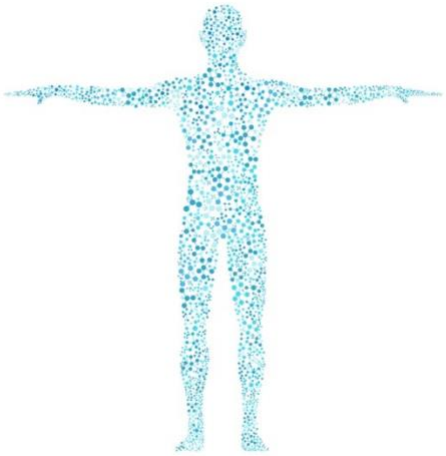
Institute of Medical Science
UNIVERSITY OF TORONTO

IMS Graduate Student Recruitment: January 2026



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: *Dr. Ahmed N. Hassan*

Currently Accepting	**MSc**
Ideal Candidate	
Research Summary	Posttraumatic stress disorder (PTSD) and substance use disorders (SUDs) are highly comorbid. Despite the clear evidence of the role substance use as self-medication in the etiology and maintenance of PTSD–SUD, integrating accessible interventions for trauma and PTSD early in the treatment of individuals with SUD is missing which risk dropout from treatment and unmet need for this population. As part of comprehensive services, making self-help services available is crucial, which is, unfortunately, absent in many facilities. Recent guidelines advise treating this comorbidity, most notably through eye movement desensitization and reprocessing (EMDR). EMDR is much shorter concerning time than other alternative therapies. Pioneering work in translating concepts from e-Health to PTSD treatment has led to the development of autonomous, smartphone-assisted (A-EMDR), in which digital settings simulate the same experience of an EMDR treatment without the use of a therapist. Here, individuals with PTSD–SUDs will be randomized to two groups: the A-EMDR group and treatment-as-usual group. The objective of this study is to determine the efficacy, feasibility, engagement, and acceptability of A-EMDR as a treatment for patients with PTSD–SUDs over a four-week treatment period. As a novel treatment for a prevalent disorder, the impact of an easily accessible and fast treatment is expected to be substantial.
Keywords	PTSD, trauma, substance use disorder, concurrent disorders, psychotherapy, EMDR
Lab location	CAMH

Relevant Links	https://pubmed.ncbi.nlm.nih.gov/?term=Hassan+AN&cauthor_id=37934553
Contact Information	ahmed.hassan@camh.ca Lab manager: Dunja.Knezevic@camh.ca 416-535-8501. ext 34051

Principal Investigator: *Dr. Ajoy Vincent*

Currently Accepting	**PhD**
Ideal Candidate	willingness to work with mouse models; Masters in genetics or biochemistry or related field preferred
Research Summary	Our lab focus on gene discovery and investigate the pathogenesis underlying inherited retinal dystrophies, specifically hereditary macular dystrophies. We use conditional mouse models to study the effect of disease causing variants found in genes implicated in the metabolic pathway. Our lab studies the effect of lipoxygenases and glycogen phosphorylases in the retina.
Keywords	retinal metabolism; ALOX15; glycogen phosphorylase; macular dystrophy; retinal pigment epithelium
Lab location	SickKids
Relevant Links	https://scholar.google.ca/citations?hl=en&user=BLbWvCsAAAAJ
Contact Information	ajoy.vincent@sickkids.ca (416) 813-7789

Principal Investigator:	*Dr. Andrew Pinto*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Graduate Teaching
Research Summary	AI in Healthcare, COVID-19, Family Medicine, Health Equity, HIV, Homelessness, Mental illness, Prevention, Primary Care, Public Health, Social Determinants of Health
Keywords	Family Medicine, Prevention, Primary Care, Public Health Sciences, Social Determinants of Health, AI in Healthcare
Lab location	St. Michael's Hospital
Relevant Links	Website: https://upstreamlab.org/ | Publications: https://pubmed.ncbi.nlm.nih.gov/?term=andrew+pinto&sort=date&sort_order=desc
Contact Information	andrew.pinto@utoronto.ca andrew.pinto@utoronto.ca 416-864-6060 x76148

Principal 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 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
Lab location	CAMH and TGH
Relevant Links	22q.ca
Contact Information	anne.bassett@utoronto.ca Gladys Wong - gladys.wong@camh.ca 416-535-8501 x32734

