation of personalized neuromodulation intervention with EEG and TMS, treating the brain as a complex dynamic system. We are conducting a number of studies in healthy participants and in patients with neuropsychiatric disorders to determine the individual optimal location (on the cortex) and moment in time (relative to ongoing fluctuating brain-state) to deliver each stimulus
Keywords	TMS, EEG, Real-time, Closed-Loop, Neuromodulation, Brain Dynamics
Lab location	CAMH, 1025 Queen St W
Relevant Links	
Contact Information	christoph.zrenner@utoronto.ca 416 535-8501 x 34319

Principal Investigator: *Chung-Wai Chow*

Currently Accepting	**PhD**
Ideal Candidate	Students with an interest in lung physiology, biostatistics and coding experience will be preferred
Research Summary	We are recruiting PhD students who are interested in lung physiology. Our research is focused on novel techniques to assess lung function using respiratory oscillometry and development of machine learning techniques to improve diagnostic acumen. We have mutiple prospective studies that compare oscillometry with spirometry in different populations with chronic lung diseases
Keywords	respiratory oscillometry pulmonary function tests machine learning biostatistics clinical outcome
Lab location	Toronto General Hospital
Relevant Links	https://chowlab.wordpress.com/
Contact Information	cw.chow@utoronto.ca ; joyce.wu@uhn.ca 416-884-2602

Principal Investigator: *Claude Alain*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Student with a background in psychology and health sciences
Research Summary	Dr Claude Alain and his team are investigating how people perceive, attend to, and remember sounds, and how auditory cognition changes with age. They are using electroencephalography to characterize the time course of brain activity when people process sounds. Dr Alain and his team also use magnetic resonance imaging to obtain brain images that can be used for brain electrical source analysis. They are also using functional magnetic resonance imaging to identify patterns of brain activity that are important for auditory attention and memory
Keywords	Auditory neuroscience, cognitive neuroscience, aging, attention, memory, perception, hearing loss, music training
Lab location	Baycrest Hospital
Relevant Links	
Contact Information	calain@research.baycrest.org 416 785-2500 ext 3523

Principal Investigator: *Corinne Fischer*

Currently Accepting	**MSc**
Ideal Candidate	N/A
Research Summary	My lab focusses on examining the imaging, pathological and clinical correlates of psychosis and associated neuropsychiatric symptoms in patients with dementia. The primary purpose is to use this data to inform possible mechanisms.
Keywords	Alzheimer's disease, psychosis, delusions, hallucinations, neuropsychiatric symptoms
Lab location	SWH
Relevant Links	https://research.unityhealth.to/profiles/corinne-fischer
Contact Information	corinne.fischer@unityhealth.to 416-864-4320

Principal Investigator: *David Mikulis*

Currently Accepting	**MSc**
Ideal Candidate	All students, although engineering background preferred
Research Summary	Dr. Mikulis is Full Professor, Senior Scientist, and Director of the JDMI Cerebrovascular Neuroimaging Lab at the UHN and U of T. His primary emphasis is translational research focusing on translation of novel imaging into the clinic. He established one of the first Canadian fMRI labs in 1993 and is currently investigating: 1) quantitative measurement and clinical application of cerebrovascular reactivity leading to the development of "the Brain Stress Test" that maps the effectiveness of the cerebral vasculature in meeting cerebral metabolic demand, 2) high-resolution imaging of the blood vessel walls for improving the diagnostic accuracy for assessing vasculopathies, and 3) developing a "needle-free" method for mapping brain blood flow. His research has led to publication of over 350 peer-reviewed papers on the assessment of the structure, function, and performance of the vascular system in health and disease including steno-occlusive disease, dementia and traumatic brain injury
Keywords	cerebrovascular reactivity, cerebral blood flow, MRI, cerebrovascular disease, concussion
Lab location	TWH
Relevant Links	Run Pubmed search on Mikulis
Contact Information	David.mikulis@uhn.ca 416-603-5800 x5612

Principal Investigator: *David Rojas*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Trainees interested in medical education, with previous experience in either program evaluation practices or medical education, would be excellent candidates.
Research Summary	We study accreditation processes across medical education, focusing on efficiency, CQI models, outcomes, teacher evaluation, and evolving program evaluation.
Keywords	Accreditation, program evaluation, teacher evaluations.
Lab location	UHN
Relevant Links	
Contact Information	david.rojas@utoronto.ca 647-300-5150

Principal Investigator: *Denis Poddubnyy*

Currently Accepting	**MSc; PhD**
Ideal Candidate	
Research Summary	Dr. Denis Poddubnyy is a Professor of Medicine at the University of Toronto and a Clinician Investigator at the University Health Network (UHN) in Toronto, Canada. He serves as the Director of Advanced Imaging Studies for Rheumatic Diseases and Co-director of the Psoriatic Arthritis Program at UHN. His research primarily focuses on spondyloarthritis (SpA) including psoriatic arthritis (PsA), with an emphasis on early diagnosis, disease progression, and advanced imaging studies. He initiated and conducted clinical studies addressing optimized treatment starategies in in SpA. He also works on integrating artificial intelligence into rheumatology, with projects that utilize deep learning to enhance the diagnosis and differential diagnosis of spondyloarthritis through the analysis of X-rays and MRI
Keywords	rheumatology, arthritis, spondyloarthritis, imaging
Lab location	TWH
Relevant Links	https://scholar.google.com/citations?user=VxNu9aMAAAAJ&hl=en
Contact Information	denis.poddubnyy@uhn.ca 416-603-5800 ext. 2511

