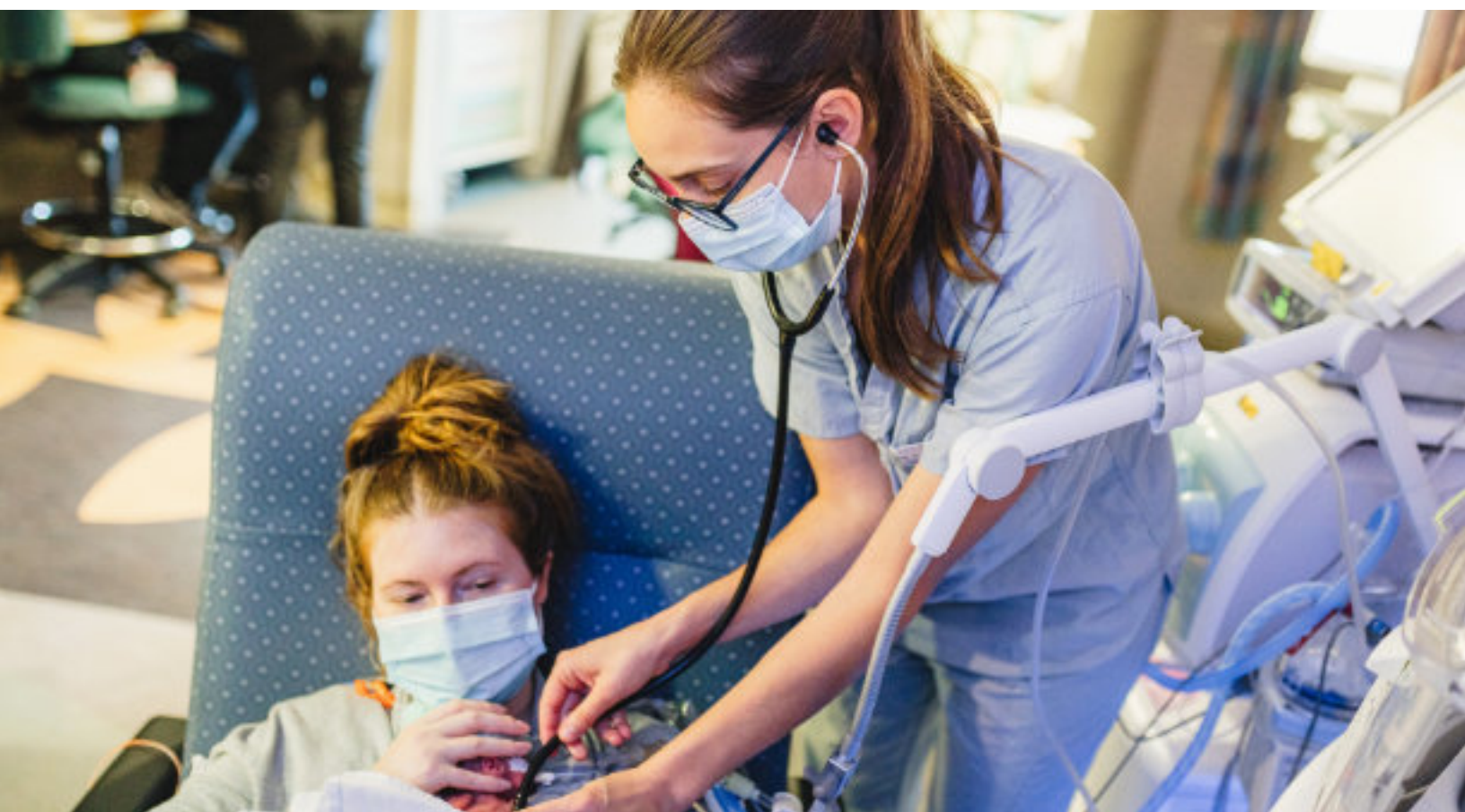


# Department of Medicine Annual Report 2021-2023



**BRIGHTER  
WORLD**

embracing recovery  
reimagining futures  
reconnecting communities



## Our Mission

We are a Department of Medicine, characterized by a collegial, interprofessional, and interinstitutional cooperation, working to achieve our goals of excellence in health education, research and clinical care which embraces the continuum from the basic science laboratory to the individual patient to the healthcare system.



## Our Goals

To facilitate the provision of the highest possible quality of care of the medical diseases of adults, giving appropriate consideration to costs and utilities.

To take responsibility for the quality of the education programs offered by McMaster University for physicians in training and practice in the disciplines of general internal medicine and the medical subspecialties and to provide many of the planners and teachers for this broad undertaking.

To be involved as appropriate in the education programs offered by McMaster University for non-physician scientists working in health-related fields and non-physician health professionals.

To develop and critically evaluate new knowledge across a wide range of disciplines from basic science to the clinical disciplines of general internal medicine and its subspecialties, to the healthcare system itself.

The Department of Medicine will set priorities for its research endeavours, based upon excellence, societal relevance, the availability of collaborative links, the opportunity for national and international significance, and additional criteria as judged appropriate.

# Welcome to the 2021-2022 and 2022-2023 Annual Report

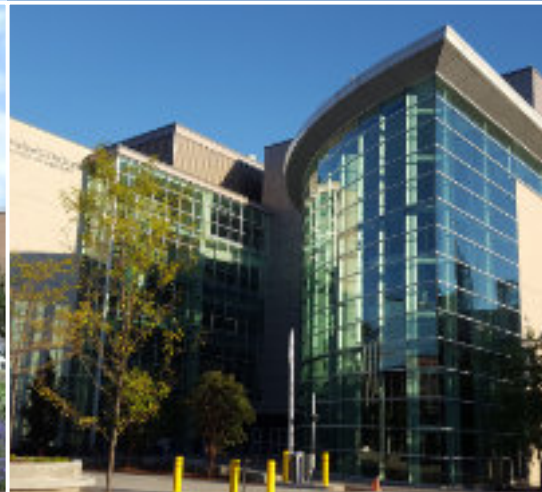
Welcome to this year's report, celebrating the Department of Medicine's remarkable contributions during the 2020-21 and 2021-22 academic years. This edition not only highlights the exceptional achievements of our department's leaders, faculty, and clinicians but also brings to light the personal stories of some of our most outstanding members.

You'll discover firsthand accounts of groundbreaking research projects, innovative educational practices, a steadfast commitment to global health, and passionate advocacy for the most vulnerable populations. As you delve into these extraordinary stories, you will see clear evidence of our faculty's unwavering dedication to excellence in learning, research, and clinical care.

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McMaster affiliate, Hamilton General Hospital



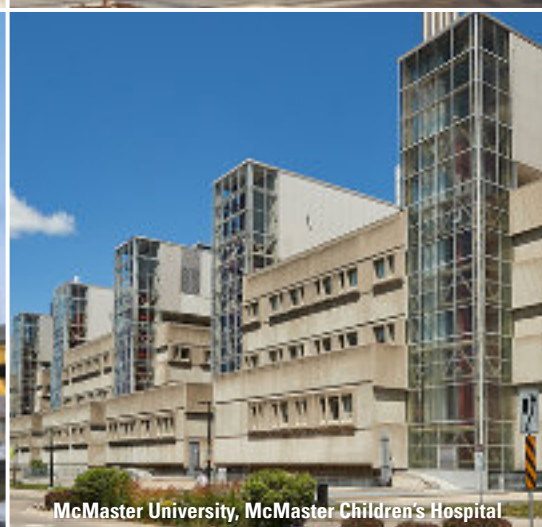
McMaster University, Hamilton Campus



McMaster affiliate, Juravinski Hospital



McMaster affiliate, St. Joseph's Healthcare, West 5th Campus



McMaster University, McMaster Children's Hospital



McMaster University, Niagara Regional Campus



McMaster University, Waterloo Regional Campus



McMaster affiliate, Juravinski Cancer Centre



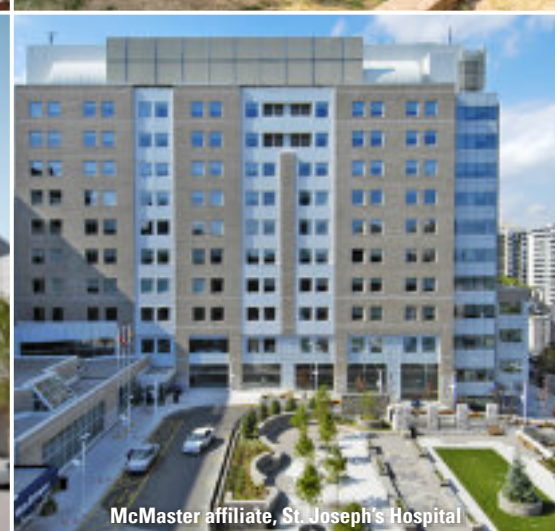
McMaster affiliate, St. Peter's Hospital



McMaster affiliate, Ron Joyce Children's Health Centre



McMaster affiliate, West Lincoln Memorial Hospital



McMaster affiliate, St. Joseph's Hospital

## A MESSAGE FROM THE President (2021–23)

McMaster's vision is to advance human and societal health through transformational impact, ambition, excellence, inclusion and community.

As the largest department in the Faculty of Health Sciences and a local and global leader in medical education, research and clinical care, the Department of Medicine truly embodies this vision.

Since the establishment of McMaster's world-renowned medical school more than 50 years ago, the Department of Medicine has been an unparalleled leader in driving research, both fundamental and clinical, for the Faculty of Health Sciences and the University. That legacy continues today with important discoveries and breakthroughs in many critical areas of health research that are improving the lives of countless people in our community and around the world. As well, the Department's tremendous impact and influence has continued to be recognized through the many awards and accolades garnered by its world-class students, faculty and staff.

The Department of Medicine continues to play an integral role in delivering exceptional health care to our community, with members of the Department leading the care of the majority of patients who require inpatient care in the Hamilton region, including those patients who experienced COVID-19. It's an extraordinary contribution to the health of our local community, and a testament to the deep commitment to patient care for which the Department is well known.

Core to the Department's success has been its ability to build the positive, interdisciplinary partnerships and collaborations needed to support educational, research and clinical excellence. The Department of Medicine has done this consistently – on campus, through extensive links within the University including with the Faculties of Engineering, Business, Humanities and Science; and in our community, working closely with our valued hospital partners to build both academic and clinical expertise.

The Department of Medicine has much to be proud of, and I want to congratulate faculty, students and staff on your many achievements. I look forward to seeing how you continue to drive innovation in teaching, research and patient care in the years ahead. ■



**Dr. David  
Farrar**

President and Vice-Chancellor  
McMaster University



*Core to the Department's success has been its ability to build the positive, interdisciplinary partnerships and collaborations needed to support educational, research and clinical excellence.*

A MESSAGE FROM THE

# Dean and Vice-President



*The  
Faculty  
ranked*

*11th overall in the  
world for clinical,  
pre-clinical and  
health subjects for  
2020*

*—Dr. Paul O'Byrne*

Over the past two years, the Department of Medicine celebrated many accomplishments that have helped the Faculty of Health Sciences build its global reputation for offering innovative, problem-based programs and high-impact research.

From training medical team members in a collaborative, interdisciplinary approach to developing effective and efficient healthcare to achieving multiple research successes in several important healthcare areas, we are advancing human and societal health and well-being through our culture of innovation, exploration, and collaboration. At the same time, we remain dedicated to the well-being of our communities and to supporting health equity.

Among its successes, our faculty members received many noteworthy recognitions. For example, professor Deborah Cook won the prestigious 2022 Canada Gairdner Wightman Award for her ground-breaking research in the treatment of patients in the intensive care unit; professor Gordon Guyatt received the Einstein Foundation Award for Promoting Quality in Research; and professor Parminder Raina was named a member of the Order of Canada for his research on aging and its impact on health and disease.

Moreover, nine Faculty of Health Sciences professors joined the Canadian Academy of Health Sciences (CAHS) as fellows. This election is considered the highest recognition of excellence in Canadian academic health sciences. The ten new McMaster CAHS fellows are professors Mehran Anvari, Richard Austin, Eric Brown, Anthony Chan, David Earn, Charu Kaushic, James MacKillop, Parameswaran Nair, Sheila Singh and David Streiner.

Two Faculty researchers were recognized by the Royal Society of Canada (RSC) for their contributions to research and scholarship. Sonia Anand, a professor in the Department of Medicine and senior scientist at the Population Health Research Institute, was named a fellow in the RSC's Academy of Science, and Andrea Gonzalez, an associate professor in the Department of Psychiatry & Behavioural Neurosciences, was elected to the RSC's College of New Scholars, Artists and Scientists.

Our students also continue to receive significant national and international accolades. For example, seven McMaster scholars were awarded the prestigious

Vanier Canada Graduate Scholarship for their academic excellence, research potential and leadership. We also added a Rhodes Scholar to our list of four prior Rhodes Scholarship recipients. Rishi Bansal, a third-year medical student in McMaster University's Michael G. DeGroote School of Medicine and a graduate of the university's Arts and Science program, was one of only eleven students across Canada to be awarded the scholarship that will enable him to pursue studies in health-care quality and integration at the University of Oxford.

Another milestone was the opening of The Indigenous Health Learning Lodge, a new home for Indigenous faculty, staff, learners, and others who want to learn about Indigenous health science education and Indigenous culture. A hub for training and curriculum development, the learning lodge provides a safe space with access to Traditional Knowledge Helpers and a student lounge to study and socialize. It will also be

## Dr. Paul O'Byrne

Dean and Vice-President,  
McMaster University



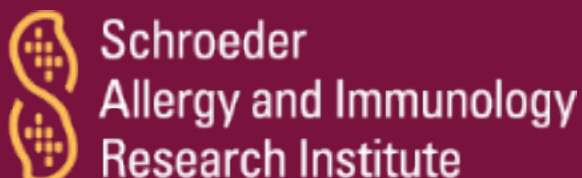
an inclusive place for non-Indigenous students to learn more about colonization and reconciliation.

The Faculty ranks highly among the country's most research-intensive universities for graduate students and faculty members. For example, in the 2021 Research Infosource rankings, McMaster placed first in graduate student research intensity – averaging \$68,900 per graduate student, and second in faculty research intensity – averaging \$369,400 per faculty member, significantly above the national average for both. With a total sponsored research income of \$353.5 million, McMaster

placed third among medical/doctoral schools in the Research University of the Year ranking, which measures research income and intensity, along with publications in leading journals, and publication impact and intensity.

Schroeder Allergy and Immunology  
Research Institute

Established from a \$10 million gift from  
Walter Schroeder and family





Deborah Cook  
Canada Gairdner Wightman Award



Gord Guyatt  
Einstein Foundation Award



Parminder Raina  
Order of Canada

#### Canadian Academy of Health Sciences (CAHS) Fellows

Mehran Anvari,  
Richard Austin,  
Eric Brown,  
Anthony Chan,  
David Earn,  
Charu Kauschic,  
James MacKillop,  
Parameswaran Nair,  
Sheila Singh,  
David Streiner

McMaster is also considered as one of the world's 50 best schools to study life sciences and medicine, ranking 49th internationally, according to the 2022 QS World University Rankings by Subject. McMaster's clinical medicine program also ranked 47th worldwide and 2nd in Canada in the Shanghai 2022 Academic Ranking of World Universities, and 24th worldwide in the Times Higher Education rankings.

Lastly, the Faculty opened a new institute to bring clinicians, scientists, and data specialists together in a one-stop shop to research the causes of life-threatening allergies and develop new treatments. The Schroeder Allergy and Immunology Research Institute was established thanks to a \$10 million gift from Walter Schroeder, a McMaster MBA '69 graduate, and his family. The funds also established the Schroeder Chair in Allergy and Immunology Research, held by Susan Wasserman, SAIRI's director and a McMaster professor of medicine in clinical immunology and allergy.

These are only a few of the many successes achieved over the past year. I encourage you to follow me on LinkedIn and other social media platforms to stay up-to-date on the latest news from the Faculty. You can also find the latest news on the Faculty's website <https://healthsci.mcmaster.ca/> ■



Rishi Bansai  
Third-year medical student receives scholarship to study at the University of Oxford



Andrea Gonzalez  
Elected to the Royal Society of Canada's (RSC) College of New Scholars, Artists and Scientists



Sonia Anand  
Fellow in the Royal Society of Canada's (RSC) Academy of Science

# INDIGENOUS HEALTH LEARNING LODGE



**Dr. Bernice Downey**  
Associate Dean



Dr. Bernice Downey is the inaugural Associate Dean of Indigenous Health within the Faculty of Health Sciences and is leading the way in a strategic response to the Truth and Reconciliation Commission of Canada's Calls to Action.



## Indigenous Health Learning Lodge

Home for Indigenous faculty, staff, learners, and others who want to learn about Indigenizing health science education and Indigenous culture.



A MESSAGE FROM THE

# Chair of the Department of Medicine

EMBRACING  
RECOVERY



REIMAGINING  
FUTURES



RECONNECTING  
COMMUNITIES

The Department of Medicine shines as a beacon of excellence in clinical care, research, and education within the Faculty of Health Sciences and the broader University.

As we turn the page on the 2022/23 academic year, our Department has grown remarkably since our last report. We are comprised of 339 GFT, 48 Emeritus Professors, 102 Joint/Associate faculty members, 22 clinical scholars and 517 part-time faculty across Hamilton, Kitchener-Waterloo and St. Catharines. Under the dynamic leadership of Dr. Margo Mountjoy in Kitchener-Waterloo and Dr. Amanda Bell in Niagara, we've welcomed new talents, strengthening our regional presence in Ontario and fortifying our commitment to health sciences.

In response to the unprecedented challenges posed by COVID-19, we stand at a pivotal moment of **Recovery**, **Reconnection**, and **Reimagining**. This triad of resilience forms the cornerstone of our vision for the upcoming year.

**Recovery** is more than a return to normalcy; it's a concerted effort to address the pandemic's clinical backlog while upholding our routine responsibilities. Our researchers, riding on the wave of significant pandemic-related funding, have now pivoted to groundbreaking work in cardiovascular, rheumatologic, and other fields, garnering numerous accolades.

**Reimagining** is at the core of our evolution. The revolutionary overhaul of our Internal Medicine core program—shifting from resident-dependent to resident-independent models at the Juravinski site—marks a significant milestone in our 50-year history. This transition, a testament to our faculty's adaptability and commitment, has been seamlessly implemented, thanks to our dedicated faculty, the Faculty of Health Sciences, and our hospital partners.

Our Department stands out in the Faculty of Health Sciences with nearly 50 full-time scientists leading the charge in research on malignancies, infectious diseases, pulmonary diseases, and hematologic diseases, amongst many others. Our interdisciplinary collaborations extend across faculties, including Engineering, Science, and Business, nurturing an ecosystem ripe for Innovation and Commercialization.,

A circular portrait of Mark Crowther, a middle-aged man with glasses and a blue patterned shirt, smiling. The portrait is partially overlaid by a dark olive green circle on the left.

# Mark Crowther

Chair, Department of Medicine  
McMaster University  
Leo Pharma Chair in  
Thromboembolism Research

As we **Reconnect**, our community of practice initiatives have flourished, covering critical topics such as leadership and quality. Over 75 faculty members have honed their leadership skills through programs at McMaster and beyond, underscoring our commitment to nurturing visionary leaders.

Research remains our bedrock, with the Department boasting 47-endowed chairs and a significant representation of Canada Research Chairs. Our faculty's achievements, detailed in this report, are a testament to our relentless pursuit of excellence.

In closing, I would also like to extend my deepest appreciation to our administrative staff, led by Ms. Annette Rosati, whose unwavering support has been instrumental in our Department's success amidst evolving workplace challenges.

Looking forward to a future replete with breakthroughs and achievements,

A handwritten signature in black ink, appearing to read 'Mark Crowther'.

Mark Crowther MD LLM MSc FRCPC  
Distinguished University Professor  
Chair, Department of Medicine  
Leo Pharma Chair in Thromboembolism Research



Krakow, Poland  
 San Francisco, USA  
 Ranchi, India  
 Beijing, China  
 Philadelphia, USA  
 Capetown, South Africa  
 Madrid, Spain  
 Shanghai, China  
 San Francisco, USA  
 Falmouth, Jamaica  
 Lisbon, Portugal  
 Quebec, Canada  
 Prague, Czech Republic  
 Washington, USA  
 Halifax, Canada  
 Chapel Hill, USA  
 Krakow, Poland  
 Kampala, Uganda  
 Kabul, Afghanistan  
 Salamiyah, Syria  
 Dar Es Salam, Tanzania  
 Paris, France  
 Phuket, Thailand  
 Los Angeles, USA  
 San Diego, USA  
 Lyon, France  
 Montreal, Canada  
 Stanford, USA  
 New Orleans, USA  
 Toronto, Canada  
 Ottawa, Canada  
 Calgary, Canada  
 Montreal, Canada  
 Cartagena, Colombia  
 Toronto, Canada  
 Waterloo, Canada

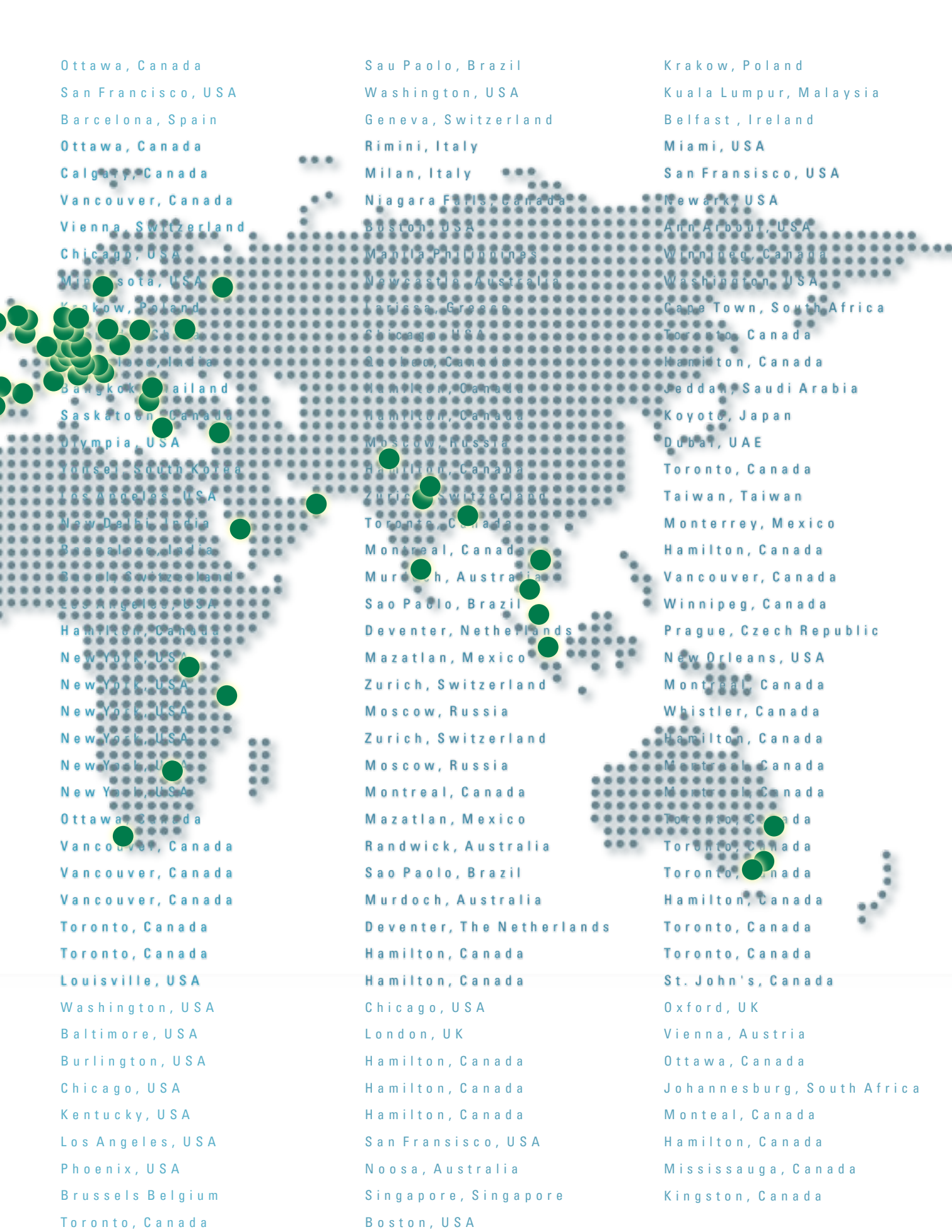
Kingston, Canada  
 Chicago, USA  
 Lyon, France  
 Nice, France  
 Heraklion, Greece  
 Montreal, Canada  
 Thessaloniki, Greece  
 Punta del Este, Uruguay  
 Buenos Aires, Argentina  
 Massachusetts, USA  
 New York, USA  
 Canmore, Canada  
 Bologna, Italy  
 San Diego, USA  
 Edmonton, Canada  
 Mexico City, Mexico  
 Kiev,, Ukraine  
 Adelaide, Australia  
 Philadelphia, USA  
 Cape Town, South Africa  
 Evian les Bains, France  
 Milan, Italy  
 Copenhagen Denmark  
 Guimaraes, Portugal  
 Sherbrooke, Canada  
 Vancouver, Canada  
 Sophia Antioplois, France  
 London, UK  
 Amsterdam, Netherlands  
 Nashville, USA  
 New Jersey, USA  
 Georgia, USA  
 Florida, USA  
 Montreal, Canada  
 Washington, USA  
 Copetown, Canada

Vancouver, Canada  
 Chicago, USA  
 Krakow, Poland  
 Jaipur, India  
 Brussels Belgium  
 Maastricht, Netherlands  
 Washington, USA  
 Reston, USA  
 New Orleans, USA  
 New Haven, USA  
 Durham, USA  
 Bethesda, USA  
 Rio de Janeiro, Brazil  
 Washington, USA  
 Rio de Janeiro, Brazil  
 Los Angeles, USA  
 Burlington, Canada  
 London, UK  
 Stanford, USA  
 London, UK  
 Reston, USA  
 Washington, USA  
 Washington, USA  
 Moscow, Russia  
 Washington, USA  
 Stanford, USA  
 Washington, USA  
 Evanson, USA  
 Johannesburg, South Africa  
 Toronto, Canada  
 Washington, USA  
 New Orleans, USA  
 Hamilton, Canada  
 Mexico City, Mexico  
 New Orleans, USA  
 Boulogne-sur-Mer, France  
 Ottawa, Canada  
 Washington, USA  
 Boston, USA  
 Burlington, USA  
 Hamilton, Canada  
 Washington, USA  
 Washington, USA

# International Influence

## DEPARTMENT OF MEDICINE: INVITED PRESENTATIONS 2021-2023

*Locations where Department of Medicine faculty presented during 2021-23, showing the Department's international influence.*





**Dr. Azim Gangi**  
Canadian Society of  
Transplantation, CST  
Education and  
Teaching Excellence  
Award  
& others



**Dr. Samuel Thrall**  
Excellence in  
Teaching for  
Outstanding  
Support of  
Student  
Development  
& others

## Awards and Highlights

### Department of Medicine Annual Report 2021-2023

*embracing recovery  
reimagining futures  
reconnecting communities*



**Dr. John Marshall**  
Canadian Association of  
Gastroenterology (CAG)  
Visiting Clinical  
Professorship Award  
& others



**Dr. Sandra Monteiro**  
Karolinska Institutet Prize  
for Research in Medical  
Education (KI PRIME)  
fellowship

# Faculty Awards and Highlights

Name	Award	Year
Bram Rochweg	Fellow of the American College of Critical Care Medicine	2022
Bram Rochweg	Department of Medicine Mid-Career Award	2022
Hertzel Gerstein	American Diabetes Association Outstanding Achievement in Clinical Diabetes Research Award	2022
Hertzel Gerstein	Ontario Medical Association Life Membership Award	2022
Matthew Lanktree	Canadian Society of Nephrology New Investigator Award	2022
John Marshall	Canadian Association of Gastroenterology Clinical Visiting Professorship Award	2021
Mitchell Levine	"Fellow, Canadian Academy of Health Sciences "	2021
Imran Satia	"European Respiratory Journal, Peer Reviewer of the Year"	2021
Siraj Mithoowani	W. Watson Buchanan Clinician Educator Career Award	2022
Teresa Chan	2021 Early Career Medical Educators Champion Award	2021
Teresa Chan	2022 AFMC Award for Outstanding Contribution to Faculty Development in Canada	2022
Joanne Ho	Canadian Geriatrics Society Peter McCracken Physician Innovator in Education Award	2022
Noel Chan	Heart and Stroke New Investigator Award 2022/2023	2022
George Heckman	Outstanding Performance Award; University of Waterloo	2022
Jonathan Sherbino	Meredith Marks Mentorship Award - Memorial University	2022
Jonathan Sherbino	"3M National Teaching Fellowship, Society for Teaching and Learning in Higher Education"	2021
Jonathan Sherbino	"William Walsh Award for Educational Excellence, Department of Medicine"	2021
Aristeidis Katsanos	E.J. Moran Campbell Internal Career Research Award	2022
Aristeidis Katsanos	European Stroke Organisation Young Investigator Award	2022
Elena Verdu	Tier 1 Canada Research Chair (CRC) in Microbial Therapeutics and Nutrition in Gastroenterology (term 1)	2022
Matthew Sibbald	CAME Meredith Marks Educator Award	2022
Alexander Hynes	"Department of Medicine, Graduate Medical Education Award"	2021
Alexander Hynes	"FHSPDA, Excellence in Postdoctoral Supervision Award"	2022
Mino Mitri	Internal Medicine Clerkship Program Faculty Award - Internal Medicine Teaching Excellence Award	2022
Mino Mitri	"Department of Medicine Early Career Award, McMaster University"	2022

# Faculty awards and highlights

Name	Award	Year
Alim Pardhan	CPSO Council Award	2022
Alim Pardhan	Canadian Association of Emergency Physicians – Emergency Physician of the Year (Ontario/Urban)	2022
Sonia Anand	OverAchiever Award – Hindu Federation Recognition Award	2022
William McIntyre	McMaster University Department of Medicine Early Career Research Award	2022
Samuel Thrall	"Excellence in Teaching for Outstanding Support of Student Development, Undergraduate MD Program, McMaster University"	2022
Clara Lu	Royal College of Physicians and Surgeons of Canada (RCPSC) Detweiler Travelling Fellowship	2021
Clara Lu	Canadian Society of Internal Medicine (CSIM) Education and Research Fund	2022
David Conen	"Canadian Institutes of Health Research, Canada Graduate Scholarship – Master's, Dr. Michael Wang [Dr. D. Conen, Supervisor]"	2021
David Conen	"BHSc Summer Research Scholarship, McMaster University "	2022
David Conen	PSI Foundation; Research Trainee Award	2022
Gordon Guyatt	"Honorary PhD, Faculty of Medicine, University of Helsinki"	2022
Gordon Guyatt	"Department of Medicine Teaching Award 2021-2022, McMaster University"	2022
Derek Chu	AAAAI Foundation Faculty Development Award	2021
Derek Chu	Pediatric Allergy & Immunology Journal - Reviewer of the Year award	2021
Derek Chu	CAAIF - CSACI - AllerGen Emerging Clinician-Scientist Research Fellowship	2021
Salim Yusuf	"Killam Prize (Health Sciences), Canada Council of the Arts"	2022
Darryl Leong	"Clive Kearon Mid-Career Award, McMaster University, 1 Jan 2022 "	2022
Flavia Kessler Borges	Roche Junior/Mid Career award	2021
Flavia Kessler Borges	Perioperative Research and Care (SPRC) Early Investigator Award	2021
Flavia Kessler Borges	Internal Career Research Award - McMaster University - Department of Medicine	2021
Flavia Kessler Borges	"Perioperative Research and Care (SPRC) Early Investigator Award, Perioperative Care Congress"	2021
Flavia Kessler Borges	Roche Junior/Mid Career Award. 1st place. Perioperative Care Congress Research Competitions	2021
Flavia Kessler Borges	"Internal Career Research Award, McMaster University – Department of Medicine"	2021

Name	Award	Year
Flavia Kessler Borges	IARS Mentored Research Award for VISION Cardiac Surgery Biobank	2022
Michael Cyr	The John Toogood Teaching Award	2022
Azim Gangji	SJHH Mission Legacy Award	2022
Azim Gangji	Canadian Society of Transplantation Excellence in Teaching and Education Award	2021
Donald Arnold	John G. Kelton Chair in Translational Research	2021
Deborah Cook	Gairdner Wightman Award	2022
Deborah Cook	IMPACT Award: Schwartz Center for Compassionate Healthcare	2021
Deborah Cook	"Lifetime Achievement Award, American College of Critical Care Medicine"	2021
Charu Kaushic	Government of Canada's Woman of Impact Online Gallery	2022
Charu Kaushic	CANFAR Leadership Award	2022
Charu Kaushic	Member of Canadian Academy of Health Sciences	2022
Martin Kolb	"Anne & Neil McArthur Research Award, St. Joseph's Healthcare Hamilton"	2021
Martin Kolb	Jack Gaudie Boehringer Ingelheim Chair in Interstitial Lung Disease	2021
Dawn Bowdish	"YWCA Hamilton & Halton – Woman of Distinction, Health & Recreation"	2022
Simerpreet Sandhanwalia	MSA-Community Action Award	2021
Maryan Graiss	Students' Choice: Clerkship Clinical Teacher Award (2022)	2022
Ronald Barr	"Lifetime Achievement Award, International Society of Paediatric Oncology"	2022
Pauline Boulos	Specialty Selective Clerkship Program Faculty Award for the Hamilton Campus.	2023
Kristen Burrows	2023 Faculty of Health Sciences Health Professions Educator Award	2023
Richard Austin	Elected to the Canadian Academy of Health Sciences (CAHS)	2022
Katrin Conen	McMaster University Division of Palliative Care research award for QI project	2022
Sameer Sharif	Juravinski Hospital ICU Super Star Staff Recognition Award	2023
Sameer Sharif	McMaster Emergency Medicine Outstanding Contribution to Program	2023
Bill Tholl	Officer of the Order of Canada	2022
Bill Tholl	HealthcareCAN Legacy of Leadership Award	2023
Zhou Xing	2023 Bernhard Ciner Award of Canadian Society for Immunology	2023
Patricia Liaw	Jack Hirsh Professorship in Thrombosis Research	2021

# Faculty awards and highlights

Name	Award	Year
Patricia Liaw	Jack Hirsh & Clive Kearon Endowed Chair in Thrombosis	2023
Ally Prebtani	Royal College of Physicians & Surgeons of Canada 2023 M. Andrew Padmos International Collaboration Award	2023
Draga Jichici	Canadian Neurological Sciences Federation 2023 Distinguished Service Award	2023
Sandra Monteiro	Canadian Association of Medical Educators Meridith Marks New Educator Award	2021
Sandra Monteiro	Karolinska Institute Prize for Research in Medical Education Fellowship	2022
Sandra Ofori	Department of Medicine Early Career Award	2023
Matthew Miller	Department of Medicine Certificate of Merit for Teaching Excellence in the Specialty Selective Clerkship Program	2023
Paul Kim	Department of Medicine Mid-Career Award	2022
Deborah Cook	Gairdner Wightman Award	2022
Deborah Cook	"Outstanding Health Professional Poster Award"	2022
Sharon Grad	Clive Davis Award	2022
Anne Holbrook	McMaster Medicine Academic Merit Achievement	2022
Shamir Mehta	Canadian Cardiovascular Society Research Achievement Award	2022
Filipe Cirne	Case of the Year 2021 - Showcase Finalist - Top 5 Best Cases	2022
Martin Kolb	Presidential Honorary Membership of the European Respiratory Society 2022	2022
Harriette Van Spall	American Heart Association Dr. Nanette K. Wenger Research Goes Red Award for Best Scientific Article on Cardiovascular Disease and Stroke	2022
Harriette Van Spall	Canadian Cardiovascular Society Mid-Career Lecturer Award in Cardiovascular Sciences	2022
Harriette Van Spall	Clive Kearon Mid-Career Research Award	2022
Donald Arnold	William Walsh Award for Educational Excellence	2023
Donald Arnold	Canadian Society for Transfusion Medicine (CSTM) QuidelOrtho Award for an outstanding contribution to Transfusion Medicine in Canada	2023
Federico Germini	Hamilton Health Sciences Research Early Career Awards (ECA) 2023	2023
Federico Germini	CAEP-CanVECTOR Research Abstract Award 2022	2023
Alexandra Papaioannou	"Canada Research Chair (Tier 1) in Geriatric Medicine and Healthy Aging, McMaster University"	2022
Alexandra Papaioannou	"Age and Ageing - Editors Choice Publication, British Geriatrics Society"	2021

Name	Award	Year
John Kelton	Jack Hirsh Award for Research Excellence	2022
Nancy Heddle	"ISBT Presidential Award, International Society of Blood Transfusion (ISBT)"	2022
Nancy Heddle	"Landsteiner-Alter Award and Lectureship, Association for the Advancement of Blood & Biotherapies (AABB)"	2022
Nancy Heddle	"McMaster University, Department of Medicine, Irene Turpie Award "	2023
Samuel Thrall	McMaster University Michael G. DeGroote School of Medicine Niagara Regional Campus Excellence in Teaching for Outstanding Support of Student Development	2022
Samuel Thrall	McMaster University Michael G. DeGroote School of Medicine Niagara Regional Campus Teaching Award	2023
Samuel Thrall	McMaster Community and Rural Education (Mac-CARE) Excellence in Teaching Award	2022
Azim Gangji	"St. Joseph's Healthcare, Hamilton, Mission Legacy Award"	2022
Azim Gangji	"McMaster University, Health Professions Educator Award"	2022
Azim Gangji	"RCPSC, Program Director of the Year Award"	2021
Azim Gangji	"Canadian Society of Transplantation, CST Education and Teaching Excellence Award"	2021
Azim Gangji	Canadian Society of Transplantation Annual General Meeting Chair Recognition	2022
Azim Gangji	Canadian Society of Transplantation Virtual Annual General Meeting Chair Recognition	2021
John Marshall	Canadian Association of Gastroenterology (CAG) Visiting Clinical Professorship Award	2020
John Marshall	Canadian Association of Gastroenterology (CAG) Visiting Clinical Professorship Award	2021



welcome

**The Boris Clinic**

HOME OF

**General Internal Medicine**  
General Internal Medicine Rapid Assessment Clinic (GIMRAC)  
General Internal Medicine Clinical Teaching Unit

**Subspecialty Clinics**  
Allergy/Immunology, Cardiology, Congenital Cardiology, Cystic Fibrosis,  
Dermatology, Digestive Diseases, Geriatrics, Hematology, Infectious  
Diseases/Travel Clinic, Neurology, Obstetric Medicine, Respiriology,  
Rheumatology, Thrombosis, Vascular

**Endocrinology and  
The Diabetes Care and  
Research Program**

**Medical Day Care**

 **Hamilton  
Health  
Sciences**

**McMaster**  
University 

Dr. Hertzel Gerstein  
Professor, Department of Medicine  
Fellow of the Royal Society of Canada





**Dr. Serena Gundy**  
Assistant Professor of Medicine,  
Director of the Obstetric Medicine Program, HHS



**Dr. Shawn Mondoux**  
Associate Professor of Medicine

## Excellence in Care


### Department of Medicine Annual Report 2021-2023

*embracing recovery  
reimagining futures  
reconnecting communities*



**Dr. Amna Ahmed**  
Assistant Professor,  
Division of General Internal Medicine



A portrait of Dr. Amna Ahmed, a woman with long dark hair, wearing a dark blue double-breasted blazer with gold buttons over a white ruffled top. She is standing outdoors, leaning on a stone railing, with a blurred background of trees and foliage.