Principal Investigator: *Dr. Behdin Nowrouzi-Kia*

Currently Accepting	**MSc ; PhD**
Ideal Candidate	I welcome interested masters and doctoral candidates to contact me about opportunities to join my lab. Please visit www.restore. rehab for more information.
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 visit www.restore.rehab to learn more about our team, publications and collaborations.
Keywords	workplace mental health, occupational therapy, rehabilitation, return to work, ,occupational health and safety
Lab location	416-946-3249
Relevant Links	www.restore.rehab
Contact Information	behdin.nowrouzi.kia@utoronto.ca 416-946-3249

Principal Investigator: *Dr. Brodie Nolan*

Currently Accepting	**MSc ; PhD**
Ideal Candidate	Looking for students interested in resuscitation sciences. We have a growing team with interests spanning cardiac arrest, trauma, and resuscitation in the prehospital, in-hospital, and military environments
Research Summary	Joining this program means working at the cutting edge of trauma, transfusion, and transport medicine. The project sits at the intersection of clinical trials, implementation science, health systems research, and policy impact. As a graduate student, you would gain experience in: - Conducting multicentre randomized trials. - Engaging with frontline paramedics, transport medicine, and trauma teams. - Working on research that could change national transfusion practice and patient outcomes.
Keywords	Trauma; Transfusion; Emergency Medicine; Injury; Prehospital care
Lab location	St. Michael's Hospital/FIRST60
Relevant Links	https://first60.ca/
Contact Information	brodie.nolan@unityhealth.to

Principal Investigator: *Dr. Daphne Korczak*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Students should have relevant research experience in either pediatrics or mental health and have taken at least two statistics and research methods courses. Successful students will demonstrate academic excellence and a exceptional critical thinking and writing skills in addition to strong communication and presentation skills.
Research Summary	My research activities focus on depression and the association of adolescent-onset depression with premature cardiovascular disease, and novel interventions to improve both depression and cardiovascular health outcomes. This has led to a growing program of research examining the role of diet and the gut-brain axis for youth with depression. A secondary area of research in the lab is in child and adolescent suicide prevention. I also lead a large collaborative initiative that examined the impact of the COVID-19 pandemic on the mental health of children and is now examining the intersection of education and mental health for children and adolescents in the community.
Keywords	child and adolescent depression; nutritional psychiatry; youth mental health; youth suicide prevention
Lab location	SickKids
Relevant Links	www.korczaklab.com
Contact Information	daphne.korczak@sickkids.ca

Principal Investigator: *Dr. Don Redelmeier*

Currently Accepting	**MSc ; PhD**
Ideal Candidate	
Research Summary	Medical decision science
Keywords	Clinical epidemiology; Health services research; Cognitive psychology; Pitfalls of reasoning; Patient safety; Traffic Crashes
Lab location	Sunnybrook
Relevant Links	
Contact Information	dar@ices.on.ca 416-480-6999

Principal Investigator: *Dr. Haibo Zhang*

Currently Accepting	**PhD**
Ideal Candidate	Ideally, a student should demonstrate expertise in machine learning, a foundational understanding of bioimaging techniques, strong critical thinking and problem-solving abilities, and the capacity to work both independently and collaboratively. Additionally, excellent communication skills and adaptability to the fast-evolving landscape of critical care and mechanical ventilation research are essential.
Research Summary	Critically ill patients often necessitate mechanical ventilation as a life-saving intervention, but mechanical ventilation itself can lead to ventilator-induced lung injury (VILI). 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. 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	Bioimaging techniques, machine learning, mechanical ventilation, AI in critical care
Lab location	St. Michael's Hospital

Relevant Links	
Contact Information	haibo.zhang@unityhealth.to 416 864-6060 x77654

Principal Investigator: *Dr. Istvan Mucsi*

Currently Accepting	**MSc ; PhD**
Ideal Candidate	
Research Summary	Patient reported outcomes, symptom management, prehabilitation, chronic kidney disease. Health equity: African, Caribbean and Black and First Nations.
Keywords	Patient reported outcomes, symptom management, prehabilitation, chronic kidney disease. Health equity: African, Caribbean and Black and First Nations.
Lab location	Toronto General Hospital
Relevant Links	https://nefros.net/ ; https://carmnetwork.ca/ ; https://kidneyhealthacb.ca/ ; symptomcare.org ; etontario.org
Contact Information	istvan.mucsi@utoronto.ca 416-340-4800

