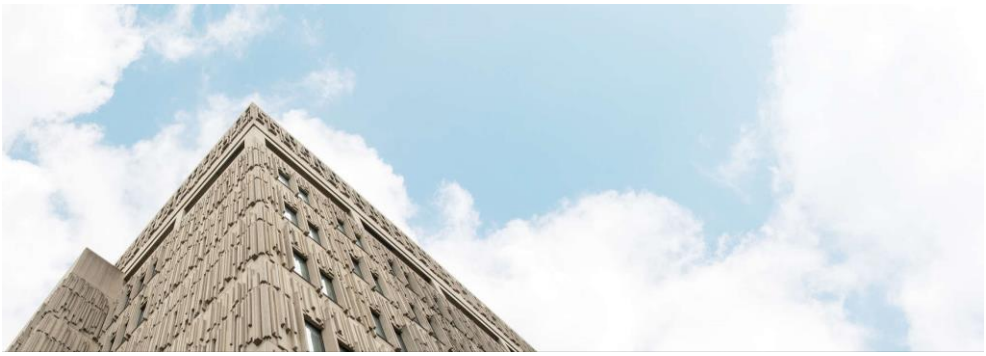
Institute of Medical Science
UNIVERSITY OF TORONTO



IMS Graduate Student Recruitment: January 2024

The Institute of Medical Science (IMS) is one of the largest graduate units at the University of Toronto. With over 700 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
- relevant links
- contact information

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

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

**Last Updated: December 1, 2023*

Principle Investigator:	*Amin Madani MD PhD FRCSC FACS*
Currently Accepting	**MSc**
Ideal Candidate	Highly motivated students with an interest in innovation and technology to improve the practice of surgery. Programming/engineering experience not required, but desirable.
Research Summary	The Surgical AI Research Academy (SARA) is dedicated towards research and innovation in areas related to surgical training, intra-operative performance augmentation, robotic surgery and telecoaching. We use various methodologies, including artificial intelligence, computer vision, AR/VR modelling, and simulation-based training to improve patient outcomes through surgical excellence.
Keywords	artificial intelligence; computer vision; surgery; assessment; patient safety
Lab location	University Health Network
Available Funding	Yes
Relevant Links	https://temertysimcentre.com/surgical-artificial-intelligence-research-academy-sara/
Contact Information	Kim.Nicholson@uhn.ca (416) 340-3843

Principle Investigator:	*Abhishek Bhaskaran*
Currently Accepting	**MSc**
Ideal Candidate	N/A
Research Summary	MRI scan guided Ventricular tachycardia ablation. The scan is used to identify scar channels which are critical for maintaining ventricular tachycardia circuits.
Keywords	Ventricular tachycardia Cardiac MRI scan
Lab location	TGH
Available Funding	Yes
Relevant Links	Pubmed Abhishek Bhaskaran
Contact Information	(416) 340-3911

Principle Investigator:	*NAVEED SIDDIQUI*
Currently Accepting	**MSc**
Ideal Candidate	N/A
Research Summary	Dr. Naveed Siddiqui I'm an Associate professor at the department of Anesthesia and Pain Medicine at the university of Toronto, and Director of Perioperative Anesthesia research unit at the Mount Sinai hospital, Toronto. The primary focus of my research is patient safety and medical education. My research initiatives include the observation of results related to aseptic technique for epidural anesthesia. I have obtained funding and have published several papers investigating educational needs and outcomes related to education of aseptic procedures in anesthesia practise. An important focus of my research and teaching is the application of ultrasound in airway management. The importance and impact of my research has been demonstrated through support from peer-reviewed funding agencies, publication of my research in high-impact journals, as well as the special focus the articles have generated (as editorials and special scientific merit categorization) and invitations to speak about my research, both at national and international level.
Keywords	Obstetric anestheisa, Quality of Recovery, Enhanced Recovery After Surgery, regional anesthesia
Lab location	Sinai health System
Available Funding	No
Relevant Links	https://discover.research.utoronto.ca/17925-naveed-siddiqui
Contact Information	My email: naveed.siddiqui@uhn.ca