**Dr. Amna Ahmed**  
Assistant Professor  
of Medicine

## EXCELLENCE IN CARE

# Quality Improvement

{ research  
care  
learning

Dr. Amna Ahmed, Assistant Professor in the Division of General Internal Medicine, has become a champion of quality improvement (QI) within the Department of Medicine.

“Quality improvement methodology is one tool to study and improve certain areas in health care with the goal of improving the care that we’re delivering to patients,” says Dr. Ahmed.

“Ultimately, the goal for everything I do in QI is to impact patient care. Some steps directly impact patient care, while others are a stepping-stone to impact patient care down the road.”

Quality improvement in health care can be done in different ways, but at its core, it is meant to improve the delivery of care to be more safe, effective, patient-centred, timely, efficient and equitable.

Dr. Ahmed first became interested in QI as a resident, seeing the complexity of care and the many different factors that could affect the patient experience and outcomes – from every health care provider involved with patient and behind-the-scenes administrative processes. She completed a master’s degree in health care quality from Queen’s University and has incorporated QI into both her clinical and academic work.

One major area of focus has been the implementation of the Epic electronic medical record across all Hamilton Health Sciences (HHS) sites. As one of the Associate Chief Medical Information Officers for HHS, Dr. Ahmed has brought her valuable perspective of patient safety and quality improvement to the implementation.

As an electronic medical record, Epic has potential to help improve health care quality by allowing clinicians to easily share medical files, notes, lab results and patient information from all sites to improve communication and efficiency. Importantly, data about a patient’s journey through the HHS system can be collected, which could allow hospital staff to better measure care quality and patient outcomes that could inform quality improvement projects.



*Quality improvement in health care... is meant to improve the delivery of care to be more safe, effective, patient-centred, timely, efficient and equitable.*

“I’m excited about how we can use our electronic medical record to extract clinical data that could be relevant for looking at how we are doing in our practices and how we can improve in our various clinical areas,” says Dr. Ahmed. “Ultimately, if you can’t measure something, you can’t improve it. I’m hoping Epic will be another tool that provides us with more data and information to explore areas where we can improve more.”

On top of her clinical work, Dr. Ahmed also champions QI within the general internal medicine residency program and the Department of Medicine, helping to demystify the topic and encouraging students, residents and faculty to consider it as part of their clinical practice. With support from the department, she has included QI workshops and projects in resident and fellowship education and has been involved in organizing local and national symposia for faculty.

“Part of my goal there has been to help people be more engaged and educated in QI so they themselves can do these projects within their own practice,” says Dr. Ahmed. “I want to empower and encourage other health care providers to be part of QI and to be part of a culture where everyone feels comfortable talking about patient safety and doing QI.”

“No change can be implemented in isolation. QI is a team sport, and without collaboration and support from clinical and academic leadership, I don’t think it could move forward.” ■



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care  
learning



**Dr. Shawn Mondoux**  
Associate Professor  
of Medicine

## EXCELLENCE IN CARE

# Quality Improvement

{ research  
care  
learning

Dr. Shawn Mondoux's background in engineering is never far removed from his current role as emergency room physician at St. Joseph's Healthcare Hamilton.

He uses the same problem-solving approaches and processes to address improvement in health care and improve patient outcomes.

dashboard is used at St. Joseph's Healthcare as well as other emergency departments in Ontario.

"Health care professionals are involved in every step of a patient's journey through the health care system, but they may have little to no understanding of the effect they have had on patient," says Dr. Mondoux. "For example, do more of the patients I see in a shift come back to the emergency department in the short-term than my colleagues' patients? And if so, why? Could I learn something about my practice from this data? There are so many interesting, introspective questions we could ask about our practices, but without the data to prompt us, we might never do so."

*Dr. Mondoux received a 2022 Graham Farquharson Knowledge Translation Fellowship from the PSI Foundation...*

He was first introduced to quality improvement processes as an engineering intern working at an aircraft manufacturer, and during his medical training and residency, he saw how similar approaches could be applied in a health care setting. He went on to complete a master's degree in quality improvement and patient safety at the University of Toronto.

"Being a physician and practising medicine is one thing. But I think that for some of us, it's also important to continually try to improve the practice of medicine," says Dr. Mondoux, also an Associate Professor in the Department of Medicine.

In recent years, he has led several quality improvement projects at St. Joseph's Health Care, exploring ways to use large data sets to identify issues and measure results.

In one recent project, Dr. Mondoux sat on a provincial group that examined how the switch to providing virtual emergency care during the COVID-19 pandemic impacted patient outcomes, analyzing millions of medical records for patients who accessed virtual emergency care in Ontario and at St. Joseph's Healthcare. Results are expected to be published in the summer of 2023.

Several years ago, Dr. Mondoux undertook another large project to pull data from the Epic electronic medical record in place at St. Joseph's Healthcare into an easily understood dashboard that provides physicians and other health care providers with useful data about their practice, including patient outcomes and resource utilization. The

Building on the dashboard, Dr. Mondoux received a 2022 Graham Farquharson Knowledge Translation Fellowship from the PSI Foundation to develop education and coaching so that physicians not only receive data from the dashboard, but can also meaningfully understand it and use it to improve their practices.

While traditional quality improvement has typically relied on choosing one methodology to solve problems, Dr. Mondoux says that a more flexible approach to choosing improvement methodology (which he and a small group of peers have dubbed agnostic improvement) offers the benefits of finding the right solution to each individual problem.

"We need to think about prescribing the right tool for the right problem. If we're only committed to one way of improving things, we could be successful in some spaces, but we could also be handcuffing ourselves in ways that are not necessarily beneficial," he says.

"We have a real opportunity to bring together all these quality improvement methods, from a variety of sectors and with many different labels, into a really sophisticated approach to improvement that makes a difference for our patients." ■



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care  
learning



**Dr. Serena Gundy**  
**Assistant Professor**  
**of Medicine**

## EXCELLENCE IN CARE

# Communities of Practice: Obstetric Medicine

{ research  
care  
learning

An innovative multidisciplinary program in obstetric medicine is helping to transform care for medically complex patients in Hamilton.

Led by Dr. Serena Gundy – an internist, Director of the Obstetric Medicine Program at Hamilton Health Sciences and Assistant Professor in the Department of Medicine – McMaster's Obstetric Medicine team provides pre-conception counselling, antenatal care, and post-partum follow-up for patients with medical co-morbidities, with an emphasis on patient-centred collaborative practice.

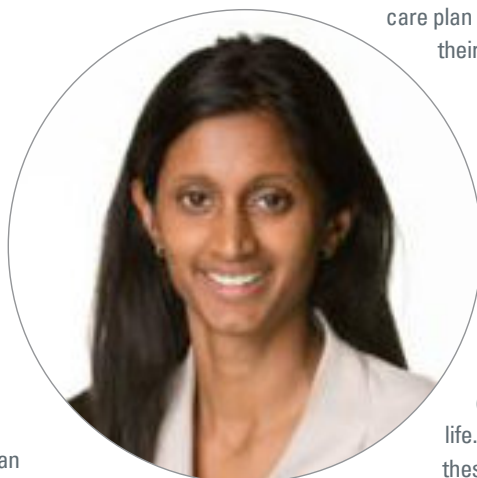
"There's often a whole group that's looking after these patients, which can be challenging in our current system," says Dr. Gundy. "The obstetric medicine physician can help connect the dots between the patient, their obstetric team, and the patients' specialists. We can all learn from each other, and patients in turn feel that we're all working as a team, instead of getting a fragmented approach or different messaging."

Interdisciplinary collaboration is key to improving outcomes for this population and vital in building an obstetric medicine community of practice. Along with her co-lead, Dr. Anna Mathew from the Division of Nephrology, Dr. Gundy has spearheaded several initiatives meant to break down academic and clinical silos, find common ground, and learn from each other's unique perspectives.

For example, specialists from at least three different disciplines meet monthly with their obstetric colleagues for combined complex care rounds. Dr. Gundy and her team are also piloting a Combined Preconception Clinic with high-risk obstetrics, which connects patients with their prepregnancy specialists or other specialists with interest in pregnancy care to help them understand their risks and optimize health before conception. Dr. Gundy and her team work to individualize each



*McMaster's Obstetric Medicine team provides pre-conception counselling, antenatal care, and post-partum follow-up for patients with medical co-morbidities...*



Dr. Anna Mathew  
Division of Nephrology

care plan based on the needs of both the patient and their providers.

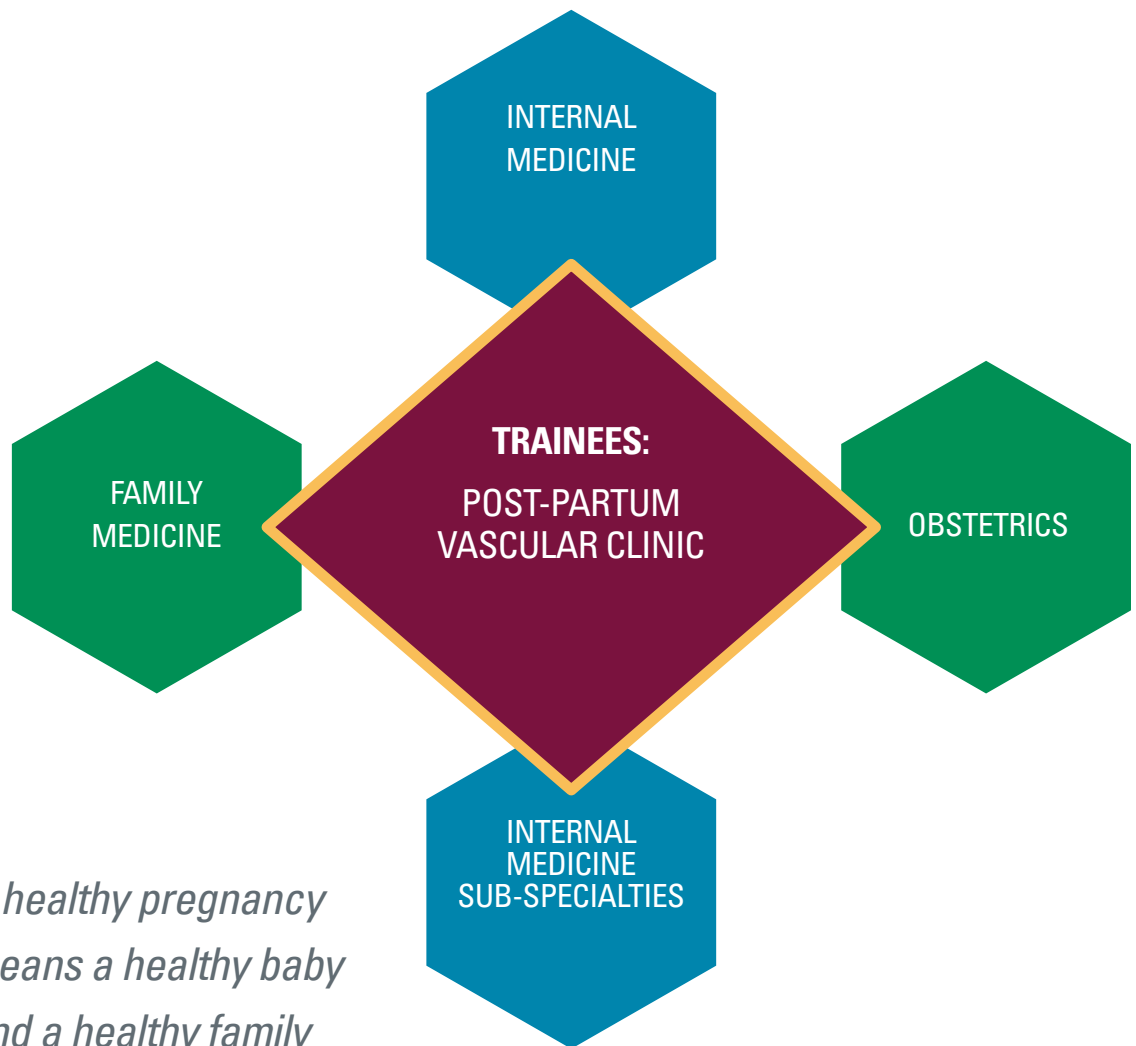
Obstetric medicine care doesn't end when the pregnancy is over, particularly for those patients who developed hypertensive disorders of pregnancy, which affect 5 to 7 per cent of all pregnancies in Canada. Conditions such as preeclampsia cause complications including high blood pressure and kidney damage, but also increase the risk of cardiovascular conditions or stroke later in life. But a lack of follow-up and education around these risks has resulted in a potential gap in care and a missed opportunity for health intervention.

"Cardiovascular disease is one of the leading causes of maternal short- and long-term morbidity related to pregnancy, and 60 per cent of it happens in the post-partum period, but most patients only have one six-week post-

5-7%

Percentage of all pregnancies that develop hypertension

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care  
learning



*A healthy pregnancy  
means a healthy baby  
and a healthy family  
going forward*

partum check,” says Dr. Gundy. “The patients and doctors we spoke to often didn’t know about the short- and long-term risks of this condition.”

To address this gap, Dr. Gundy established the Post-Partum Vascular Clinic, which provides intensive follow-up and counselling for those who experienced preeclampsia and other hypertensive disorders of pregnancy. The clinic now has trainees from internal medicine and its subspecialties, family medicine and obstetrics, ensuring that McMaster residents have training and awareness in this unique female specific cardiovascular risk factor.

Dr. Gundy hopes that by transforming how care is delivered to medically complex pregnant people, these patients will not only have a healthy pregnancy but also better long-term health.

“Pregnancy can be a window of opportunity to catch chronic conditions, like hypertension, early or for those who developed a new pregnancy specific condition, to give them health teaching and coaching and connect them with long-term follow-up that they deserve,” says Dr. Gundy. “A healthy pregnancy means a healthy baby and a healthy family going forward.” ■



**Dr. Sandra Monteiro**  
MERIT Scientist  
appointed to the  
Department of  
Medicine



**Dr. Andrew Cheung,**  
Clerkship Director,  
Internal Medicine

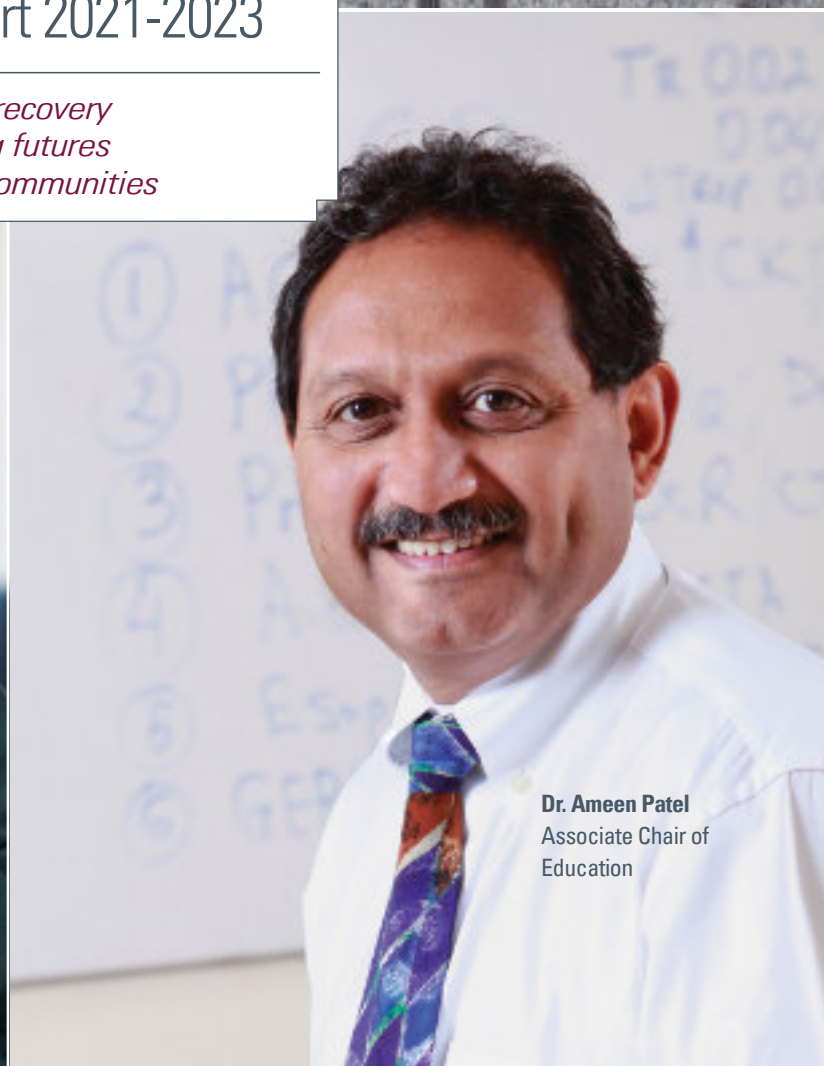
## Leadership in Education

### Department of Medicine Annual Report 2021-2023

*embracing recovery  
reimagining futures  
reconnecting communities*



**Dr. Zahira Khalid,**  
Associate Professor of  
Medicine, Internist at St.  
Joseph's Healthcare



**Dr. Ameen Patel**  
Associate Chair of  
Education

## LEADERSHIP IN EDUCATION

# KI PRIME Fellowship Presented to Sandra Monteiro

research  
care  
learning

The prestigious Karolinska Institutet has unveiled the Karolinska Institutet Prize for Research in Medical Education (KI PRIME) fellowship, a program aimed at fostering groundbreaking research and innovation in the field of medical education.

One of the fortunate recipients of the KI PRIME Fellowship is Sandra Monteiro, a McMaster University researcher and MERIT Scientist appointed to the Department of Medicine.

Expressing gratitude for the acceptance into the program, Monteiro emphasized the rare chance to dedicate focused time to contemplate

*By questioning conventional wisdom, Monteiro's work has helped shift the paradigm in medical education.*

the influence of her work at McMaster and the broader field of health professions education. "This fellowship's true value lies in the prospect of networking with fellow scientists at similar career stages, providing a platform for sharing diverse experiences and knowledge."

While Monteiro already enjoys the support of numerous supportive and collegial scientists at McMaster University and across Canada, she acknowledges the necessity of expanding her network internationally to truly make a global impact.

The work that led to Monteiro's selection for the KI PRIME Fellowship primarily focuses on clarifying best practices, streamlining curricula, and empowering clinicians to apply theoretical knowledge effectively. One notable contribution of her work has been challenging the widely accepted notion that deliberate, slow reflection or "system 2 thinking" can consistently enhance patient safety by reducing diagnostic errors.

For decades, the prevailing dual process theory has criticized "system 1 thinking" as an instinctual process that requires careful dissection and reprocessing to be reliable. However, Monteiro's research has demonstrated that excessive introspection and unguided deliberation

can introduce diagnostic errors. She has argued that system 1 processes are inherent to human cognition and largely inaccessible to reflection, making it impossible for individuals to identify and correct their own mistakes solely through internal analysis.

By questioning conventional wisdom, Monteiro's work has helped shift the paradigm in medical education and foster a more nuanced understanding of cognitive processes involved in clinical decision-making. Her research has significant implications for improving patient outcomes and optimizing health-care systems, particularly in the context of medical diagnostic accuracy.

The KI PRIME Fellowship not only acknowledges the remarkable contributions of Monteiro's work but also provides a platform to further advance her research platform. With the support of the fellowship, Monteiro aims to expand her collaborations and enhance her international network, thereby maximizing her impact on McMaster University's medical education systems and health on a global scale. ■



**Dr. Sandra Monteiro**  
Department of Medicine



**Dr. Andrew Cheung**  
Clerkship Director

## LEADERSHIP IN EDUCATION

# Excellence in Teaching: IM Clerkship Program

{ research  
care  
learning

Dr. Andrew Cheung took over the role of Clerkship Director for Internal Medicine at a time of transition for the program.

During the previous two years, pandemic restrictions meant that medical students had spent much less time than usual learning in the hospital. But by July 2022, when Dr. Cheung became Clerkship Director, the restrictions were starting to ease.

"It was a good time to come in and re-envision how we could do things now that we're looking to the post-pandemic world," says Dr. Cheung, a general internist at St. Joseph's Healthcare Hamilton and Assistant Professor of Medicine. "The changes we've made have helped to strengthen the learning experience in clinical education and rebuild the social connections among clerks, and I think they've been changes for the better."

One of Dr. Cheung's first goals as Clerkship Director was to increase clerks' time in the hospital compared to pandemic rotations and help them feel better prepared for their upcoming residency training. Clerks are now spending more time in the hospital during the day to gain exposure to day-to-day teaching and informal learning, while also having some overnight shifts to better reflect residency schedules. The internal medicine clerkship also runs a dedicated academic half-day for clerks to boost the amount of formalized teaching during their rotation.

At the same time, the clerkship program has been rebuilding the sense of community among clerks, with an active social committee and more events planned.

"Medical student presence in the wards had become very scant during the pandemic, and it is great to see that medical students are back in the wards and learning in a clinical setting again," says Dr. Cheung. "It's been very rewarding to rebuild the sense of community and connections with the students and other faculty, which has been sorely missed for the past few years."

Dr. Cheung is also leading the internal medicine clerkship program through another major change, as Hamilton Health Sciences prepares to close the clinical teaching unit at Juravinski Hospital and move all internal medicine education to St. Joseph's Healthcare and Hamilton General Hospital.

The restructuring, expected to take place this summer, will give clerks opportunities to work with different faculty and in different settings, such as the emergency department or community sites, that will give them a broader learning experience.

"Internal medicine is going through a dramatic change in this city, but a positive development is that we can take advantage of some of the new opportunities that will arise," says Dr. Cheung.



*All of the initiatives are meant to help support medical students through their education and create the next generation of leading internal medicine physicians.*

Another of Dr. Cheung's goals is to expose pre-clerkship students to internal medicine earlier in their education to help them understand the specialty and learn about careers internal medicine. He plans to expand the pre-clerkship to early-year medical students to gain experience with internal medicine faculty, and this summer, a new simulation-based course will launch to give students opportunities to do classroom-based and procedure-based internal medicine learning in a simulation lab.

All of the initiatives are meant to help support medical students through their education and create the next generation of leading internal medicine physicians.

"One of the most rewarding things for me, aside from direct patient care, is seeing students develop and learn new skills as they go through these major transitions," says Dr. Cheung. "This role gives me an opportunity to shape the educational experience is for a larger group of students, and it is rewarding to see these junior trainees progress through the program and develop into strong clinicians." ■

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learning

## LEADERSHIP IN EDUCATION

# Excellence in Teaching

research  
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learning

For more than ten years, Dr. Ameen Patel has held the role of Associate Chair of Education, leading education initiatives at the Department of Medicine to support faculty in their educational roles, which has helped to build the department's team of high-quality educators.

"Mentoring and guiding faculty members and facilitating their participation in their own initiatives with respect to education, whether it be curriculum development, evaluation tool development, or participation in education activities is a large part of my role."

"I provide guidance and help them bring their vision to reality," says Dr. Patel. "But everything I do is a team effort, and the accomplishments in this area are often the vision of colleagues that I am able to help realize."

"It has been a huge undertaking, and it continues to be a huge undertaking each year," says Dr. Patel, "but it's had good uptake from other clinical departments within McMaster and even from departments at other universities."

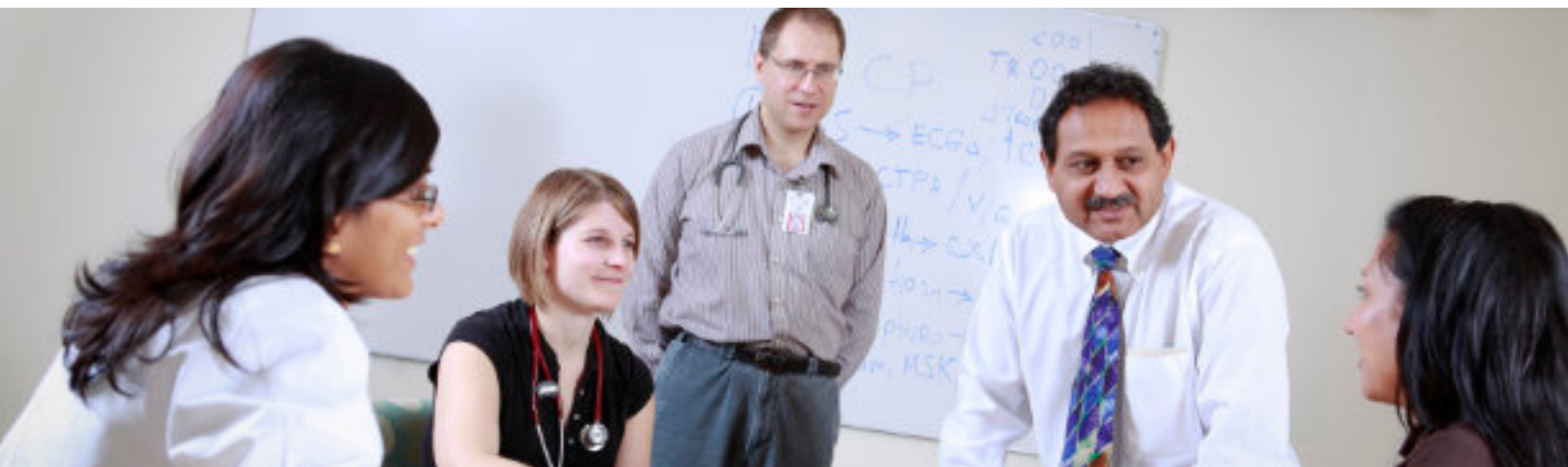
Since 2019, Dr. Patel has also served as Director of the department's Division of Education and Innovation, which is meant to help bring faculty members with innovative research or curriculum with potential for commercialization.

"Our vision is to understand how we can better facilitate the process of bringing ideas with commercial potential all the way through to commercialization," says Dr. Patel. "We're trying to build teams that

connect basic scientists, clinicians and leaders with and opportunities for commercialization. It's a relatively new division, but it's brought people together and it has enormous potential."

Dr. Patel says that the Department of Medicine's strong emphasis on education, both for trainees and continuing education for faculty, is contributing to learning environment that is recognized worldwide, and he credits the department's leadership, program directors and other educational leaders with supporting the initiatives he and his team are leading. All divisions have an annual continuing education event, many of which are now national or international in scope, and the McMaster Textbook of Internal Medicine, led by co-editor-in-chief Dr. Roman Jaeschke has been accessed by tens of thousands of people around the world.

"McMaster and the Department of Medicine is always open to new ideas and trying things," says Dr. Patel. "Sometimes it doesn't work, but we learn from it. And not uncommonly, we have a home run that we can move forward." ■





*... how we can better  
facilitate the process of  
bringing ideas with  
commercial potential all  
the way through to  
commercialization.*

Dr. Ameen Patel  
Associate Chair of Education





**Dr. Zahira Khalid**  
**Associate Professor**  
**of Medicine**

## GLOBAL HEALTH

# Clinical Educator Fellowship in Guyana

{ research  
care  
learning

While Dr. Zahira Khalid was serving as program director of the internal medicine training program at Georgetown Public Hospital in Guyana, she saw the opportunity to change how training was delivered – from relying on international volunteer teachers to being self-sustainable with local leadership.

“I wanted to build something that I could actually make sustainable and not dependent on international aid,” says Dr. Khalid, a general internist at St. Joseph’s Healthcare Hamilton and Associate Professor of Medicine.

“The program in Guyana is very young, and there was an excellent opportunity to put the building blocks in place to make it self-sustainable.”

Dr. Khalid has had a long interest in global health, working as a physician and educator in countries including Namibia, Cambodia, Peru and Uganda. In 2015, she first became involved with the internal medicine training program at Georgetown Public Hospital, which is affiliated with the University of Guyana School of Medicine. The program had only been running since 2013 and was the first post-graduate program in internal medicine in Guyana.

**“Having that local leadership is an important milestone in ensuring the program’s sustainability.”**

By the time Dr. Khalid became director of the internal medicine program in 2017, 11 graduates had completed the program and could take on faculty roles. But, although the graduates had mentorship through international volunteers, they were still lacking formal training in medical education.

In 2022, Dr. Khalid and a group of other physicians involved in the program received funding from the Royal College of Physicians and Surgeons to support a certificate program in medical education, research and quality improvement in Guyana. The program, which launched this spring with its first eight learners, will help train graduates from the internal medicine program in the fundamentals of

medical education, research and quality improvement to prepare them to take on leadership roles in the University of Guyana School of Medicine. In addition to online learning, participants in the certificate program will visit McMaster University for learning and mentorship opportunities and attend medical education conferences to present research.

In 2020, Dr. Khalid handed over leadership of the internal medicine program to a Guyanese internal medicine specialist who recently completed a graduate degree in medical education and will also serve as director of the new certificate program.

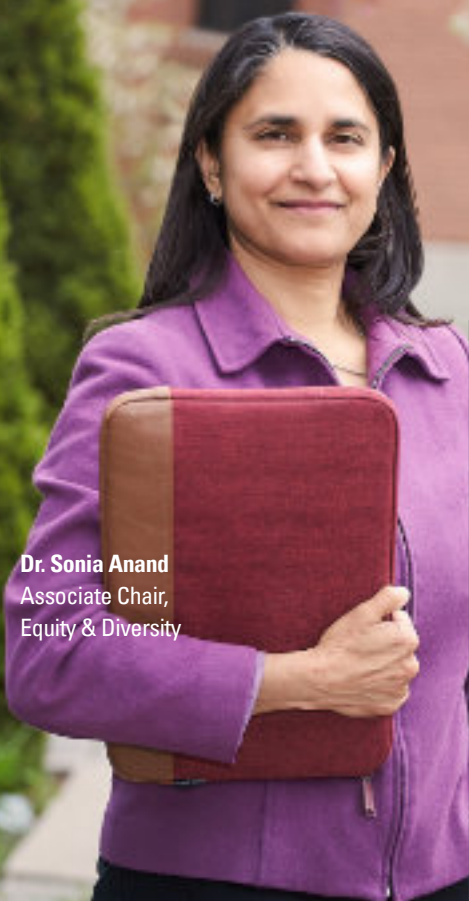
“We are making sure that McMaster is not leading this program, but that a Guyanese physician is leading the program, with appropriate mentorship and coaching,” says Dr. Khalid. “Having that local leadership is an important milestone in ensuring the program’s sustainability.”

In addition, through a partnership with McMaster and the Department of Medicine, a group of Guyanese trainees came to McMaster to receive subspecialty training in specialties including general internal medicine, nephrology, respiratory, hematology and infectious diseases. Seven residents from Guyana were trained – some of the first Guyanese physicians to be trained in a subspecialty – and have now returned to Guyana to set up their services within the public health care system.

While Dr. Khalid has taken on much of the leadership of the Guyanese training programs, she says that the support and involvement of many members of the Department of Medicine have been essential to launch all the programs and provide training and mentorship to the Guyanese trainees.