Principal Investigator: *Dr. Jesse Pasternak*

Currently Accepting	**MSc ; PhD**
Ideal Candidate	Previous work in outcomes or health services research is required. Experience with ICES a huge plus.
Research Summary	Innovation and outcomes in Thyroid, Parathyroid and Adrenal Tumors
Keywords	
Lab location	UHN
Relevant Links	https://surgery.utoronto.ca/faculty/jesse-pasternak
Contact Information	paige.mckinley@mail.utoronto.ca (416) 340-4792

Principal Investigator: *Dr. John Vincent*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Significant wet lab experience, and in a research environment, is a requirement, preferably with DNA, RNA and protein, and cell culture-related techniques
Research Summary	Molecular genetics and molecular biology of neurodevelopmental disorders, including autism, and developing therapeutic strategies. Our main focus is on genes such as PTCHD1, MECP2, CHD2, CHD8, SYNGAP1 and others.
Keywords	autism spectrum disorder; neurodevelopmental disorders; intellectual disability; genes; function
Lab location	CAMH
Relevant Links	www.ncbi.nlm.nih.gov/myncbi/john.vincent.5/bibliography/public/
Contact Information	john.vincent@camh.ca 416 317 0890

Principal Investigator: *Dr. Julie Ottoy*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Experience with statistical analysis and Python/R or equivalent software. Basic programming skills (eg. Linux/Bash). Prior course(s) related to neuroscience and/or imaging.
Research Summary	Dr. Ottoy's research focuses on elucidating Alzheimer's disease pathophysiology through the application of structural, functional, and molecular neuroimaging techniques, as well as fluid biomarkers. She also studies novel targets for small vessel disease and their interactions with Alzheimer's pathology and inflammation in the brain. Her research interests combine translational and clinical research in living humans. She is currently recruiting MSc and PhD students to work on projects that involve vascular-inflammatory contributions to dementia. This research applies multi-modal imaging (structural MRI, functional MRI, and Positron Emission Tomography) and blood-based biomarkers in large dementia cohorts. Her work is carried out in close collaboration with other scientists at Sunnybrook, including Drs. Goubran (artificial intelligence), Black (vascular dementia - IMS), and Rabin (women's health - IMS). If you have a computational neuroscience focus with a special interest in neuroimaging, please contact Dr. Ottoy at julie.ottoy@sri.utoronto.ca with your CV and transcript.
Keywords	Dementia; Neuroimaging; Vascular disease; Inflammation; MRI; Biomarkers
Lab location	Sunnybrook Research Institute
Relevant Links	1) Spotlight: https://health.sunnybrook.ca/understanding-the-causes-and-progression-of-alzheimers-disease-scientist-spotlight-on-dr-julie-ottoy/ 2) Scientist profile: https://research.sunnybrook.ca/researchers/julie-ottoy/ 3) Publications: https://scholar.google.com/citations?user=SEal3W0AAAAJ&hl=en
Contact Information	julie.ottoy@sri.utoronto.ca

Principal Investigator: *Dr. Karineh Kazazian*

Currently Accepting	**MSc**
Ideal Candidate	
Research Summary	In the Kazazian lab we study non-genetic causes of drug resistance in gastrointestinal epithelial cancers. The research program utilizes an integrated pipeline that connects mechanistic modelling in patient derived organoids to co culture validation with stromal components and to in vivo confirmation, producing actionable readouts for future clinical correlation. Current work focuses on non genetic drug tolerance and leverages organoids, live cell assays, autophagy and stress readouts, EMT and plasticity markers, and quantitative image analysis to better understand treatment resistance and tumour progression. The Kazazian lab is located in the Princess Margaret Research Institute, Canada's largest integrated cancer research, teaching, and treatment centre, and one of UofT's affiliated teaching hospitals. As one of UHN's seven research institutes, the Princess Margaret Cancer Centre provides over 299,000 sq. ft. of research space and 15 state-of-the-art core facilities that enable its 307 researchers, many of whom are clinician scientists, and ~413 trainees to study all major areas of cancer across its seven programs: cancer biology and imaging, computational biology and medicine, genetics and epigenetics, immuno-oncology, protein structure and function, stem cells and supportive care. The world-class facilities and specialized services that support this productive and innovative research enterprise include the UHN Biobank, PM Genomics Centre, Functional High Throughput Screening Core, Animal Resources Centre, PM Biostatistics Department, among others. PM also offers weekly educational rounds for research trainees, covering critical topics such as grant writing, protocol development, biostatistics, literature appraisal, clinical research operations, and effective scientific communication.
Keywords	Gastric cancer, autophagy, drug resistance, translational research, oncology, patient derived models