Principal Investigator: *Dmitry Rozenberg*

Currently Accepting	**MSc**
Ideal Candidate	Looking for a student with some experience conducting prospective research studies when it comes to data collection, physical assessments, and qualitative interviews. Previous experience with physical activity and exercise interventions would be an asset, but not essential.
Research Summary	My lab research aims to understand the impact of physical fitness and skeletal muscle dysfunction on daily physical function, quality of life, frailty, health care use, and survival before and after lung transplantation. We are 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 individuals with chronic lung disease and transplant patients and their response to rehabilitation. My lab is also exploring the role of caregivers in advanced cardiopulmonary disease and multimodality programs that may help reduce stress levels. Further, we are also studying the pathophysiology of dyspnea in conditions such as Ehlers Danlos Syndrome and chronic lung disease
Keywords	Exercise training, chronic lung disease, transplantation, caregivers, dyspnea, Ehlers Danlos Syndrome
Lab location	Toronto General Hospital Research Institute
Relevant Links	https://www.uhnresearch.ca/researcher/dmitry-rozenberg
Contact Information	Dmitry.Rozenberg@uhn.ca 416-340-4800 ext 7358

Principal Investigator: *Elliot Wakeam*

Currently Accepting	**MSc**
Ideal Candidate	Clinical epidemiology
Research Summary	Surgical outcomes and clinical trials in thoracic surgery and lung transplantation
Keywords	Lung cancer, esophageal cancer, lung transplant, surgical outcomes, clinical epidemiology
Lab location	TGH
Relevant Links	
Contact Information	Elliot.wakeam@uhn.ca 647-504-6581

Principal Investigator: *Gilla Shapiro*

Currently Accepting	**MSc**
Ideal Candidate	Recommended experience includes: background in health psychology or public health, experience conducting systematic literature reviews, submitting REB applications, analyzing quantitative and/or qualitative data, and/or scientific writing.
Research Summary	The Shapiro Lab is based at the University of Toronto and Princess Margaret Cancer Centre. We conduct quantitative and qualitative research to understand individual health decision making and behaviour to improve cancer care across the disease continuum. Current projects focus on cancer prevention and human papillomavirus (HPV) vaccine uptake as well as lay navigation to support patients with cancer.
Keywords	Health behaviour, Decision making, Vaccine acceptance and uptake, The social determinants of health, Psychosocial oncology, Mental health
Lab location	Princess Margaret Cancer Centre
Relevant Links	https://psychiatry.utoronto.ca/faculty/gilla-shapiro
Contact Information	gilla.shapiro@uhn.ca 416-356-8764

Principal Investigator: *Heather Baltzer*

Currently Accepting	**MSc; PhD**
Ideal Candidate	A student with an interest and experience in working with population level data A student with an interest and or experience in clinical research and qualitative research
Research Summary	There are two themes: 1. Population health of peripheral nerve injuries. We have defined a broader upper extremity trauma data cohort using CIHI data and are now refining this to understand the epidemiology of peripheral nerve injuries and in particular, the underlying causes (eg, traumatic, iatrogenic, etc). 2. Translational work in development of sensory prosthetic devices for partial hand amputees. This is in collaboration with engineer colleagues. As we scale production and patient recruitment, we will be entering an iterative phase of modifying the device based on end user feedback.
Keywords	Peripheral nerve injury, upper extremity trauma, amputation, prosthetic design
Lab location	Toronto Western
Relevant Links	
Contact Information	Heather.baltzer@uhn.ca 416-710-5926

Principal Investigator: *Haibo Zhang*

Currently Accepting	**MSc, PhD**
Ideal Candidate	1. Machine Learning Expertise: Good skills in machine learning techniques is essential for developing and implementing algorithms to analyze and interpret bioimaging data. Familiarity with both supervised and unsupervised learning methods would be advantageous. 2. Bioimaging Techniques: Basic knowledge of bioimaging techniques is fundamental for understanding and working with the biological images relevant to the study. 3. Critical Thinking and Problem-Solving: The ability to approach complex problems in the realm of mechanical ventilation with critical thinking and innovative problem-solving skills is highly valued. 4. Team Collaboration: Given the interdisciplinary nature of the research, the capacity to collaborate effectively with team members from diverse backgrounds, including clinicians and researchers, is crucial for success. 5. Communication Skills: Strong written and verbal communication skills are essential for documenting findings, presenting results to the research team, and potentially contributing to publications or presentations. 6. Adaptability: The field of critical care and mechanical ventilation research is dynamic, and an ability to adapt to new technologies, methodologies, or changes in project direction is important.
Research Summary	Critically ill patients often necessitate mechanical ventilation as a life-saving intervention. While employing low tidal volumes and pressures can mitigate lung over-distension and reduce the risk of ventilator-induced lung injury (VILI), the persistently high mortality rate, reaching up to 40%, underscores the need for more tailored approaches. A significant challenge in current bedside practice is the uniform application of a one-size-fits-all ventilation strategy, which may prove inadequate for individual patients, contributing to injury.

	In our research, we have employed bioimaging techniques such as micro computed tomography (μ-CT) and electrical impedance tomography (EIT) to visualize mechanical ventilation effects in rabbits. These methods allow us to pinpoint areas of injury and measure lung strain, facilitating the identification of optimal ventilator strategies by customizing pressure and tidal volumes based on individual patient needs. The student involved in this project will analyze an extensive dataset comprising μ-CT and EIT data. By leveraging machine learning algorithms, they will identify patterns associated with enhanced lung healing under specific ventilatory strategies. This approach aims to proactively prevent ventilator-induced lung injury (VILI) by tailoring ventilation practices to individual patient characteristics.
Keywords	lung strain, mechanical ventilation, machine learning, bioimaging
Lab location	St. Michael's Hospital
Relevant Links	
Contact Information	haibo.zhang@unityhealth.to; julie.khang@unityhealth.to (assistant) 416 864-6060 X77654