“This has been a very collaborative effort. It takes a village to do all of these things, and the whole Department of Medicine has been very supportive of these endeavours. I’m very grateful for everything the department has done to help,” she says. ■

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learning



**Dr. Sonia Anand**  
Associate Chair,  
Equity & Diversity



**Dr. Leslie Martin**  
Director, Internal  
Medicine Residency  
Program

## Coordinator Reports

### Department of Medicine Annual Report 2021-2023

- Associate Chair, Research
- Medical Subspecialties Residency Program
- Internal Medicine Clerkship Program
- Internal Medicine Residency Training Program
- Director of Administration
- Department of Medicine at Hamilton Health Sciences
- Department of Medicine at St. Joseph's Healthcare
- Equity and Diversity Associate Chair

*embracing recovery  
reimagining futures  
reconnecting communities*



**Dr. Madeleine Verhovsek**  
Chief of Medicine  
St. Joseph's  
Healthcare  
Hamilton



**Dr. Khalid Azzam**  
Physician-in-Chief  
Hamilton Health  
Sciences

COORDINATOR REPORT

# Associate Chair, Research

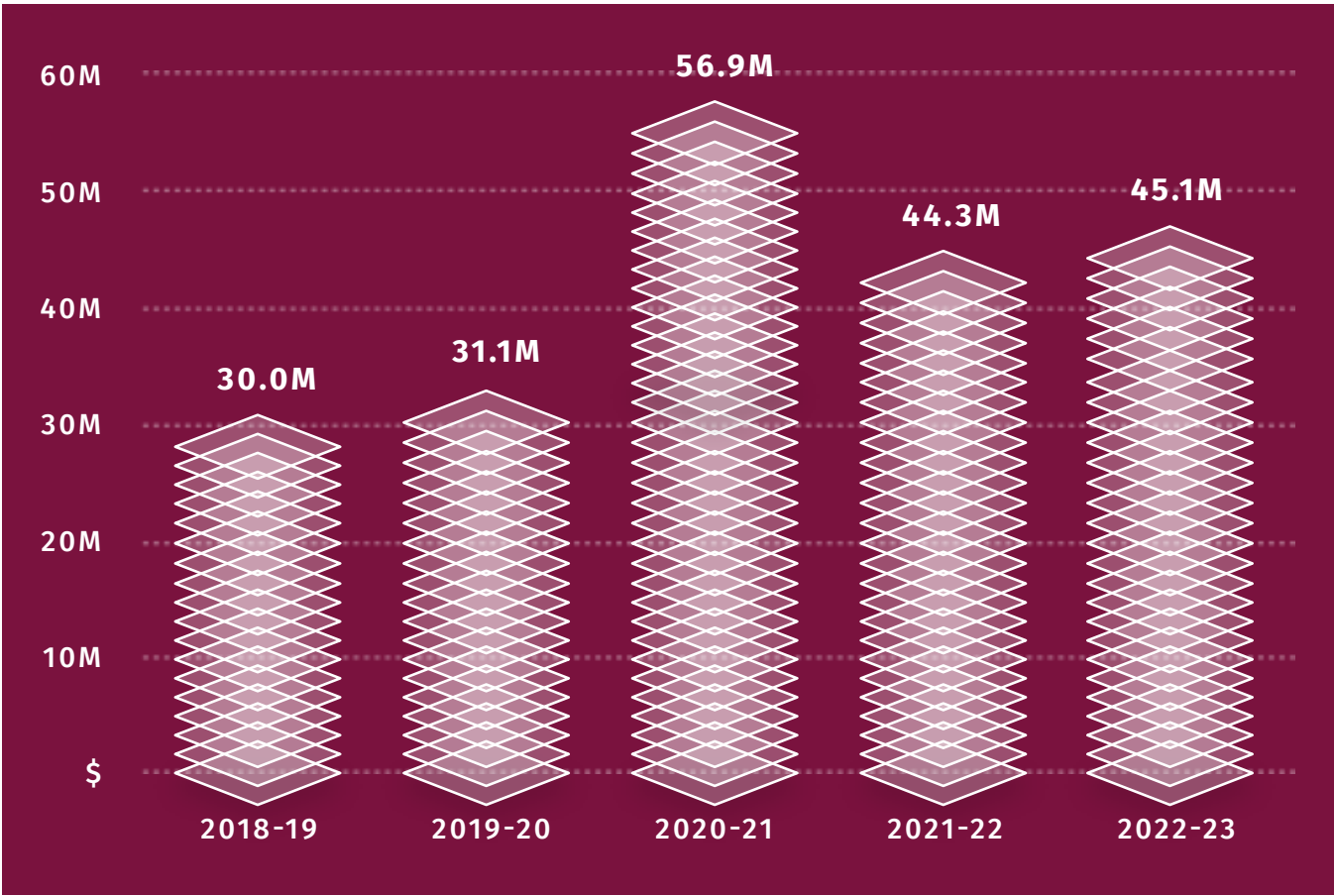
The mandate of the associate chair of research is to promote and facilitate research within the department. To meet this mandate, the associate chair has focused on the following activities:

- 1. ensuring the success of junior faculty involved in research activities through advice and mentoring,
- 2. continuously updating and refining the scoring system that was implemented to quantify research output of faculty for purposes of remuneration and promotion and tenure,
- 3. ensuring that adequate departmental resources are earmarked for research, and
- 4. serving on search committees for new hires in the research stream.

The associate chair of research interviews all recruits and provides feedback to the department chair regarding their research potential. Those selected for faculty appointments in the research stream meet with the associate chair regularly for mentorship and advice regarding research progress, grant applications, funding, and career planning. The associate chair also provides advice to department members regarding new funding opportunities and research strategies.

The associate chair of research serves as a member of the Departmental Executive, Research Executive, Tenure and Promotion, Executive Finance, and Alternate Funding Plan Committees. The role of the associate chair on these committees is to advise and advocate for research.

DEPARTMENT OF MEDICINE | RESEARCH FUNDING BY YEAR



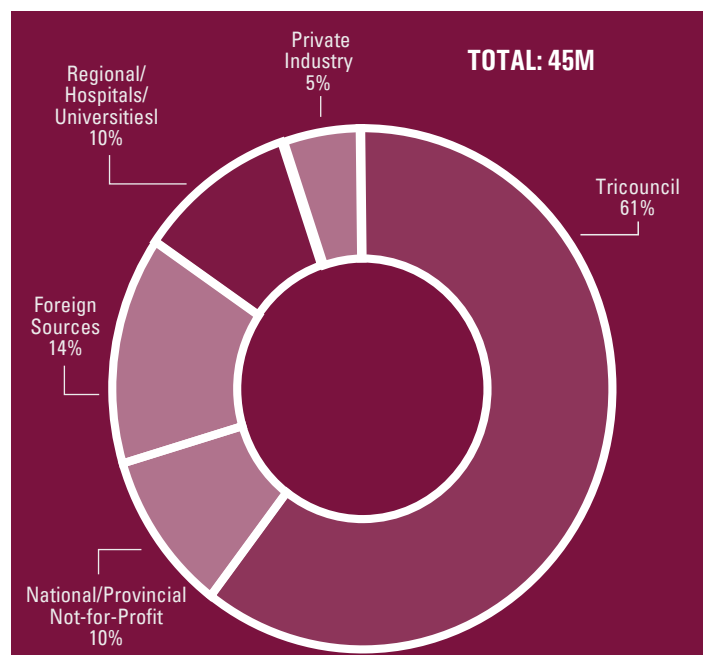
The Department of Medicine offers Internal Career Awards for new faculty members as well as mid-career awards. These awards can be held for up to three years and are granted on a competitive basis. The early career awards are available for both research and education and are aimed at fostering the next generation of researchers and educators. Funding from this source can be used to offset clinical expenses, thereby increasing protected time for research. The associate chair of research is a member of the committee that reviews and prioritizes the application for Internal Career Awards.

The Department of Medicine continues to be a major contributor to the research productivity of the Faculty of Health Sciences, McMaster University. The amount of research funding for 2021-22 was \$44.3 million and

**Dr. Jeffrey Weitz**  
Associate Chair,  
Research  
McMaster University

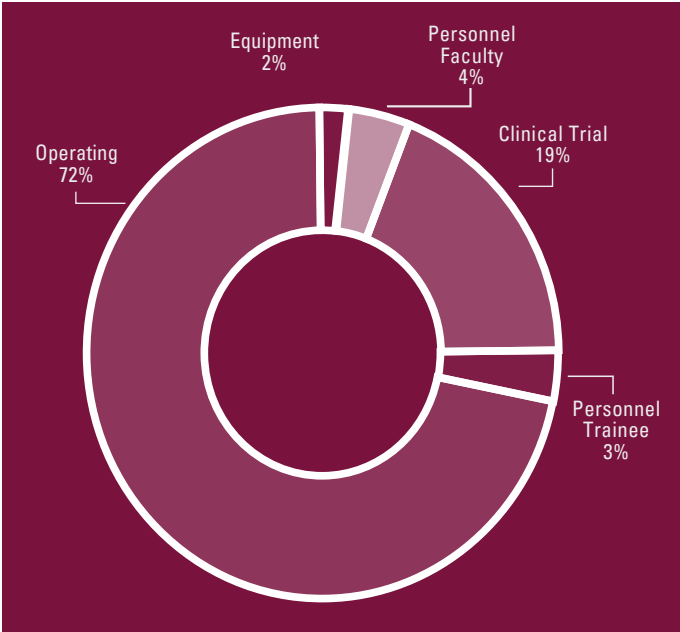


DEPARTMENT OF MEDICINE 2022-23 | RESEARCH FUNDING BY SOURCE

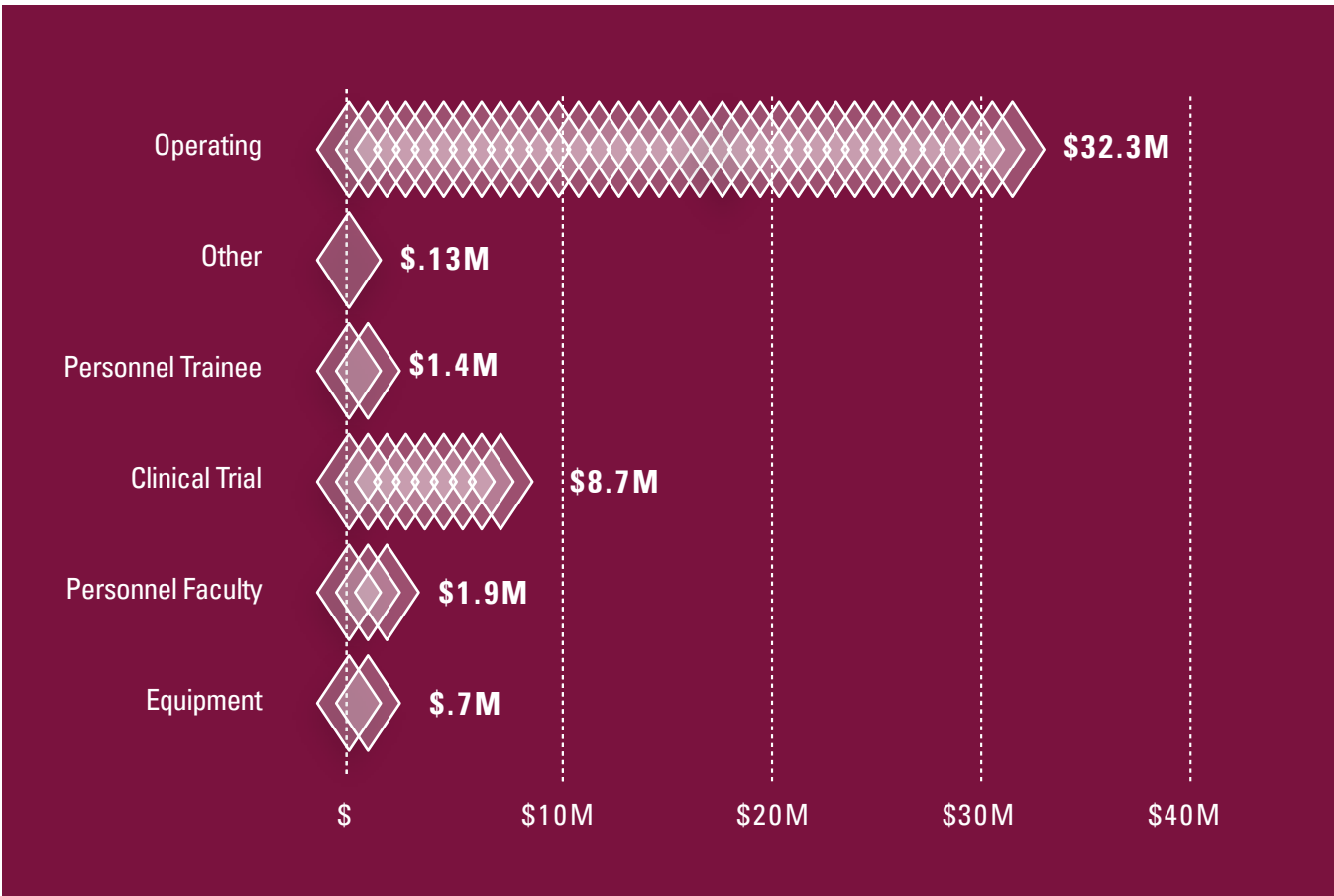


for 2022-23 was \$45.1 million excluding monies held with our hospital partners. Most of the funding came from peer-reviewed sources, with 62% from the federal government (tri-council), 10% from disease-specific funding agencies, 15% from foreign sources including the National Institutes of Health, 10% from provincial/regional/internal funds, and 5% from corporate sponsors. ■

DEPARTMENT OF MEDICINE 2022-23 | RESEARCH FUNDING BY TYPE



DEPARTMENT OF MEDICINE 2022-2023 | RESEARCH FUNDING BY TYPE



## COORDINATOR REPORT

# Medical Subspecialties Residency Program Report 2021-23

The McMaster Medical Subspecialties Residency Programs continue to provide the highest-quality training for residents in Cardiology, Clinical Immunology & Allergy, Endocrinology, Gastroenterology, General Internal Medicine, Geriatric Medicine, Hematology, Infectious Diseases, Medical Biochemistry, Medical Oncology, Nephrology, Neurology, Physical Medicine and Rehabilitation, Respiriology and Rheumatology. Subspecialty training at McMaster endeavours to train subspecialists of tomorrow who demonstrate excellence in clinical care, understanding of and aptitude for high-quality research endeavours, skill in education of learners, peers, and patients, and who pursue

We have also welcomed our newest Royal College accredited subspecialty training program: Palliative Medicine, which matched its first resident for the 2022-2023 academic year. This is a novel program as it accepts residents both from Internal Medicine and Family Medicine training streams.

The Medical Subspecialties programs continue to be supported by the efforts of the Medical Subspecialties Central Office (MSCO) which acts as a central resource for program support and shared Medical Subspecialties initiatives, including the following:

### a) Shared Academic Half-day curriculum

Covering topics common to all medical specialties such as Quality Improvement and Patient Safety, Equity and Diversity, Professionalism and more, with a focus on CanMEDS roles.

The following residents acted as co-chairs of the Combined Academic Half-Day committee, demonstrating educational leadership:

Academic Half-Day Committee		
2022-23	Dr. Olivia Cook	Endocrinology
2022-23	Dr. Hyder Shah	Neurology
2021-22	Dr. Ankur Goswami	G.I. Medicine
2021-22	Dr. Siobhan Deshauer	Rheumatology

### b) Resident research

Supported through the medical subspecialties grant, given to one to two residents annually in a faculty-reviewed grant competition. Highlighted by participation at the Internal Medicine Resident Research Day, where there are awards presented to the top subspecialty research.

Internal Medicine Resident Research Day Resident Research 2022-2023 Grant Recipients		
Dr. Arden Azim	G.I. Medicine	Supervisor: Dr. Matt Sibbald
Dr. Grace Zhang	Adult Hematology	Supervisor: Dr. Amaris Balitsky
Resident Research 2021-2022 Grant Recipients		
Dr. Carson Lo	Infectious Disease	Supervisor: Dr. Zain Chagla
Dr. Omar Ibrahim	Cardiology	Supervisor: Dr. William McIntyre

2022-2023 Resident Research Award Recipients
First place in Medicine Specialty Scientific poster presentation category: Dr. Arden Azim
Second place in Medicine Specialty Scientific poster presentation category: Dr. Simon Overduin

### 2021-2022 Resident Research Award Recipients

First place in the Medicine Specialty Scientific Poster presentation category: Drs. Ankur Goswami, Ala'a Soud Alrehaily, Clara Lu, Claire Lee, Hammam Gholam and Radha Joseph (Joint presenters)

First place in the Medicine Specialty Clinical Poster presentation category: Dr. Siobhan Deshauer

Third place in the Medicine Specialty Oral presentation category: Dr. Mats Lyndon Juneke

### c) Global Health

The Medical Subspecialties Program group continues to support residents interested in pursuing an elective at our affiliated hospital in Georgetown, Guyana. After a gap during COVID, the following residents have since completed this elective:

#### Residents of the Medical Subspecialties Program Group

Dr. Hammad Rafay	Respirology	2022
Dr. Deborah Koh	Rheumatology	2022
Dr. Curtis Sobchak	G.I. Medicine	2023
Dr. Matthew Chan	G.I. Medicine	2023
Dr. Teresa Semalulu	Rheumatology	2023



**Dr. Kim Legault**

Co-Chair, Medical Subspecialties Program Directors' Committee

### d) Recognition of excellence

The Dr. Jeff Ginsberg Award is given annually and recognizes one to two residents who have consistently displayed exemplary professionalism, collaboration, leadership, and commitment to academic achievement.

#### Jeff Ginsberg Award

2022-23	Dr. Olivia Cook	Endocrinology
2021-22	Dr. Siobhan Deshauer	Rheumatology
2021-22	Dr. Joanne Britto	Hematology

Our Subspecialty programs are supported by our dedicated group of Program Directors and Program Administrators (inset table), and we would like to thank them for their hard work, innovative practices, and commitment to residency education. We would also like to acknowledge the outgoing Program Directors who have stepped down from their roles during the last two years and thank them for their years of service to their subspecialty resident program. This includes:



**Dr. Meera Luthra**

Co-Chair, Medical Subspecialties Program Directors' Committee

Outgoing Program Directors		
2021-22	Dr. Rebecca Amer	Respirology
2021-22	Dr. Jaclyn Quirt	Clinical Allergy & Immunology
2021-22	Dr. Jim Sahlas	Neurology
2022-23	Dr. Tricia Woo	Geriatric Medicine

The Medical Subspecialties programs continue to be supported by the efforts of the Medical Subspecialties Central Office (MSCO)\* which acts as a central resource for program support and shared Medical Subspecialties initiatives, including the following:

Joyce Munga, Rachelle Dymont, Sam Moshiri

Our collaborations are our strength, and the ability to share resources across programs improves educational quality and provides opportunities for enriched clinical experiences and scholarship. We would like to thank all of our residents, program administrators, program directors, McMaster Postgraduate Medical Education, and the Department of Medicine, for all of their support, and collaboration! ■

## 2022-2023 Medicine Subspecialty Grant winners

MEDICAL EDUCATION GRANT AWARDEE	SUPERVISOR	PROJECT TITLE
<b>Dr. Grace Zhang, PGY4 Adult Hematology</b>	Dr. Amaris Balitsky	Development and Evaluation of a CAR-T Therapy Electronic Learning Module for Canadian Hematology Residents
MEDICAL EDUCATION GRANT AWARDEE	SUPERVISOR	PROJECT TITLE
<b>Dr. Arden Azim, PGY4 General Internal Medicine</b>	Dr. Matthew Sibbald	Integrating Interprofessional Learning Modalities: Creating a Framework for Hybrid Interprofessional Education

Program	Program Director	Program Administrator
Cardiology	Dr. Matthew Sibbald	Doreen Reeve
Clinical Immunology & Allergy	Dr. David Fahmy	Daniel DiCenzo
Endocrinology	Dr. Meera Luthra	Dana Gordon
Gastroenterology	Dr. Eric Greenwald	Divya Bhardwaj
General Internal Medicine	Dr. Zahira Khalid	
Geriatric Medicine	Dr. Tricia Woo	Daniel DiCenzo
Hematology	Dr. Graeme Fraser	Meggan Armstrong
Infectious Diseases	Dr. Eva Piessens	Connie Boffa
Medical Biochemistry	Dr. Guillaume Paré	Erin Alderson
Medical Oncology	Dr. Ghazaleh Kazemi	Nicole Molinaro
Nephrology	Dr. Matthew Miller	Wendy Clark
Palliative Medicine	Dr. Mino Mitri	Divya Bhardwaj
Physical Medicine and Rehabilitation	Dr. Simran Basi	Kim Pusung
Respirology	Dr. Joshua Wald	Kimmy Rolfe
Rheumatology	Dr. Kim Legault	Rennée Tremblay

COORDINATOR REPORT

# Internal Medicine Clerkship Program

## Faculty Undergraduate Director

The Internal Medicine Clerkship Program is mandatory for all McMaster medical students and consists of a four-week core rotation attached to the inpatient medicine units in Hamilton and at the regional campuses in Waterloo and Niagara and a two-week transition to residency rotation. The Internal Medicine Clerkship Program has continued to evolve to meet the changing needs of our students. Our Clerkship Committee meets monthly to address challenges and to discuss and implement new initiatives to improve the learning experience for our students. This committee is composed of the Site Coordinators for the Hamilton Hospitals, the Regional Education Leads at Waterloo and Niagara, our program administrators, and resident and student representatives.

We have experienced some changes to the membership of the Internal Medicine Clerkship Team. Dr. Faraz Masood stepped down as the Regional Education Lead for the Niagara Regional Campus. We all benefited greatly from his experience and advice and thank him for his contributions. Dr. Bennett Haynen has taken over this role and has continued to build on the strong foundation left by Dr. Masood. Dr. Ahraaz Wyne left the Site Coordinator role at Juravinski Hospital to pursue other opportunities and Dr. Jessica Huynh has taken on this important role.

## Awards

The Medicine Clerkship Program has been privileged to offer several awards to students and faculty. These awards are given to a student from each of the five training sites: Hamilton General Hospital, Juravinski Hospital, St Joseph's Hospital, Niagara, and Waterloo. One medical student from each of the five training sites is chosen to receive the Dr. Paul O'Byrne Award for Outstanding Clinical and Academic Achievement. The award is given to acknowledge a student who has excelled in the Internal Medicine Clerkship in the domains of clinical acumen and knowledge of internal medicine. The Dr.



**Dr. Andrew Cheung**  
MD MBA FRCPC  
Undergraduate Director  
Internal Medicine  
Clerkship Program

Akbar Panju Award for Professionalism is awarded to a student who exemplifies the practice of medicine in the areas of compassion, service, altruism, and trustworthiness. Faculty from the Department of Medicine are also recognized for their excellence in teaching during the clerkship rotations. Unfortunately, awards were not presented to the Class of 2021 due to disruptions from the COVID-19 pandemic.

For the class of 2022, the Dr. Paul O'Byrne Award for Academic Achievement during the internal medicine core clerkship rotation was awarded to the following students:

2022	Juravinski Hospital	Jenny Zhu
2022	Hamilton General Hospital	Janna Malone
2022	St Joseph's Hospital	Jessica Scott
2022	Niagara Regional Campus	Shauna Jose
2022	Waterloo Regional Campus	Ryan Scanlan

For the class of 2022, the Dr. Akbar Panju Award for Professionalism during the internal medicine core clerkship rotation was awarded to the following students:

2022	Juravinski Hospital	Larissa Maini
2022	Hamilton General Hospital	Elizabeth Richardson
2022	St Joseph's Hospital	Ravinder Sandhu
2022	Niagara Regional Campus	Camille Wiley
2022	Waterloo Regional Campus	Takhliq Amir

The Medicine Clerkship Program awarded Teaching Excellence Awards to the following faculty in 2022

2022	Juravinski Hospital	Dr. Kevin Singh
2022	Hamilton General Hospital	Dr. Haroon Yousuf
2022	St Joseph's Hospital	Dr. Mino Mitri

For the class of 2023, the Dr. Paul O'Byrne Award for Academic Achievement during the internal medicine core clerkship rotation was awarded to the following students:

2023	Juravinski Hospital	Peter Belesiotis
2023	Hamilton General Hospital	Isabel Thomas
2023	St Joseph's Hospital	Karam Elsolh
2023	Niagara Regional Campus	Ruqqiyah Rana
2023	Waterloo Regional Campus	Eric Asgari

For the class of 2023, the Dr. Akbar Panju Award for Professionalism during the internal medicine core clerkship rotation was awarded to the following students:

2023	Juravinski Hospital	Ejaz Causer
2023	Hamilton General Hospital	Michael Wong
2023	St Joseph's Hospital	Jonah Rakoff
2023	Niagara Regional Campus	Aidan Kwok
2023	Waterloo Regional Campus	Fatima Mazhar

The Medicine Clerkship Program awarded Teaching Excellence Awards to the following faculty in 2023:

2023	Juravinski Hospital	Dr. Ameen Patel
2023	Hamilton General Hospital	Dr. Hugh Traquair
2023	St Joseph's Hospital	Dr. Jason Cheung
2023	Niagara Regional Campus	Dr. Stephanie Paolone
2023	Waterloo Regional Campus	Dr. Andrea Molckovsky

## Program Updates

The Internal Medicine Clerkship Rotation is intense with a significant amount of knowledge to be acquired and a demanding call schedule. Unfortunately, there were many changes to the structure of our rotations due to the significant restrictions placed on learner capacity and in-person teaching during the COVID-19 pandemic. The Internal Medicine Clerkship Leadership was forced to respond to the rapidly changing environment to preserve clerkship educational opportunities for our students. These restrictions did limit our ability to deliver non-clinical and clinical teaching opportunities. The resilience of our students, residents and faculty during this time was vital in ensuring that students continued to receive excellent clerkship education.

Using Zoom, all sites were able to maintain daily educational sessions on the inpatient medicine units. We also continued to host weekly hour-long tutorial sessions with our Chief Medical Residents and faculty supervisors online. To ensure adequate exposure to different aspects of inpatient medicine, clerks alternated between weeks of daytime coverage and weeks of overnight call shifts, to gain broad exposure to managing complex patients admitted to our inpatient medical units.

As pandemic restrictions eased, we were able to reintroduce more regular teaching, including bedside teaching sessions led by the Chief Medical Residents. Towards the end of 2022, we relaunched the Academic Half-Days for clerks to ensure protected time for studying, bedside teaching sessions and tutorials.

## Acknowledgements

On behalf of the Internal Medicine Clerkship Program and the students, I would like to thank the following people and groups without whom these programs would not be possible: Ms. Tina Laporte, internal medicine clerkship administrative program coordinator; Drs. Stephen Gölck and Bennett Haynen, our Regional Education Leads for the Kitchener and Niagara Regional Campuses; Drs. Kajenny Srivaratharajah, Sergio Mazzadi and Jessica Huynh, our Site Coordinators for the Hamilton sites; Kerri Alves, Hayley Sicard, Shannon Venema, Alicia Piedmonte, and Megan Tupper, our administrative assistants; Dr. Mark Crowther; the Clinical Teaching Unit directors and their assistants; Dr. Leslie Martin and Ms. Jan Taylor of the Internal Medicine Residency Program, along with its residents and administrative staff. Without the engagement and support of these people, we would not have a successful program. I am also grateful to the Clerkship Directors in other programs who are always willing to share ideas and successes from their programs and to Dr. Helen Neighbour for her leadership and support.

The students continue to inspire us with their dedication to their education and we are particularly grateful to our student representatives who ensure that students are involved in our program decision making. ■

## COORDINATOR REPORT

# Internal Medicine Residency Training Program

### Mission

The McMaster Internal Medicine Residency Program exists to create exceptional, innovative, and compassionate healthcare professionals who provide evidence-based, patient-centered care to our diverse populations.

### Vision

We aspire to deliver an innovative and evidence-informed postgraduate educational approach, fostering exceptional McMaster Internal Medicine Residency graduates who excel in healthcare systems worldwide and set new standards of excellence in their respective fields.

The McMaster Internal Medicine Residency Program trains approximately 110 residents across 4 years of training within the central campus in Hamilton and the distributed campus in Waterloo. We continue to host many residents from other postgraduate programs and medical students while they rotate within our Clinical Teaching Units as a core component of their training.

The Program Director role has been incredibly busy since my arrival in 2021: in addition to the everyday activities required to run the program, we have been navigating the ongoing pandemic response, rising patient volumes and complexity during a time of resource constraints, and accreditation. I have been engaging at the national level to understand the approach taken by other institutions, all facing similar challenges. The collaborative and proactive approach taken locally by all stakeholders to meet these challenges has been unparalleled, and I am so grateful and proud of the incredible team at McMaster. I am also incredibly impressed by the dedication of our residents and the inspiring clinical, educational and research successes they achieve in their training and beyond as our colleagues. Celebrating their success reminds us why we are here as academic clinicians.



**Dr. Leslie Martin**  
MD, FRCPC

Director, Internal Medicine  
Residency Program

### Accreditation

Our program underwent an accreditation visit with the Royal College of Physicians and Surgeons of Canada (RCPSC) in spring 2023 with final status of “Accredited Program with External Review at 2 years”. This reflects the recognition by the RCPSC of the important structural changes to our Clinical Teaching Unit with the city-wide restructuring that was underway during the accreditation visit. While the restructuring addresses many challenges for the Internal Medicine Program, there remains important ongoing work to holistically tackle the remaining identified areas for improvement. We look forward to sharing our

action plan with the entire department with the arrival of the final written report in late 2023. We are committed to engaging all stakeholders and driving forward changes to the clinical learning environment that serves our patients, learners, faculty and healthcare partners. We implore everyone to participate in calls for future engagement and solution generation! The timeline is short until the return accreditation visit in Fall 2025. We are confident that we will be successful in addressing the areas for improvement prior to the return visit. We are immensely proud of all we have accomplished, and excited for the opportunity that lies ahead as we continue our work to ensure that we have the best possible educational experience for residents and faculty alike.

## Clinical Teaching Unit Restructuring

In partnership with the University and Hospital networks, including many in the Department of Medicine, we engaged in a successful restructuring of our Clinical Teaching Units to launch in July 2023. This was achieved in under two years and would not have been possible without the herculean contributions of many. This change allowed for the reconcentration of residents and educational activities across two core CTU sites (St. Joseph's Healthcare Hamilton and Hamilton General Hospital). Educational innovation has followed, with the re-establishment of "morning report" at both sites. The Program and Division of General Internal Medicine will maintain an ongoing academic footprint at the Juravinski Hospital for learners to work alongside faculty on preceptor-based teams. We are working to establish a senior-level educational curriculum for residents on site, and welcome the support of our subspecialty colleagues in this endeavour.

## Competency-Based Medical Education (CBME)

In spring 2022, our first resident cohort successfully graduated from the Competence by Design Internal Medicine curriculum. Overall, we had a highly successful launch in 2019 under the leadership of the past inaugural chairs of the Competence Committee, Drs. Mark Matsos and Mohamed Panju. There is much to be celebrated in this new system: the broad recognition of the value of direct observation and feedback by

learners and faculty as a learning cue, the establishment of a longitudinal Academic Coach for each learner, and resident engagement in active reflection at core transition points in their training. We recognize there are ongoing challenges in this system. We are committed to engaging in quality improvement and nimbly adapting our program in response to updates from the Royal College of Physicians and Surgeons of Canada.

## Re-Establishing Social Connection

In the aftermath of the COVID-19 pandemic, the need to re-establish social connection was brought forth as a priority during our program engagement workshops. In response, the program hosted its first Program-Wide Retreat in fall 2022 with resident-faculty dinner, followed by a Saturday excursion to Cedar Glen YMCA camp for resident team-building activities with similar activities planned in fall 2023. We welcome suggestions on how to continue to build meaningful social connections amongst the fabric of our community at McMaster.

## Celebrating Success

This report provides an opportunity to reflect on the success of our residents and faculty, celebrated yearly at Resident Research Day. ■

Award	2021-2022	2022-2023
Akbar Panju Professionalism, PGY1	Kelsey MacEachern	Justin Senecal
Hui Lee SMR Award, PGY2	Brian Lauzon Zainab AlMaqrashi Laura Spatafora	Zainab AlMaqrashi Christina Ma
Chief Medical Resident Award, PGY3	Curtis Sobchak Tamoor Afzaal Wendy Ye	Ali Eshaghpour Matthew Patel
CTU Teaching Faculty Award	SJH: Andrew Cheung HGH: Hugh Traquair JH: Christian Kraeker	SJH: Jason Cheung HGH: Marianne Talman JH: Conor Cox
Subspecialty Teaching Award	Kimberley Lewis	Craig Ainsworth
Outstanding Rotation Award	Hematology SJH	Geriatrics SJH
Community Preceptor Award	Thomas Haffner	William Chan
ER Mentor Award	Jillian Roberge	N/A
Medical Staff Association Award, SJH	Klement Yeung	Matthew Patel Shiliang Ge
Medical Staff Association Award, HHS	Zainab AlMaqrashi	Christina Ma

## Research Day Awards

Award	2021-2022	2022-2023
Dr. O'Byrne Research Grant	Tyler Pitre (B. Rochweg)	Ghazal Haddad (B. Rochweg)
Dr. Wasi Medical Education Grant	Megan Smith-Uffen (H. Seow)	Aliya Esmail/Nikki Cliffe (J. Wald)
HHS Patient Safety Grant	Tina Zhou (C. Demers)	Tina Zhou (S. Yohanna)
Patterson Grant in Geriatrics Research	Matthew Patel (C. Patterson)	Shannon Gui (C. Patterson)
SJH Grant in Quality Improvement	N/A	Nikki Cliffe / Lori Israelian
Oral – Gold	Suk Joon Ji	Suk Joon Ji
Oral – Silver	Tyler Pitre	Tyler Pitre
Oral – Bronze	Mats Juneke	Inna Berditchevskaia
Scientific Poster – First	Tauben Averbuch	Manan Ahuja
Scientific Poster – Second	Sama Anvari	Kelsey MacEachern
Subspecialty Scientific Poster – First	Radha Joseph	Arden Azim
Subspecialty Scientific Poster – Second	Siobhan Deshauer (clinical)	Simon Overduin
Clinical Poster – First	Sze Wah Chan	Shiliang Ge
Clinical Poster – Second	Shannon Gui	Megan Smith Uffen

The success of our residents in research is outstanding with over 450 publications and presentations over the last 5 years.

## Special Thanks

Supporting the residents in this program can only be accomplished by the collective efforts of so many that allow us to deliver a robust, unique and comprehensive program that meets the needs of our diverse and accomplished resident group.