Lab location	Princess Margaret Cancer Centre
Relevant Links	
Contact Information	karineh.kazazian@uhn.ca

Principal Investigator: *Dr. Katalin Szaszi*

Currently Accepting	**MSc**
Ideal Candidate	
Research Summary	Dr. Szaszi is a cell biologist whose discovery and translational research focuses on epithelial biology and pathophysiology in the context of tissue injury and regeneration in kidney and skin disease. The lab's major objective is to uncover and validate molecular pathways activated by chronic inflammation, that have key roles in physiological and pathological tissue repair, and to devise means to interfere with these. The lab currently focuses on the role and regulation of Rho family proteins and tight junction proteins in secretion, migration and fibrotic reprogramming of epithelial cells. They use cultured cells and a variety of cell biological and biochemical approaches to assess the role of specific proteins in dysregulated tissue repair and identify potential drug targets for preventing organ fibrosis. The uncovered mechanisms are further validated and explored using animal models of kidney and skin diseases. Dr. Szaszi is supported by grants from CIHR, NSERC and the Canadian Kidney Foundation, and has over 85 peer-reviewed, well cited publications.
Keywords	Epithelial cell biology; signal transduction; inflammation; organ fibrosis; kidney disease; keratinocyte biology
Lab location	Keenan Research Center St Michael's Hospital
Relevant Links	https://research.unityhealth.to/profiles/katalin-szaszi
Contact Information	katalin.szaszi@unityhealth.to

Principal Investigator: *Dr. Kathryn Howe*

Currently Accepting	**PhD**
Ideal Candidate	
Research Summary	endothelial biology and cell to cell communication in atherosclerosis with emphasis on extracellular vesicles
Keywords	endothelial cells, atherosclerosis, extracellular vesicles, efferocytosis
Lab location	PMCRT
Relevant Links	www.howeandfishlabs.com
Contact Information	Kathryn.howe@uhn.ca Contact: karima.bandali@uhn.ca

Principal Investigator: *Dr. Lihi Eder*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Prioritize people with previous clinical background (e.g. MD) or strong and proven research experience
Research Summary	Clinical and translational research in psoriatic arthritis focusing on cardio-metabolic abnormalities, sex/gender difference, risk factors for progression to psoriatic arthritis
Keywords	clinical research, translational research, imaging, sex/gender, cardio-rheumatology
Lab location	Women's College Hospital
Relevant Links	https://ims.utoronto.ca/faculty/lihi-eder
Contact Information	lihi.eder@wchospital.ca 416-323-6400 ext 5108

Principal Investigator: *Dr. Marta Maslej*

Currently Accepting	**MSc**
Ideal Candidate	A student with an interest in mental health and generative AI; programming experience and exposure to methods in AI/NLP are preferred
Research Summary	We study AI applications in mental health, with a focus on health equity and human factors of implementation.
Keywords	AI, mental health, equity, natural language processing, human-computer interactions
Lab location	CAMH
Relevant Links	https://predictivecarecollab.com/
Contact Information	marta.maslej@camh.ca

Principal Investigator: *Dr. Michael Fehlings*

Currently Accepting	**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.fehlingslab.com/
Contact Information	michael.fehlings@uhn.ca 416-603-5627

Principal Investigator: *Dr. Mingyao Liu*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Strong bioinformatics, especially on scRNA-sequences and data analysis
Research Summary	Single cell RNA sequencing on ischemia-reperfusion injury in human lung transplants.
Keywords	Single cell RNA sequencing on ischemia-reperfusion injury in human lung transplants.
Lab location	MaRS
Relevant Links	https://latnerlabs.ca/lab-groups/
Contact Information	mingyao.liu@utoronto.ca 416 634-7501

Principal Investigator: *Dr. Minna Woo*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Research experience in a basic science lab with knowledge in cell biology and physiology is welcome. Mouse work experience would also be helpful.
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 dementia. 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, and brain. 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-ranging implications for better understanding and treatment of both diabetes as well some cancers and dementia.
Keywords	insulin resistance, diabetes, metabolism, inflammation, signal transduction, cre-loxP system
Lab location	UHN - MaRS East Tower
Relevant Links	https://bbdc.org/members-research/woo-minna/
Contact Information	minna.woo@uhn.ca 416-340-5214