Principal Investigator: *Jennifer Quon*

Currently Accepting	**MSc**
Ideal Candidate	We are recruiting a Master's student wth an undergraduate degree in the sciences, engineering or related field. Technical expertise in computer science/coding is strongly encouraged and experience with health sciences data is recommended
Research Summary	The Surgical Artificial Intelligence Lab (SAIL) aims to develop machine learning tools to better understand neurosurgical diseases and improve patient care. We have a particular focus on applying artificial intelligence techniques such as computer-vision and deep learning towards the diagnosis and treatment of pediatric neurovascular and oncologic disease
Keywords	Artificial intelligence, machine learning, computer vision, neurosurgery, brain tumours, neurovascular
Lab location	SickKids
Relevant Links	https://www.sickkids.ca/en/staff/q/jennifer-quon/
Contact Information	Jennifer.quon@sickkids.ca 416-813-7261, or ext: 407261

Principal Investigator: *Karen Davis*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Preference for a PhD neuroscience or physiology student with a background in pain and/or brain imaging (MEG/EEG).
Research Summary	The main focus of research in my lab is the central mechanisms underlying pain, the influence of attention and mechanisms of plasticity in people pain conditions. A variety of experimental techniques are used including brain imaging (MRI, but mostly now MEG), psychophysical and cognitive assessment. One current focus is to detect the individual differences in brain circuitry underlying pain and the different ways in which people cope with pain and balance cognitive demands with pain. These approaches will advance our understanding of brain abnormalities in chronic pain, treatment responses, and to predict how patients with chronic pain will respond to specific treatments
Keywords	pain, MEG, attention, imaging
Lab location	UHN - Toronto Western
Relevant Links	https://scholar.google.ca/citations?user=Zd1fmDMAAAAJ&hl=en&oi=ao
Contact Information	karen.davis@uhn.ca 416-603-5662

Principal Investigator: *Kelsey McLaughlin*

Currently Accepting	**MSc,**
Ideal Candidate	We are seeking a highly motivated student capable of working independently and handling sensitive situations with vulnerable patients. The ideal candidate must demonstrate responsibility, reliability, and professionalism in a healthcare setting. Experience in healthcare, particularly in maternal or obstetric care, is preferred but not required. Strong communication skills, emotional maturity, and the ability to navigate clinical environments are essential in this role.
Research Summary	Our research group focuses on advancing the diagnosis, prevention, and treatment of hypertension during pregnancy to improve maternal and fetal health. By exploring the mechanisms and risk factors of pregnancy-related cardiovascular conditions, our research aims to identify early detection strategies, develop effective interventions, and promote better monitoring of high risk pregnancies.
Keywords	Hypertensive disorders of pregnancy, maternal cardiovascular health, clinical research
Lab location	Mount Sinai Hospital
Relevant Links	
Contact Information	kelsey.mclaughlin@sinaihealth.ca 416-586-4800 x 8764

Principal Investigator: *Ken Croitoru*

Currently Accepting	**MSc**
Ideal Candidate	
Research Summary	Polyphenol is associated with the onset of Crohn's disease. We culture polyphenols producing and test if they can protect against colitis
Keywords	Human Microbiome Inflammation Crohn's disease Bacteriology Cell host microbiome interaction
Lab location	University of Toronto
Relevant Links	https://croitorulab.com/
Contact Information	ken.croitoru@sinaihealth.ca 416-586-4800 ext. 7454

Principal Investigator: *Lena Serghides*

Currently Accepting	**PhD**
Ideal Candidate	Experience with mouse handling, or willingness to work with mouse models. Previously work in the cardiovascular field an asset. Bioinformatic experience an asset.
Research Summary	Our lab studies the impact of HIV and HIV antiretrovirals in pregnancy. Special focus on effects on the placenta, maternal cardiovascular remodeling, and fetal neurodevelopment. Projects may include mouse work, in vitro models, and work with clinical samples.
Keywords	HIV, HIV antiretrovirals, pregnancy, placenta, fetal neurodevelopment, cardiovascular remodeling, mouse model
Lab location	TGHRI, UHN
Relevant Links	https://www.serghides.ca/
Contact Information	lena.serghides@utoronto.ca

Principal Investigator: *Linda Mah*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Neuroscience background, strong numeracy and writing skills, interest or aptitude in studying clinical disorders associated with aging including Alzheimer's disease dementia. Previous experience as a research trainee or research assistant in a clinical research laboratory.
Research Summary	Early detection and prevention of Alzheimer's disease (AD) through development of behavioural markers of AD risk and neuromodulation; relationship between emotion and cognition
Keywords	emotion, cognition, Alzheimer's disease, dementia, neuromodulation, neuroimaging, depression, neuropsychiatry
Lab location	Baycrest
Relevant Links	https://www.researchgate.net/profile/Linda_Mah
Contact Information	lmah@research.baycrest.org 416 785 2500 ext 3365

Principal Investigator: *Louise Gallagher*

Currently Accepting	
Ideal Candidate	Students with strong writing and data analytical skills and either a biology background and a grounding in genomics or students from a psychology neuroscience perspective.
Research Summary	My lab advances precision medicine in child and youth mental health and neurodevelopmental disorders, focusing on genomics, eye-tracking and biomarker identification
Keywords	Neurodevelopment, genomics, psychiatry, eye-tracking, transdiagnostic
Lab location	SickKids
Relevant Links	https://psychiatry.utoronto.ca/faculty/louise-gallagher
Contact Information	louise.gallagher@sickkids.ca (416) 813-1500

Principal Investigator: *Mahavir Agarwal*

Currently Accepting	**MSc; PhD**
Ideal Candidate	
Research Summary	Dr. Agarwal's research interest lies in understanding the mechanisms underlying metabolic and cognitive dysfunction in mental illness with specific focus on insulin signaling in the brain. He also runs clinical trials to evaluate the efficacy of new treatments for these abnormalities.
Keywords	Mental illness, insulin, antipsychotics, imaging
Lab location	CAMH
Relevant Links	https://www.camh.ca/en/science-and-research/science-and-research-staff-directory/mahaviragarwal
Contact Information	mahavir.agarwal@camh.ca