Principle Investigator:	*Andrea Furlan*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Masters and PhD levels. Students with a background in healthcare or clinicians. Experience with interprofessional team, quantitative data analysis and some knowledge of qualitative methods.
Research Summary	Our project is part of the Transforming Health with Integrated Care (THINC) Implementation Science Teams (IST). We focus on improving our understanding of how to implement, evaluate, adapt, and/or spread/scale evidence-informed integrated care policies and interventions that encompass intersectoral collaborations within and/or beyond the formal health care delivery system in order to advance the Quadruple Aim and health equity. Our project involves knowledge mobilization of chronic pain and opioid stewardship, and we use the Project ECHO (Extensions for Community HealthCare Outcomes) to achieve these goals.
Keywords	knowledge mobilization; implementation science; chronic pain; primary care; case-based learning;
Lab location	UHN, Toronto Rehab, University Centre
Available Funding	Yes
Relevant Links	https://uhn.echoontario.ca/Our-Programs/Chronic-Pain https://www.echoontario.ca/#1 Dubin, R. E., Flannery, J., Taenzer, P., Smith, A., Smith, K., Fabico, R., Zhao, J., Cameron, L., Chmelnitsky, D., Williams, R., Carlin, L., Sidrak, H., Arora, S., & Furlan, A. D. (2015). ECHO Ontario Chronic Pain & Opioid Stewardship: Providing Access and Building Capacity for Primary Care Providers in Underserviced, Rural, and Remote Communities. Studies in health technology and informatics, 209, 15–22.
Contact Information	Corine.whittle@uhn.ca

Principle Investigator:	*Minna Woo*
Currently Accepting	**MSc; PhD**
Ideal Candidate	research experience in basic science lab, preferably animal handling experience
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 cancer. 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 nervous system. 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 define physiological roles in specific tissues, in addition to defining its potential pathogenic role in disease models. 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 cancer and cardiovascular disease.
Keywords	diabetes, insulin resistance, sarcopenia, fatty liver, vagal nerve, mouse models
Lab location	MaRS East Tower TGHRI
Available Funding	Yes
Relevant Links	https://pubmed.ncbi.nlm.nih.gov/?term=Minna+Woo&sort=date https://bbdc.org/members-research/woo-minna/
Contact Information	minna.woo@uhn.ca

Principle Investigator:	*Yat Man Tsang*
Currently Accepting	**MSc; PhD**
Ideal Candidate	N/A
Research Summary	A broad range of radiation oncology and science topics, including radiotherapy trial quality assurance, ultra-hypofractionated/ stereotactic radiotherapy treatment outcomes, and strategies to future-proofing radiation therapist practice.
Keywords	Radiation Therapy, Imaging, Quality Assurance, Big Data
Lab location	Princess Margaret Cancer Centre
Available Funding	Yes
Relevant Links	
Contact Information	Lina.LaTorre@uhn.ca (416) 946-2174

Principle Investigator:	*Benjamin Goldstein*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Prior research experiences is desired but not mandatory. Strong interpersonal skills and professionalism are required.
Research Summary	My group focuses on bipolar disorder in youth, and on the associations of vascular measures with bipolar disorder and with the brain. Our methods include neuroimaging, neurocognition, blood biomarkers, genetics, and detailed clinical characterization.
Keywords	bipolar disorder; neuroimaging; vascular; youth;
Lab location	CAMH
Available Funding	Yes
Relevant Links	https://www.camh.ca/en/science-and-research/institutes-and-centres/centre-for-youth-bipolar-disorder
Contact Information	benjamin.goldstein@camh.ca

Principle 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 data, and/or scientific writing.
Research Summary	The Shapiro Lab is based at the University of Toronto and Princess Margaret Cancer Centre. We conduct mixed methods research to understand individual health decision making and behaviour to improve cancer care across the disease continuum, from cancer prevention to end-of-life care. Current projects focus on cancer prevention and human papillomavirus (HPV) vaccine acceptance and uptake. Dr. Gilla Shapiro is a Psychologist and Clinician-Scientist at the Department of Supportive Care, Princess Margaret Cancer Centre, and an Assistant Professor at the Department of Psychiatry and the Dalla Lana School of Public Health, University of Toronto. She completed a PhD in Clinical and Health Psychology at McGill University and a dual-degree Master of Public Administration and Master of Public Policy at the London School of Economics and Political Science and the Hertie School of Governance. Dr. Shapiro's interests include psychosocial oncology, cancer prevention, health decision making, the social determinants of health, policy and health equity.
Keywords	Health behaviour Decision making Vaccine acceptance and uptake The social determinants of health Psychosocial oncology Mental health
Lab location	Princess Margaret Cancer Centre
Available Funding	Yes
Relevant Links	
Contact Information	gilla.shapiro@uhnresearch.ca NA

Principle Investigator:	*Corinne Fischer*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Master's students preferred. Experience with statistics is required and database experience is preferred.
Research Summary	The primary focus of research is to investigate the link between neurodegenerative disorders and psychosis leveraging imaging, biomarkers, genomics and clinical data.
Keywords	Psychosis, Alzheimer's disease, APOE4, delusions, hallucinations.
Lab location	Unity Health, St. Michaels Campus
Available Funding	Yes
Relevant Links	https://research.unityhealth.to/researchers/corinne-e-fischer/
Contact Information	corinne.fischer@unityhealth.to (416) 864-5320