Principal Investigator: *Dr. Nadia Minian*

Currently Accepting	**MSc ; PhD**
Ideal Candidate	
Research Summary	Tobacco use remains the leading cause of preventable premature death,1 killing over 45,000 Canadians annually and costing the economy an estimated $16 billion each year. Quitting smoking reduces the risk of developing several cancers and other smoking-related diseases, with this risk continuing to decrease the longer an individual remains abstinent. Smoking cessation treatment is one of the main contributors to reductions in mortality in Canada 3 and one of the most cost-effective clinical interventions for reducing cancer morbidity and mortality. Among approved smoking cessation medications, varenicline is one of the most effective;6 it increases the odds of cessation compared to placebo [odds ratio (OR) = 2.88], bupropion (OR = 1.59), and nicotine replacement patch (OR = 1.51)].6 While many smoking cessation pharmacological treatments work better for men than for women,7,8 varenicline has demonstrated equal efficacy for 1-year outcomes Thus, varenicline may help reduce gender disparities typically seen in rates of smoking cessation.9 Adherence to varenicline is critical for success, as higher adherence levels significantly increase the likelihood of long-term abstinence10-12 but adherence to the 12-week regimen was only 50% in the largest study to date. In the last two years, with CIHR funding (Grant #: PJT 180405 and 707218), we developed and tested ChatV,13,14 a theory-informed, conversational agent designed to support adherence to varenicline. ChatV engages users through automated conversations, offering tailored features such as reminders, side-effect management, goal-setting and problem-solving. The intervention is grounded in behavioural science frameworks, and was co-created with healthcare providers and patients to ensure usability and relevance. It incorporates many of the findings from a 2019 Cochrane review, summarizing interventions to increase adherence to smoking cessation medication. ChatV addresses scalability challenges by automating adherence supports and reducing the need for intensive human resources. Preliminary feasibility testing has shown promising results, with all predefined thresholds outlined in our “stop, amend, and go” criteria have been met, reinforcing the feasibility of progressing to a full-scale trial. We now have secured the funding to conduct the RCT

Keywords	Cancer Prevention, Smoking Cessation, Medication Adherence, Implementation Science, Digital Interventions, Behavioural Science
Lab location	CAMH- Queen St
Relevant Links	https://intrepidlab.ca/en
Contact Information	nadia.minian@camh.ca (416) 535-8501

Principal Investigator: *Dr. Nomazulu Dlamini*

Currently Accepting	**MSc; PhD**
Ideal Candidate	
Research Summary	I leverage a large clinical database and employ multi-modal neuroimaging and genomic discovery to elucidate mechanisms and predictors of risk and outcome in childhood stroke and cerebrovascular disorders.
Keywords	childhood stroke, neuroimaging, large data, genomics, cerebrovascular disorders,
Lab location	SickKids
Relevant Links	
Contact Information	nomazulu.dlamini@sickkids.ca kylie.wazonek@sickkids.ca 416-813-7721

Principal Investigator: *Dr. Peng Yan*

Currently Accepting	**MSc; PhD**
Ideal Candidate	I am a vitreoretinal surgeon and Associate Professor in the Department of Ophthalmology and Vision Sciences, and I would like to continue my contribution to PAC and engage in teaching or collaborations with MSc and PhD students.
Research Summary	Advancing medical & surgical vitreoretinal care through translational science, multimodal imaging, and AI.
Keywords	macula, retina, vitreous, vitreous substitute, surgery
Lab location	Kensington Vision and Research Center
Relevant Links	https://scholar.google.com/citations?user=K5coSfgAAAAJ&hl=en
Contact Information	pyan@kensingtonhealth.org 416-928-1335

Principal Investigator: *Dr. Richard Swartz*

Currently Accepting	**MSc; PhD**
Ideal Candidate	
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 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. Recently, I am focused on large pragmatic trials in emergency stroke care, designing and carrying out ambulance-based clinical trials for stroke and validating better outcome measures for cognitive impairment in clinical trials.
Keywords	Stroke Thrombolysis Thrombectomy Neuroprotection Vascular Cognitive Impairment Dementia EVT
Lab location	Sunnybrook
Relevant Links	ACT Lancet 2022 – https://pubmed.ncbi.nlm.nih.gov/35779553/ VCI guidelines Alzheimers and Dementia 2025 https://pubmed.ncbi.nlm.nih.gov/39822128/ Goal Setting (Stroke 2021) - https://pubmed.ncbi.nlm.nih.gov/33467876/ ONDRI (CJNS 2017) - https://pubmed.ncbi.nlm.nih.gov/28003035/ Longterm Outcomes (CMAJ 2017) - https://pubmed.ncbi.nlm.nih.gov/28739847/
Contact Information	rick.swartz@sunnybrook.ca 416-480-6100- EXT 683724