Principal Investigator: *Mamatha Bhat*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Student with prior experience in research, excellent academics, as well as enthusiasm and motivation to conduct research. Would need to be a team-player and work collegially.
Research Summary	The goal of Dr. Bhat's research program is to develop and deploy tools of artificial intelligence integrating clinical and omics data for improved long-term outcomes of liver transplantation.
Keywords	Artificial Intelligence, Multimodal AI
Lab location	TGHRI
Relevant Links	https://bhatlab.ca/ ; https://www.uhn.ca/Transplant/Research/AI-transplant
Contact Information	mamatha.bhat@uhn.ca

Principal Investigator: *Margaret Hahn*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Independent, driven, works well in team. Requirement is also GPA >=3.7
Research Summary	Physical health in severe mental illness, in relation to psychopathology/illness outcomes and cardiometabolic morbidity.
Keywords	Obesity, diabetes, severe mental illness
Lab location	CAMH
Relevant Links	https://pubmed.ncbi.nlm.nih.gov/?term=margaret+hahn%5BAuthor%5D&sort=date
Contact Information	margaret.hahn@camh.ca 416-768-1696

Principal Investigator: *Marianne Koritzinsky*

Currently Accepting	**MSc; PhD**
Ideal Candidate	We are accepting PhD student or students that enter the MSc program wit the intent to reclassify to the PhD program. Requirements: Strong academic background in biochemistry and molecular biology. Experience with biochemical, molecular and cell biology techniques. Research experience
Research Summary	The microenvironment of human tumors is unlike that of any normal tissue, characterized by extreme heterogeneities in nutrient supply, pH, and oxygenation. These features develop as a consequence of alterations in the metabolic and proliferative status of tumor cells together with a highly irregular vascular supply. We are investigating the tumor microenvironment with a primary interest in understanding the cellular and molecular responses to deficiencies in oxygenation (hypoxia) and redox perturbations, and their influence on the biological behavior of tumors and treatment resistance
Keywords	Cancer, redox homeostasis, metabolism, hypoxia, immune infiltrate, radiotherapy
Lab location	Princess Margaret Cancer Research Tower
Relevant Links	
Contact Information	Marianne.Koritzinsky@uhn.ca 416-581-7841

Principal Investigator: *Mark Boulos*

Currently Accepting	**MSc**
Ideal Candidate	-Knowledge in statistics and prior research experience would be an asset -Strong organizational skills -Outstanding interpersonal skills -Strong written communication skills -Interest in sleep medicine and/or related disciplines (e.g. neurology, respirology, anesthesiology, psychiatry, etc.)
Research Summary	Dr. Mark Boulos is a Stroke & Sleep Neurologist, Associate Professor, and Senior Scientist in the Division of Neurology at the University of Toronto and Sunnybrook Health Sciences Centre. Dr. Boulos serves as the Medical Lead for the Sunnybrook Sleep Laboratory and Program Director for the Sleep Neurology Fellowship Program at the University of Toronto. Dr. Boulos oversees an active research program that investigates the association of sleep disorders with TIA/stroke, dementia, and other neurological disorders. In addition, he has an interest in home sleep monitoring, normative sleep data, and novel treatment interventions for managing sleep disorders
Keywords	sleep, stroke, neurology, ambulatory monitoring
Lab location	Sunnybrook Health Sciences Centre
Relevant Links	https://sunnybrook.ca/research/team/member.asp?t=10&m=586&page=527
Contact Information	mark.boulos@utoronto.ca sarah.berger@sri.utoronto.ca (lead research coordinator)

Principal Investigator: *Matthew Lincoln*

Currently Accepting	**MSc; PhD**
Ideal Candidate	We are looking for passionate students interested in combining laboratory experiments with sophisticated data analysis.
Research Summary	Our lab uses single cell genomics and quantitative genetic techniques to identify mechanisms that cause multiple sclerosis and other autoimmune diseases.
Keywords	Multiple sclerosis, genomics, genetics, autoimmunity, transcriptomics, single cell
Lab location	St. Michael's Hospital
Relevant Links	
Contact Information	matthew.lincoln@utoronto.ca

Principal Investigator: *Matthew Sloan*

Currently Accepting	**MSc; PhD**
Ideal Candidate	I am looking for hard-working students who are interested in engaging in research with patients with substance use disorders to develop novel treatments.
Research Summary	My lab primarily focuses on clinical trials investigating novel treatments for addiction.
Keywords	Addiction, Psychopharmacology, Endocannabinoid System, Alcohol Use Disorder, Clinical Trials, Human Laboratory Studies
Lab location	CAMH
Relevant Links	
Contact Information	matthew.sloan@camh.ca 416-535-8501 x 33840

Principal Investigator: *Melanie Penner*

Currently Accepting	**PhD**
Ideal Candidate	Preferred applicants will have some demonstrated interest in neurodevelopment, including previous research experience.
Research Summary	The Autism Community Capacity and Evaluation of Programs and Training (ACCEPT) lab conducts research focused on building capacity for high quality autism care in the community.
Keywords	Autism, diagnosis, children
Lab location	Holland Bloorview Kids Rehabilitation Hospital
Relevant Links	https://hollandbloorview.ca/research-education/bloorview-research-institute/research-centres-labs/autism-research-centre/autism-research-centre-our-team/dr-melanie-penners-lab
Contact Information	mpenner@hollandbloorview.ca 416-425-6220