Jan Taylor – Senior Administrator

Sharlene Honaizer, Susan Serro, Christine Knight – Residency Program administrative support

Sarah Algar – CTU Administrative support

Kerri Alves, Pauline Dawson – Regional Campus Administrative Team

## Faculty Leadership

Dr. Mark Crowther, Chair, Department of Medicine

Dr. Parveen Wasi, Associate Postgraduate Dean

Dr. Khalid Azzam - Physician-in-Chief HHS

Dr. Madeleine Verhovsek - Chief of Medicine SJHH

Dr. John Neary - Division Director, GIM

Annette Rosati – Director of Administration, Department of Medicine

Dr. Joshua Wald, Dr. Haroon Yousuf – Deputy Program Directors

Dr. Conor Cox - R4 Internal Medicine Program Lead

Dr. Rebecca Kruisselbrink - Regional Education Lead, Waterloo Regional Campus

Dr. Amanda Huynh – SJHH CTU Director

Dr. Marianne Talman – HGH CTU Director

Dr. Mohamed Panju – Ambulatory CTU Director

Dr. Darryl Leong - Director of Research

Drs. Siraj Mithoowani and Jennifer Tsang – Deputy Directors of Research

Dr. Jessica Huynh - Chair of Assessment

Dr. Meera Joseph – Faculty Lead, Academic Half-Day

Dr. Ted Xenodemetropoulos – Faculty Lead, Case-Based Learning Curriculum

Dr. Hugh Traquair – Faculty Lead, Simulation and POCUS Committees

Dr. Clara Lu – Faculty Lead, Social Medicine Committee

Dr. Haroon Yousuf – Juravinski CTU Site Lead

Dr. Conor Cox – incoming Deputy Program Director Education

Dr. Marianne Talman – incoming Deputy Program Director Wellness and Quality Improvement

Dr. Kajenny Srivaratharajah – incoming Deputy Program Director CBME

Specialty Rotation Coordinators for Internal Medicine learners	
Cardiology – Dr. Alison Montgomery HGH, Dr. Patrick Magloire JH	Cardiac Care Unit – Dr. Faizan Amin
Clinical Immunology – Dr. David Fahmy	Intensive Care – Dr. Samir Sharif JH, Dr. Tania Ligor, SJH
Endocrinology – Dr. Reema Shah	Gastroenterology – Dr. Ted Xenodemetropoulos JH, Dr. Rob Spaziani SJH
Geriatrics – Dr. Heather McLeod, Dr. Micheline Gagnon	Hematology – Dr. Irwin Walker JH, Dr. Rick Ikesaka SJH
Infectious Diseases – Dr. Eva Piessens, JH, Dr. Zain Chagla SJH, Dr. Andrew Kapoor HGH	Medical Oncology – Dr. Nidhi Kumar Tyagi
Neurology – Dr. Aristeidis Katsanos, Dr. Jackie Solomon	Palliative Care – Dr. Anne Woods, Dr. Mino Mitri, Dr. Anne Boyle
Respirology – Dr. Joshua Wald, Dr. Terence Ho	Rheumatology – Dr. Arthur Lau

## COORDINATOR REPORT

# Director of Administration

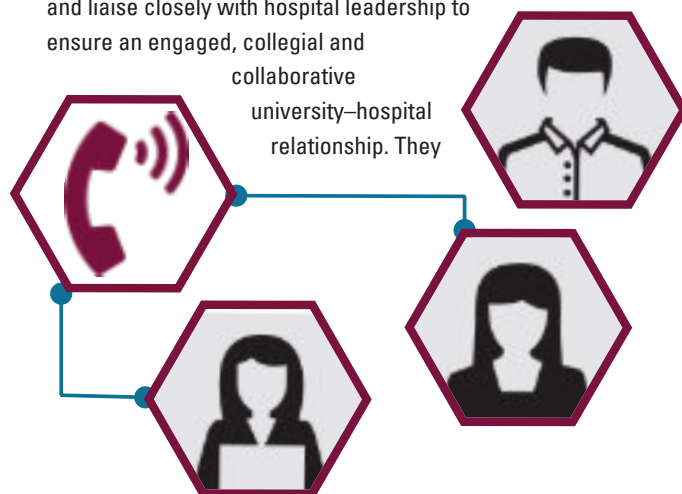
I am fortunate to work with and support many talented and exceptional faculty and staff. As our department continues to grow with new faculty recruits and clinical scholars, so too does our administrative support system.

The last few years have brought significant changes to the administrative structure of the Department of Medicine, partly due to a changing labour market following the pandemic. As managers, we dealt with completely remote or hybrid working models. We restructured our team to provide site-specific managers to support our faculty and staff at each hospital site. The department also recruited a research-focused manager to provide additional support to our expanding research teams.

The department continued to be financially strong through 2020–22, with surpluses in the clinical practice plan and educational program. Surplus funds enabled the department to continue to support essential educational activities, including a graduate student incentive program, as well as provide invaluable professional development opportunities to faculty members. Faculty and staff development remains a key priority to ensure a bright future for our department.

The commitment of the management team and staff has significantly contributed to the Department of Medicine's success during these years. Although there was turnover in the team, we have recruited talented and committed administrative staff. With the retirement of Leslie Steinberg, a longstanding McMaster employee, the department recruited Erin Savard to lead the McMaster University Medical Centre team. In addition, Lina Moumneh joined the department to provide faculty and staff support at Hamilton General. At St. Joseph's Healthcare, Christine Chadwick was recruited to be site coordinator. Gail Laforme continues to be a dedicated and committed team player at the Juravinski Hospital and Cancer Centre. Natasha Hillier was promoted to site coordinator to support our research teams, and Andrew Woodhall was promoted to assistant

finance manager. These dedicated managers are “hands-on” and liaise closely with hospital leadership to ensure an engaged, collegial and collaborative university–hospital relationship. They



**Annette Rosati**  
BA MBA  
Director of  
Administration

*Faculty and staff development remains a key priority to ensure a bright future for our department.*



are a direct link to new faculty recruits as they get settled in their new surroundings.

Other equally important and invaluable members of the department's administrative team include Lorrie Reurink (human resources) and Lisa Greer (finance). As a team, we continue to face challenges related to our changing work landscape. However, the Department of Medicine's leadership and management teams are committed to supporting the university's initiatives and advocating the merits of change to our faculty, students and staff. ■

## COORDINATOR REPORT

# Department of Medicine at Hamilton Health Sciences

The Department of Medicine at Hamilton Health Sciences (HHS) continues to grow in size and productivity.

We currently have 582 credentialed physicians, with ongoing recruitment of clinician-educators and clinician-scientists to bolster clinical work across various divisions. Over the last two years, a significant expansion, particularly in hospitalist services, has been aimed at aligning clinical services and enhancing patient care. Additionally, two exceptional services are joining our department: the Palliative Care Consultation Service, expertly led by Drs. Sabira Kanani and Judy Gladstone, and the Substance Use Service, under the leadership of Dr. Tim O'Shea, in close collaboration with Dr. Robin Lennox at St. Joseph's Hospital. These additions reflect our commitment to continually improving and diversifying the services we offer to our patients.



Dr. Barry Lumb MD FRCP(C)  
Physician-in-Chief (Ret)

my first term. A major strength of our department continues to be the strong relationship between the chiefs at both health care systems and the academic department.

The Department of Medicine at HHS has prioritized integrating equity, diversity and inclusion (EDI) into its structure and daily activities. We are dedicated to collaborating with HHS and Medical Affairs to establish a leadership role focused on

In September 2020, after 12 years of exemplary and steadfast leadership, Dr. Barry Lumb stepped down from his role as physician-in-chief. His tenure is marked by numerous achievements and a profound dedication to excellence in patient care, research and education.

Following his departure, I had the honour of assuming this role, and I am now navigating the second half of

spearheading EDI initiatives. Reflecting this commitment, HHS has formulated a five-year EDI strategic plan. Dr. Smita Halder, who previously co-chaired the HHS EDI Advisory Council and currently serves as the senior medical officer in Medical Affairs, has been instrumental in this endeavour. Her guidance has been invaluable to me and other department leaders as we strive to embed inclusive practices in every facet of the department's operations. Our goal is to create an environment where diversity is celebrated, equity is standard practice and inclusive approaches are the driving force behind innovation and excellence.



**Dr. Khalid Azzam**  
MBBS MSc FRCP(C)  
Physician-in-Chief  
Hamilton Health Sciences

A central priority for our department is emphasizing the significance of ambulatory care and its optimized utilization, aimed at expanding services to meet the growing needs of our population. The pilot project led by Dr. Barry Lumb at the Juravinski Hospital Medical Ambulatory Clinic

was a pivotal initiative. This successful pilot demonstrated the potential for growing ambulatory services and laid a strategic roadmap for the future. It has been instrumental in freeing up ambulatory spaces for both patient care and research, showcasing an effective model for enhancing health care delivery. However, more work remains as we aim to expand this work to other ambulatory spaces. We are focusing on refining our approaches and ensuring that our ambulatory care facilities can adequately accommodate the evolving needs of our hospitals and the community.

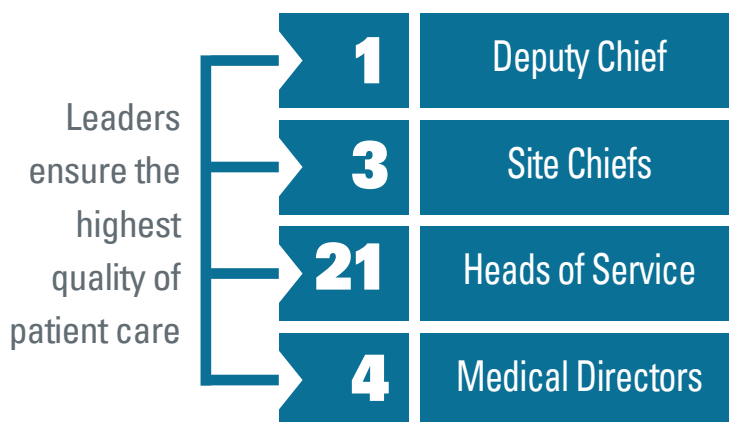
The COVID-19 pandemic exerted immense pressure on our health care systems, exacerbating pre-existing challenges and raising concerns about the sector's financial stability. The pandemic's direct and indirect impacts have led to significant shortages and strains on health human resources. As we navigate post-COVID-19 recovery and strive to establish a new normal, our hospitals grapple with an unprecedented demand for services and ongoing pressure on human resources. Within this challenging landscape, the Department of Medicine at HHS has played a critical role in both the response to and recovery from the COVID-19 pandemic. Our physicians have made substantial contributions during these extraordinary



*Our goal is to create an environment where diversity is celebrated, equity is standard practice and inclusive approaches are the driving force behind innovation and excellence.*

times. They have been deeply involved in leading pandemic preparedness, participating in subject-matter expert groups and task forces, working in COVID-19 hospital units, and contributing to leadership, education, patient care and research. Members of our department have spearheaded several successful clinical initiatives, including monitoring patients remotely after discharge, providing virtual consultations to long-term care facilities, adapting COVID units in response to each pandemic wave, implementing an extracorporeal membrane oxygenation (ECMO) program for COVID-19 patients and piloting a Long COVID clinic. Each of these initiatives reflects the department's commitment to innovative and responsive health care during a period of unparalleled challenges.

The implementation of Epic, which went live in June 2022, represents a major transformation at HHS, significantly

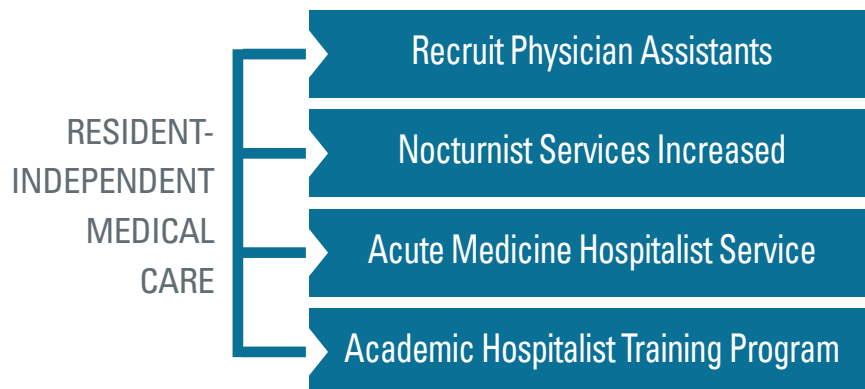


enhancing the quality of patient safety and care. Given the wide range of services HHS provides, this implementation was notably complex. The Department of Medicine has made and continues to make, an outstanding contribution to this project. Physicians from the Department of Medicine have been substantially involved in this transformative process, marked by their enthusiasm to elevate the hospital's care to a level befitting its size and academic mandate. Dr. Barry Lumb played a vital role as the medical executive of the project. Additionally, Dr. Amna Ahmad,

associate chief information medical officer, has made an invaluable contribution, bringing her extensive knowledge and expertise in quality improvement and patient safety to the forefront of this significant undertaking.

The Department of Medicine at HHS is deeply committed to quality improvement (QI) and patient safety at departmental and hospital levels. Last year, we appointed Dr. Samir Raza as the deputy chief of medicine, specifically focusing on patient safety, quality improvement and wellness. Our department is part of a data-driven community dedicated to enhancing the quality of inpatient general medical care, as a participant in the Ontario General Medicine Quality Improvement Network (GeMQIN), a provincial initiative spearheaded by Ontario Health (Quality). In May 2023, physicians managing general medicine patients within our department received the MyPractice report. This report provides a detailed analysis of individual physicians' practice patterns, focusing on patient outcomes and offering comparative data from their peers. This audit and feedback process serves as a valuable tool, summarizing clinical performance and offering opportunities for both individual and group practice improvements.

Currently, we are engaged in a project aimed at effectively using the reports generated by GeMQIN. This project is designed to address the needs of our physicians and patients, aligning with the objectives of the Quintuple Aim, ensuring that these insights are integrated into our continuous improvement processes.



We undertook a significant transformation by expanding hospitalist services and establishing a resident-independent medical care model at Juravinski Hospital starting July 1, 2023. Over the past several years, having enough residents to support three clinical sites for General Internal Medicine clinical teaching units while providing both day and night coverage was becoming more challenging. HHS, St. Joseph's Hospital and the Faculty of Health Sciences through the Hospital University Liaison Committee have been collaborating to develop and implement a staged strategy to transition hospital services since 2019. The

strategy began with recruiting physician assistants across all sites to reinforce the medical teams. Subsequently, the services of nocturnists were increased at Juravinski Hospital. The final phase of this transformation involved transitioning Juravinski Hospital to a resident-independent model, establishing an acute medicine hospitalist service and an academic hospitalist stream, which included the creation of an academic hospitalist training program. Dr. Haroon Yousuf, effectively leading the implementation of this transformation, collaborated closely with both operational and medical leadership at the site to ensure a smooth and effective transition.

*... our hospitals grapple with an unprecedented demand for services and ongoing pressure on human resources.*

The leadership structure of the HHS Department of Medicine now includes a deputy chief, three site chiefs, 21 heads of service, and four medical directors. These key leaders are crucial in ensuring the highest quality of patient care. They support and facilitate the department's members in delivering exceptional clinical services in

inpatient and outpatient settings while maintaining a solid commitment to our academic mission. I extend my sincere thanks and appreciation to each of these leaders for their dedication and hard work.

I would like to celebrate and express my profound gratitude for the remarkable contributions and resilience of the members of the Department of Medicine at HHS. Our team members have made significant impacts locally, provincially and internationally, whether at the bedside, in education or

through groundbreaking research. The scope of their achievements is so vast that it's impossible to capture all of them in this brief report. Each member's dedication and hard work have been instrumental in advancing our department's mission. I sincerely thank every department member for their exceptional commitment and for continually going above and beyond in their roles. Your efforts are appreciated and have made a real difference. ■



Ron Joyce  
Children's  
Health Centre



## COORDINATOR REPORT

# Department of Medicine at St. Joseph's Healthcare

Since taking on the role of Chief of Medicine at St. Joseph's Healthcare Hamilton (SJHH) in July 2021, it has been my great privilege to work with the amazing physicians across our department as we cultivate excellence in clinical services, research and education, with outstanding patient care as the ultimate goal. Our department is built on a foundation of collaboration, communication and mutual support; innovation, quality and patient safety; equity, diversity and inclusion; and community accountability.

General Internal Medicine (GIM) continues to be very clinically busy at SJHH, with average daily inpatient census frequently exceeding 160 patients. During the COVID-19 Omicron wave in late 2021 and early 2022, all physicians in the SJHH Department of Medicine participated in a backup/surge schedule for over two months to support our GIM colleagues and the inpatient population. The Substance Use Service (previously known as Addiction Medicine Service) has continued to grow and expand their referral criteria at SJHH, providing a valuable service for patients receiving care in all acute care areas at the Charlton site.

On the outpatient side, the COVID Care Clinic – led by Dr. Zain Chagla and staffed by Department of Medicine physicians, with

Daily patient count at SJH's GIM clinics frequently exceeds

160

support from nursing and pharmacy – delivered uninterrupted care, using monoclonal antibody treatments and other evidence-based therapies for eligible patients from October 2021 until early 2023. In December 2022, the Rheumatology and Infectious Diseases geographic full-time physicians successfully moved their offices and clinics from the 25 Charlton office building to spaces

within the SJHH footprint, facilitating enhanced collaboration with colleagues on site.

Throughout this time and beyond, leadership from a number of teams – SJHH Department of Medicine, General Internal Medicine and medical affairs; McMaster Department of Medicine, post-graduate medical education and core internal medicine program leadership; and Hamilton Health Sciences (HHS) Department of Medicine, General Internal Medicine and medical affairs – collaborated on efforts toward restructuring the clinical teaching unit city-wide. These efforts culminated in changes that went into effect on July 1, 2023.



**Dr. Madeleine Verhovsek**  
MD FRCPC  
Chief of Medicine  
St. Joseph's Healthcare Hamilton

Another collaborative effort has been the move to city-wide medical grand rounds. SJHH-hosted dates have included in-person rounds co-hosted with the SJHH Research Institute and the McMaster Department of Health Research Methods, Evidence and Impact (Drs. Salim Abdool Karim and Quarraisha Abdool Karim on tackling epidemics in Africa with science); combined rounds with SJHH Psychiatry (Lisa Jeffs and Dr. Maiko Schneider on trans-inclusive health care); and rounds presented by Drs. Clara Lu, Achieng Tago and Jennifer Walker on Indigenous identity, race and ethnicity data collection in health care.

SJHH continues to prioritize equity, diversity and inclusion (EDI) initiatives. The EDI Council, launched in October 2020, continues to bring together an interdisciplinary group of hospital staff and physicians to address matters important to our staff, patients and communities. We also continue to emphasize professionalism standards and accountability for professional staff, as well as patient experience, patient safety and quality improvement.

Dr. Jason Cheung took on leadership of the GIM clinical service effective July 1, 2021. I am grateful to work with Dr. Cheung and all the other talented and committed heads of service in our SJHH Department of Medicine. In 2021–2022, we welcomed a number of new heads of service: Dr. Maggie Larche (Rheumatology, July 2021), Dr. Rick Ikesaka (Hematology and Thromboembolism, July 2021), Dr. Rebecca Amer (Respirology, October 2021) with Dr. Helen Neighbour as deputy head of service (January 2022), Dr. Anna Mathew (Nephrology, September 2022), Dr. Zain Chagla (Infectious Diseases, January 2023), Dr. Heather McLeod (Geriatrics, January 2023), and Dr. Tim O'Shea (Substance Use, with Dr. Robin Lennox, March 2023). Several other Department of Medicine members have taken on important new hospital leadership roles, including Dr. Juliana Li (medical lead for pulmonary diagnostic and respiratory therapy liaison), Dr. Steven Wong (deputy chief medical information officer) and Dr. Zain Chagla (interim senior medical director, clinical operations).

Heads of service and medical leads continuing their leadership over this period are Drs. Vikas Tandon (Cardiology), Marvin Chum (Neurology), Khurram Khan (Gastroenterology), Anne Boyle (Palliative Care), Meera Luthra (Endocrinology), Natya Raghavan (Respirology Rehab), Bryan Alton (Post-Acute Care), Robin Lennox (Substance Use), Anne Holbrook (Clinical Pharmacology



*The Substance Use Service (previously known as Addiction Medicine Service) has continued to grow and expand their referral criteria at SJHH...*

and Toxicology), Juliana Li (Sleep Medicine), Rajendar Hanmiah (Internal Medicine Rapid Access Clinic), Steven Wong (Community Internal Medicine Rapid Access Clinic) and Muntasir Saffie (Tuberculosis Clinic).

I want to offer my sincere gratitude to our physicians who transitioned out of head of service or medical lead roles during this period of time, including Drs. Joe McMullin, Nader Khalidi, Gerard Cox, Christian Rabbat, Marcel Tunks, Phillippe El-Helou, Joye St. Onge, Leslie Martin and Anne Woods.

We welcomed a number of new physician colleagues to SJHH from 2021 to 2023 and continue to foster an outstanding learning environment for students in undergraduate medicine and physician assistant programs, postgraduate medicine trainees, fellows and clinical scholars. We thank Dr. Azim

Backup surge  
schedule to  
support GIM  
colleagues during  
COVID surge



Gangji for his ongoing leadership as the SJHH Vice President of Education. Research continues to be an active area of growth, with SJHH Department of Medicine physicians working across all of the research pillars at the Research Institute of St. Joe's Hamilton, particularly in lung and chest and kidney research and at the Father Sean O'Sullivan Research Centre.

I would like to close by thanking all SJHH Department of Medicine physicians for continuing to provide exemplary clinical care, including throughout the challenging circumstances of the COVID-19 pandemic and increased strain on the health care system. It is a true pleasure to work with such talented, committed individuals, and we value the strong ongoing collaboration we have with leadership from the McMaster and HHS Departments of Medicine. ■

COORDINATOR REPORT

# Equity & Diversity Associate Chair

The mandate of the Associate Chair of Equity and Diversity (ACED) is to measure and address inequities within the Department of Medicine by gender, ethnicity/race, sexual orientation, and disability.

Current initiatives underway:

- Biennial survey of faculty, most recently administered in January 2023
- Equity Checklist Version 3.0 for all new faculty recruits
- Standardized advertising and interview process for leadership positions
- Unconscious Bias training for chairs of selection committees
- Equity, diversity and inclusion statements for new recruits

Published paper on the COVID-19 pandemic and work-life integration:  
Garner S, Anand S, Campbell N, Douketis J, Wang M, Mehta S, Liaw P, Duong M. Impact of the COVID-19 Pandemic on Clinical Practice and Work–Life Integration Experienced by Academic Medical Faculty. Can Journ Gen Int Med [Internet]. 2022 Jun. 4 [cited 2023 Aug. 29];17(2):22-3. Available from: <https://cjpgim.ca/index.php/csim/article/view/627>



**Dr. Sonia Anand**  
MD PhD  
Associate Chair,  
Equity & Diversity

REVIEWING THE PAST 2 YEARS:

	July to July 2021-22	July to July 2022-23
Survey Year	No	Yes
Equity Checklist	Version 2.0	Version 3.0
Tested AFP points for EDI		Yes
EDI Advisory Committee with Division Representation		Yes
EDI Statement Rubric		Yes, working group described below

# Equity & Diversity Survey 2021: COVID-19

## How our practice, work, and home lives changed over the course of the pandemic

253 responded.

Overall N; mean (SD) presented.

Mann-Whitney test used to test for significance:

p-value <.05- >\*

p-value <.01- >\*\*

p-value <.001- >\*\*\*

Men/Women's responses regarding home impact were statistically significantly different, so these have been presented in addition to the overall responses.

### CLINICAL PRACTICE

**48%**

are **concerned** or **very concerned** about the medical legal risks of making their clinical practice virtual.

N=237; 2.5 (1.2)

**66%**

have **fewer** face to face clinics

N=227; 2.1 (1.4)

**21%**

have **substantial** difficulty paying admin assistant salary.

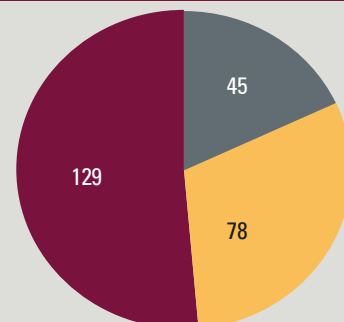
N=226; 2.8 (1.1)

**25%**

perceive a **substantial** reduction in patient billings

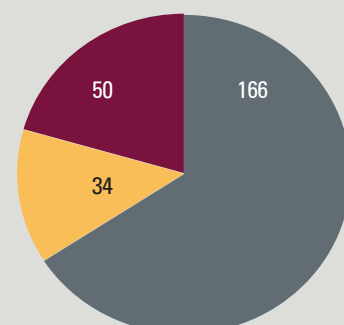
N=235; 2.8 (1.2)

Personal risk of acquiring an infectious disease like COVID-19 and/or passing it on to family.  
N = 252; 3.6 (1.3)



■ Unconcerned  
■ Somewhat concerned  
■ Very concerned

Interactions with colleagues  
N=250; 2.3 (1.4)



■ Fewer  
■ Similar  
■ More

### CAREER

Career fulfillment  
N=252; 2.6 (1.1)

51% 29% 20%

Research productivity  
N=241; 2.6 (1.0)

52% 31% 17%

Attendance at educational rounds or CME  
N=251; 2.9 (1.2)

38% 27% 35%

■ Less  
■ Unchanged  
■ More

### HOME

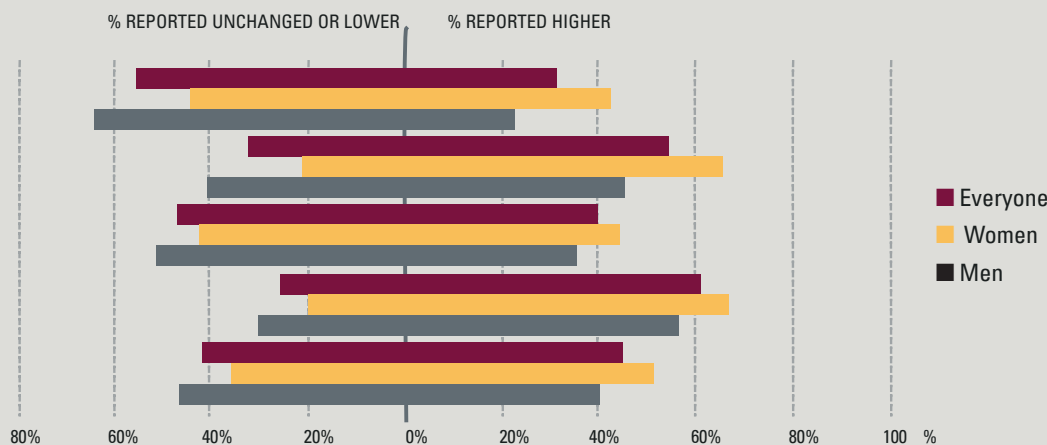
Care of dependants  
N = 243; 3.5 (1.0) \*\*

Hours spent doing your job  
N = 252; 3.9 (1.0) \*\*\*

Hours spent on childcare or homeschooling  
N = 231; 3.7 (0.9)

Burnt out or overwhelmed  
N = 252; 4.1 (0.8) \*\*

Loneliness  
N = 252; 3.7 (0.9)



## 2022-2023:

EDI Survey administered in January 2023 (296/374 = 79% response rate)

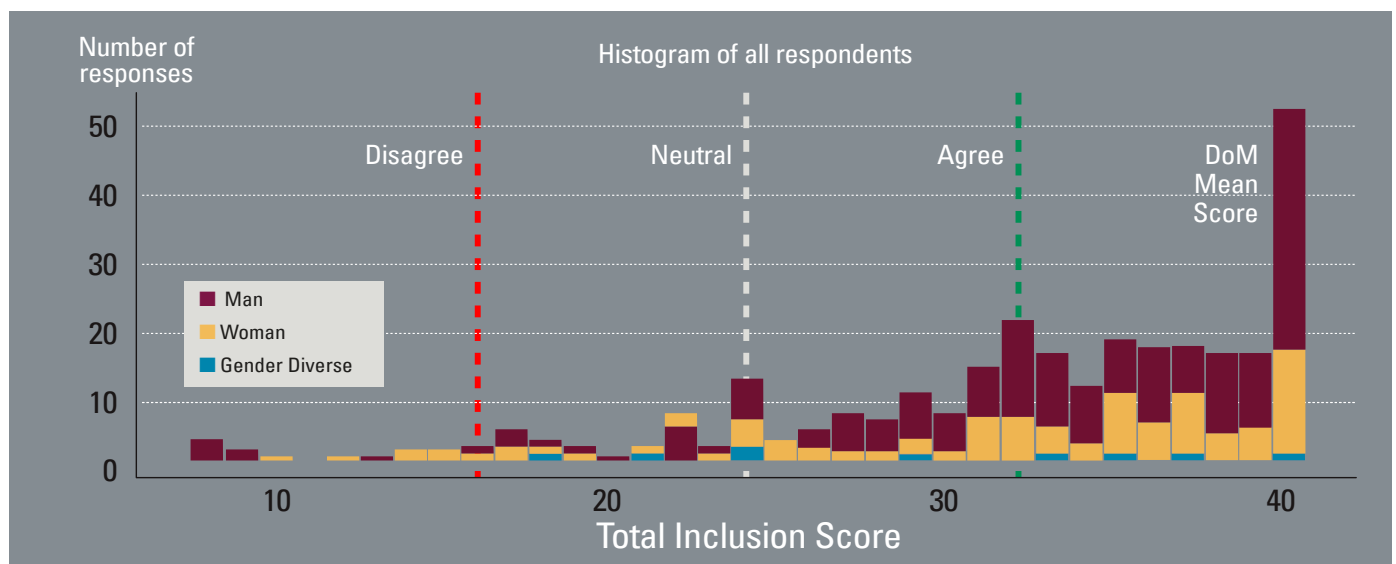
### New Section in 2023 Survey on Workplace Inclusion

An inclusive working environment is one in which all members feel safe and empowered, experience a sense of dignity and belonging, and are valued and respected for their contributions to the shared purposes of the group. The primary outcome of equity and diversity initiatives is to create inclusive working groups. For that reason, we sought to measure the sense of workplace inclusion in the DoM on the third administration of the survey in 2023.

The workplace inclusion score considers 8 domains:

1. I know I can trust my team.
2. People are valued as individuals.
3. My opinions matter.
4. I have access to new opportunities.
5. My team distributes recognition evenly.
6. My team recognizes diversity.
7. I feel respected.
8. I always feel like I'm part of a team at work.

Each respondent was asked to answer each question about the clinical or research group where they spend most of their time. Answers ranged from 1 (Strongly disagree) to 5 (Strongly agree). A higher score indicates feeling more included in the team. Overall Inclusion Scores can range from 8 to 40.



The Equity & Diversity Checklist 3.0 for incoming positions or appointments with salaries or stipends has been updated. The Equity checklist was developed (starting with Version 1.0 in 2019) to standardize recruitment practices and selection committee processes within the DoM. The checklist serves as a guide to selection committee chairs concerning best practices in the recruitment of a diverse candidate pool, creation of a diverse selection committee, and the use of common questions and a standardized scoring system. With the recent version of the EDI checklist applicants are required to submit an EDI statement. These are not scored although a question about the quality of the

statement could be included in the scoring components for each applicant. To standardize the assessment of the quality of EDI statements, Dr. Anand brought together a Faculty of Health Sciences working group and their work is described below.

The EDI Statement working group was convened to standardize assessments of EDI statements. Many institutions have adopted EDI initiatives and require faculty/leadership applicants to submit statements outlining their dedication to fostering an inclusive environment. However, subjective assessments of these statements can result in disparate evaluations due to implicit biases and

differing impressions of quality among reviewers. To mitigate this issue, a rubric-based approach is proposed. A examination of the the implementation of rubric-guided evaluations for EDI statements provided by applicants to the Department of Medicine and Canada Research Chair program at McMaster University will be conducted, aiming to reduce personal biases and discrepancies in the selection process.

The resulting draft rubric comprises three core domains: understanding of EDI principles, evidence of promoting EDI in past work, and a commitment to future EDI endeavours. Each domain contains sub-domains illustrating the practical application of these core principles. Two rounds of evaluation were conducted using fictional statements written by one of the researchers (Round One) and anonymized statements from previous faculty applicants (Round Two). In both rounds, the interclass correlation coefficients (ICC) indicated high agreement between reviewers regarding EDI statement quality, suggesting the robustness and consistency of the rubric in guiding evaluations. This study contributes to the

ongoing discourse on promoting EDI within academia by proposing a systematic and standardized approach to evaluate faculty applicants' EDI statements. The results of this work are currently being written up for publication.

Members of this working group include: Dr. Sonia Anand, Adan Amer (Masters student), Natalie Campbell (Data Manager), Dr. Lisa Schwartz, Dr. Gita Wahi, Dr. Sandra Monteiro, Dr. Will Harper, Dr. Natasha Johnson, Dr. Madeleine Verhoevsek, Dr. Saroo Sharda, Dr. Jennifer Walker, and Dr. Patricia Liaw.

AFP Points for EDI contributions were collected in 2023 as a pilot assessment. Review of the data is on-going. ■

## EDI Champions for each Division: December 2022

These individuals attend the EDI Advisory Committee and communicate information back to their respective Divisions.

EDI Champion	Division
Dr. Seychelle Yohanna / Dr. Christian Rabbat Dr. Christine Ribic	Nephrology
Dr. James Douketis / Dr. Haroon Yousuf / Dr. Kejenny Srivarajarathan / Dr. Amna Ahmed / Dr. Betty Chui	General Internal Medicine
Dr. MyLinh Duong / Dr. Dawn Bowdish	Respirology
Dr. Will Harper	Endocrinology
Dr. Dereck Chu	Allergy Immunology
Dr. Smita Halder	GI
Dr. Mimi Wang	Geriatrics
Dr. Eslam Shosha	Neurology
Dr. Faiza Khokhar	Rheumatology
Dr. Gousia Dhar	Pharmacology & Toxicology
Dr. Emilie Belley-Cote / Dr. Shamir Mehta	Cardiology
Dr. Gihan Perera	PM & R
Dr. Joanna Dionne	Critical Care
Dr. Sandra Monteiro / Dr. Kenneth Owen	Education & Innovation
Dr. Eva Piessens	Infectious Disease
Dr. Madeleine Verhovsek / Dr Patricia Liaw	Heme / Thrombo
Dr. Carys Masserela / Dr. Michelle Welsford	Emergency Medicine
Dr. Sandra Monteiro	Education and Innovation

# Research

## Groundbreaking Research

- ICU ideas may lead to respiratory breakthrough
- Minimal cost, minimal time: significant impact
- Making a difference in lives in real time

## Research Institutes

- Population Health Research Institute (PHRI)
- Thrombosis and Atherosclerosis Research Institute (TAARI)
- Firestone Institute for Respiratory Health
- Farncombe Family Digestive Health Research Institute
- Chanchlani Research Centre
- Geriatric Education and Research in Aging Sciences Centre (GERAS)
- Centre for Metabolism, Obesity and Diabetes Research (MODR)
- Michael G. DeGroote Centre for Transfusion Research (MCTR)
- McMaster Immunology Research Centre (MIRC)
- Schroeder Allergy and Immunology Research Institute (SAIRI)

## Endowed Chairs and Professorships

## Canada Research Chairs

## Publication Highlights



**Dr. Dawn Bowdish**  
Professor of Medicine



**Dr. Bram Rochweg**  
Associate Professor,  
Critical Care

## Groundbreaking Research

### Department of Medicine Annual Report 2021-2023

*embracing recovery  
reimagining futures  
reconnecting communities*



**Dr. Jeff Healey**  
Director, Division  
of Cardiology



**Dr. Zou Xing**  
Winner of the Hardy  
Cinader Award



*Dr. Bram Rochweg  
Critical Care*

**Dr. Bram Rochweg**  
Associate Professor  
Critical Care

**Tina Millen**  
Critical Care  
Research Coordinator

## GROUNDBREAKING RESEARCH

# ICU Ideas May Lead to Respiratory Breakthrough

research  
care  
learning

Working in a busy intensive care unit, particularly through the COVID-19 pandemic, Dr. Bram Rochweg has experienced the uncertainty around caring for severely ill patients.

The knowledge gaps around how to provide the best care – not just for COVID-19 but many conditions seen in the ICU – help inform the clinical trials he leads as part of the Critical Care Research Team at Juravinski Hospital.

“Early in the pandemic, we had no idea what to do for these patients who were so sick. Seeing that, we had to come up with better solutions, which led to trials and work with the World Health Organization to develop COVID treatment guidelines,” says Dr. Rochweg, a critical care specialist at Juravinski Hospital and Associate Professor in the Department of Medicine. “My ideas for research absolutely come from being in the ICU and seeing patients and areas of uncertainty.”

recommended treatments for COVID-19 in non-COVID patients.

Corticosteroids, which are cheap and widely available, reduce lung inflammation and have been effective in treating COVID-related respiratory failure, but they have not been sufficiently studied in non-COVID respiratory failure.

In March 2023, Dr. Rochweg received a \$3.4 million grant from the Canadian Institutes of Health Research to lead a large multicentre clinical trial examining whether corticosteroids are

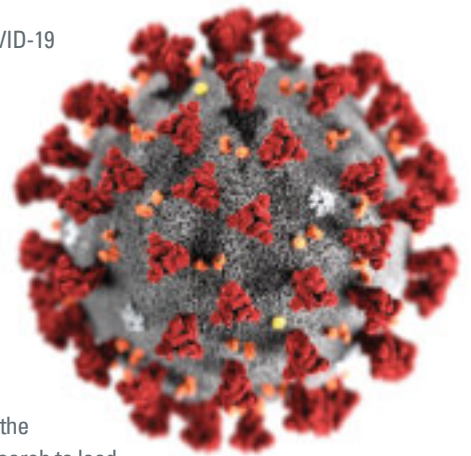
an effective treatment for acute respiratory failure in patients admitted to the ICU, as well as how long corticosteroids should be administered. The research team is hoping to enroll 4000 patients at sites across Canada and internationally.