Principal Investigator: *Dr. Robert Hamilton*

Currently Accepting	**MSc; PhD**
Ideal Candidate	The Hamilton lab seeks a graduate student for the MSc (preferred) or PhD program. The preferred avenue of research is biomarkers and pathophysiology of Congenital Heart Block, continuing research recently published in Lancet Rheumatology (Benjamin et al, May 2025). Experience with epitope analysis, ELISA, western blotting and animal modelling (particularly active immunization of mice and assessment of fetal mice) are strongly preferred. Students are expected to seek additional/independent funding through all feasible applications.
Research Summary	The Hamilton lab seeks a graduate student for the MSc (preferred) or PhD program. The preferred avenue of research is biomarkers and pathophysiology of Congenital Heart Block, continuing research recently published in Lancet Rheumatology (Benjamin et al, May 2025). Experience with epitope analysis, ELISA, western blotting and animal modelling (particularly active immunization of mice and assessment of fetal mice) are strongly preferred. Students are expected to seek additional/independent funding through all feasible applications.
Keywords	congenital heart block, autoimmune, lupus, Sjogren's disease, western blotting, ELISA
Lab location	SickKids
Relevant Links	Benjamin, S., et al. (2025). "Maternal autoantibodies to the sodium potassium pump alpha1 subunit AT1A1 and fetal autoimmune congenital heart block: a case-control study." Lancet Rheumatol.Suzuki, H., et al. (2005). "Effect of maternal autoantibodies on fetal cardiac conduction: an experimental murine model." Pediatric research 57(4): 557-562.

Contact Information	robert.hamilton@sickkids.ca 416-813-6142

Principal Investigator: *Dr. Robert Kridel*

Currently Accepting	**MSc**
Ideal Candidate	
Research Summary	We study lymphoma using functional genomics, liquid biopsies, and therapeutic models to discover biomarkers and treatments.
Keywords	lymphoma, translational research, epigenetics, functional genomics, novel therapies
Lab location	Princess Margaret Cancer Research Tower
Relevant Links	http://kridel-lab.ca
Contact Information	robert.kridel@uhn.ca

Principal Investigator: *Dr. Robert Vanner*

Currently Accepting	**MSc ; PhD**
Ideal Candidate	Experience in cancer genetics, molecular biology, or computational biology would be an asset.
Research Summary	My research program uses large datasets, genomics, and animal models to define the impact of Clonal Hematopoiesis and somatic mosaicism on clinical outcomes, with the goal of developing precision treatment strategies and novel therapeutics for patients with cancer and chronic disease.
Keywords	clonal hematopoiesis, cancer, genetics, genomics, mosaicism
Lab location	PMCRT - MaRS Tower
Relevant Links	https://www.ncbi.nlm.nih.gov/myncbi/robert.vanner.1/bibliography/public/
Contact Information	robert.vanner@uhn.ca (416) 946-4501x8673

Principal Investigator: *Dr. Roger S. McIntyre*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Persons interested in translational research around scientific mechanisms for translational medicine for major depressive disorder and bipolar disorder
Research Summary	Especially interested in mechanisms, notably metabolic and inflammatory mechanisms and developing novel treatments for psychiatric disorders, including psychedelics, ketamine, GLP-1 agents and many more.
Keywords	depression, bipolar disorder, psychedelics, ketamine, incretins
Lab location	UHN
Relevant Links	https://pubmed.ncbi.nlm.nih.gov/?term=mcintyre+rs&sort_order=asc&size=100
Contact Information	roger.mcintyre@bcdf.org