Principal Investigator: *Michael Fehlings*

Currently Accepting	**MSc; PhD**
Ideal Candidate	
Research Summary	My basic science laboratory integrates molecular, imaging, electrophysiological, and neurobehavioural approaches to examine the pathophysiology and treatment of traumatic and non-traumatic forms of spinal cord injury (SCI). Current studies in SCI are focused on understanding the mechanisms of the secondary injury after SCI with a focus on examining the role of inflammation, the development of novel neuroprotective strategies, and the use of stem cell transplantation to repair the injured spinal cord. The translation from benchside to bedside is a key goal of our research and is exemplified in the team's involvement in clinical trials. Additionally, my laboratory has a vibrant clinical research program exploring machine learning (supervised and unsupervised learning), other AI analytic approaches, trajectory-based modeling, and advanced imaging to predict outcomes for individuals living with spinal cord injury and degenerative cervical myelopathy.
Keywords	Artificial Intelligence, Molecular & Cell Biology, Bioengineering, Neurodegenerative Disorders, Clinical Trials, Stem Cells
Lab location	UHN - Toronto Western Hospital/Krembil Research Institute
Relevant Links	https://www.uhnresearch.ca/researcher/michael-g-fehlings
Contact Information	michael.fehlings@uhn.ca 416-603-5627

Principal Investigator: *Michael Wainberg*

Currently Accepting	**PhD**
Ideal Candidate	Programming experience is a must!
Research Summary	We apply statistics, machine learning and other computational approaches to large datasets to learn how genetics causes brain diseases. Our overarching goal is to find new drug targets, while developing new ways to do genetic studies and extract meaning from them along the way.
Keywords	human genetics, single-cell, computational biology, machine learning, brain diseases
Lab location	Mount Sinai
Relevant Links	https://wainberglab.org
Contact Information	m.wainberg@utoronto.ca

Principal Investigator: *Mingyao Liu*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Either with strong interests and background on bioinformatics, or with surgical training on microsurgery
Research Summary	The current research in my lab focusing on cellular and molecular mechanisms of ischemia reperfusion injury in lung transplantation. Using transcriptomics, metabolomics and bioinformatics we are studying the role of different types of cell death and metabolic changes in donor lungs. Using cell culture and animal models, we are developing new organ preservation solution and EVLP perfusion solution
Keywords	Transcriptomics, scRNAseq, metabolomic, organ preservation solution, EVLP perfusion solution
Lab location	PMCRT2-814
Relevant Links	ORCID: 0000-0002-9188-8417, https://www.uhnresearch.ca/researcher/mingyao-liu
Contact Information	mingyao.liu@utoronto.ca 416-634-7501

Principal Investigator: *Minna Woo*

Currently Accepting	**MSc; PhD**
Ideal Candidate	
Research Summary	The major research focus in the Woo laboratory is to elucidate molecular mechanisms that determine pathogenesis of insulin resistance and type 2 diabetes, which are well known to increase the risk of cardiovascular disease, and some cancer types and mental illnesses. We are investigating many of the fundamental genes that are involved in cell survival and differentiation, in particular, tumour suppressors and oncogenes. Many of these fundamental genes have essential physiological roles in metabolic tissues such as liver, muscle, adipose tissue, and the pancreatic islets. The roles of many of the fundamental genes are highly context dependent and are specific for the tissue in which they function. Using genetically engineered mice, we examine the whole body physiology as well as take biological, biochemical and molecular approaches to a single cell resolution to define mechanistic roles in specific tissues. These approaches to clarify tissue-specific molecular mechanisms have wide implications for better understanding and treatment of both diabetes as well as its relationships to some cancers and mental illnesses.
Keywords	insulin resistance; diabetes; insulin signaling transduction; genetic mouse models; autonomic nervous system; MASLD
Lab location	TGHRI
Relevant Links	https://bbdc.org/members-research/woo-minna/
Contact Information	minna.woo@uhn.ca 416-340-5214

Principal Investigator: *Mojgan Hodaie*

Currently Accepting	**PhD**
Ideal Candidate	
Research Summary	The Hodaie Lab is a translational surgical imaging lab. Our projects use advanced brain imaging techniques to study chronic neuropathic facial pain, with a special focus on trigeminal neuralgia (TN). A variety of imaging methodologies are used including white matter tractography and cortical thickness analysis. Using these methods, we examine the effect of neurosurgical interventions (e.g. microvascular decompression surgery, Gamma Knife radiosurgery) on nerve and brain of TN patients, and aim to find potential biomarkers for effective treatment. A number of projects are available focusing on accelerated brain aging, cognition, the study of biomarkers, accelerated brain aging in pain, and the use of advanced statistical and computational approaches, such as machine learning and artificial neural networks. Preference will be given to students interested in pursuing a PhD degree
Keywords	
Lab location	UHN (Toronto Western Hospital)
Relevant Links	https://www.hodaielab.com/
Contact Information	Mojgan.Hodaie@uhn.ca ; kiki.vona@uhn.ca (admin) 416-603-5800 ext 2641; 416-603-5800 ext 6441(admin)

Principal Investigator: *Moumita Barua*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Ideally a student who would be interested in pursuing a PhD
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 then use our genetic discoveries to prioritize clinically relevant models, in which we study kidney disease mechanisms. Our overall objective is to advance preclinical development of novel therapeutics. The 3 main projects in the lab are: 1. Genome-wide association studies of kidney traits - basic programming knowledge is an asset for this human based study 2. Pax2 mediates kidney repair/regeneration - enthusiasm to work with mouse models is an asset 3. Mechanisms in Alport syndrome - enthusiasm to work with mouse models is again an asset We are looking for highly motivated trainees to join our supportive team to work on any one of these projects depending on applicant interests and strengths. Trainee career development is an important part of mentorship for the supervisor. Lab alumni have gone on to medical school, entered extremely competitive IMG residency programs and continued their research careers in academic institutions, industry and national organizations such as CIHI.
Keywords	large data sets, next-generation sequencing, single cell sequencing, proteomics, mouse models, kidney disease
Lab location	Toronto General Hospital

Relevant Links	https://orcid.org/0000-0003-0628-9071
Contact Information	moumita.barua@uhn.ca 416-340-4800 ext 8007