“So many of our interventions in the ICU for patients with respiratory failure are complex. But steroids are cheap and easy to administer,” says Dr. Rochweg. “If we can show that something as widely available and

cheap as a corticosteroid benefits patients with respiratory failure, the impact could be dramatic for patients, not just in Canada, but worldwide.”

Dr. Rochweg says that local mentors such as Drs. Deborah Cook, Roman Jaeschke, Maureen Meade and Gordon Guyatt, as well as having a strong research team at the Juravinski Hospital have been essential in creating a successful research environment, which ultimately helps patients access the best available care.

“Working on the WHO guidelines and in clinical trials, I feel like I do my best to offer leading edge care,” he says. “I try to be as moldable and pivot as much as possible to apply up-to-date research and improve care for my patients based on the science we’ve advanced.” ■



*Dr. Rochweg has also served on the World Health Organization committee developing clinical practice guidelines for COVID-19.*

Dr. Rochweg was a clinical trials leader before the pandemic, particularly in sepsis and fluid resuscitation. And over the last few years, he has participated in a number of studies related to COVID-19, including testing a new form of non-invasive ventilation called the helmet and different combinations of anti-inflammatory treatments for patients in the ICU.

With his expertise in critical care and guideline methodology, Dr. Rochweg has also served on the World Health Organization (WHO) committee developing clinical practice guidelines for COVID-19. The committee, which includes members from around the world, reviews new research and trials of COVID-19 treatments and develops practice recommendations, which are currently on their fifteenth iteration.

Dr. Rochweg is now undertaking a large clinical trial testing one of the

renowned results { research  
care  
learning

## GROUNDBREAKING RESEARCH

# Minimal Cost, Minimal Time: Significant Impact

research  
care  
learning

As Director of the Division of Cardiology in the Department of Medicine, Dr. Jeff Healey oversees a globally competitive research team that is changing the field of cardiology around the world.

With a focus on interdisciplinary collaboration and developing the next generation of researchers, Dr. Healey wants to ensure the division's scientists are leading innovative, high-impact research for years to come.

"Much of the good science lies in the 'no man's land' between disciplines, and you need people from many all these groups to pull off these large trials," says Dr. Healey, who is also Director of Cardiology at McMaster University and the Yusuf Chair of Cardiology in the Department of Medicine. "This research group has been masterful in the way that collaboration occurs."



As part of Dr. Healey's research focused on arrhythmia and implantable devices, he leads the Canadian Stroke Prevention Intervention Network (C-SPIN), a large network of clinical trials researchers funded by the Canadian Institutes of Health Research (CIHR), and collaborates with colleagues at the Population Health Research Institute on cross-disciplinary clinical trials that are changing clinical practice.

One such trial was the Left Atrial Appendage Occlusion Study III (LAAOS III), published in the New England Journal of Medicine in 2021. Led by Dr. Richard Whitlock from McMaster's Department of Surgery, Stuart Connolly, Emilie Belley-Coté, Dr. Healey and other researchers, LAAOS III found that removing the left atrial appendage, a small pouchlike structure on the left side of the heart, during surgery reduced the future risk of stroke by 42%. Since the procedure is done during surgery that is already taking place, the cost and time involved are minimal and the side effects are negligible, but the clinical impact is significant.

... [the  
procedure]  
reduced the  
future risk of  
stroke by

42%

"This trial was probably one of our most important in the last couple of years, and that was a collaboration between heart surgeons, stroke neurologists and arrhythmia doctors," says Dr. Healey.

Building on those results, Dr. Healey, Dr. Stuart Connolly and Dr. Sanjit Jolly will be starting the LAAOS IV trial this year, which will examine whether plugging the left atrial appendage in patients who have atrial fibrillation using a catheter-based approach reduces their risk of stroke. Dr. Whitlock is also conducting the LeAAPS trial, which is evaluating surgically closing the left atrial appendage in individuals without atrial fibrillation, but who are at increased risk of developing it.

In 2022, Dr. Healey, Dr. Darryl Leong, and other researchers published the first results of a large trial called ATLAS, which is examining a new implantable defibrillator that is placed just underneath the skin to



Dr. Stuart Connolly  
Professor Emeritus, Medicine



Dr. Sanjit Jolly  
Division of Medicine

LAAOS  
Left Atrial Appendage Occlusion Study 4

A portrait of Dr. Jeff Healey, a middle-aged man with short brown hair and blue eyes, sitting in a wooden chair outdoors. He is wearing a white dress shirt and a blue tie with a white geometric pattern. His right arm is resting on his lap, and his left arm is resting on his thigh. The background consists of lush green trees and a stone building.

**Dr. Jeff Healey**  
Division of Cardiology

# LEAAPS



Dr. Darryl Leong  
Division of Medicine



Dr. Emilie Belley-Cote  
Division of Medicine

manage arrhythmia. The researchers found significant reduction in implant-related complications with the new device compared to the conventional implantable defibrillators that are closer to the heart, and patients are continuing to be monitored in order to determine whether the new implant is effective at managing arrhythmias.

Dr. Healey and his team in the Division of Cardiology and the Population Health Institute have a number of large trials ongoing, some of which are

*“Collegiality, mutual support, developing young investigators, and global networking are key to achieving our vision for the program.”*

expected to be presented this year and could potentially change care for patients. Dr. Healey says that the many high-impact trials led by McMaster researchers speaks to the globally competitive research environment and team – which all contribute to making an impact for patients every day through their leading-edge work.

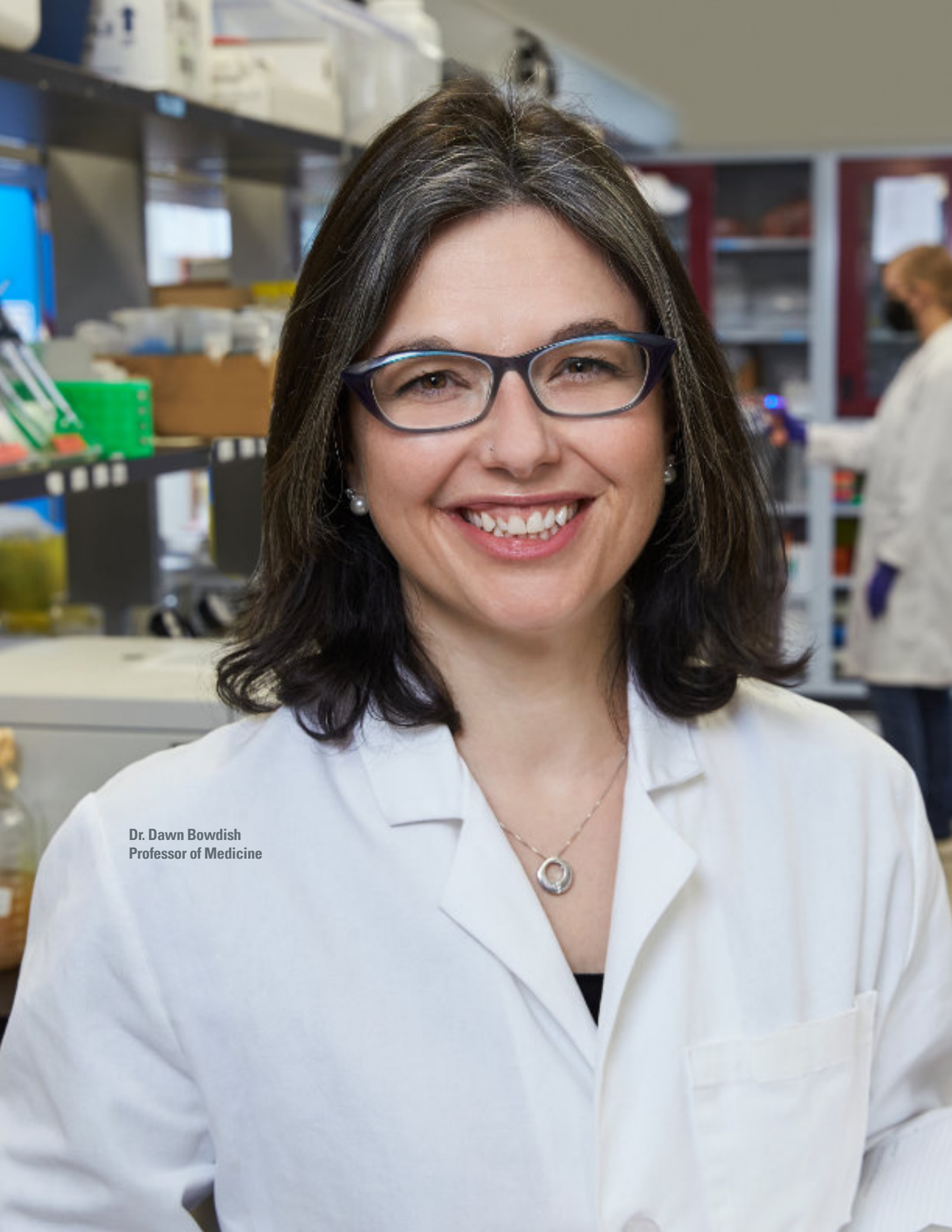
“The research group here includes an impressive group of investigators that is well-respected around the world,” says Dr. Healey. “Collegiality, mutual support, developing young investigators, and global networking are key to achieving our vision for the program.” ■



**Population Health  
Research Institute**  
HEALTH THROUGH KNOWLEDGE



**Dr. Richard Whitlock**  
Department of Surgery



**Dr. Dawn Bowdish**  
**Professor of Medicine**

## GROUNDBREAKING RESEARCH

# Making a Difference in Lives in Real Time

research  
care  
learning

Years before the COVID-19 pandemic, Dr. Dawn Bowdish, Professor of Medicine, was interested in studying the immune systems of older adults and how infection impacts their short- and long-term health.

"I've become really passionate about using vaccination to prevent infection, not just because it stops the acute infection, but because it can provide more years of healthy independent living for older adults," she says.

"For example, pneumonia in mid- to late-life can accelerate all sorts of chronic health issues and rob people of their independence."

So when the disproportional impact of COVID-19 on older adults and long-term care residents became clear, her research area was suddenly pushed into the spotlight, and she was ready to pivot her research program to address the crisis.

In early 2021, she and colleagues across McMaster undertook the largest Canadian study of COVID-19 vaccinations and infections in long-term care homes and retirement communities. At its peak, 1,600 participants provided blood samples to the study team every few months to be analyzed for COVID-19 antibodies.

Among its many findings, the study demonstrated that recency of vaccination is a major protective factor against COVID-19 infection, as immunity – whether through vaccination or infection – starts to wane after about three months or even less in the case of infection. The results have been used to help educate long-term care and retirement residents and staff about the importance of vaccination and inform policies and recommendations about the timing of vaccine doses.

"As a basic scientist, it can often take a decade or more for our study results to move into practice," says Dr. Bowdish. "This study provided us with a very unusual opportunity to make a difference in people's lives in real time."

Dr. Bowdish says that McMaster's investments in infectious disease research, as well as its research facilities and infrastructure, including the Human Immune Testing Suite and the McMaster Immunology Research Centre, highly qualified staff and opportunities for collaboration within and across disciplines were vital for allowing her and other researchers to take leading roles in COVID-19 research.

One such research centre is the Firestone Institute for Respiratory

Health (FIRH) at St. Joseph's Healthcare. Dr. Bowdish became executive director of the FIRH in 2021, where she focuses on developing the institute's translational research to improve lung health.

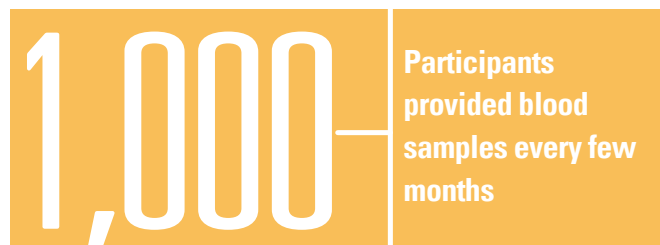
*... vaccination... can provide more years of healthy independent living for older adults.*

"One in five Canadians lives with lung disease, and respiratory diseases and infections are in the top ten causes of death in Canada," she says. "My vision is that the Firestone Institute for Respiratory Health will be the world's recognized thought leader in respiratory health, improve the lives of people currently living with lung disease, and reduce the burden of disease in the next generation."

FIRH basic scientists and clinicians, who have a long history of collaborating on translational research, are taking on new challenges in lung health, including understanding and treating long COVID, examining aging and frailty in disease development, and using personalized medicine to tailor treatment for lung disease.

Dr. Bowdish says she hopes that through her research program and FIRH research, the health of older adults will be taken more seriously.

"Every Canadian child should have as many years with their grandparents as possible, and it saddens me that because of both acute and long-term health issues, COVID has shortened that period of time," she says. "But it gives us something to fight for." ■



renowned results { research  
care  
learning

## RESEARCH INSTITUTES

# Reports: Research Institutes

## POPULATION HEALTH RESEARCH INSTITUTE

The Population Health Research Institute (PHRI) was founded in 1999 to conduct transdisciplinary research to improve health outcomes around the world. PHRI is a world leader in large clinical trials, population health studies and epidemiology expertise.

In the last two years, PHRI researchers have led important international clinical trials.

In the LAAOS-III trial, Drs. Richard Whitlock and Stuart Connolly found a quick, simple and safe procedure during cardiac surgery in patients with atrial fibrillation (AF) reduced their stroke risk by 30% with no increase in bleeding. Drs. Whitlock, Andre Lamy and PJ Devereaux found troponin is a fast, effective predictor of risk in patients undergoing heart surgery in the VISION Cardiac Surgery trial.

The World Health Organization's addition of polypills for cardiovascular prevention to its essential medicines list in 2023 was largely based on evidence generated by PHRI in more than 15 years of clinical trials. In a meta-analysis of individual patient data, Dr. Philip Joseph found that a polypill of aspirin, statin and blood pressure medications slashed heart attack risk by 53%, stroke by 51%, and deaths from cardiovascular causes by 49%.

In the INVICTUS trial, Dr. Connolly found that vitamin K antagonists reduced cardiovascular events and mortality, without increasing major bleeding, compared to rivaroxaban in younger, mostly female patients with rheumatic heart disease and AF in 24 countries in Africa, Asia, India and Latin America. Earlier-than-expected data from the phase IV multicentre ANNEXa-I trial, led by Dr. Connolly, paved the way for further guidance on the treatment of potentially life-threatening bleeds in patients with acute intracerebral hemorrhage (ICH).

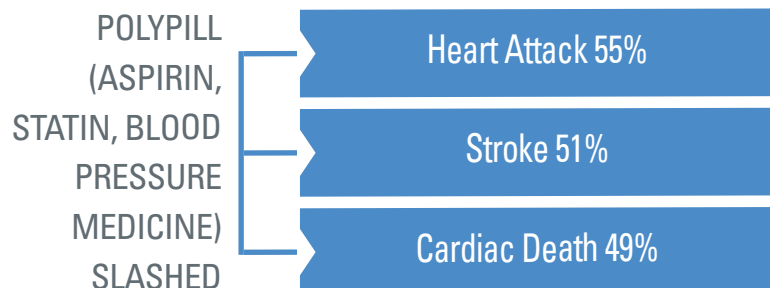
In the ATLAS S-ICD trial, Dr. Jeff Healey found more than 90% of patients implanted with a subcutaneous defibrillator (S-ICD) experienced fewer complications compared to those with a transvenous defibrillator (TV-ICD). In a substudy, Drs. Healey and Darryl Leong found seven times more risk of tricuspid regurgitation with TV-ICD compared to S-ICD. Dr. Healey and his colleagues in the AF SCREEN International Consortium found a 10-fold increase in detecting AF when patients wore a chest patch monitor.

The PURE Healthy Diet Score – the most diverse study of nutrition and health outcomes globally and the only study with sufficient representation from high, middle and low-

income countries and a focus on natural foods – analyzed the data of 245,000 people in 80 countries. The PURE study team, led by Salim Yusuf, found greater risk of cardiovascular disease associated with high glycemic foods, lower risk with fish and greater risk with refined or cereal grains, as well as a greater risk of inflammatory bowel disease with ultra-processed foods. Analysis of the landmark COMPASS trial, led by Dr. Sonia Anand, found that a plant-based diet is associated with health benefits for patients with coronary artery disease and/or peripheral arterial disease. The first study of heart failure that includes patients from countries at different economic levels and from five continents, led by Salim Yusuf, found that heart failure is deadly and undertreated in most countries including Canada, but more so in poorer countries.

Dr. PJ Devereaux, as the nominated principal investigator and co-lead, was awarded \$39 million from CIHR for the new pan-Canadian Accelerating Clinical Trials (ACT) consortium. Five PHRI studies were awarded ACT funding in its first round in 2023. PHRI is also one of six research hubs in the Canadian Heart Function Alliance (CHF Alliance) network launched in May 2022 to tackle the challenges of heart failure, with Drs. Yusuf, Joseph and Eva Lonn in scientific leadership, and Shrikant Bangdiwala co-leading the data management model.

Dr. Hertz Gerstein, with Hamilton Health Sciences (HHS), launched the “transforming





## PURE HEALTHY DIET SCORE

245,000

People  
studied in  
80 countries

tomorrow today" initiative to further develop transdisciplinary research, with three grants provided in 2022. Dr. Guillaume Paré launched a program of strategic translational research for vascular health (STRIVE), supported by Drs. Gerstein and Jeffrey Weitz, to further integrate fundamental research and clinical and population research between PHRI and the Thrombosis and Atherosclerosis Research Institute.

With the Escarpment Cancer Research Institute and HHS data science/digital health information technology centre, PHRI established the Virtual Care and Remote Automated Monitoring Technology Research (VICTOR) program, including a perioperative and cancer outcomes virtual care laboratory.

PHRI welcomed critical care cardiologist Dr. Emilie Belley-Cote to the PHRI executive committee as a new voice representing early-career scientists and women in research, and Muhammad Hameed took the reins as COO from Janette Panhuis on her retirement. ■

Accelerating  
Clinical Trials  
awarded

\$39M

## RESEARCH INSTITUTES

### THROMBOSIS & ATHEROSCLEROSIS RESEARCH INSTITUTE (TAARI)

The Thrombosis and Atherosclerosis Research Institute (TaARI) is situated within the state-of-the-art David Braley Research Building (DBRB) at the Hamilton General Hospital.

Under the leadership of executive director Dr. Jeffrey Weitz, TaARI has consistently upheld its commitment to excellence in education and research. The DBRB is a collaborative hub, housing both TaARI and the Population Health Research Institute, which fosters synergistic connections between fundamental and clinical research. This synergy empowers a seamless approach, bridging the gap between laboratory research and clinical application in addressing complex health care challenges.



**Dr. Jeffrey Weitz**  
Executive Director of  
TaARI

TaARI's research endeavours have transcended geographical boundaries, nurturing collaborations that extend across all hospital sites and span national and international research networks. Its unwavering mission remains centred on reducing premature mortality and disability arising from thrombotic diseases. This is achieved through extensive research efforts into the pathogenesis, prevention, diagnosis and treatment of thrombosis and vascular diseases, coupled with a steadfast commitment to providing an evidence-based foundation for educating the next generation of health care professionals and scientists.

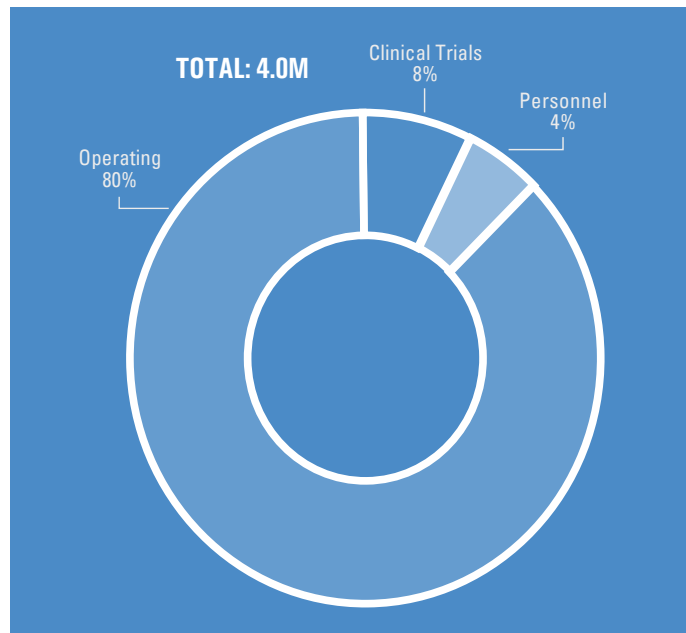
TaARI operates through two distinct research streams. The experimental thrombosis and atherosclerosis (ETA) program delves into fundamental and translational research, exploring the intricate interplay between thrombosis, atherosclerosis, diabetes and inflammation. Meanwhile, the clinical thrombosis research program (CTP) conducts investigations aimed at optimizing the prevention, diagnosis and treatment of patients with thrombotic disorders. This program also focuses on research in health outcomes and knowledge translation, with the ultimate goal of seamlessly transferring critical information from research to patient care. The clinical research program has a regional footprint, encompassing all Hamilton Health Sciences (HHS) sites and St. Joseph's Healthcare Hamilton, ensuring comprehensive clinical care for patients in both hospital and community settings who are affected by or at risk of thrombotic disorders.

TaARI's sustained success is attributed in part to continued funding support from HHS, which bolsters its research infrastructure, propels research productivity and cultivates an exceptional learning environment. In the past two years, TaARI has successfully secured over \$8 million in research funding, primarily from Canada's tri-council. Among its faculty, eight individuals hold endowed chairs, with the expendable interest from these chairs contributing significantly to its research funding.

Beyond research, TaARI faculty play pivotal roles in advancing the educational mission of the Department of Medicine, providing a rich learning environment for a diverse spectrum of learners. Their educational outreach extends from undergraduate thesis students to MSc and PhD candidates to postdoctoral fellows. From 2021 to 2023, TaARI faculty have supervised 82 undergraduate students, 20 master's students, 22 PhD candidates and six postdoctoral fellows. As such, TaARI continues to be one of the primary off-campus hubs for undergraduate and postgraduate learning at McMaster University. ■

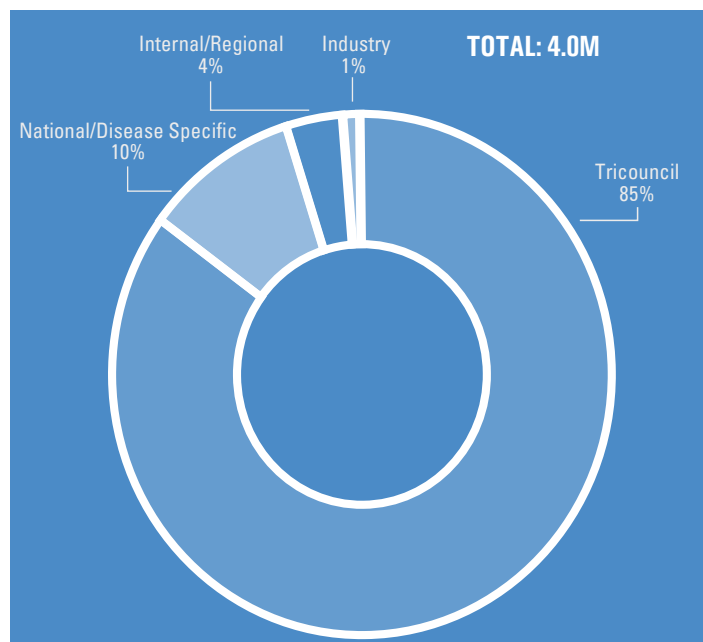
## THROMBOSIS & ATHEROSCLEROSIS RESEARCH INSTITUTE

### 2022-23 RESEARCH FUNDING BY TYPE



## THROMBOSIS & ATHEROSCLEROSIS RESEARCH INSTITUTE

### 2022-23 RESEARCH FUNDING BY SOURCE



# RESEARCH INSTITUTES

## FIRESTONE INSTITUTE FOR RESPIRATORY HEALTH

The Firestone Institute for Respiratory Health has a strong history of clinical and research collaborations with the Divisions of Clinical Immunology and Allergy, Rheumatology, Infectious Disease and other related divisions, and joint clinics are run through the Firestone clinic. This history of collaboration has led to important research advances in lung autoimmunity, allergic asthma and treatment of infection-induced exacerbations in chronic lung disease.

The 2021–2022 period was exceptionally challenging as our clinician-scientists were heavily involved in patient care for COVID-19, and staff illnesses and increased demands on clinician-scientists made clinical research challenging. Nonetheless, Firestone researchers made many major advances.

New and emerging research areas of focus include the pulmonary hypertension program, chronic cough, long COVID, chronic obstructive pulmonary disease (COPD), sleep medicine, lung cancer and COVID-19 vaccines.

The Firestone is one of the major recruitment sites for the Canadian Pulmonary Hypertension Registry (CPHR), one of the largest registries in the world. Currently, five research projects and clinical trials have received ethics approval and over 200 patients from the Firestone are enrolled. To date, the CPHR has resulted in four conference abstracts and three manuscripts. Dr. Nathan Hambly, who leads the Firestone initiatives in pulmonary hypertension, also began recruitment to the international EXPOSURE PH registry and two clinical trials in Group 1 pulmonary arterial hypertension.

Drs. Imran Satia and Paul O'Byrne have received funding to develop a standardized questionnaire and run clinical trials testing novel pharmaceutical interventions for chronic cough. Dr. Satia is leading a number of studies on chronic cough treatment and risk factors, and he is co-chairing a Canadian Thoracic Society working group with Dina Brooks to increase awareness, identify gaps in clinical care and improve education efforts. Dr. Satia's leadership was recognized with the European Respiratory Society's inaugural gold medal in chronic cough.

Drs. Rebecca Amer and Zain Chagla (Infectious Disease) have built a long COVID clinic to serve the complex needs of patients who have long-lasting health issues following a COVID-19 infection. Dr. MyLinh Duong led the Ontario Multi-Regional Hospital COVID-19 Registry Recovery Trajectory Sub-study, which will inform long-term pulmonary and extra-pulmonary consequences and the recovery trajectory following COVID-19 infection.



*New and emerging research areas of focus include the pulmonary hypertension program, chronic cough, long COVID, chronic obstructive pulmonary disease (COPD), sleep medicine, lung cancer and COVID-19 vaccines.*



Dr. Nathan Hambly



Dr. Imran Satia



Dr. Paul O'Byrne



Dr. Dina Brooks



Dr. Rebecca Amer



Dr. Zain Chagla

Dr. Manali Mukherjee is leading a clinical trial in collaboration with other Firestone researchers, clinicians and colleagues in the Division of Rheumatology to determine if autoantibodies generated during or after COVID-19 infection might contribute to some of the symptomology and progression to an autoimmune clinical diagnosis. Sarah Svenningsen published five manuscripts in the “Live COVID Free Study” funded by the Ontario Ministry of Health COVID-19 Rapid Research Fund. She was also funded by Cyclomedica to characterize lung function after non-critical COVID-19 and has contributed to studies that help explain why patients suffering from breathlessness often have normal lung function tests.

In addition, Dr. Satia and Myrna Dolovich are contributing to the Phase 1 and 2 studies of the nebulized COVID-19 vaccine with Drs. Fiona Smaill and Zhou Xing.

Dr. Terence Ho is leading a randomized controlled trial to determine whether sputum cytology is a useful management tool for COPD. He is also working with Dr. Joshua Wald to determine whether patients benefit from humidified air/oxygen via high-flow nasal cannula while in the hospital and after discharge. In response to the challenges of the COVID-19 pandemic, the pulmonary rehabilitation team partnered with the pharmaceutical company VERTEX to determine the effectiveness of virtual rehabilitation programs post-discharge for patients with COPD.

Dr. Julianna Li led an initiative to provide patients with masks for BiPAP/ non-invasive ventilation to improve the ventilation experience in hospital, improve compliance, and generate higher rates of long-term acceptance and shorter hospitalization.

By increasing collaboration between basic scientists in respirology and clinician-scientists in thoracic surgery, our researchers have launched exciting new programs that aim to improve lung cancer detection and patient outcomes. Drs. Yaron Shargall, Eldar Priel and Manali Mukherjee are leading a new project to detect lung cancer using volatile organic compounds, circulating tumour DNA, and cell-free DNA in blood airways secretions.

Firestone researchers are also being recognized for their leadership in educational initiatives. For example, the Demystifying Medicine YouTube channel, started by Dr. Kjetil Ask, was recognized as a YouTube star after reaching 100K subscribers, and Dr. Ciaran Scallan won the 2023 AFP Clinician-Educator Award.

Dr. Helen Neighbour was appointed the chair of clerkship for the undergraduate medical education (UGME) program. She is committed to ensuring that students have the knowledge and skills to be successful physicians through the UGME mission of clinical excellence, innovation, leadership and social accountability.



Dr. MyLinh Duong



Dr. Manali Mukherjee



Dr. Sarah Svenningsen



Dr. Myrna Dolovich



Dr. Fiona Smaill



Dr. Zhou Xing



Dr. Terence Ho



Dr. Joshua Wald



Dr. Yaron Shargall



Dr. Eldar Priel



Dr. Kjetil Ask

The interventional pulmonary fellowship, which was developed in the Division of Respirology in partnership with Thoracic Surgery, recruited three additional fellows: Dr. Eldar Priel (2021), Dr. David Youssef (2022) and Dr. Viktor Sekowski (2023). ■

## RESEARCH INSTITUTES

### FARNCOMBE FAMILY DIGESTIVE HEALTH RESEARCH INSTITUTE

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The vision of the Farncombe Family Digestive Health Research Institute is to adopt an integrated interdisciplinary approach to investigate the role of the intestinal microbiota in the maintenance of health and the expression of diseases within and beyond the gastrointestinal tract. Our goal is to develop microbiota-directed therapies to optimize health and treat chronic diseases within and beyond the intestinal tract, and in so doing, train the next generation of scientists.

Research at the institute, which is inherently translational, relates to various aspects of medicine and uses a range of approaches. The figure below illustrates our main foci.

The institute continues to thrive following the COVID-19 pandemic, and we have established two new initiatives. The Nutrition Initiative, led by Drs. David Armstrong, Elena Verdu and Maria Ines Pinto-Sanchez, has research, education and service components. It is based on the premise that nutrition science needs to incorporate not only the nutritional value of diet and host factors, but also the role of microbiota. Diet shapes the microbiota, and the microbiota influence multiple activities in the human host; these diet-microbiota interactions can be beneficial or deleterious. For example, in gluten sensitivity, microbes may cleave gliadin into immunogenic or non-immunogenic peptides with subsequent consequences to the host. The Nutrition Initiative addresses not only the basic science of diet-microbe interactions, but also clinical studies in conditions such as celiac disease and related disorders and functional gastrointestinal (GI) problems, such as irritable bowel syndrome. The initiative also addresses the determinants of dietary choice, including socio-economic and psychological factors, in a community setting. The Microbial Therapy Initiative, led by Michael Surette, resurrects interest in fecal microbial transfer post-COVID. It will initially focus on using lyophilized fecal material but will evolve into use of curated microbial communities aimed at increased efficacy in controlling disorders such as inflammatory bowel disease. ■



Dr. David Armstrong  
Nutrition Initiative



Dr. Elena Verdu  
Nutrition Initiative

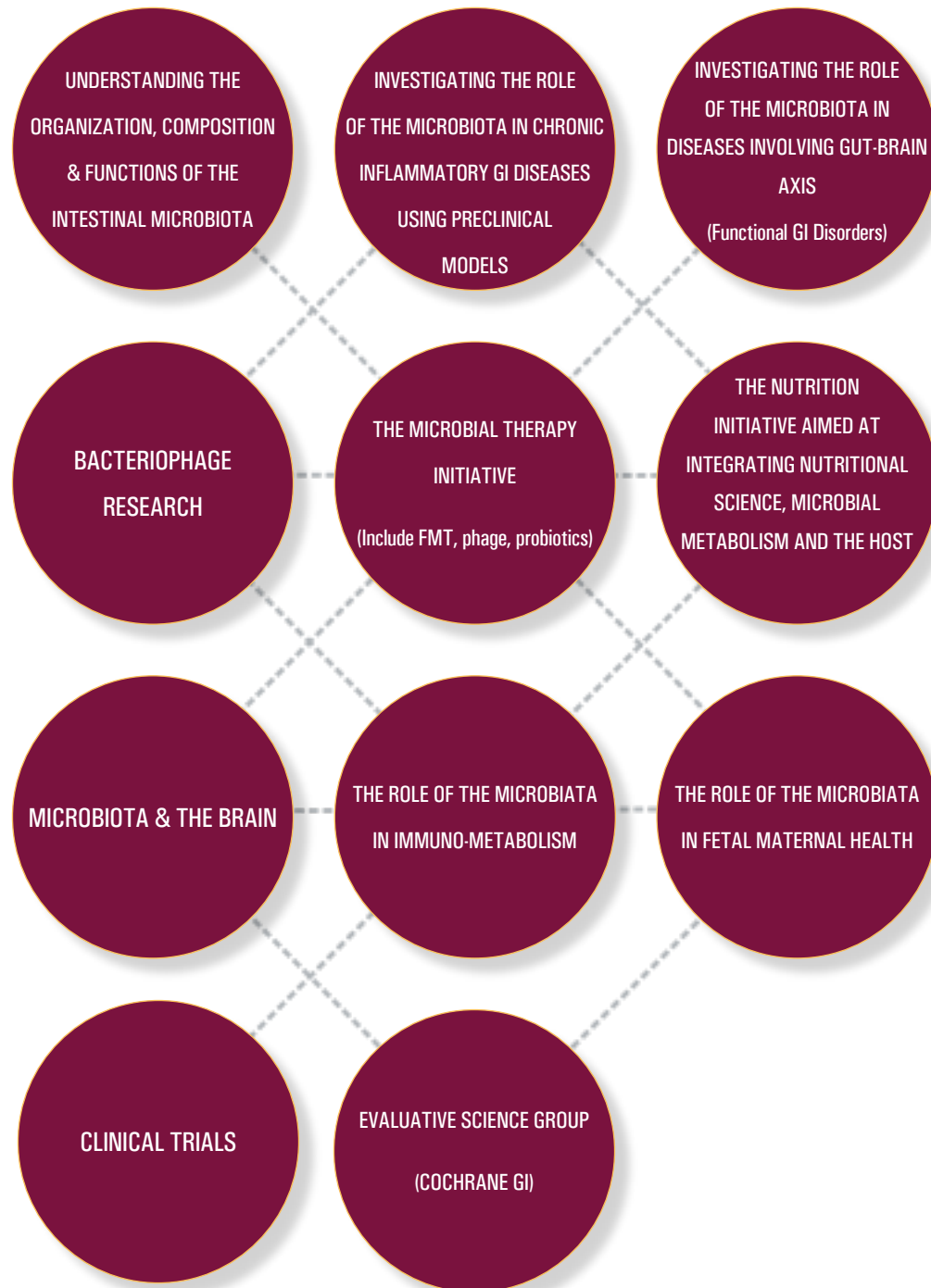


Dr. Maria Ines  
Pinto-Sanchez  
Nutrition Initiative



Dr. Michael Surette  
Microbial Therapy  
Initiative

## OUR RESEARCH FOCI



# RESEARCH INSTITUTES

## CHANCHLANI RESEARCH CENTRE

The Chanchlani Research Centre was established in 2011 after Vasu and Jaya Chanchlani made a generous donation to McMaster University. The Chanchlani Research Centre pursues research studies seeking to add to collective knowledge in genetics, genomics and environmental risk factors for chronic diseases across the life course, with special emphasis on high-risk groups including ethnically diverse populations such as South Asians and First Nations people, those of low socio-economic status and women. This highly engaged and collaborative research group has made tremendous strides in their work, with direct and tangible outcomes. In 2021, the transdisciplinary group of researchers re-focused on questions of health equity, tackling difficult questions with innovative methodologies that push the boundaries of knowledge and generate innovative solutions. These questions include investigating the impacts of the COVID-19 pandemic among marginalized populations, understanding the genetic and social factors associated with opioid addiction, and working in the local community to solve health equity problems faced by newcomers to Canada.