Principal Investigator: *Dr. Sanjeev Sockalingam*

Currently Accepting	**MSc**
Ideal Candidate	
Research Summary	My research lab has two areas of focus: The first is on the intersection of obesity and mental health including links between obesity and mental health outcomes and interventions to treat mental health conditions to improve obesity care. My lab also conducts research on using digital tools and AI in advancing knowledge translation and capacity building in healthcare.
Keywords	obesity, mental health, bariatric surgery, digital education, artificial intelligence, knowledge translation
Lab location	CAMH
Relevant Links	https://www.camh.ca/en/science-and-research/science-and-research-staff-directory/sanjeevsockalingam
Contact Information	Tanya Essarie - tanya.essarie@camh.ca 416-535-8501 ext 32178

Principal Investigator: *Dr. Sarah Hales*

Currently Accepting	**MSc**
Ideal Candidate	We would welcome students with expertise/interest in quantitative or qualitative methodologies, as well as interest in exploring the experience and impact of this complex intervention on those facing advanced disease and end of life.
Research Summary	Our team is currently conducting trials of a novel psychedelic-assisted psychotherapy called Psilocybin-assisted Existential, Attachment and RelationaL (PEARL) therapy in patients with advanced cancer and their family caregivers. These trials are conducted by our team, collaborating across various disciplines including psychiatry, psychology, palliative care, spiritual care, bioethics, and music therapy. We are employing both quantitative and qualitative methods aimed at evaluating feasibility, acceptability, and efficacy.
Keywords	Psychedelic-assisted psychotherapy, advanced cancer, end-of-life experience, existential distress, depression, anticipatory grief
Lab location	Princess Margaret, University Health Network
Relevant Links	
Contact Information	sarah.hales@uhn.ca 416-946-4501 x 2551

Principal Investigator: *Dr. Seema Mital*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Hardworking, self-motivated, independent, good writing skills, history of productivity, with a background in one or more of bioinformatics, computational science, cardiac research, cell culture, molecular biology techniques
Research Summary	We have sequenced over 2,000 genomes, generated multi-omics datasets from several hundred patients, and collected extensive clinical, imaging, and deep phenotyping data. Leveraging these resources, we are applying AI-driven analytics to uncover predictive algorithms and identify new therapeutic targets. This integrated platform offers diverse opportunities for trainees to engage in cutting-edge precision cardiology research. Projects include defining genomic predictors of disease phenotypes and outcomes in childhood heart disease, building AI models for predicting diastolic heart failure in pediatric cardiomyopathy, advancing in silico drug discovery through multi-omics integration, and testing targeted therapies in patient-derived iPSC models. Trainees will also explore metabolic mechanisms of cardiomyopathy using advanced imaging such as cardiac magnetic resonance spectroscopy and lipidomics. Working within a multidisciplinary team of clinicians, scientists, and data experts, trainees will gain expertise in genotype-phenotype association, multi-omics integration, and AI methods, preparing them to implement precision care algorithms that directly impact patients.
Keywords	Genomics, Multi-omics, Artificial Intelligence, Cardiomyopathy, Precision Medicine, iPSC Models
Lab location	SickKids
Relevant Links	https://www.sickkids.ca/en/staff/m/seema-mital/

Contact Information	seema.mital@sickkids.ca 416-813-7418

Principal Investigator: *Dr. Sergio Rueda*

Currently Accepting	**MSc; PhD**
Ideal Candidate	
Research Summary	The overall goal of our research program is to better understand the effects of cannabis use and legalization on mental health and health care utilization in the era of federal legalization. We aim to improve the mental health of people who consume cannabis by evaluating the impacts of cannabis use on mental health and service provision to drive change in policy and practice, and to promote safer cannabis use by optimizing support for marginalized people. We work with a variety of qualitative and quantitative methods, study designs (cohort and RCTs), and with a variety of populations, including people with mental health conditions and people living with HIV. Projected impacts of our research program include enabling people who use cannabis to have a healthier relationship with cannabis and optimizing programs and services to improve the lives of people who use cannabis.
Keywords	Cannabis; cohort and laboratory studies; quantitative and qualitative research
Lab location	CAMH
Relevant Links	
Contact Information	sergio.rueda@utoronto.ca 647-280-5002

Principal Investigator: *Dr. Shannon Lange*

Currently Accepting	**MSc**
Ideal Candidate	Ideal student will have knowledge of basic epidemiological concepts, experience working with large datasets, and a strong skill set in biostatistics.
Research Summary	Much of the research being conducted in my lab focuses on quantitative analytics and population health modeling with a particular emphasis on suicide epidemiology and the link between alcohol use and suicide.
Keywords	Alcohol, Suicide, Epidemiology, Population Health, Public Health
Lab location	CAMH
Relevant Links	
Contact Information	shannon.lange@camh.ca 416-535-8501 x34512