Principal Investigator: *Naveed Siddiqui*

Currently Accepting	**MSc**
Ideal Candidate	Seeking motivated students with an interest in clinical research, anesthesia, and perioperative care; research experience is an asset.
Research Summary	We study perioperative outcomes, anesthesia techniques, and airway management, with a focus on regional anesthesia and POCUS applications.
Keywords	Perioperative outcomes ERAS, regional anesthesia, general anesthesia, airway management, POCUS, anesthesia research.
Lab location	Mount Sinai Hospital
Relevant Links	https://discover.research.utoronto.ca/17925-naveed-siddiqui
Contact Information	naveed.siddiqui@uhn.ca 416-586-5270

Principal Investigator: *Nicola Jones*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Excited by science, great team player
Research Summary	Our gastrointestinal tract plays an important role both in maintaining health and wellbeing. However, changes within our gastrointestinal tract or the bacteria housed in our gut can trigger disease. The Jones lab team is interested in understanding the pathogenesis of chronic gastrointestinal disorders with the hopes of improving health and treating or preventing disease. In particular our laboratory focuses on Helicobacter pylori, which infects half of the human population and is the most significant risk factor for development of gastric cancer. Our translational research program employs cell culture, organoids, animal models and patient samples to answer to delineate how infection alters host cell signalling to cause disease.
Keywords	Helicobacter pylori, gastric cancer, lysosomes, mitochondria
Lab location	SickKids PGCRL
Relevant Links	https://www.sickkids.ca/en/staff/j/nicola-jones/
Contact Information	nicola.jones@sickkids.ca

Principal Investigator: *Nomazulu Dlamini*

Currently Accepting	**MSc; PhD**
Ideal Candidate	A background in neuroscience, health sciences or epidemiology is preferred.
Research Summary	The Children's Stroke Research program is part of the Division of Neurology at The Hospital for Sick Children (SickKids). The program performs collaborative research aimed at understanding, preventing, and improving outcomes in paediatric stroke. This includes clinical, epidemiological and neuroimaging research in the paediatric stroke population. Our program is committed to improving research into the etiology and treatment of paediatric stroke through the sharing and dissemination of information around the world. We believe that working collaboratively across the globe is the best way to advance care for paediatric stroke patients.
Keywords	paediatric stroke neuroimaging MRI outcomes AI models
Lab location	Peter Gilgan Center for Research and Learning, Sickkids
Relevant Links	https://lab.research.sickkids.ca/ipss/
Contact Information	nomazulu.dlamini@sickkids.ca ; alexandra.linds@sickkids.ca 416-813-7721

Principal Investigator: *Ori Rotstein*

Currently Accepting	**MSc; PhD**
Ideal Candidate	experience in cell/molecular biology
Research Summary	We study ischemia/reperfusion injury following trauma, surgery and transplant, Mechanistic insights gained by cell/molecular and translational research guide the development of novel interventions.
Keywords	ischemia/reperfusion injury, macrophages, liver, mitochondria, antioxidants
Lab location	SMH
Relevant Links	https://www.biorxiv.org/content/10.1101/2024.09.04.608457v1 10.1101/2024.09.04.608457
Contact Information	rotsteino@smh.ca ; 416 864 5637

Principal Investigator: *Peter Gross*

Currently Accepting	**MSc; PhD**
Ideal Candidate	biochemistry experience. bacterial cultures. protein isolation. will work with human blood samples.
Research Summary	We have produced a novel backbone for a FRET-based protease sensor. We have a thrombin sensor and a plasmin sensor. These are being evaluated in preclinical and clinical studies. We have other proteases on the to-do list.
Keywords	protease, coagulation, fibrinolysis, fluorescent resonance energy quenching, protein engineering
Lab location	University Health Network, Toronto General, Max Bell Research Building
Relevant Links	https://scholar.google.ca/citations?user=FhNI39QAAAAJ&hl=en
Contact Information	peter.gross@uhn.ca 473-873-0973

Principal Investigator: *Pushpal Desarkar*

Currently Accepting	**MSc**
Ideal Candidate	motivated and interested to work with neurodiverse population, some experience in neurophysiology, especially EEG and/or brain stimulation, experience in coding, using Matlab, previous publications.
Research Summary	Dr. Desarkar seeks to address two overarching goals through his research: i) Obtaining new knowledge related to neurophysiological underpinnings in neuropsychiatric disorders, especially autism, across the lifespan, and developing novel therapeutic interventions for these conditions. ii) Using innovative brain stimulation techniques, including transcranial magnetic stimulation (TMS) and the combination of TMS and EEG (TMS-EEG), he is investigating evidence for atypical neuroplasticity and its connection with autism-associated difficulties (e.g. motor function difficulties, sensory sensitivities, executive function difficulties). He is using novel brain stimulation techniques to develop innovative 'brain mechanism-driven' treatment options for these autism-associated difficulties to improve outcomes for autistic adults. He received funding from Canadian Institutes of Health Research (CIHR), Scottish Rite Charitable Foundation of Canada, CAMH Discovery Fund, salary support from the academic scholar award at the Department of Psychiatry, University of Toronto, and the Innovation Fund of the Alternative Funding Plan for the Academic Health Sciences Centres of Ontario.
Keywords	Autism, Transcranial Magnetic Stimulation, Neurophysiology, EEG, Brain Stimulation Trial.
Lab location	CAMH

Relevant Links	https://www.camh.ca/en/science-and-research/science-and-research-staff-directory/pushpaldesarkar
Contact Information	Pushpal.Desarkar@camh.ca 416-535-8501, x 32726