Dr. Sonia Anand is the centre's director. Faculty members who participate in centre research include Dr. Sandi Azab (Health Research Methods, Evidence, & Impact; HEI), Dr. Joseph Beyene (HEI), Dr. Rahul Chanchlani (Pediatrics), Dr. Russell de Souza (HEI), Dr. Guillaume Pare (Pathology), Dr. Sujane Kandasamy (Brock University), Dr. Zena Samaan (Psychiatry) and Dr. Gita Wahi (Pediatrics).

The centre has collaborative partnerships with Six Nations, Lac La Ronge Indian Band and Wendake, Quebec, as well as YMCA Canada, City of Hamilton and Mohawk College.

The centre places a strong emphasis on training students at all levels who are engaged with marginalized populations to learn community engagement and advocacy skills that can be applied to global and local health problems.

### COVID-19 studies in multi-ancestral, vulnerable populations

Racialized people often make up a larger proportion of employees in high-risk essential occupations and are more likely to live in multi-generational households. These groups also have higher cardio-metabolic risk burden (e.g., obesity and diabetes), and these comorbid conditions likely increased the risk of COVID-19 infection. Furthermore, reduced access to health care or negative experiences with the health care system may contribute to adverse outcomes experienced by non-white populations. Racialized people represent 19% of the population in Canada (25% in Ontario), yet health agencies in Canada and some provinces do not routinely collect ethnicity or race data, and there are high rates of missing data. With the disproportionately high numbers of COVID-19 cases in such populations, who are subject to systemic socioeconomic vulnerabilities and increased cardiometabolic risk, research aimed at understanding post-COVID-19 condition (formerly known as long COVID) in these key communities must be prioritized. No studies on the impact of post-COVID-19 condition that have included diverse populations in Canada have been done, and researchers at the Chanchlani Research Centre are now undertaking this study.

Researchers are also leading population-based studies of COVID-19 among a multi-ethnic new immigrant population, three First Nations communities and South Asians in Ontario and British Columbia. They reported in CMAJ Open in 2022 the SARS-CoV-2 seropositivity among the South Asian cohort to be 24%, among the



Dr. Sandi Azab  
Health Research  
methods, Evidence &  
Impact HEI



Dr. Joseph Beyene  
HEI



Dr. Rahul Chanchlani  
Pediatrics



Dr. Russell de Souza  
HEI



Dr. Guillaume Pare  
Pathology

highest reported after the third wave in Canada. They are also investigating vaccine confidence, effectiveness and safety in the South Asian, First Nations and new immigrant populations. A recent publication in BMJ Open found that access to and confidence in the COVID-19 vaccine was impacted by individual risk perceptions; sources of trusted information (ethnic and non-ethnic); impact of COVID-19 and the pandemic on individuals, families and society; and experiences with COVID-19 mandates and policies, including temporal and generational differences. Community-level awareness and outreach tailored to language and cultural context were considered successful approaches.

## Global Health Award

In addition to their generous gift for the centre, the Chanchlani family and McMaster University created the Chanchlani Global Health Research Award in 2012 to recognize a leading scholar in global health. The scholar is selected by an internal committee in conjunction with the global health program. Dr. Michelle Williams from the Harvard School of Public Health received the 2023 Chanchlani Global Health Award. ■



Dr. Sujane Kandasamy  
Brock University

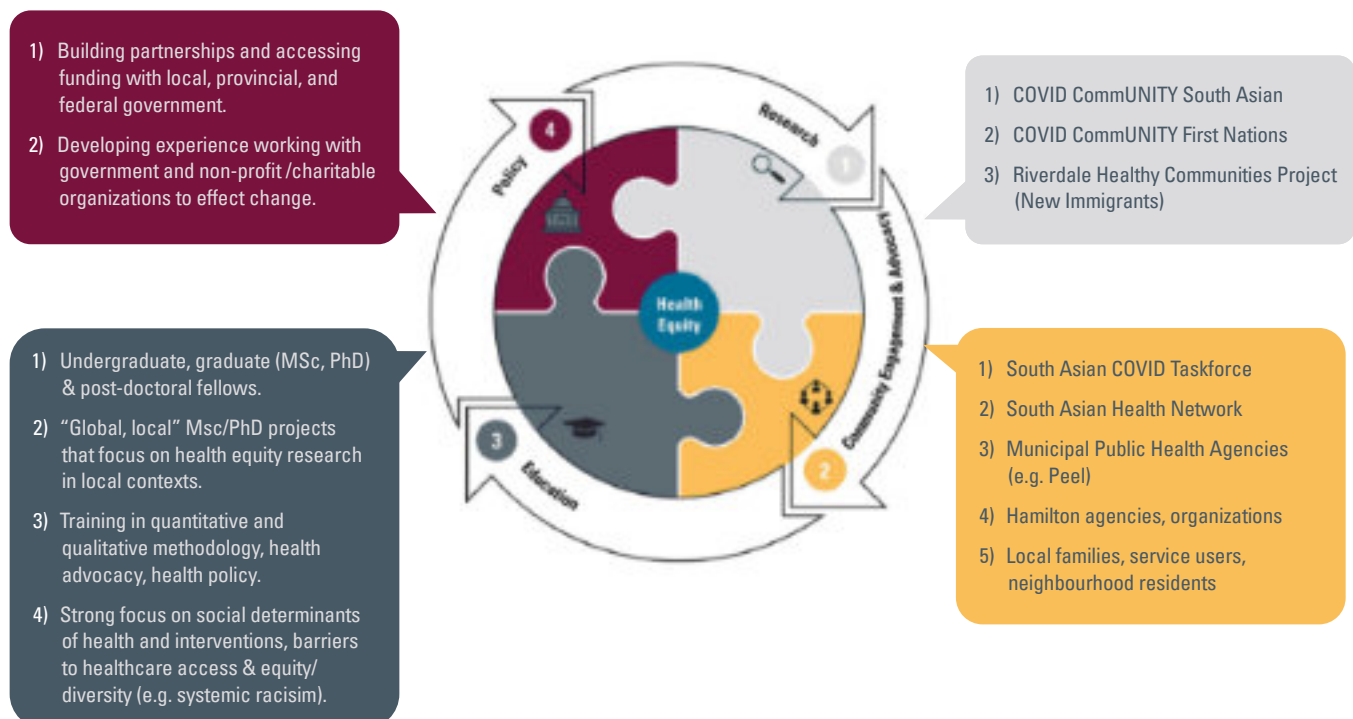


Dr. Gita Wahi  
Pediatrics



Dr. Zena Samaan  
Psychiatry

## GOING FORWARD VISION OF THE CHANCLANI RESEARCH CENTRE



## RESEARCH INSTITUTES

### GERAS CENTRE FOR AGING RESEARCH

The Geras Centre for Aging Research is committed to making life better for older adults through high-impact research tackling the biggest challenges facing our aging population. Its vision is to promote healthy aging to help people age with dignity and independence. As a CIHR Canadian Research Centre on Aging, our team comprises specialists who collaborate to deliver the highest-quality comprehensive care rooted in research evidence. Our multidisciplinary research team includes undergraduate students, postdoctoral fellows and faculty members across all levels, from junior to senior scientists.



Health experts are pushing for increased physical activity as a way to improve brain health and mobility and reduce fractures in older adults. However, despite the benefits, prescribing exercise is still a challenge. At the Geras Centre for Aging Research, researchers are leading work to develop sustainable models beyond the walls of the hospital to improve brain health, improve mobility and reduce fractures in older adults across the continuum of care. Trainees are working on several projects aimed at promoting exercise as medicine within larger multimodal programs.



*...pushing for increased physical activity as a way to improve brain health and mobility and reduce fractures in older adults.*

The first research project is PREVENT, which targets hip fractures among older adults residing in long-term care homes. This program aims to identify residents at highest risk of fracture and provide health care teams with training and tools for improving care. The program uses a “fracture risk calculator” based on a resident’s electronic health record to identify those most at risk. The health care teams are then trained on how to best assist residents and their families in making treatment decisions, providing tools such as medication ordering templates, fall and fracture reduction strategies and care plans. The Geras Centre is conducting the first Canadian trial to examine the efficacy of the PREVENT program in preventing hip fractures among residents in long-term care homes across the country.



The second research project, FitJoints, aims to improve post-surgical outcomes for frail older adults undergoing hip or knee replacement surgery. This program is led by a team of clinical researchers in geriatrics and orthopedic surgery across multiple surgical sites in Canada. The program combines physiotherapist-supported exercise, dietary counselling and protein supplements, and medication review to improve the safety and appropriate use of medicines. Patients’ frailty status, physical function, pain level and quality of life will be assessed before and after surgery. Weekly phone calls will be conducted with patients for 12 weeks after surgery to provide ongoing support and encouragement. The FitJoints program aims to not only improve surgical



outcomes, but also to promote exercise as a means of preventing and managing osteoarthritis. Geras Centre trainees are working on both PREVENT and FitJoints to promote exercise as medicine and, ultimately, improve the health and quality of life of older adults across Canada and beyond.

The third research project involves leading the first Canadian trial in frailty rehabilitation: OPTIMAL Fitness. The OPTIMAL Fitness study was developed by the Geras Centre for Aging Research in collaboration with partners including the YMCA of Hamilton/Burlington/Brantford and Upper James Physio. This study aims to investigate the effectiveness of a four-month community-based intervention for promoting healthy aging. The program comprises exercise sessions, nutrition counselling and medication consultations, all designed to support older adults. Ongoing findings indicate that these interventions are effective in helping older adults maintain their health and well-being while adhering to safety measures. ■

## OPTIMAL FITNESS STUDY

4 mo—

intervention  
for promoting  
healthy aging



More than 60 seniors take part in a Bollywood-themed dance party at the Hamilton Hindu Samaj Temple, a GERAS event. Photo: Cathie Coward, The Hamilton Spectator



## RESEARCH INSTITUTES

### CENTRE FOR METABOLISM, OBESITY AND DIABETES RESEARCH

The Centre for Metabolism, Obesity and Diabetes Research (MODR) was founded in 2018 with a focus on translating world-leading basic science into clinical practice to improve the prevention, diagnosis and treatment of metabolic diseases across the life course.

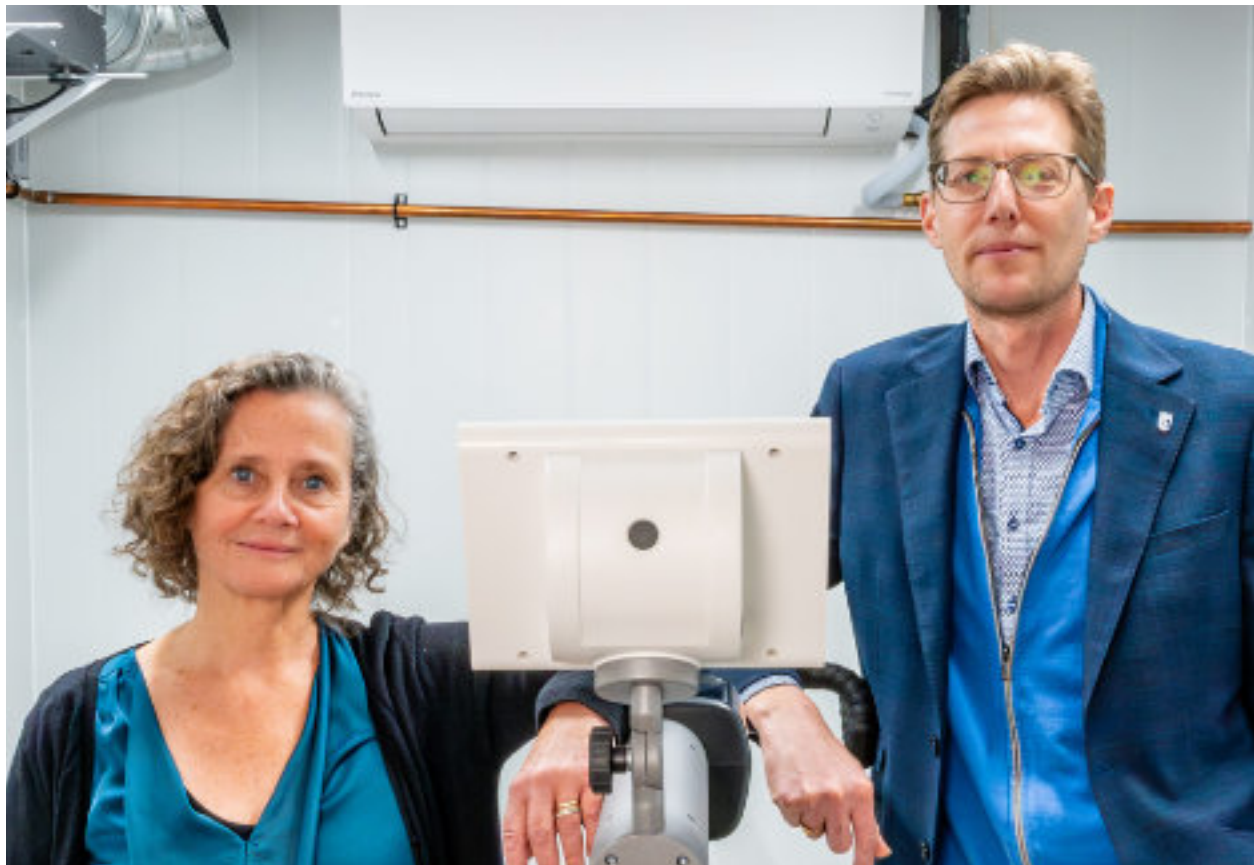
The centre includes 49 faculty members across 14 departments, including 12 faculty from the Department of Medicine, and is co-directed by Drs. Katherine Morrison (Pediatrics) and Gregory Steinberg.

MODR members' research spans from cellular

\$34M

Research  
Funding  
over Two  
Years

systems to patient populations. Over the past two years, MODR members have secured over \$34 million in research funding, authored 908 publications and supervised over 100 trainees, including several Vanier Canada graduate scholarships and Banting postdoctoral fellowships.



Dr. Katherine Morrison (Pediatrics) and Dr. Gregory Steinberg in the MODR Energy Lab.

MODR also hosted 31 seminars and two symposia.

In 2022, the construction of the MODR Energy Lab was completed. This clinical research suite includes state-of-the-art equipment, unique in Canada, that allows for the precise assessment of energy expenditure (calorie burning) in adults and children. This new infrastructure will enable growth of bench–bedside–bench research related to metabolism and health. ■



# 31

SEMINARS  
HOSTED

# 100+

TRAINEES  
SUPERVISED

# 908

PUBLICATIONS

MODR INCLUDES:

# 49

FACULTY  
MEMBERS

across

# 14

DEPARTMENTS

## RESEARCH INSTITUTES

### MCMASTER IMMUNOLOGY RESEARCH CENTRE

The McMaster Immunology Research Centre (MIRC) is a vibrant, highly successful research group with a unique model of research excellence, teaching and research training, and research service provision (including core facilities) aligned with the mission of the Faculty of Health Sciences, McMaster University and major funding bodies such as CIHR. MIRC has an outstanding record of research and training in mucosal immunology and innate immunity, infectious diseases and vaccine development, influence of aging and environment on immunological mechanisms, food allergy and allergic airway disease, chronic inflammation and lung disease, and cancer immunology and immunotherapy.

MIRC enables collaboration and integration of basic and translational research themes, and it is characterized by discoveries of immune mechanisms and new approaches toward therapeutics in disease. MIRC membership includes 14 principal investigators (PIs), six of whom are also primary members of the Centre for Discovery in Cancer Research. Some PIs are also members of the Institute for Infectious Disease Research, the Shroeder Institute for Allergy and Immunology or the Firestone Institute for Respiratory Health, but all 14 share the same lab space, equipment and research infrastructure.

MIRC PIs are consistently funded between \$8.5 million and \$11 million per year with a significant increase in 2020–21 due to COVID-19 grant success (\$14 million). Additionally, MIRC researchers recently received \$10 million for a phase 2 COVID-19 vaccine clinical trial.

Funding enabled MIRC members to publish significant articles as senior author in high-impact journals such as *Cell*, *Nature Immunology*, *Cell Metabolism*, *Allergy*, *Journal of Allergy and Clinical Immunology*, *Proceedings of the National Academy of Sciences*, *Journal for ImmunoTherapy of Cancer* and *Cell and Molecular Immunology*.

Research.com, a company that analyzes research activities by discipline, ranked McMaster as first in Canada and 33rd in world rankings for immunology in 2022. Recently, MIRC member Dr. Zhou Xing was awarded the Canadian



Dr. Zou Xing  
Winner of the Hardy Cinader Award, a prestigious lifetime achievement award.

14

Principal investigators collaborating across disciplines share same lab space, equipment and research infrastructure

\$14M

COVID 19  
Grant  
Success

90  
RESEARCH  
TRAINEES

# \$8.5-\$11M

Funding  
per year

Society of Immunologists' Hardy Cinader Award, a prestigious lifetime achievement recognizing his contributions to immunology.

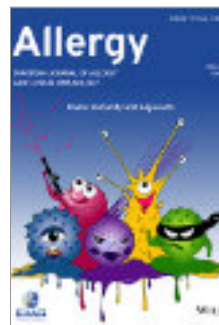
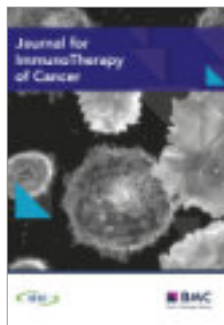
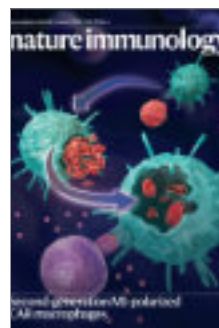
MIRC is also heavily committed to trainee development, with an average of 90 research trainees annually. MIRC runs a weekly seminar series that includes trainees presenting their work in progress and external or internal invited PIs. MIRC trainees organize an annual showcase all-day symposium (Perey Symposium).

Currently, MIRC has 23 master's students, 25 PhD candidates, 12 postdoctoral fellows and eight research associates. MIRC PIs supervise fourth-year undergraduate thesis projects for the health sciences, life sciences, biochemistry, integrated

science and biomedical discovery and commercialization programs. They also teach a variety of undergraduate and graduate courses.

MIRC also coordinates core facility services available to McMaster faculty researchers. These services, which are run on a cost-recovery basis, include the histology core, flow cytometry core, autoclave/glasswashing core and tissue culture media production core. The human immune testing suite (HITS), a service providing immune phenotyping, is also available. ■

Funding enabled MIRC members to publish significant articles as senior author in high-impact journals



renowned results { research  
care  
learning

## RESEARCH INSTITUTES

### MICHAEL G. DEGROOTE CENTRE FOR TRANSFUSION RESEARCH

The Michael G. DeGroot Centre for Transfusion Research (MCTR) is making critical discoveries and advancements in blood transfusion science, immune-mediated platelet disorders and COVID-19 long-term protective immunity. Its team of transfusion medicine experts and laboratory-based scientists have formed a truly translational research unit.

The MCTR is leading several randomized controlled trials (RCTs) in transfusion medicine. During the COVID-19 pandemic, the team led the CONCOR-1 trial to test convalescent plasma as an effective treatment for acute COVID-19 illness. The study was published September 9, 2021, in *Nature Medicine*, and results led to the discontinuation of the convalescent plasma program in Canada and other countries around the world. Data collected for this study will help to inform newer and better blood-based immune therapies for COVID-19 and other diseases. The MCTR team is also leading a clinical trial of sex-matched or sex-mismatched red blood cell transfusions in patients with critical illness, supported by a CIHR-funded pilot RCT completed at five institutions.

Leveraging the infrastructure built for the CONCOR-1 trial, MCTR, with partners at the University of Toronto and Queen's University, is spearheading the Canadian Transfusion Trials Group (CTTG), a national network for collaborative clinical trials in transfusion medicine. CTTG is a collaboration between investigators, research staff, policymakers, blood suppliers and patient representatives, with a focus on training and mentorship. In recognition of the innovative nature of the trials group and its potential to inform best practice in transfusion medicine, the CTTG is receiving a total of \$2.3 million in funding from Canadian Blood Services over the next five years. The CTTG held an in-person meeting with attendees from across Canada in February 2023 and is poised to launch several initiatives in the coming year.

During the COVID-19 pandemic, MCTR investigators discovered the link between the COVID-19 vaccines and the blood clotting syndrome called vaccine-induced immune thrombotic thrombocytopenia (VITT). In addition, the team reported on the use of intravenous immune globulin as a treatment for VITT and helped develop international guidelines on the diagnosis and



Donald Arnold



Jeanine Callum

\$2.3M

FUNDING from  
Canadian Blood  
Services

treatment of VITT. The studies, published in *Nature* and *The New England Journal of Medicine*, were identified in 2021 by Ontario's premier as two of the top five studies funded by the province.

The MCTR laboratory became the national reference testing laboratory for VITT in Canada and is leading research for this new immune-mediated thrombotic syndrome. Researchers are now conducting a long-term study on VITT patients that will help the medical and scientific community better understand why VITT only occurred in some individuals and how to care for patients with long-term effects of VITT. This research will improve vaccine safety in the future, as adenoviral vector vaccines have an important role across the globe. In addition, the laboratory developed new tests to assess COVID-19 immunity following infection and vaccination. The results helped inform the Government of Canada's COVID-19 vaccination policies, including the optimal timing between doses and the need for vaccine booster shots in long-term care facilities.

During the pandemic, staff in the laboratory increased their research activity while providing the continued level of excellent service for patient care. In recognition, the staff were awarded the 2021 McMaster University President's Award for outstanding service in the team category.

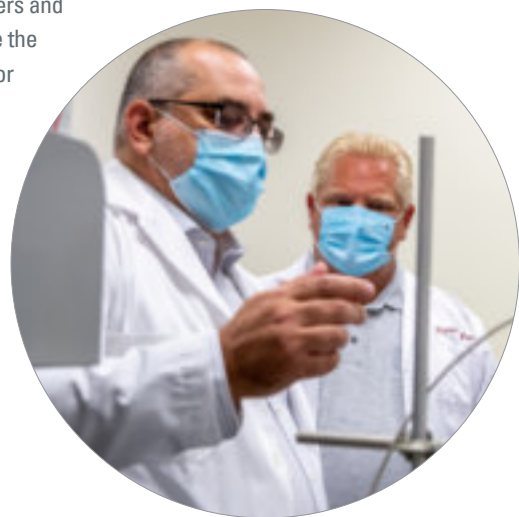
Ontario Premier Doug Ford visited McMaster University on August 12, 2021, to see firsthand the work being done by MCTR. The premier was joined by Minister of Health Christine Elliot and Minister of Colleges and Universities Jill Dunlop. Hamilton Mayor Fred Eisenberger and Flamborough-Glanbrook MPP Donna Skelly also attended a tour of the centre and several other university laboratories during the visit.

Looking ahead, MCTR will continue to innovate clinical trial design and foster cutting-edge translational research in Canada. To enable this, the team will integrate clinical health databases in



*...MCTR will continue to innovate clinical trial design and foster cutting-edge translational research in Canada.*

transfusion medicine across multiple hospitals in Ontario, which will support embedded clinical trials and provide key quality metrics on blood product utilization. This will respond to an immediate need from the Ministry of Health to make transfusion data accessible to researchers and clinicians and to ensure the highest level of safety for blood products. ■



Premier Doug Ford (right) visits MCTR.



## RESEARCH INSTITUTES

### SCHROEDER ALLERGY AND IMMUNOLOGY RESEARCH INSTITUTE

The Schroeder Allergy and Immunology Research Institute (SAIRI) has made extraordinary progress this year in both the treatment and prevention pathways under the institute's umbrella. This progress is highlighted by discoveries in the lab that translate into novel therapies (treatment pathway), as well as seminal findings to better understand allergy development over time through a prospective longitudinal cohort (CHILD) and develop strategies to prevent allergies (prevention pathway).

Through the use of advanced immunological and computational techniques, SAIRI immunologists have discovered a novel cell type identified as a type of memory B cell, fated to become an IgE-producing cell responsible for persistent allergy and, therefore, a therapeutic target. This work was published in *Science Translational Medicine*. As these cells are extremely rare, we've developed technologies, referred to as allergen-specific tetramers, to harvest a sufficient number of these cells for in-depth investigations. A report on this technology was published in *Nature Protocols*. These advances have been made possible through international collaborations with industry and academic leaders, such as ALK-Abello (Denmark) and the Fred Hutchinson Cancer Center (USA), among others.

The CHILD study has described a bacterial signature in the infant gut microbiome associated with any of the four most common childhood allergies. This finding, published in *Nature Communications*, potentially opens a path toward preventing the development of numerous allergic diseases. Furthermore, CHILD researchers have described a new, simple symptom-based screening tool known as CHART that detects asthma risk in children as young as two years of age. Importantly, family physicians and nurses can use this tool to more closely monitor and better manage these children. This work has been published in the *Journal of the American Medical Association*.

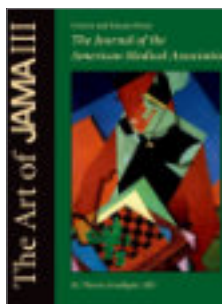
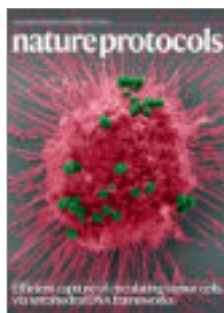
In total, SAIRI members have led 45 publications and collaborated on 97 others



*...very strong position to make major advances in the prevention and treatment of allergic diseases over the next few years.*

45

PUBLICATIONS  
led by SAIRI  
Members



since January 2022. In addition, the tools created by SAIRI researchers are made available to investigators worldwide. For example, the tetramer technology has been sought after by colleagues at various institutions, including McGill University, the University of British Columbia and Memorial Sloan Kettering Center in New York. Furthermore, the prevention pathway established the CHILD database in early 2022, which allows researchers to search more than 300 processed datasets and analyze biological samples collected across 12 timepoints, from pregnancy to five years of age.

SAIRI has also recently added high-quality personnel to its team. Joshua Koenig, assistant professor, and three additional associate members have joined the treatment pathway. As well, the prevention pathway has hired five new highly qualified individuals with expertise ranging from project management to biostatistics and data analysis. SAIRI directly supports five graduate students known as Schroeder Scholars in the treatment pathway and four in the prevention pathway.

Lastly, since the inception of the institute in 2021, SAIRI researchers have leveraged more than \$1.6 million, which includes gifts from donors, grants,



Drs. Manel Jordana, Joshua Koenig, Susan Waserman of the Schroeder Allergy and Immunology Research Institute.



Dr. Meghan Azad

industry and student scholarships. Most recently, Dr. Meghan Azad from the University of Manitoba has been awarded a \$2.5 million grant from the US National Institutes of Health to enable a five-year study that will use breast milk samples preserved in storage at the study outset and correlate findings with later health outcomes in children.

SAIRI investigators have made major progress to date and are in a very strong position to make major advances in the prevention and treatment of allergic diseases over the next few years. ■

\$2.5M

GRANT

from the US National Institute of Health

# Reports: Endowed Chairs and Professorships

NAME	APPOINTMENT
Sonia Anand	Michael G. DeGroote Chair in Population Health Research; Canada Research Chair in Ethnic Diversity and Cardiovascular Disease (Tier 1); Director, Population Genomics Program
<b>David Armstrong</b>	Douglas Family Chair in Nutrition Research
Donald Arnold	John G. Kelton Chair in Translational Research
<b>Ali Ashkar</b>	Canada Research Chair in Innate Immunity and Natural Killer Cell Function (Tier 1)
Richard Austin	Amgen Canada Research Chair in Nephrology
<b>Steven Baker</b>	Hamilton Hospitals Assessment Centre Endowed Professorship in Neuromuscular Disease
Shannon Bates	Eli Lilly Canada/May Cohen Chair in Women's Health
<b>Premysl Bercik</b>	Richard Hunt-AstraZeneca Chair in Gastroenterology
Dawn Bowdish	Canada Research Chair in Aging and Immunity (Tier 2)
<b>Jonathan Bramson</b>	
Alberto Caminero Fernandez	Douglas Family Chair in Gastroenterology Research
<b>Stephen Collins</b>	Farncombe Family Chair in Digestive Health Research
Mark Crowther	Leo Pharma Chair in Thromboembolism Research
<b>Judah Denburg</b>	William J. Walsh Chair in Medicine
James Douketis	David Braley and Nancy Gordon Chair in Thromboembolic Disease
<b>John Eikelboom</b>	Jack Hirsh/PHRI Chair in Thrombosis and Atherosclerosis Research; Canada Research Chair in Cardiovascular Medicine from the Canadian Institutes for Health Research
Hertzel Gerstein	Population Health Institute Chair in Diabetes Research and Care
<b>Jeffrey Healey</b>	Salim Yusuf Chair in Cardiology
Jeremy Hirota	Canada Research Chair in Respiratory Mucosal Immunology (Tier 2)
<b>Alexander Hyne</b>	Farncombe Family Chair in Phage Biology
Sanjit Jolly	Stuart Connolly-PHRI Chair in Cardiovascular Research
<b>Nader Khalid</b>	ABBVIE Chair In Education In Rheumatology

NAME	APPOINTMENT
Martin Kolb	Jack Gauldie Boehringer Ingelheim Chair in Interstitial Lung Disease
<b>Mark Larché</b>	Canada Research Chair, Allergy & Immune Tolerance; McMaster University/GlaxoSmithKline Chair in Lung Immunology at St. Joseph's Healthcare
Arthur Lau	Actavis Chair in Rheumatology for Better Bone Health
<b>Patricia Liaw</b>	Jack Hirsh-Clive Kearon Chair in Thrombosis
Davide Matino	Bayer Chair for Clinical Epidemiology Research in Bleeding Disorders
<b>Shamir Mehta</b>	Douglas Holder-PHRI Chair in Interventional Cardiology
Dominik Mertz	Michael G. DeGroote Chair in Infectious Diseases
<b>Paul Moayyedi</b>	Audrey Campbell Chair in Ulcerative Colitis Research
Manali Mukherjee	AstraZeneca Chair in Respiratory Diseases
<b>Parameswaran Nair</b>	Frederick E. Hargreave Teva Innovation Chair in Airway Diseases
John Neary	Boris Family Chair in Education and Internal Medicine
<b>Akbar Panju</b>	Medard DeGroote Chair in Medicine
Alexandra Papaioannou	Eli Lilly Canada Chair in Osteoporosis, Canada Research Chair in Geriatric Medicine and Healthy Aging (Tier 1)
<b>Ameen Patel</b>	William J. Walsh Chair in Medical Education
Demetrios Sahlas	Michael G. DeGooote Professorship in Stroke Management
<b>Mukul Sharma</b>	Michael G. DeGroote Chair in Stroke Prevention
Ashkan Shoamanesh	Marta and Owen Boris Chair in Stroke Research and Care
<b>Joye St. Onge</b>	St. Peter's/McMaster Chair in Aging
Gregory Steinberg	J. Bruce Duncan Chair in Metabolic Diseases; Canada Research Chair in Metabolism, Obesity and Type 2 Diabetes (Tier 2)
<b>Michael Surette</b>	Canada Research Chair in Interdisciplinary Microbiome Research (Tier 2)
Sarah Svenningsen	Canada Research Chair in Translational Pulmonary Imaging (Tier 2)
<b>John Turnbull</b>	Andrew Bruce Douglas Chair in Neurology
Elena Verdu	Canada Research Chair in Microbial Therapeutics and Nutrition in Gastroenterology (Tier 1); Canada Research Chair in Nutrition, Inflammation and Microbiota (Tier 2)
<b>Irwin Walker</b>	Joseph E. DesRoches Chair in Bone Marrow Transplantation
Susan Waserman	Schroeder Chair in Allergy and Immunology Research
<b>Jeffrey Weitz</b>	Heart and Stroke Foundation / J. Fraser Mustard Chair in Cardiovascular Research
Geoff Werstuck	ISTH-McMaster Chair in Thrombosis and Hemostasis
<b>Salim Yusuf</b>	Heart and Stroke Foundation / Marion W. Burke Chair in Cardiovascular Disease

## ABBVIE CHAIR IN EDUCATION IN RHEUMATOLOGY

### Dr. Nader Khalidi



Dr. Nader Khalidi, the AbbVie Chair in Education in Rheumatology, has provided great support to a wide range of learners, including undergraduate, graduate and postgraduate students, giving them opportunities to explore the clinical and research aspects of rheumatology. The chair has helped to sustain a steady complement of residents in rheumatology, which continues to help with the current lack of rheumatologists.

The educational accomplishments at McMaster continue to flourish at all levels of teaching to undergraduate and postgraduate learners, as well as in research education.

The Musculoskeletal (MSK) Bootcamp for medical students was again highly successful in recruiting multiple students and exposing them to rheumatology as a possible specialty. The rheumatology residency program successfully underwent an external review by the Royal College of Physicians and Surgeons of Canada (RCPSC) with very little to no changes needed for the program; in fact, the RCPSC highly complimented the division for its dedication to educating future rheumatologists.

The 2023 Clinical Day in Rheumatology returned to an in-person conference and educated all learners to improve the knowledge base of rheumatology in clinical care.

Several fellowships continue to recruit trainees, including the vasculitis fellowship, overseen by Dr. Khalidi as program director, the musculoskeletal ultrasound fellowship and scleroderma fellowship, overseen by Dr. Maggie Larché, and the new lupus fellowship, under the leadership of Dr. Kostas Tselios. ■

## ACTAVIS CHAIR IN RHEUMATOLOGY FOR BETTER BONE HEALTH

### Dr. Arthur Lau



Dr. Arthur Lau was awarded the Actavis Chair in Rheumatology for Better Bone Health in 2022, succeeding Dr. Rick Adachi, who was the inaugural chair holder.

Dr. Lau's main research focus is identification of frailty in patients with underlying rheumatological conditions, particularly patients with rheumatoid arthritis and patients on chronic glucocorticoids for varying conditions. Dr. Lau has collaborated extensively with the Geras Centre for Aging Research and is piloting the use of a cellphone-based application that incorporates physical examination metrics to assess the incidence of frailty in the rheumatological population and whether the frailty metric changes with improved or worsened control of their underlying disease. If pilot studies demonstrate feasibility of the project, the goal is to include this frailty assessment into the Ontario Best Practice Research Initiative, a large prospective rheumatoid arthritis cohort for which Dr. Lau currently serves on the steering committee.

Another research focus is the development and implementation of strategies to identify patients at high risk for sustaining fractures and developing clinical programs to ensure these patients are assessed and initiated on appropriate therapies to prevent future fractures. Patients who have sustained a fracture are at greatest risk for re-fracturing and are most likely to benefit from therapy to reduce fracture risk. Dr. Lau is leading a multidisciplinary quality improvement initiative for the Hamilton hospitals.