Principal Investigator: *Dr. Stefan Kloiber*

Currently Accepting	**MSc ; PhD**
Ideal Candidate	Experience in clinical research, mental health / psychiatry, neuroimaging, genomics and/or analysis of large datasets
Research Summary	Clinical Research - Mood, Anxiety, Obsessive-Compulsive Disorders including clinical trials, neuroimaging studies (PET, fMRI), biomarker studies, genomics, digital behavioural phenotyping, pharmacogenetics, endocannabinoid system, effects of cannabinoids.
Keywords	Clinical research, Mood, Anxiety, Obsessive-Compulsive Disorders, PET imaging, endocannabinoid system
Lab location	CAMH
Relevant Links	https://psychiatry.utoronto.ca/faculty/stefan-kloiber
Contact Information	stefan.kloiber@camh.ca 416-535-8501

Principal Investigator: *Dr. Tereza Martinu*

Currently Accepting	**MSc; PhD**
Ideal Candidate	Experience with flow cytometry and/or statistical analyses (R studio) are a plus.
Research Summary	Our lab works on mechanisms and biomarkers of chronic rejection after lung transplantation. We use patient-derived samples and mouse models to focus on the following themes: 1) The role of epithelial injury in pro-fibrotic pathways, 2) Th17 and IL-17, 3) pro-fibrotic macrophages in chronic rejection, 4) B cell phenotypes in post-transplant rejection and inflammation, 5) the role of innate immune stimuli (such as aspiration) in potentiating rejection. Most common techniques include single cell sequencing and transcriptomics, flow cytometry, immunofluorescence, in vitro cell culture systems, ELISA and multiplex arrays for protein measurements, and mouse lung transplantation.
Keywords	Lung transplant, chronic rejection, epithelial cells, IL-17, B cells, macrophages. B cells, fibrosis.
Lab location	PMCRT
Relevant Links	https://www.cladteam.ca/
Contact Information	tereza.martinu@uhn.ca 416-710-6309

Principal Investigator: *Dr. Victor Tang*

Currently Accepting	**MSc; PhD**
Ideal Candidate	
Research Summary	The goal of Dr. Tang's research program is to develop novel therapeutics and improve treatment outcomes for patients with substance use disorders and concurrent mental health and substance use disorders. His current areas of focus include: 1. Clinical trials and translational research testing novel therapeutic strategies in addiction psychiatry 2. Development of non-invasive brain stimulation modalities such as repetitive transcranial magnetic stimulation (rTMS), deep brain stimulation (DBS), and others to target neurobiological mechanisms of addiction and concurrent disorders, 3. Innovative approaches to clinical service delivery for substance use disorders through research integration, technology, and measurement-based care 4. Investigate brain and behaviour based biomarkers of substance use disorders and their comorbidities to enhance clinical care
Keywords	neuromodulation, clinical trials, clinical research, brain stimulation, addiction, depression
Lab location	CAMH
Relevant Links	https://scholar.google.com/citations?user=KtSGiPcAAAAJ&hl=en

Contact Information	victor.tang@camh.ca 416-535-8501 ext. 39137

Principal Investigator: *Dr. Yona Lunsky*

Currently Accepting	**MSc**
Ideal Candidate	
Research Summary	We study mental and physical health care for adults with developmental disabilities and their families. We are interdisciplinary and prioritize patient and family engagement in our work. We also co-design and evaluate mental health interventions for this population.
Keywords	developmental disabilities, mental health, healthcare, caregiving, autism, patient engagement
Lab location	CAMH
Relevant Links	www.hcardd.ca ; https://www.camh.ca/en/science-and-research/institutes-and-centres/azrieli-adult-neurodevelopmental-centre
Contact Information	yona.lunsky@camh.ca 415 535-8501, x37813

Principal Investigator: *Dr. Zahi Touma*

Currently Accepting	**MSc; PhD**
Ideal Candidate	
Research Summary	Systemic lupus Assessment of disease activity, patient-reported outcome measures, and cognitive function. Measurement science
Keywords	lupus, measurement, cognition, patient-reported outcomes
Lab location	Toronto Western Hospital
Relevant Links	https://ihpme.utoronto.ca/faculty-profile/zahi-touma/
Contact Information	zahi.touma@uhn.ca 416-603-5800 ext 5743