Institute of Medical Science
UNIVERSITY OF TORONTO

Principal Investigator: *Richard Swartz*

Currently Accepting	**MSc; PhD**
Ideal Candidate	1 - Open to - MD/ PhD, Msc candidates 2- Interests In - Neuroscience, Epidemiology, Medical Sciences 3 - Statistics Background is an asset but not required.
Research Summary	My ongoing research program focuses on reducing the burden of stroke and vascular cognitive impairment (VCI), using innovative clinical research designs embedded in care, including large-scale pragmatic, registry-embedded observational studies and randomized controlled trials and epidemiological studies across 3 main pillars: 1) improving stroke treatments, 2) improving long-term outcomes from stroke and VCI and 3) understanding vascular contributions to neurodegeneration and biomarkers of VCI.
Keywords	Stroke, Thrombolysis, Thrombectomy, Neuroprotection, Vascular Cognitive Impairment and Dementia
Lab location	Sunnybrook Health Sciences Centre
Relevant Links	Act (Lancet 2022) - https://pubmed.ncbi.nlm.nih.gov/35779553/ Goal Setting (Stroke 2021) https://pubmed.ncbi.nlm.nih.gov/33467876/ VCI Guidelines (ALc 2025) Gold Setting (Stroke 2021) ONDRI (JNS 2017) Long term outcomes (CMAJ 2017), VCI Guidelines - https://pubmed.ncbi.nlm.nih.gov/39822128/ ONDRI (CJNS 2017) https://pubmed.ncbi.nlm.nih.gov/28003035/ Long-term morbidity and mortality in patients without early complications after stroke or transient ischemic attack (CMAJ 2017) https://pubmed.ncbi.nlm.nih.gov/?term=Long+term+outcomes+2017&sort=jour
Contact Information	rick.swartz@sunnybrook.ca 416-480-6100 ext. 683724

Principal Investigator: *Roger McIntyre*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Any undergraduate background that would allow them to be eligible for a program at IMS.
Research Summary	We focus on translational research that seeks to determine the role that inflammation or metabolic systems, insulin and GLP-1, play in the treatment of mood disorders.
Keywords	GLP-1 RA, mood disorders, metabolic targets, inflammation, ketamine, psychedelics.
Lab location	Toronto Western Hospital
Relevant Links	https://pubmed.ncbi.nlm.nih.gov/?term=mcintyre+rs&sort=date&size=200
Contact Information	roger.mcintyre@bcdf.org 416-669-5279

Principal Investigator: *Rupert Kaul*

Currently Accepting	**PhD**
Ideal Candidate	The only criterion is that the student should be excited by the research we are doing.
Research Summary	In the Kaul lab we assess how HIV susceptibility and other reproductive health outcomes are related to the genital tract microbiome and immunology. These studies generally a mix of prospective cohort studies and clinical trials, and are performed with the help of participants from Toronto, Kenya and Uganda.
Keywords	Mucosal immunology HIV susceptibility Genital microbiome
Lab location	Medical Sciences Building
Relevant Links	https://immunology.utoronto.ca/faculty/rupert-kaul
Contact Information	rupert.kaul@utoronto.ca 416-316-5704

Principal Investigator: *Sanjeev Kumar*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Experience with data quality assurance, cleaning, strong analytical background, writing skills, familiarity with dementia, pharmacological and non-pharmacological treatments for symptoms related to dementia.
Research Summary	Dr. Sanjeev Kumar is a geriatric psychiatrist. His research focuses on studying the role of pharmacological and non-pharmacological interventions to manage neuropsychiatric symptoms of dementia. He is also studying central and peripheral markers using EEG and other wearable technologies and brain stimulation interventions for symptoms of dementia.
Keywords	cognitive disorders, dementia, Neuropsychiatric symptoms, brain stimulation, physiology
Lab location	CAMH
Relevant Links	https://www.camh.ca/en/science-and-research/science-and-research-staff-directory/sanjeevkumar
Contact Information	Sanjeev.Kumar@camh.ca 416-535-8501

Principal Investigator: *Sarah Hales*

Currently Accepting	**MSc**
Ideal Candidate	
Research Summary	The overarching goal of my academic work is to expand the boundaries of health care beyond the focus on physical symptoms and disease to include subjective experience, psychological distress, and the family system; beyond the focus on present illness to consider preparation for end of life, the dying phase, and bereavement; and beyond the acute medical setting of the comprehensive cancer care centre to increase access to specialized psychosocial oncology care across Canada and around the globe. All of my research focuses on the psychosocial challenges facing patients with advanced disease and their families and the development and testing of interventions aimed at relieving their distress and improving their quality of life and death. All projects fall under one of the following three categories: 1) quality of the end-of-life experience and dying and death in advanced disease; 2) the experience of caregivers supporting patients with advanced disease; 3) psychotherapeutic care and interventions to support for patients and families facing advanced disease.
Keywords	Psychosocial oncology, advanced disease, palliative care, caregivers, psychotherapeutic interventions, psychedelic-assisted psychotherapy
Lab location	Princess Margaret
Relevant Links	
Contact Information	sarah.hales@uhn.ca 416-946-4501 x2551

Principal Investigator: *Tyler Kaster*

Currently Accepting	**MSc**
Ideal Candidate	
Research Summary	Dr. Kaster's research is focused on the clinical application of interventional psychiatry treatments for severe psychiatric illness. This is accomplished through leading and collaborating on clinical trials of new treatments including repetitive transcranial magnetic stimulation (rTMS), ketamine, magnetic seizure therapy, and psychedelics. It is also accomplished through observational studies leveraging administrative health databases of established treatments such as medications and ECT. His current research is supported by the Canadian Institutes for Health research to conduct a multi-site clinical trial of rTMS for bipolar depression and a separate study to determine the association of rare events potentially associated with ECT amongst those with schizophrenia. He is also a co-investigator on studies examining methods to personalize rTMS treatment for obsessive compulsive disorder using an individual's brain activity as well as a trial of an intensified form of rTMS known as accelerated rTMS.
Keywords	neurostimulation, depression, clinical epidemiology, clinical trials
Lab location	CAMH
Relevant Links	https://pubmed.ncbi.nlm.nih.gov/?term=kaster+ts&sort=date
Contact Information	tyler.kaster@camh.ca 416-535-8501 x 30070