He has worked collaboratively with orthopedic surgeons, the fracture liaison service and the in-patient rehabilitation unit leads to develop screening protocols for patients admitted to hospital with a fracture who would benefit from further assessment and treatment.

Support from the Actavis Chair in Rheumatology for Better Bone Health has allowed Dr. Lau to continue to advance the research program of the Division of Rheumatology by further building research capacity and increasing collaborations at local, national and international levels. Furthermore, this chair will also support and advance the training of young investigators interested in pursuing a career in metabolic bone disease research. ■

## AMGEN CANADA CHAIR IN NEPHROLOGY

### Dr. Richard Austin



Dr. Richard Austin is a career investigator of the Heart and Stroke Foundation of Ontario and director of the Hamilton Centre for Kidney Research (HCKR). He currently holds the Amgen Canada Chair in Nephrology, which supports biomedical research aimed at better understanding the underlying cellular mechanisms that drive chronic kidney disease (CKD) and heart disease. The goal of Austin's research program is to elucidate the underlying cellular stress pathways that contribute to CKD and their negative impact on heart disease, including vascular calcification, the underlying cause of heart disease in patients with impaired kidney function.

This research has uncovered several novel cellular factors that influence the development of vascular calcification, and several major discoveries have recently been published in high-impact scientific journals. The Austin research team recently reported the existence of unique circulating autoantibodies that accelerate the development of atherosclerosis, the underlying cause of heart disease. Studies are now underway to determine whether these autoantibodies contribute to CKD. The team has also characterized rare human variants in the PCSK9 gene that lower low-density lipoprotein (LDL) cholesterol levels in the blood and significantly protect against heart disease. Finally, the Austin team identified the underlying mechanism by which caffeine protects against CKD and heart disease. This discovery spawned

the creation of a start-up biotech company developing novel caffeine derivatives to treat and manage both CKD and heart disease. In addition to drug discovery, the team deciphered how a currently prescribed PCSK9 inhibitor that lowers blood LDL cholesterol levels and reduces heart disease can protect against CKD.

As director of the HCKR, Austin fosters interaction between biomedical scientists and clinicians/nephrologists in the Divisions of Nephrology and Urology. This has allowed the implementation of a translational research program with a bench-to-bedside approach. Formal research meetings identify important and relevant research areas in nephrology that directly impact patient care and treatment. This approach brings like-minded clinician-scientists and researchers together to create a dynamic and extensive research program that allows development of novel therapeutic strategies for CKD and its cardiovascular complications. As a testament to Austin's seminal discoveries, he was elected to the Canadian Academy of Health Sciences in September 2022. ■

## AUDREY CAMPBELL CHAIR IN ULCERATIVE COLITIS RESEARCH

### Dr. Paul Moayyedi



Established in 2010 via a generous gift from the daughters of the late Audrey Campbell (Linda Campbell, Gaye Farncombe and Susan Grange) via the Crohn's and Colitis Foundation of Canada, the goals of the Audrey Campbell Chair in Ulcerative Colitis Research are to provide leadership in research relevant to improving the health of persons with ulcerative colitis,

promote collaborative research across disciplines, and attract outstanding students, research associates and faculty to McMaster University.

Canada has the highest incidence of inflammatory bowel disease (IBD) in the world and is rising rapidly. It is estimated that almost 1% of Canadians will suffer from IBD in the next 10 years with preteens and adolescents having a particular increase in incidence.

Over the past year, Dr. Moayyedi was the principal applicant on a \$12.5 million CIHR grant to study how gut bacteria as well as how diet might interact to cause ulcerative colitis and Crohn's disease. Another important component of this grant is understanding why patients with these diseases are particularly prone to suffer from anxiety and/or depression. We have attracted a further \$20 million from various sources to conduct this work. We have formed the IMAGINE network, which involves 17 centres across Canada including all major universities and multidisciplinary researchers such as gastroenterologists, paediatricians, epidemiologists, immunologists, microbiologists, psychiatrists and psychologists. This study is being coordinated at McMaster University and the Farncombe Family Digestive Health Research Institute under his leadership. This is a five-year study that promises to find cures for at least a subset of patients with these diseases, as well as ways to better personalize the treatment of Crohn's disease and ulcerative colitis.

We published the first randomized trial in the world that evaluated transplanting healthy stool into patients with ulcerative colitis could bring them into remission. This trial was positive with a success rate similar to current therapies.

This is proof of concept that changing gut bacteria can improve ulcerative colitis. This paper has been cited over 1480 times and was among the top 1% cited articles in its field and a citation classic. Our work has been repeated by others and so far, six research centres have replicated our findings. We still need to understand better why it is successful in some patients and not others so we can improve the effectiveness of this approach and this will be achieved through the IMAGINE network.

Dr Moayyedi has 474 publications that have been cited over 76,300 times. This places him in the top 10 most cited authors in gastroenterology in the Google Scholar database. He is also on the Clarivate™ Highly Cited Researchers™ 2023 list of the top 0.1% of world researchers from the last decade. He published 13 peer-reviewed papers with almost 6,000 citations in 2023. He has presented at the Canadian Digestive Diseases Week, the US Digestive Diseases Week, the American College of Gastroenterology, the Pan-American Gastroenterology meeting and the Asian Pacific Diseases Week in 2023. He gave the Graham/Schwartz Annual Lecture at Baylor College as well as the 53rd Samuel D Kushlan Lecture at Yale University on the microbiome and IBD. Both are esteemed lectures in prestigious institutions.

Dr Moayyedi is Assistant Dean of Research and is promoting clinical research at McMaster University and across Hamilton. He is also the current President of the Canadian Association of Gastroenterology. He was appointed as the joint Editor-in-Chief (EIC) of Gastroenterology in July 2022. This is the most prestigious Gastroenterology journal, and he is the first EIC to be appointed outside of the US.

In the coming year we plan to:

1. Continue to develop the IMAGINE network to coordinate research across Canada for new approaches to treating patients with IBD. We will also better understand how to manage anxiety and depression that is associated with these diseases.
2. Improve our understanding of how fecal transplant therapy works in ulcerative colitis.
3. Continue to support Canadian and US guidelines on the management of IBD and other GI diseases.. ■

## DAVID BRALEY AND NANCY GORDON CHAIR IN THROMBOEMBOLIC DISEASE

### Dr. James Douketis



Dr. James Douketis was awarded the David Braley and Nancy Gordon Chair in Thromboembolic Disease in 2020. Between 2021 and 2023, Dr. Douketis was principal author or co-author of nearly 60 publications, including, notably, first author on a review of perioperative antithrombotic management published in *New England Journal of Medicine Evidence*. Over his career, he has had 440 publications.

In 2022, he received CIHR funding for the PAUSE-Virtual Study, assessing the safety of virtual perioperative anticoagulant management. In early 2024, he received CIHR funding for the PAUSE-2 trial, which will assess two different strategies of perioperative anticoagulant management in high-risk patients.

Dr. Douketis developed and led the 2022 American College of Chest Physicians (ACCP) guidelines on perioperative antithrombotic therapy – widely considered a benchmark for management of patients who are receiving anticoagulant or antiplatelet drugs and require an elective surgery or procedure. The guidelines were published in *Chest*, with Dr. Douketis as lead author. This was followed in 2023 by the ACCP's approval to develop a new guideline, which Dr. Douketis will lead, for the management of patients who are receiving anticoagulant therapy and require urgent surgery or who are bleeding. He was also co-chair of the international thrombosis and cancer guideline, which was published in *Lancet Hematology*.

In 2022, Dr. Douketis was elected to the council of the International Society on Thrombosis and Haemostasis, the leading organization for thrombosis and hemostasis worldwide, for a six-year term. He received the 2023 Anne and Neil McArthur Research Award from St. Joseph's Research Institute, as well as ACCP recognition for outstanding contribution to perioperative antithrombotic therapy practice guideline development in 2022.

Dr. Douketis aims to continue using the chair to support ongoing and planned research initiatives relating to the perioperative management of antithrombotic therapy and the prevention of treatment of thromboembolic disease. ■

## DOUGLAS FAMILY CHAIR IN GASTROENTEROLOGY RESEARCH

### Dr. Alberto Caminero



Dr. Alberto Caminero is an assistant professor in the Division of Gastroenterology and a member of the Farncombe Family Digestive Health Research Institute. Dr. Caminero was recruited to the division in 2019 with the inaugural Douglas Family Junior Chair. The central aim of his research program is to identify diet-microbiota interactions for the treatment or prevention of food sensitivities and inflammatory bowel disease (IBD). The lab is supported by CIHR, Natural Sciences and Engineering Research Council of Canada, Crohn's and Colitis Canada and Canada Foundation for Innovation.

It is estimated that one fifth of the global population experiences adverse reactions to food, and IBD affects around 270,000 people in Canada. Despite exceedingly high rates of accidental exposures to allergens, the main treatment for food sensitivities is a life-long allergen-free diet. Pharmacological drugs are the only treatment currently used to induce and maintain remission in IBD; however, the drugs are expensive, lose efficacy over time and are associated with adverse events, suggesting the need for complementary therapies. In addition, the main environmental triggers and drivers of both food sensitivity and intestinal inflammation are not well understood. The microbiome role in health and disease has become centre stage in the biomedical field, and this is particularly relevant in gastroenterology. Dr. Caminero's research supports the role of microbes in the onset and severity of these diseases through

metabolic interactions, opening new avenues for prevention and treatment of chronic inflammation and food sensitivities.

Dr. Caminero has a fruitful publication record, with 42 peer-reviewed publications including 25 original publications, 10 reviews, five book chapters and three editorials. He has published in high-impact journals such as *Gastroenterology*, *Nature Communications*, *Nature Reviews Gastroenterology and Hepatology* and *Science Translational Medicine*. He is also a member of the Canadian Association of Gastroenterology's Research Affairs Committee and Equity, Diversity and Inclusion Committee. Dr. Caminero actively speaks to both the scientific community and the public about his research program and was invited to give 20 talks between 2020 and 2022. ■

## DOUGLAS FAMILY CHAIR IN NUTRITION RESEARCH

### Dr. David Armstrong



Dr. David Armstrong, professor in the Division of Gastroenterology, is the inaugural holder of the Douglas Family Chair in Nutrition Research, established in 2021. The chair has allowed him to address some of the fundamental challenges that health care providers face when trying to improve digestive and overall health for patients, as well as work to improve care for patients with digestive diseases through bench-to-bedside research and education.

Over the last three years, the Farncombe Family Digestive Health Research Institute has established the Farncombe Institute Nutrition Initiative (FINI), which features specialty nutrition clinics for patients with celiac disease and inflammatory bowel disease (IBD) linked to disease registries to support translational research. It has also established a gastrointestinal (GI) clinical nutrition fellowship program.

Recognizing that patients face numerous challenges as they try to adopt commonly prescribed diet plans, including financial constraints, food insecurity, disease activity and psychosocial factors, the FINI team has worked to understand current patient barriers and develop screening tools and interventions to facilitate patient-centred, best-practice nutritional care. They have also completed translational studies assessing the roles of proteases in IBD and of tryptophan in modulating symptoms and inflammation in celiac disease.

Current studies include using wearable devices and monitoring technologies to allow for more accurate monitoring of food intake, carbohydrate malabsorption, physical activity, sleep patterns and physiological measures related to symptoms in patients with IBD; developing big data analytics and artificial intelligence tools with colleagues across McMaster to improve understanding of the impact of diet, physical activity and psychosocial factors on nutritional and overall health; and developing novel endoscopic techniques to allow for more accurate and reproducible diagnosis of food-related GI disorders.

Over the last year, they have held regular educational events for patients and health care professionals, including the annual GI & Liver Disease Update and the first FINI symposium on novel basic and clinical aspects of dietary management for digestive diseases. In the coming years, Dr. Armstrong plans to collaborate with colleagues across multiple disciplines to improve access to precise, patient-centred nutritional care for individuals with digestive diseases. ■

## FARNCOMBE FAMILY CHAIR IN PHAGE BIOLOGY

### Dr. Alexander Hynes



Alexander Hynes is an associate professor in the Division of Gastroenterology. Hynes joined the Department of Medicine as assistant professor and Farncombe Family Chair in Phage Biology in 2017 following a renewed global interest in bacteriophages (bacteria-specific viruses) as tools to control and manipulate bacterial populations, especially in the face of the growing antimicrobial resistance crisis. Since he joined the division, he has obtained over \$2.2 million in competitive external funding as lead investigator, working with collaborators around the globe. His contributions to the field and the university in research, teaching and service have resulted in his promotion and permanence effective July 2023.

Notably, through his trainee-oriented research program, he has supervised one postdoctoral fellow, 24 undergraduate students and 11 graduate students since 2017. He has been recognized with awards for excellence in graduate education (2021) and postdoctoral supervision (2022).

The field of bacteriophage research has been perceived as small, with articles regularly claiming that only a handful of scientists are conducting phage research in Canada. As applications of phage therapy will require coordinated efforts across a broader base of stakeholders, Hynes decided to address this critical gap and started an organization called “Phage Canada” through a series of word-of-mouth symposia. Its presence has since

ballooned, with the 2022 symposia attracting more than 250 attendees from 35 Canadian institutions in academia, government and industry. This year, Phage Canada was formalized as a legal entity with a mission to support and advance phage research and therapeutics in Canada. The existence of Phage Canada facilitated the donation of a \$5 million gift (administered by the University of Toronto) for phage research across Canada – the largest known single gift to fund phage work.

In keeping with his efforts to impact circles outside of academia, Hynes has been working with the National Microbiology Labs and National Research Council to help shape their roles in phage research and applications. ■

## FARNCOMBE CHAIR IN INTESTINAL RESEARCH

### Dr. Stephen Collins



As Farncombe Chair in Intestinal Research, Dr. Stephen Collins has continued as director of the Farncombe Family Digestive Health Research Institute. The Institute has continued to thrive following the COVID-19 pandemic and has established two new initiatives. The Nutrition Initiative, led by Drs. David Armstrong, Elena Verdu, and Maria Ines Pinto-Sanchez, has research, education and service components. It is based on the premise that nutrition science needs to incorporate not only the nutritional value of diet and host factors, but also the role of microbiota. Diet shapes the microbiota, and the microbiota influence multiple activities in the human host; these diet-microbiota interactions can be beneficial or deleterious. The Nutrition Initiative addresses not only basic science of diet-microbe interactions, but also clinical studies in conditions such as celiac disease and related disorders and functional gastrointestinal (GI) problems, such as irritable bowel syndrome. The initiative also addresses the determinants of dietary choice, including socio-economic and psychological factors in a community setting. The Microbial Therapy Initiative, led by Michael Surette, resurrects interest in fecal microbial transfer post-COVID. It will initially focus on using of lyophilized fecal material but will evolve into use of curated microbial communities aimed at increased efficacy in controlling disorders such as inflammatory bowel disease.

Dr. Collins remains director of the GI motility laboratory and has continued research in

collaboration with Dr. Premysl Bercik aimed at better understanding the interaction between intestinal microbiota and function in both the intestinal tract and the brain. In 2022, their publications included the demonstration that microbiota-derived histamine induces visceral hyperalgesia via interaction with histamine H4 receptors, raising the possibility of microbiota-directed therapy for abdominal pain. In a related project, they demonstrated direct interaction between microbiota and mast cells, another source of histamine contributing to sensitization of sensory nerves in the gut. He has also published other collaborative research examining metformin-induced reductions in tumour growth involving modulation of the gut microbiome and the BMAL1 gene's role in regulating the daily timing of colitis. ■

## HAMILTON HOSPITALS ASSESSMENT CENTRE ENDOWED PROFESSORSHIP IN NEUROMUSCULAR DISEASE

### Dr. Steven K. Baker



Established in 2002 via a generous gift from the Hamilton Hospitals Assessment Centre of Hamilton Health Sciences, the goal of the Hamilton Hospitals Assessment Centre Endowed Professorship in Neuromuscular Disease is to contribute significantly to the body of scholarship in the field of neuromuscular disease and to be involved in clinical work that informs the research agenda.

The Peripheral Nerve Clinic (PNC) at McMaster, led by Dr. Steven Baker, provides exemplary tertiary care to individuals with peripheral nerve disease and related disorders. The clinical content informs the research agenda, which is primarily centred on acquired and hereditary neuropathy.

The PNC is unique in its focus on patients with inflammatory and hereditary neuropathies. The clinic team has amassed a large database of patients dependent on intravenous immunoglobulin. Their treatment requires a tremendous amount of nursing and administrative support, and Dr. Baker works alongside his team to accomplish their mandate of diagnosing and treating these patients. Dr. Baker also works with rare disease patients, such as those with stiff-person syndrome.

In Dr. Baker's research, he and his team investigate the role of nodal-paranodal antibodies in relation to the syndromes they cause that are similar to chronic inflammatory demyelinating polyneuropathy. Dr. Baker also

serves as research director for the Division of Physical Medicine and Rehabilitation, which allows him to regularly interact with residents to encourage research in the field of peripheral neurology. Trainees of all levels are welcome to participate in research of their interest.

Dr. Baker recently published a manuscript that discusses some of the philosophical considerations of informed consent, and he has been invited to co-author a book entitled *The Clinical Encounter: A Philosophical Analysis*, which is scheduled for publication by Wiley Publishing in 2025. He recently assumed presidency of the Canadian Society for Clinical Neurophysiology, which is part of the Canadian Neurosciences Federation. ■

## HEART AND STROKE FOUNDATION / MICHAEL G. DEGROOTE CHAIR IN POPULATION HEALTH RESEARCH

### Dr. Sonia Anand



Dr. Sonia Anand received the Heart and Stroke Foundation/Michael G. DeGroote Chair in Population Health Research at McMaster University in 2008, which has been renewed every five years. The mandate of this chair is to improve research in population health as it relates to cardiovascular disease (CVD).

Dr. Anand's research focuses on understanding the contribution of environmental and genetic factors on the development of cardiovascular risk factors and CVD. She has a particular interest in conducting intersectoral research including ethnicity, sex/gender and social factors. The overarching objective of her research program is to investigate the community and individual causes of cardio-metabolic risk factors and CVD among vulnerable populations across the life course to discover early risk phenotypes for CVD, develop strategies to improve the outcomes of patients with peripheral artery disease (PAD), and develop and test interventions to reduce cardio-metabolic risk factors and CVD. In 2020, Dr. Anand turned her attention to addressing vulnerable populations (South Asians, Indigenous people and new immigrants) to characterize their rates of COVID-19 infection, response to vaccination and vaccine confidence. She has also initiated investigations of the long-term cardiovascular impact of COVID-19 infection.

Specific projects include the Canadian Alliance of Healthy Hearts and Minds, a prospective cohort study designed to investigate the impact of community-level factors, individual health

behaviours and access to health services on cognitive function, subclinical vascular disease, fat distribution and the development of chronic diseases among adults living in Canada; the NutriGen Alliance, a multiethnic birth cohort alliance that enables detailed studies of genetic influences on cardio-metabolic traits; and the SCORE! Project, which brings together a multi-sectoral group of partners to design and implement a community-based healthy active living intervention to improve activity and healthy eating for children and families.

Dr. Anand was appointed co-chair of the Canadian Cardiovascular Society clinical practice guidelines on PAD, published in May 2022, and led the health behaviours and medical therapy section. Dr. Anand also co-edited a special issue of the Canadian Journal of Cardiology, which included papers she led on diet and PAD, and social determinants of health and PAD. Dr. Anand was also an external reviewer for the American Heart Association/American College of Cardiology Guideline Task Force in 2022. Between 2021 and 2023, Dr. Anand was author or co-author on more than 50 publications. ■

## JACK GAULDIE BOEHRINGER INGELHEIM CHAIR IN INTERSTITIAL LUNG DISEASE

### Dr. Martin Kolb



Dr. Martin Kolb has held the Jack Gauldie Boehringer Ingelheim Chair in Interstitial Lung Disease since 2021. His academic focus is in interstitial lung disease (ILD), the most prominent of which is idiopathic pulmonary fibrosis (IPF).

Dr. Kolb's research is examining the mechanisms of fibrosis, helping to identify novel drug targets and biological markers of disease progression. The clinical research benefits patients directly through participation in clinical trials and testing novel antifibrotic compounds. Clinical work includes examining the changing epidemiology of ILD, as well as patient outreach and educational programs through partnership with patient organizations. Dr. Kolb is co-chair of the Canadian Registry for Pulmonary Fibrosis (CARE-PF), which started in 2015 and is prospectively following more than 5,000 patients across eight sites in Canada.

His basic science work has focused on investigating mechanisms of fibrosis progression, primarily related to the active role that scar tissue plays in driving further disease progression through its interaction with mesenchymal, epithelial and endothelial cells. He also has a CIHR-funded project investigating how remodelling of pulmonary blood vessels in fibrosis feeds back to fibrosis progression. Both projects use a mix of in vivo and in vitro models and utilize their extensive tissue bank from human lung biopsies.

In the next years, Dr. Kolb will continue clinical research in ILD, including designing novel trials on drug therapy and biomarker development and imaging, in partnership with some multinational companies and other academic leaders. He has partnered with the international Open Source Imaging Consortium, which aims to develop novel algorithms of image analysis using artificial intelligence. He will also continue his basic and translational research projects that investigate mechanisms of fibrosis progression.

Dr. Kolb served as chief editor of the European Respiratory Journal from 2018 to 2022; he is now guideline editor for the journal and section editor for interstitial lung disease. Since being appointed chair, Dr. Kolb has published more than 60 original articles, reviews and editorials in numerous journals including The New England Journal of Medicine and other top journals in respiratory medicine. He gives approximately 25 invited talks, lectures and seminars around the world each year. ■

## JACK HIRSH/POPULATION HEALTH RESEARCH INSTITUTE CHAIR IN THROMBOSIS AND ATHEROSCLEROSIS RESEARCH

### Dr. John Eikelboom



Dr. John Eikelboom is a professor in the Department of Medicine and senior scientist at the Population Health Research Institute and Hamilton Health Sciences.

Supported by the Jack Hirsh/Population Health Research Institute Chair in Thrombosis and Atherosclerosis, Dr. Eikelboom's work focuses on optimizing antithrombotic therapies for prevention and treatment of arterial and venous thromboembolism, as well as optimizing strategies to prevent bleeding and its adverse consequences. Over the past three years, in part prompted by experience conducting two trials of promising COVID-19 therapies during the pandemic, his work has expanded to include observational and randomized studies of infectious diseases in Africa, including a study of malaria outcomes in Sierra Leone and use of azithromycin to prevent mortality in patients with advanced HIV in multiple sub-Saharan countries.

Dr. Eikelboom's research is supported by grants from multiple funding agencies, including the Canadian Institutes for Health Research and the Gates Foundation, and he has more than 800 peer-reviewed publications. Over the past decade, he has been listed annually by the Web of Science among the top 1% of cited researchers. ■

## JOHN BIENENSTOCK CHAIR IN MOLECULAR MEDICINE

### Dr. Jonathan Bramson



As the holder of the John Bienenstock Chair in Molecular Medicine, Jonathan Bramson focuses on researching novel treatments for cancer and educating the next generation of scientists. Collectively, he and his colleagues have established an outstanding infrastructure for research and development of novel T cell immunotherapies.

During his tenure as the John Bienenstock Chair in Molecular Medicine, his lab developed and refined a novel technology for engineering white blood cells to fight cancer, called a “TAC receptor,” and a therapeutic cell product called a “TAC T cell.” In late 2020, a first-in-human study was launched testing the safety and anti-tumour activity of TAC T cells in patients with solid gastric, colorectal and breast tumours, with the first patient infused in September 2021.

Bramson’s group has successfully produced TAC T cells for every patient in the study. There have been no major toxicities, and more importantly, there have been early signs of clinical activity and some evidence of tumour regression. In July 2023, Bramson’s group was awarded \$3 million from CIHR for a second clinical trial that will test TAC T cells in patients with myeloma.

Bramson’s group has developed methods to engineer a subset of white blood cells called GDT cells with a new class of receptor that shows improved properties and powerful ability to kill tumour cells. GDT cells can be transferred to unrelated cancer patients without risk of graft versus host disease. In June 2023, his group was

awarded \$200,000 from the Leukemia and Lymphoma Society of Canada to develop a GDT cell therapy for multiple myeloma.

Bramson has also partnered with Anthony Rullo, associate professor in the Department of Medicine, to develop a novel technology known as a covalent immune recruiter (CIR) to enable their engineered T cells to recognize a series of tumour targets. In June 2023, they were awarded \$2 million from the Ontario Research Fund to develop this technology for the treatment of glioblastoma and multiple myeloma.

Trainees at all levels are engaged in Bramson’s research. During the last period, he supervised nine graduate students and three undergraduate students. Trainees benefit from the unique experience of working in a cutting-edge research environment where the outcomes of their research have a direct impact on human health care. ■

## JOHN G. KELTON CHAIR IN TRANSLATIONAL RESEARCH

### Dr. Donald M. Arnold



Dr. Donald M. Arnold, co-director of the Michael G. DeGroote Centre for Transfusion Research (MCTR), holds the John G. Kelton Chair in Translational Research.

Dr. Arnold's team is committed to advancing blood transfusion science through innovative and impactful clinical and basic research. Priority research areas include optimal utilization of blood products, transfusion medicine health outcomes, and mechanisms underlying hemostasis and bleeding disorders. His team is leading several multicentre studies in bleeding disorder therapeutics and is actively studying new diagnostic strategies, novel biomarkers and the role of cellular immunity.

In response to the COVID-19 pandemic, Dr. Arnold's team launched a large international trial to evaluate the efficacy and safety of COVID-19 convalescent plasma as a potential treatment for COVID-19. Under Dr. Arnold's leadership, the CONCOR-1 trial enrolled patients globally and ultimately published the results in *Nature Medicine*.

Building upon that success, Dr. Arnold's team is leading the Canadian Transfusion Trials Group (CTTG), a national network of blood transfusion experts whose primary goal is to accelerate and streamline pan-Canadian, high-quality clinical trials to improve transfusion practices. In March 2023, the CTTG received \$2.3 million from Canadian Blood Services to support this groundbreaking network.

Dr. Arnold's team is also involved in studying the mechanistic pathways related to COVID-19 infection. With Dr. Ishac Nazy and the McMaster Platelet Immunology Laboratory, Dr. Arnold's team became the national testing centre for vaccine-induced thrombotic thrombocytopenia (VITT). This initiative led to the discovery of the antibody responsible for VITT – a finding published in *Nature*. For these efforts, the group was recognized with the McMaster President's Award for Outstanding Service. Dr. Arnold's team is currently conducting a long-term study examining the antibody levels and clinical sequelae in patients with this rare disorder. This work on VITT has also accelerated research on other immune-mediated platelet disorders, such as immune thrombocytopenia (ITP), which has led to the development of the platelet variability index – a novel diagnostic tool used for diagnosing ITP.

Dr. Arnold's group is funded by Canadian Institutes of Health Research, Canadian Blood Services, the Ontario Ministry of Health, Public Health Agency of Canada, McMaster University and various industry partners. ■

## LEO PHARMA CHAIR IN THROMBOEMBOLISM RESEARCH

### Dr. Mark Crowther



Dr. Mark Crowther has held the LEO Pharma Chair in Thromboembolism Research since its inception in 2010. Dr. Crowther's work has enhanced McMaster's global standing in thromboembolism research. His primary research objective is the development of evidence-based strategies to prevent and treat thrombotic complications, particularly in high-risk patients. This focus is of paramount importance, considering the prevalence of thrombosis as a leading cause of death and disability.

In recent years, Dr. Crowther has prioritized fostering research excellence among undergraduate and medical students. By integrating them into high-quality literature review teams, he has influenced care standards and guidelines, and cultivated a culture of research excellence that directly impacts patient care. McMaster University's strong heritage in thromboembolism research provides an optimal environment for this work. The institution's flexibility in allowing researchers to pursue their objectives and its collaborative network of clinical and basic science researchers propel scientific advancement.

Over the past two years, Dr. Crowther's team, with crucial contributions from McMaster students, has published significant papers, including synthesizing COVID-19 lessons and exploring bleeding mitigation methods. Between 2021 and 2023, Dr. Crowther has published 49 peer-reviewed papers, with 20 involving one or more co-authors who are current or former trainees. To date, Dr. Crowther has published nearly 600 peer-reviewed publications. ■

## MCMASTER UNIVERSITY/GLAXOSMITHKLINE CHAIR IN LUNG IMMUNOLOGY AT ST. JOSEPH'S HEALTHCARE

### Dr. Mark Larché



Dr. Mark Larché was first appointed to the McMaster University/GlaxoSmithKline Chair in Lung Immunology at St. Joseph's Healthcare in March 2008, with renewals in 2013 and 2018 for further five-year terms. During this time, Dr. Larché's lab was active in several areas of research:

1. Identifying and analyzing blood and sputum biomarkers in patients with rheumatoid arthritis
2. Developing mRNA peptide vaccines for allergic disease (with Elena Tonti, Adiga Life Sciences Inc.)
3. Understanding the pathogenesis and treatment of scleroderma (with the Hamilton Scleroderma Group and Boyang Zhang, Department of Chemical Engineering)
4. Assessing pro-fibrotic properties of patient serum in 3-D microvascular networks
5. Analyzing antigen-specific T cells and B cells in pre-clinical models of allergic airways disease and food anaphylaxis
6. Examining delivery of viral vector vaccines using oral thin film (with Alex Adronov, Department of Chemistry and Chemical Biology)
7. Investigating the role of PAD4 protein in the pathogenesis of rheumatoid arthritis (with Dr. Sarah Wootton, University of Guelph)

Dr. Larché is currently collaborating on projects with other faculty within the Firestone Institute for Respiratory Health, the McMaster Immunology Research Centre, the Department of Chemistry and the Department of Chemical Engineering at McMaster University.

In 2022–2023, Dr. Larché received funding to support research activities associated with this Chair from Bristol Myers Squibb, Southern Ontario Pharmaceutical Health Innovation Ecosystem, The Research Institute at St. Joe's Hamilton, Innovation Factory and Adiga Life Sciences Inc. ■

## POPULATION HEALTH RESEARCH INSTITUTE CHAIR IN DIABETES RESEARCH AND CARE

### Dr. Hertzel C. Gerstein



The Population Health Research Institute Chair in Diabetes Research and Care was established in 2001 to provide broad support for research activities focused on the prevention and treatment of dysglycemia and its serious consequences. Dr. Hertzel Gerstein is pursuing these goals through a broad range of research-related activities at the international, national and local levels, including:

- a. Ongoing analyses of the large AMPLITUDE O trial and REWIND trial of GLP-1 receptor agonists on serious health outcomes in people with diabetes. These analyses are revealing important insights into the effect of this class of drugs on first and recurrent cardiovascular outcomes, strokes, renal outcomes, and cognitive impairment, as well as identifying mediating factors for these benefits and novel ways to measure effects on the kidneys and cognition.
- b. Ongoing collaboration using proteomic, genomic and epigenetic analyses of blood stored from thousands of clinical trial participants, which are identifying novel causal protein mediators of cardiovascular and renal diseases and targets for novel drug therapy in people with and without dysglycemia.
- c. Completion and ongoing analysis of clinical trials of a diabetes remission strategy in people with established type 2 diabetes, showing that diabetes remission can be achieved and identifying protocols to do so.

Dr. Gerstein continues to collaborate with colleagues at McMaster to identify the mechanisms underlying the development of

diabetes and the relationship between dysglycemia and cardiovascular diseases, mortality, cognitive decline and cancers. Dr. Gerstein's research is conducted at the Population Health Research Institute, where he is deputy director, and is funded by peer-review agencies and industry.

Dr. Gerstein continues to collaborate with colleagues at McMaster to identify the mechanisms underlying the development of diabetes and the relationship between dysglycemia and cardiovascular diseases, mortality, cognitive decline and cancers. Dr. Gerstein's research is conducted at the Population Health Research Institute, where he is deputy director, and is funded by peer-review agencies and industry.

Between 2021 and 2023, Dr. Gerstein published more than 50 articles and editorials in major peer-reviewed journals and was an invited guest speaker, commentator or faculty member at 48 local, national, and international scientific meetings.

The American Heart Association named Dr. Gerstein's AMPLITUDE O trial as one of the top advances in 2021. In June 2022, Dr. Gerstein received the prestigious American Diabetes Association (ADA) 2022 Outstanding Achievement in Clinical Diabetes Research Award – the highest award for clinical research given by the ADA. He also received the Ontario Medical Association Life Membership Award 2022 and the Canadian Society of Endocrinology and Metabolism's Dr. Robert Volpé Distinguished Service Award for his contributions to the discipline of endocrinology. ■

## RICHARD HUNT/ASTRAZENECA CHAIR IN GASTROENTEROLOGY

### Dr. Premysl Bercik



Growing evidence suggests that diet-gut microbiota interactions play a major role in health and disease, affecting the function of the digestive tract as well as distant organs, including the central nervous system. With the support of the Richard Hunt/AstraZeneca Chair in Gastroenterology, Dr. Premysl Bercik's research remains focused on the microbiota-gut-brain axis – a bidirectional communication between the digestive system and the brain – and its role in chronic gastrointestinal diseases. His research is highly translational, providing proof-of-concept studies from bench to bedside.

His group has demonstrated that bacterial histamine plays a key role in the genesis of chronic abdominal pain in patients with irritable bowel syndrome (IBS), identifying a specific bacterium that transforms dietary histidine into histamine, which then induces visceral hypersensitivity. In a closely related project, his group has shown that when bacteria from patients with IBS are transplanted into germ-free mice, they can disrupt the colonic mucus layer and penetrate the epithelial barrier, directly interacting with mast cells. These results have direct impact on the understanding of the pathophysiology and treatment of IBS, as the research team identified specific pathways and receptors that can be targeted pharmacologically or through dietary interventions. His group also found that IBS patients with immune reactivity to wheat, characterized by high levels of anti-gliadin antibodies, improve their symptoms after

adhering to a gluten-free diet, suggesting that the anti-gliadin antibody immunoglobulin G (IgG) can be used as an actionable biomarker.

Dr. Bercik's basic research has been supported by CIHR, the W. Garfield Weston Foundation, the Biocodex Foundation, the Crohn's and Colitis Foundation, the Canadian Digestive Health Foundation and the Society for Study of Celiac Disease. For his research achievements, Dr. Bercik was awarded the 2021 Canadian Association of Gastroenterology Research Excellence Award. ■

## STUART CONNOLLY-PHRI CHAIR IN CARDIOVASCULAR RESEARCH

### Dr. Sanjit Jolly



Dr. Sanjit Jolly's research is focused on improving the outcomes of patients with acute myocardial infarction who are undergoing invasive cardiac procedures. As a clinical trialist, Dr. Jolly leads global randomized trials. He and his team recently completed a randomized treatment trial in both outpatient and hospitalized patients with COVID-19 that showed that aspirin, colchicine and rivaroxaban did not improve outcomes for these patients.

They have also completed a randomized trial of ultrasound guidance for femoral artery access for cardiac procedures. This trial showed that, overall, ultrasound guidance did not improve outcomes, but it did improve outcomes when a vascular closure device was used. An updated meta-analysis showed outcomes improved with ultrasound guidance.

They are also conducting trials in patients with cardiovascular disease. One such trial is the CLEAR-OASIS 9 trial, a randomized trial of colchicine and spironolactone in patients with acute myocardial infarction. This trial included 7,000 patients and is currently in the follow-up phase. They are also conducting a trial comparing low- and high-dose heparin in percutaneous coronary intervention in 16,000 patients in Canada. They are now conducting the LAAOS IV trial, which is examining the benefit of percutaneous left atrial appendage closure.