Principle Investigator:	*Monica Serban*
Currently Accepting	**MSc**
Ideal Candidate	programming skills: R and Python, deep learning methods, statistics background
Research Summary	The focus of my research is to personalize and optimize external beam radiation therapy and brachytherapy treatments. Additionally, I aim to establish clinical evidence for morbidity risk factors in cervix cancer. Furthermore, my research is dedicated to the accurate quantification of delivered radiation dose in the context of adaptive radiotherapy and re-irradiation.
Keywords	cancer radiotherapy, brachytherapy, artificial intelligence, morbidity and dose-effects relationships, radiation therapy treatment planning, deformable image registration, adaptive radiation therapy, re-irradiation, vaginal morbidity post-radiotherapy, ce
Lab location	Princess Margaret Cancer Centre
Available Funding	Yes
Relevant Links	https://radonc.utoronto.ca/faculty/monica-serban
Contact Information	monica.serban@uhn.ca (437) 249-5275

Principle Investigator:	*Katalin Szaszi*
Currently Accepting	**PhD**
Ideal Candidate	Experience in cell culture, cell biology methods and microscopy are an advantage
Research Summary	My lab is interested in the cell biology of tissue repair under normal and diseased sates. We are working with cultured epithelial cells, as well as disease models (e.g. kidney disease mouse model). I am seeking a student interested in exploring mechanisms of epithelial cell migration, focusing on the role of intercellular junctions. This is a discovery type basic science project, using microscopy (live imaging) and cell biology approaches
Keywords	epithelial cells; wound healing; tissue regeneration; intercellular junctions; live imaging; kidney disease
Lab location	Keenan Research Center, St Michael's Hospital (209 Victoria street)
Available Funding	Yes
Relevant Links	https://research.unityhealth.to/researchers/katalin-szaszi/
Contact Information	katalin.szaszi@unityhealth.to

Principle Investigator:	*Jennifer Kwan*
Currently Accepting	**MSc**
Ideal Candidate	We are seeking dedicated & motivated students interested in molecular biology research. As a Clinician-Scientist & former IMS graduate, Dr. Kwan is interested in mentoring the next generation of scientists and physician-scientists.
Research Summary	Many cancer patients experience side effects from cancer treatment. We are developing novel biomarkers and therapeutics for treatment-related side effects to improve the health and quality of life of cancer patients in the long-term.
Keywords	Breast Cancer, Molecular Biology, Cell Culture, Mouse Models, Biomarkers, Drug Discovery
Lab location	Princess Margaret Cancer Centre/ Research Institute, University Health Network
Available Funding	Yes
Relevant Links	https://www.uhnresearch.ca/researcher/jennifer-kwan
Contact Information	jennifer.kwan@uhn.ca

Principle Investigator:	*Robert Grant*
Currently Accepting	**MSc; PhD**
Ideal Candidate	Applicants must have a demonstrated track record of training neural networks, be motivated to help people with cancer, and excited to work as part of a dynamic multidisciplinary team. Prior research experience and clinical training are encouraged but not
Research Summary	We aim to use artificial intelligence to improve the lives of people with cancer. As a medical oncology, I align our research with the biggest challenges in oncology: improving the effectiveness and reducing the toxicity of treatment. To build AI systems, we use large structured and unstructured data from the electronic record at our institution, provincial administrative datasets, and multi-modal genomics datasets from hepatobiliary and pancreatic cancers generated by collaborators at the Ontario Institute for Cancer Research.
Keywords	Machine learning, artificial intelligence, genomics, electronic medical records, pancreatic cancer, biliary cancer
Lab location	Princess Margaret Cancer Centre
Available Funding	Yes
Relevant Links	
Contact Information	robert.grant@uhn.ca (416) 946 4501x3308

Principle Investigator:	*Darrell Tan*
Currently Accepting	**MSc**
Ideal Candidate	Our team values strong skills in critical thinking, quantitative analysis and scientific writing. We are not a wet lab. A commitment to health equity principles is essential.
Research Summary	Our team conducts clinical trials, clinical observational studies, and implementation science dedicated to finding and implementing expanded options for HIV and STI treatment and prevention.
Keywords	Infectious diseases; herpes simplex virus type 2; prevention; pre-exposure prophylaxis; post-exposure prophylaxis
Lab location	St Michael's Hospital
Available Funding	Yes
Relevant Links	https://www.optionslab.ca
Contact Information	cassandra.bertucci@unityhealth.to

Principle Investigator:	*Russell Schachar*
Currently Accepting	**MSc; PhD**
Ideal Candidate	We are looking for an eager student with a background in psychology or biological sciences, human or animal research. Experience in math, statistics and computer programming are assets in our lab.
Research Summary	Our lab studies the genetic and environmental causes of mental illness in children and youth in a large community and a clinic sample. We have a strong interest in the measurement of child psychopathology.
Keywords	genetics, environment, neurobiology
Lab location	SickKids
Available Funding	Awaiting results
Relevant Links	https://lab.research.sickkids.ca/schachar/careers/
Contact Information	