Principal Investigator: *Venkat Bhat*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Neuroscience, psychology, psychopharmacology, clinical trials, engineering/computer science, AI & analytics.
Research Summary	The IPP offers novel psychopharmacological (e.g. IV ketamine/nitrous/psychedelics), neurostimulation (e.g. rTMS/ECT/ new modalities) and digital therapeutic interventions accompanied by AI & data analytics.
Keywords	Neuroscience, psychology, psychopharmacology, clinical trials, engineering/computer science, AI & analytics.
Lab location	St. Michael's Hospital, Unity Health Network and Toronto Western Hospital, University Health Network
Relevant Links	https://oldresearch.unityhealth.to/research-programs/interventional-psychiatry-2/
Contact Information	venkat.bhat@utoronto.ca 416-360-4000x76404

Principal Investigator: *Vijay Chauhan*

Currently Accepting	**MSc; PhD**
Ideal Candidate	PhD candidate preferred. Asset to have background in cardiac physiology, computational biology, computer programming, image analysis.
Research Summary	Our lab conducts translational studies in patients with atrial fibrillation to understand atrial structure, function and its relation to arrhythmia vulnerability. Our techniques include intracardiac mapping, body surface electrocardiography, signal processing, cardiac CT, echo and image analysis. These studies will improve rhythm management in patients with atrial fibrillation.
Keywords	atrial fibrillation, cardiomyopathy, heart failure, electrical mapping, signal processing, image processing
Lab location	Toronto General Hospital, Peter Munk Cardiac Center
Relevant Links	
Contact Information	vijay.chauhan@uhn.ca 416-340-3172

Principal Investigator: *Warren Lee*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Genuine curiosity and interest in research; hard-working.
Research Summary	We are an endothelial biology lab with a focus on the study of permeability. We have particular expertise in the study of endothelial LDL transcytosis (the first step in atherosclerosis) and in the development of therapeutic and diagnostic approaches for lung endothelial leakage (i.e. pathogen-induced lung injury) in inflammation.
Keywords	endothelial biology; atherosclerosis; innate immunity; lung injury; lipoproteins
Lab location	St. Michael's Hospital
Relevant Links	warrenleelab.com
Contact Information	warren.lee@unityhealth.to

Principal Investigator: *Yaping Jin*

Currently Accepting	**MSc**
Ideal Candidate	Ideal students will be those with basic knowledge of epidemiology and biostatistics, and an interest and ability to learn to use statistical software (e.g. SAS, R, SPSS) to analyze large-scale databases. Students with an interest in ophthalmology will be an asset.
Research Summary	Age-related macular degeneration (AMD) and glaucoma are the leading causes of irreversible blindness in Canada and globally. Accurate data on the prevalence of AMD and glaucoma based on eye exams are important for understanding disease burden, distribution, and for studying risk factors. While such data is available from many countries, including the United States and Australia, none is available from Canada. This is largely due to the high cost of clinical eye exams, the time required to perform such studies, and the large sample size required. Self-reported surveys on AMD and glaucoma represent an easy and low-cost alternative for understanding how many Canadians are affected by these conditions. However, self-reports are associated with recall bias, misunderstanding of medical terms and pressure from social issues (e.g., the possibility that reporting AMD and glaucoma might lead to the loss of a driver's license). Using data collected in the Canadian Health Measures Survey by Statistics Canada, this study will estimate the prevalence of self-reported and exam-determined AMD and glaucoma in Canada and investigate the validity of self-reported data compared to clinical eye exam results. This study will generate the first data on how many Canadians are affected by AMD and glaucoma and provide important information on the value of using self-reported questionnaires to study these conditions in Canada. Additionally, this Canada-based study will contribute to international vision research and fill in the knowledge gap between Canada and other countries.
Keywords	Age-related Macular Degeneration, Glaucoma, Prevalence, Eye exams, Validity, Self-report
Lab location	Kensington Eye Institute

Relevant Links	https://pubmed.ncbi.nlm.nih.gov/?term=Jin+YP+ophthalmology
Contact Information	Yaping.Jin@utoronto.ca 416-978-7938

Principal Investigator: *Zahi Touma*

Currently Accepting	**MSc**
Ideal Candidate	
Research Summary	Dr. Touma is a Rheumatologist and Clinical Epidemiologist whose research is focused on patients with systemic lupus erythematosus (SLE) and measurement science with a particular interest in the assessment of disease activity, patient reported outcomes and cognitive function. He is the director of the Toronto Lupus Program and Associate Professor of medicine in the department of medicine, division of rheumatology. He is the co-instructor of the measurement in clinical research course at the Institute of Health Policy, Management and Evaluation (IHPME) at the University of Toronto. Dr. Touma has developed SLE disease activity indices: the SLEDAI Responder Index-50 and the SLEDAI-2K Glucocorticoids Index. He has established the NeuroLupus Program which is a team of experts in psychometrics, neuropsychology, neurology, psychiatry, measurement and bioinformatics with the goal of developing improved methods of identifying cognitive impairment in SLE and understanding its course over time and impact on health-related quality of life and productivity. Dr. Touma is the co-chair of the American College of Rheumatology (ACR) criteria subcommittee. He leads the Outcome Measures in Rheumatology (OMERACT) SLE Working Group to update the core outcome set for SLE clinical trials. Dr. Touma's work has been supported by grants from the Canadian Institutes of Health Research, Arthritis Society of Canada, Lupus Canada, Physician Services Incorporated and Lupus Research Alliance. He is the recipient of an Early Researcher Award from the Government of Ontario.

Keywords	Cognition, Cardiovascular, Respiratory, Musculoskeletal
Lab location	UHN-Toronto Western Hospital
Relevant Links	Website=> https://www.uhnresearch.ca/researcher/zahi-touma Publications => https://pubmed.ncbi.nlm.nih.gov/?term=Zahi%20Touma
Contact Information	zahi.touma@uhn.ca ; dennisse.bonilla@uhn.ca (admin) 416-603-5800 ext. 3559 (admin)