Dr. Jolly's team has raised more than \$15 million in funding for these trials, including large grants from CIHR. They have published multiple publications and are working to complete all of these trials. They have also recently launched the Canadian Association of Interventional Cardiologists Clinical Trials Network in collaboration with the Accelerating Clinical Trials (ACT) Consortium. ■

## WILLIAM J. WALSH CHAIR IN MEDICINE

### Dr. Judah Denburg



After four decades, Dr. Judah Denburg has handed over directorship of the Division of Clinical Immunology and Allergy to his colleague, Dr. Susan Waserman. Drs. Denburg and Waserman and members of the vibrant division, which spans the Departments of Medicine and Pediatrics, see patients, teach and research. In this context, Dr. Denburg continues to collaborate across departments and divisions, participating in both basic and applied research, including clinical investigation and trials of new biologics for treatment of lupus and related autoimmune disorders.

Much of his research has focused on mechanisms of allergic inflammation, with particular emphasis on tissue cytokines in the differentiation and recruitment of hemopoietic progenitors of inflammatory effector cells such as eosinophils, basophils and mast cells. This internationally acclaimed work has included the creation and development of in vitro assays to monitor clinically relevant fluctuations in these progenitor cells during allergic responses, as well as to examine cell function, phenotype and gene expression in cord blood to develop novel biomarkers to predict the onset of atopy and allergic disease. Collectively, these studies have established the biological importance of hemopoietic mechanisms and bone marrow-derived myeloid progenitors in inflammation, tissue repair and neonatal development of chronic disease. Using these approaches and methodologies, Dr. Denburg has recently pivoted

to study the immunological profile of COVID-19 infection, establishing cross-Faculty collaborations in newly awarded, multidisciplinary studies.

As founder, scientific director and CEO of AllerGen NCE, Dr. Denburg forged a strong national research and training community in allergic and respiratory disease, uniting over 500 investigators and collaborators from 137 partnerships (government, universities, industry and others), now with international connections and visibility in several continents. Since its inception in 2005, AllerGen researchers collectively have more than 6,000 publications and trained more than 1,750 highly qualified personnel. Ongoing research forged by AllerGen and catalyzed by Dr. Denburg's leadership is having impact across Canada and globally .

In July 2023, Dr. Denburg successfully planned and hosted the 12th Biennial Symposium of the International Eosinophil Society (IES) in Hamilton. Dr. Denburg also organized the 33rd Biennial meeting of the Collegium Internationale Allergologicum in Montreal in October 2023. This was the first time this prestigious society held its biannual meeting in Canada and provided an opportunity to showcase many significant Canadian accomplishments in the field of allergy and immunology. ■

## YUSUF CHAIR IN CARDIOLOGY

### Dr. Jeff Healey



Dr. Jeff Healey is a professor in the Department of Medicine and an associate faculty in the Department of Health Research Methods, Evidence and Impact. He is director of the Division of Cardiology and a senior scientist at the Population Health Research Institute. Dr. Healey is the principal investigator and chair of the Canadian Stroke Prevention Intervention Network (CSPIN), which is conducting a series of clinical trials related to atrial fibrillation and stroke prevention.

He is leading the 4000-patient ARTESiA trial, which will determine if treatment with direct anticoagulants can prevent stroke in patients with subclinical atrial fibrillation. He is also currently leading the ATLAS trial, which is comparing a new, totally subcutaneous defibrillator against the traditional defibrillator that requires a lead to be placed through a vein and into the heart.

Dr. Healey is also chair of the Canadian Cardiovascular Society's (CCS) development committee, a member of the CCS guidelines committee and a member of the executive committee of the international AF-Screen collaboration. Dr. Healey serves on the editorial boards of the Canadian Journal of Cardiology and Heart Rhythm, and is associate editor of Heart Rhythm-O2. He is also a member of the research and scientific program committees for the Heart Rhythm Society.

As Yusuf Chair and Cardiology Division Director, Dr. Healey has helped lead the division through the COVID-19 pandemic and the related supply chain and human resource challenges. Despite many challenges, the division delivered excellent

clinical care and took on new roles, including as a regional centre for extra-corporeal membrane oxygenation (ECMO) to support the most critically ill patients with COVID-19. The division also increased its delivery of echocardiography (ECG) and transitioned to providing ambulatory ECG monitoring and a significant proportion of pacemaker and implanted defibrillator follow-up care to patients without the need for hospital or clinic visits.

The division's research program continues to be world-leading, and Dr. Shamir Mehta was awarded this year's Canadian Cardiovascular Society's Research Achievement award. In education, the division received full accreditation for its residency program and for its new fellowship programs in echocardiography, interventional cardiology and electrophysiology. The division continues to add new members, while two prominent members, Dr. Koon Teo and Dr. Deborah Hastings, retired this year. ■

# Reports: Canada Research Chairs

## CANADA RESEARCH CHAIR IN AGING AND IMMUNITY

### Dr. Dawn Bowdish



Dawn Bowdish received a Tier 2 Canada Research Chair in Aging and Immunity in 2014, which was renewed in 2019. She is also the executive director of the Firestone Institute for Respiratory Health, one of Canada's top research institutes devoted to translational research in chronic lung disease. Her Canada Research Chair program explores how the immune system changes over the life course, how age-related changes in the immune system contribute to healthy and unhealthy aging, and how the aging immune system changes its responses to vaccination and respiratory infections, including pneumonia and COVID-19.

In 2021–2022, Bowdish received a five-year NSERC Discovery Grant and was co-lead on two major grants from the COVID-19 Immunity Task Force to study the immunogenicity of vaccination in immunocompromised individuals (SUCCEED) and in older adults living in retirement communities and long-term care (LTC). The COVID in LTC study is the largest study in Canada to address COVID-19 infections in LTC and retirement communities. The study found that Moderna vaccines provided better protection than Pfizer vaccines and that targeting vaccine campaigns prior to a wave had the largest impact on reducing infections in older adults. The National Advisory Council on Immunization used these findings to create recommendations about when to vaccinate older adults and the type of vaccine to use. During the pandemic, Bowdish was a trusted advisor to major media outlets and shared this and other evidence-based research in dozens of print, radio and televised news interviews and knowledge translation events for older adults and their caregivers. Bowdish also received funding from the Canada Foundation for Innovation (CFI) to create the PreClinical Studies on Aging laboratory, which is Canada's only aging mouse facility dedicated to uncovering non-genetic factors associated with healthy and unhealthy aging.

In 2021–2022, Bowdish and her team published 17 peer-reviewed manuscripts and editorials. She supervised three MSc students, two PhD students, three post-doctoral fellows (one co-supervised), one technician and three undergraduate students, most of whom received scholarship or fellowship support. The COVID in LTC study employed an additional 40 individuals that she supervised or co-supervised, including technicians, research coordinators, research assistants, phlebotomists, a project manager and courier. She gave 14 invited scientific talks, as well as talks to policymakers and knowledge users.

Bowdish's research program has received grant support from CIHR, NSERC, Weston Family Foundation, Population Health Research Institute, COVID-19 Immunity Task Force (Public Health Agency of Canada) and CFI. ■

# CANADA RESEARCH CHAIR IN ETHNIC DIVERSITY AND CARDIOVASCULAR DISEASE

## Dr. Sonia Anand



Dr. Sonia Anand holds the Canada Research Chair in Ethnic Diversity and Cardiovascular Disease, which was renewed in 2018. The goals of the chair include:

Identifying health behaviours (i.e., diet and activity) and genetic determinants of abdominal obesity and related cardiometabolic risk factors among adults of diverse ethnic origin

Evaluating interventions aimed at lowering cardiovascular and diabetes risks in high-risk ethnic groups

Investigating the impact of the in utero environment, maternal fetal-genetics and epigenetics, together with early life behaviours, on the development of cardiometabolic traits among South Asian and Indigenous Peoples.

In 2013, Dr. Anand and her colleagues received a grant from the CIHR Institute of Nutrition, Metabolism and Diabetes to study nutritional, genetic, epigenetic and microbiome associations with cardiometabolic phenotypes and allergic disorders among 5,500 newborns from the CHILD, FAMILY, START and ABC birth cohort studies. In 2016, they received a CIHR team grant focused on dietary intake and metabolomics in early life and pregnancy, continuing their research on the developmental origins of health and disease.

In 2022, Dr. Anand and her colleagues received funding from the Public Health Agency of Canada for the SCORE! Project, a tri-component engagement meeting bringing together academic researchers, local families, municipal leaders, and representatives from child/youth education and community-based organizations. This project includes conducting formative work with the local community, school and community organizations to determine the facilitators and barriers to healthy active living for children and families in the community. The goal is to design and implement a community-based intervention to improve activity and healthy eating for children and families in the community. The team has finished the first year of the design phase, which includes piloting physical activity interventions such as outdoor games and sports and planting a community garden. The team has developed partnerships with Mohawk College, St. Joseph's Healthcare Hamilton, McMaster Children's Hospital, YMCA, the City of Hamilton, and Catholic and public school boards. ■

## CANADA RESEARCH CHAIR IN GERIATRIC MEDICINE AND HEALTHY AGING

### Dr. Alexandra Papaioannou



Dr. Alexandra Papaioannou was awarded a Tier 1 Canada Research Chair in Geriatric Medicine and Healthy Aging in October 2022. She recently received the prestigious 2023 CIHR Institute of Aging Betty Havens Award for Knowledge Mobilization in Aging and is a fellow of the Canadian Geriatrics Society, recognizing her outstanding and continuing work in geriatrics and gerontology.

Dr. Papaioannou is committed to making life better for older adults through high-impact research tackling the biggest challenges facing the aging population. Her research program strives to make an impact across the lifespan and drive strategic initiatives to transform prevention and treatment of chronic diseases in older adults. Her research is informed by clinical experience working with patients, families and community organizations to co-create innovative solutions to improve patient care and quality of life. She is committed to creating change by setting the highest standards and building a clear sense of community and belonging. Her research program is built on a solid foundation of interdisciplinary partnerships and collaborations that support the next generation of clinical scholars and ensure the scientific community is well-positioned to tackle the major local and global issues now and in the future.

Dr. Papaioannou was awarded three CIHR-funded project grants to advance geriatric care models tailored to older adults living with frailty or multi-complex conditions. One of the landmark studies is the first Canadian trial in frailty rehabilitation, focusing on community-dwelling older adults who have lost energy or strength. She also leads the first Canadian randomized controlled trial to evaluate the clinical effectiveness of a multimodal frailty reduction intervention before joint replacement surgery to improve post-surgical outcomes. Finally, she leads the first pan-Canadian, multi-faceted fracture prevention model for long-term care to implement best practices in fracture prevention.

At the Geras Centre for Aging Research, Dr. Papaioannou is committed to training the next generation of clinical scholars, including undergraduate students, post-doctoral fellows and junior and senior faculty. Her trainees actively participate in national programs like the McMaster Institute for Research on Aging, NSERC sMAP CREATE (Smart Mobility for the Aging Population), Canadian Training Platform for Trials Leveraging Existing Networks (CAN-TAP-TALENT), AGE-WELL and the Canadian Geriatrics Society mentorship, all of which are shaping the future of aging research and technology-driven solutions in Canada. ■

# CANADA RESEARCH CHAIR IN INNATE IMMUNITY AND NATURAL KILLER CELL FUNCTION

## Dr. Ali Ashkar



Ali Ashkar was awarded a Tier 1 Canada Research Chair in 2014, which was renewed in 2021.

The chair focuses on two major goals:

1. Develop natural killer (NK) cell-based cancer immunotherapy for solid tumours. Ashkar's team has made significant progress on this aim. They have developed off-the-shelf NK cell-based cancer immunotherapy against breast, lung and ovarian cancers, as well as chimeric antigen receptor-NK (CAR-NK) immunotherapy to treat Her2+ and CD7+ solid tumours. His research and collaborations with Kiadis Pharma have been the base of a recent phase I clinical trial by Sanofi testing the safety of an off-the-shelf universal NK cell therapy. Over the last three years, his research program has developed a protocol to expand a unique type of immune cell (called gamma-delta T cells) for an off-the-shelf cancer immunotherapy.
2. Understand the reasons for an immune system overreaction (cytokine storm) during viral infection. As it is increasingly clear that immune cell overreaction is the main reason for tissue damage during viral infection, Ashkar's team is looking to understand why immune cells become overactive and produce excessive amounts of cytokines that destroy the body's own cells. They have made two important discoveries: First, type I interferons (involved in innate defense) produced early in an infection are protective and beneficial, but they are not beneficial later in the infection. Second, in contrast, type III interferons (also called IFN-lambda) are regulatory and prevent excessive inflammatory responses during viral infections.

Since the renewal of the Tier 1 Canada Research Chair in 2021, three MSc and two PhD students have graduated from his lab, and one of these PhD graduates received a Governor General's academic gold medal. His three current PhD students received CIHR Canada Graduate Scholarships – Doctoral (each for three years), and all three of his MSc students received competitive national scholarships. In 2022, his lab received a new CIHR grant, adding to the two other CIHR grants he already held. Since 2021, Ashkar's research team has published 24 peer-reviewed manuscripts in journals including *Cell Metabolism*, *iScience* and *PLoS Pathogens*. ■

## CANADA RESEARCH CHAIR IN INTERDISCIPLINARY MICROBIOME RESEARCH

### Dr. Michael Surette



The human microbiome, the collection of microbes that live on and in the human body, are now widely recognized as contributing to almost all aspects of human biology. Dr. Surette has established a broad and highly collaborative research program addressing the mechanisms by which the microbiota contribute to human health and disease throughout the course of life. This includes the development of the microbiome in infants, and changes that occur in the elderly. His lab has expertise in developing culture-independent and culture-based approaches to characterize and exploit the microbiome. The ability to culture the human microbiome is driving new research into bioprospecting the human microbiota's natural product diversity for bacteria/bacterial products with therapeutic applications. The lab is carrying out microbiome analysis for several cohort studies including three large national initiatives: CHILD, IMAGINE SPOR Network and a new Canadian Longitudinal Study on Aging sub-study (Healthy Brains, Healthy Aging Initiative).

During the reporting period, Dr. Surette gave 11 presentations and the Surette lab contributed to 49 peer reviewed publications. The collaborative nature of his research is reflected in his co-author network which includes 34 different McMaster University faculty. In 2023, he was the recipient Canadian Society of Microbiologists Murray Award for Career Achievement. His research was supported by operating grants from Genome Canada, Canadian Institutes of Health Research (including several team grants), Crohn's and Colitis Canada, The Weston Family Microbiome initiative and industry collaborations. Dr. Surette is Director of McMaster's Farncombe Metagenomic Facility. ■

## CANADA RESEARCH CHAIR IN METABOLISM AND OBESITY

### Dr. Gregory Steinberg



Gregory Steinberg holds the Canada Research Chair in Metabolism and Obesity. His research focuses on understanding the molecular pathways controlling the metabolism of fat and sugars and how endocrine factors regulate these effects. In 2021–2023, Steinberg’s research team made significant progress in understanding 1) the development of non-alcoholic fatty liver disease (NAFLD) and 2) the balance between cellular energy demand and nutrient availability.

1. Approximately 25% of Canadians have NAFLD, which causes high levels of cholesterol and blood glucose and increases the risk of heart attack, stroke and type 2 diabetes. In addition, approximately 2% of people with NAFLD will develop liver cirrhosis requiring a transplant or liver cancer.

In a publication in *Cell Metabolism* in June 2022, Steinberg’s team discovered that an enzyme called ATP-citrate lyase (ACLY) can lower liver fat by increasing fat burning and reducing fat and cholesterol production. They also discovered that targeting this enzyme with bempedoic acid (brand name Nexletol), a drug for cardiovascular disease, lowers liver fat, inflammation and fibrosis (i.e. scarring). Lastly, they showed that people with genetic mutations in ACLY have markers of lower liver fat and inflammation. These data support inhibiting ACLY to treat NAFLD. They also published a review article in *Nature Reviews Drug Discovery* summarizing therapeutics targeting enzymes in the lipid synthesis pathway and how this approach may be useful for treating multiple disease conditions.

2. The survival of all cells depends on the constant challenge to match energetic demands with nutrient availability. This task is mediated through a highly conserved network of metabolic fuel sensors that orchestrate both cellular and whole organism energy balance. A mismatch between cellular energy demand and nutrient availability, in which nutrient availability exceeds demand, is a key factor contributing to the development of many common chronic diseases.

The AMP-activated protein kinase (AMPK) is an evolutionarily conserved cellular energy sensor that controls metabolism. In December 2022, Steinberg’s team (in collaboration with Grahame Hardie from the University of Dundee) published a paper in the *Proceedings of the National Academy of Sciences* identifying the importance of a key regulatory mechanism controlling AMPK activity and showing that this mechanism is critical for maintaining mitochondrial function. Multiple therapeutics have been developed that target this residue and have entered clinical development. In addition, Steinberg and Hardie wrote a comprehensive review on recent insights into the control of AMPK, downstream consequences and potential applications in health and disease, published in *Nature Reviews Molecular Cell Biology*. ■

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## CANADA RESEARCH CHAIR IN RESPIRATORY MUCOSAL IMMUNOLOGY

### Dr. Jeremy Alexander Hirota



Dr. Hirota, Associate Professor of Medicine, was appointed Canada Research Chair in Respiratory Mucosal Immunology in April 2017 (Term 1) and again in April 2022 (Term 2). Since starting as a Tier 2 CRC, Dr. Hirota has supervised 21 undergraduate students, 7 MSc students (5 graduated), 7 PhD students, and 4 postdoctoral fellows. Dr. Hirota's directly supervised students are based at St. Joseph's Research Institute within the Firestone Institute for Respiratory Health, the McMaster Immunology Research Centre, and the School of Biomedical Engineering on main campus. Dr. Hirota co-supervises students at the University of Waterloo (Adjunct) and University of British Columbia (Affiliate) through appointments at these institutes.

Dr. Hirota's interdisciplinary lung immunology research program stems from molecule to population level projects, with the vision to study how the air that is inhaled impacts lung health and disease and includes a focus on bringing research to the marketplace. From the basic science level, Dr. Hirota's group is exploring how 3D microenvironments impact lung cell biology and immune responses where he has co-developed intellectual property that is a foundation for university spin-out company (Summer 2023). As a member of the School of Biomedical Engineering, Dr. Hirota works with his colleagues to develop bespoke experimental systems to simulate mechanical forces experienced by lung cells and tissues. At a translational level, Dr. Hirota is establishing a cannabis research program that explores in cells, mice, and humans how combustion of this now legal plant impacts host immunity to viruses. Dr. Hirota functions as a lead of the lung working group within the McMaster University Centre for Medicinal Cannabis Research. At a population level, Dr. Hirota has taken his expertise and established a program in host-immunity to explore how an individual's response during early SARS-CoV-2 positivity could predict outcomes in COVID-19 patients. Digital health solutions are being explored to monitor host immunity in a scalable format that can have population reach. An overarching vision of all of these research programs is to achieve traditional academic metrics as well as commercialize any research outputs to ensure maximum socio-economic benefit is realized.

Support for Dr. Hirota's program comes from NSERC, CIHR, CFI, SickKids, Ontario Lung Association, Roche, Ontario Government, The Thistledown Foundation and industry partnerships. Dr. Hirota has an H-Index of 33 and 3843 total citations. ■

## CANADA RESEARCH CHAIR IN THROMBOSIS

### Dr. Jeffrey Weitz



Dr. Jeffrey Weitz has held the Tier 1 Canada Research Chair in Thrombosis since 2001, with renewals in 2008 and 2015. This chair provides salary support for Dr. Weitz and has been used to fund his research program. In addition, the Canada Foundation for Innovation (CFI) has provided funds for state-of-the-art equipment that is used by Dr. Weitz and other investigators at the Thrombosis and Atherosclerosis Research Institute.

Focusing on thrombosis, this chair facilitated:

- a. the successful CIHR Team Grant in Venous Thromboembolism that was awarded to Dr. Weitz and the McMaster thromboembolism group in 2006, which provided \$4.2 million over seven years
- b. the \$35 million CFI award for Large-Scale Institutional Endeavours, which provided one-third of the funding for the David Braley Research Institute at Hamilton General Hospital
- c. the CIHR Foundation Grant awarded to Dr. Weitz, which will provide \$2.8 million over seven years
- d. Heart and Stroke Foundation awards that have provided additional funds to Dr. Weitz's research program.

Dr. Weitz's current research projects are focused on characterizing new regulators of blood coagulation, developing novel methods for rendering blood-contacting medical devices less thrombogenic, and conducting basic and clinical studies of factor XI and factor XII inhibitors. ■

## CANADA RESEARCH CHAIR IN TRANSLATIONAL PULMONARY IMAGING

### Dr. Sarah Svenningsen



Sarah Svenningsen was awarded the Tier 2 Canada Research Chair in Translational Pulmonary Imaging in September 2020. With additional funding from the Canada Foundation for Innovation, Svenningsen strategically acquired cutting-edge equipment that she integrated with existing medical imaging infrastructure to launch a translational pulmonary imaging research program within the Firestone Institute for Respiratory Health at St. Joseph's Healthcare Hamilton.

Svenningsen's translational pulmonary imaging research program focuses on the development and clinical study of non-invasive pulmonary computed tomography (CT) and magnetic resonance imaging (MRI) measurements that are highly sensitive to pathological changes in the airways, parenchyma and vasculature. The program focuses on an integrated clinical and medical imaging approach that uses translational imaging to (1) detect and understand the early manifestation of pulmonary diseases, (2) predict and evaluate pulmonary disease outcomes, and (3) improve the selection, delivery and efficacy of therapies targeting pulmonary diseases.

From 2021 to 2023, Svenningsen gave over 15 invited lectures and supervised nine trainees, including undergraduate and graduate students, and clinical research fellows. Her team contributed to over 20 peer-reviewed manuscripts and 30 conference abstracts. Svenningsen fostered local collaborations with McMaster faculty in respirology, radiology and biomedical engineering; national and international collaborations with the Canadian Respiratory Research Network and 129Xe MRI Clinical Trials Consortium; and collaborations with several industry partners including Cyclomedica, AstraZeneca, Sanofi, Genentech, Forsee Pharmaceuticals and Trudell Medical. Svenningsen and her colleagues initiated research projects spanning the three aforementioned themes, including two randomized controlled trials, covering a range of diseases such as asthma, chronic obstructive pulmonary disease (COPD), lung cancer, bronchiolitis obliterans and COVID-19. ■

## PUBLICATIONS

# Publication Highlights July 2021 - June 2022

### July 2021

V. Goel, D. Bulir, E. De Prophetis, M. Jamil, L. Rosella, D. Mertz, C. Regehr, M. Smieja.

#### *COVID-19*

COVID-19 international border surveillance at Toronto's Pearson Airport: A cohort study. 2021 Jul 1 10.1136/bmjopen-2021-050714

### August 2021

P. Joseph, G. Roshandel, P. Gao, P. Pais, E. Lonn, D. Xavier, A. Avezum, J. Zhu, L. Liu, K. Sliwa, H. Gamra, S. Bangdiwala, K. Teo, R. S. Yusuf et al.

#### *Cardiovascular disease*

Fixed-dose combination therapies with and without aspirin for primary prevention of cardiovascular disease: an individual participant data meta-analysis 10.1016/S0140-6736(21)01827-4

### September 2021

Kollengode Ramanathan, Kiran Shekar, Ryan Ruiyang Ling, Ryan P. Barbaro, Suei Nee Wong, Chuen Seng Tan, Bram Rochwerg, et al.

#### *Critical Care*

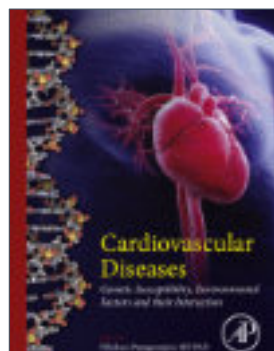
Extracorporeal membrane oxygenation for COVID-19: A systematic review and meta-analysis 10.1186/s13054-021-03634-1

### October 2021

Matt Sibbald, Sandra Monteiro, Jonathan Sherbino, Andrew LoGiudice, Charles Friedman, Geoffrey Norman.

#### *British Medical Association (BMJ) Journals*

Should electronic differential diagnosis support be used early or late in the diagnostic process? A multicentre experimental study of Isabel 10.1136/bmjqs-2021-013493



### November 2021

Connie N. Hess, MH Sab, Manesh R. Patel, Rupert M. Bauersachs, Sonia S. Anand, et al.

#### *Journal of the American College of Cardiology*

Safety and Effectiveness of Paclitaxel Drug-Coated Devices in Peripheral Artery Revascularization: Insights From VOYAGER PAD 10.1016/j.jacc.2021.08.052

### December 2021

M. Racey, M. Markle-Reid, D. Fitzpatrick-Lewis, M. U. Ali, H. Gagne, S. Hunter, J. Ploeg, R. Sztramko, L. Harrison, R. Lewis, M. Jovkovic and D. Sherifali.

#### *BioMed Central (BMC) Geriatrics*

Fall prevention in community-dwelling adults with mild to moderate cognitive impairment: A systematic review and meta-analysis 10.1186/s12877-021-02641-9

### January 2022

Philippe Bégin, Jeannie Callum, ... Donald M. Arnold, et al.

#### *Nature Medicine*

Convalescent plasma for hospitalized patients with COVID-19: An open-label, randomized controlled trial 10.1038/s41591-021-01488-2

### February 2022

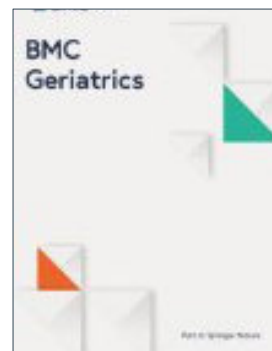
Léna Rivard, Leif Friberg, David Conen, Jeffrey S. Healey, et al.

#### *Circulation*

Atrial Fibrillation and Dementia: A Report From the AF-SCREEN International Collaboration 10.1161/CIRCULATIONAHA.121.055018

### March 2022

Léna Rivard, Leif Friberg, David Conen, Jeffrey S. Healey,



# Publication Highlights

July 2022 - June 2023

Trygve Berge, Giuseppe Boriani, Axel Brandes, Hugh Calkins, A. John Camm, Lin Yee Chen, Josep Lluís Clua Espuny, Ronan Collins, Stuart Connolly, Nikolaos Dagres, Mitchell S.V. Elkind, Johan Engdahl, Thalia S. Field, Bernard J. Gersh, Taya V. Glotzer, Graeme J. Hankey, Joseph A. Harbison, Karl Georg Haeusler, Mellanie T. Hills, Linda S.B. Johnson, Boyoung Joung, Paul Khairy, Paulus Kirchhof, Derk Krieger, Gregory Y.H. Lip, Maja-Lisa Løchen, Malini Madhavan, Georges H. Mairesse, Joan Montaner, George Ntaios, Terence J. Quinn, Michiel Rienstra, Mårten Rosenqvist, Roopinder K. Sandhu, Breda Smyth, Renate B. Schnabel, Stavros Stavrakis, Sakis Themistoclakis, Isabelle C. Van Gelder, Ji-Guang Wang and Ben Freedman.

*Circulation*

Atrial Fibrillation and Dementia: A Report From the AF-SCREEN International Collaboration

**April 2022**

P.J. Devereaux, M.D., Ph.D., Maura Marcucci, M.D., Thomas W. Painter, M.B., Ch.B., David Conen, M.D., M.P.H., Vladimir Lomivorotov, M.D., Daniel I. Sessler, M.D., Matthew T.V. Chan, M.B., B.S., Ph.D., Flavia K. Borges, M.D., Ph.D., María J. Martínez-Zapata, M.D., Ph.D., Chew-Yin Wang, M.B., Ch.B., Denis Xavier, M.D., Sandra N. Ofori, F.W.A.C.P., Michael K. Wang, M.D., Sergey Efremov, M.D., Ph.D., Giovanni Landoni, M.D., Ydo V. Kleinlugtenbelt, M.D., Ph.D., Wojciech Szczeklik, M.D., Ph.D., Denis Schartz, M.D., Amit X. Garg, M.D., Ph.D., Timothy G. Short, M.B., Ch.B., M.D., Maria Wittmann, M.D., Christian S. Meyhoff, M.D., Ph.D., Mohammed Amir, F.R.C.S.Ed., David Torres, M.D., Ameen Patel, M.D., M.A.C.P., Emmanuelle Duceppe, M.D., Ph.D., Kurt Ruetzler, M.D., Ph.D., Joel L. Parlow, M.D., Vikas Tandon, M.D., Edith Fleischmann, M.D., Carisi A. Polanczyk, M.D., Sc.D., Andre Lamy, M.D., Sergey V. Astrakov, M.D., Ph.D., Mangala Rao, M.D., William K.K. Wu, Ph.D., Keyur Bhatt, M.S., Miriam de Nadal, M.D., Ph.D., Valery V. Likhvantsev, M.D., Pilar Paniagua, M.D., Ph.D., Hector J. Aguado, M.D., Ph.D., Richard P. Whitlock, M.D., Ph.D., Michael H. McGillion, R.N., Ph.D., Michael

Prystajec, M.D., Jessica Vincent, M.Sc., John Eikelboom, M.B., B.S., Ingrid Copland, Kumar Balasubramanian, M.Sc., Alparslan Turan, M.D., Shrikant I. Bangdiwala, Ph.D., David Stillo, M.A.Sc., Peter L. Gross, M.D., Teresa Cafaro, M.D., Pascal Alfonsi, M.D., Ph.D., Pavel S. Roshanov, M.D., Emilie P. Belley-Côté, M.D., Ph.D., Jessica Spence, M.D., Ph.D., Toby Richards, M.D., Tomas VanHelder, M.D., Ph.D., William McIntyre, M.D., Ph.D., Gordon Guyatt, M.D., Salim Yusuf, M.D., D.Phil., and Kate Leslie, M.D. for the POISE-3 Investigators\*

*The New England Journal of Medicine*

Tranexamic Acid in Patients Undergoing Noncardiac Surgery

**May 2022**

RECOVERY Collaborative Group

*The Lancet*

Aspirin in patients admitted to hospital with COVID-19 (RECOVERY): a randomised, controlled, open-label, platform trial

**June 2022**

Jonathan P. Piccini, Valeria Caso, Stuart J. Connolly, Keith A. A. Fox, Jonas Oldgren, W. Schuyler Jones, Diana A. Gorog, Václav Durdil, Thomas Viethen, Christoph Neumann, Hardi Mundl, Manesh R. Patel, on behalf of the PACIFIC-AF Investigators.

*The Lancet*

Safety of the oral factor XIa inhibitor asundexian compared with apixaban in patients with atrial fibrillation (PACIFIC-AF): a multicentre, randomised, double-blind, double-dummy, dose-finding phase 2 study

**July 2022**

Marrissa J. McIntosh BSc, Harkiran K. Kooner BSc, Rachel L. Eddy PhD, Samira Jeimy MD, Christopher Licskai MD, Constance A. Mackenzie MD, Sarah Svenningsen PhD, Parameswaran Nair MD PhD, Cory Yamashita MD, Grace Parraga PhD.

*CHEST Journal*



Asthma Control, Airway Mucus, and 129Xe MRI Ventilation After a Single Benralizumab Dose

## August 2022

Philip Joseph, Vellappillil Raman Kutty, Viswanathan Mohan, Rajesh Kumar, Prem Mony, Krishnapillai Vijayakumar, Shofiqul Islam, Romaina Iqbal, Khawar Kazmi, Omar Rahman, Rita Yusuf, Ranjit Mohan Anjana, Indu Mohan, Sumathy Rangarajan, Rajeev Gupta, Salim Yusuf.

*European Heart Journal*

Cardiovascular disease, mortality, and their associations with modifiable risk factors in a multi-national South Asia cohort: a PURE substudy

## September 2022

RECOVERY Collaborative Group.

*The Lancet*

Tocilizumab in patients admitted to hospital with COVID-19 (RECOVERY): a randomised, controlled, open-label, platform trial

## October 2022

Stuart J. Connolly, Ganesan Karthikeyan, Mpiko Ntsekhe, Abraham Haileamlak, Ahmed El Sayed, Alaa El Ghamrawy, Albertino Damasceno, Alvaro Avezum, Antonio M. L. Dans, Bernard Gitura, Dayi Hu, Emmanuel R. Kamanzi, Fathi Maklady, Golden Fana, J. Antonio Gonzalez-Hermosillo, John Musuku, Khawar Kazmi, Liesl Zühlke, Lillian Gondwe, Changsheng Ma, Maria Paniagua, Okechukwu S. Ogah, Onkabetse J. Molefe-Baikai, Peter Lwabi, Pilly Chillo, Sanjib K. Sharma, Tantchou T. J. Cabral, Wadea M. Tarhuni, Alexander Benz, Martin van Eikels, Amy Krol, Divya Pattath, Kumar Balasubramanian, Sumathy Rangarajan, Chinthanie Ramasundarahettige, Bongani Mayosi, Salim Yusuf, INVICTUS Investigators.

*The New England Journal of Medicine*

Rivaroxaban in Rheumatic Heart Disease-Associated Atrial Fibrillation

## November 2022

Shamir R. Mehta, Jia Wang, David A. Wood, John A. Spertus,

David J. Cohen, Roxana Mehran, Robert F. Storey, Philippe Gabriel Steg, Natalia Pinilla-Echeverri, Tej Sheth, Kevin R. Baine, Sripal Bangalore, Warren J. Cantor, David P. Faxon, Laurent J. Feldman, Sanjit S. Jolly, Vijay Kunadian, Shahar Lavi, Jose Lopez-Sendon, Mina Madan, Raul Moreno, Sunil V. Rao, Josep Rodés-Cabau, Goran Stanković, Shrikant I. Bangdiwala, John A. Cairns, for the COMPLETE Trial Investigators.

*JAMA Cardiology*

Complete Revascularization vs Culprit Lesion-Only Percutaneous Coronary Intervention for Angina-Related Quality of Life in Patients With ST-Segment Elevation Myocardial Infarction: Results From the COMPLETE Randomized Clinical Trial

## December 2022

Mark Loeb, Amy Bartholomew, Madiha Hashmi, Wadea Tarhuni, Mohamed Hassany, Ilan Youngster, Ranjani Somayaji, Oscar Larios, Joseph Kim, Bayan Missaghi, Joseph V. Vayalumkal, Dominik Mertz, Zain Chagla, Maureen Cividino, Karim Ali, Sarah Mansour, Lana A. Castellucci, Charles Frenette, Leighanne Parkes, Mark Downing, Matthew Muller, Verne Glavin, Jennifer Newton, Ravi Hookoom, Jerome A. Leis, James Kinross, Stephanie Smith, Sayem Borhan, Pardeep Singh, Eleanor Pullenayegum, and John Conly.

*Annals of Internal Medicine*

Medical Masks Versus N95 Respirators for Preventing COVID-19 Among Health Care Workers: A Randomized Trial

## January 2023

Jason Weatherald, Ken Kuljit S. Parhar, Zainab Al Duhailib, Derek K. Chu, Anders Granholm, Kevin Solverson, Kimberley Lewis, Morten Hylander Møller, Mohammed Alshahrani, Emilie Belley-Cote, Nicole Loroff, Edward T. Qian, Cheryl L. Gatto, Todd W. Rice, Dan Niven, Henry T. Stelfox, Kirsten Fiest, Deborah Cook, Yaseen M. Arabi, Waleed Alhazzani.

*BMJ*

Efficacy of awake prone positioning in patients with COVID-19 related hypoxemic respiratory failure: systematic review and



# Publication Highlights

July 2022 - June 2023

meta-analysis of randomized trials

## February 2023

Darryl P. Leong, Ali Zhang, Jessica A. Breznik, Rumi Clare, Angela Huynh, Maha Mushtaha, Sumathy Rangarajan, Hannah Stacey, Paul Y. Kim, Mark Loeb, Judah A. Denburg, Dominik Mertz, Zain Chagla, Ishac Nazy, Matthew S. Miller, Dawn M. E. Bowdish, MyLinh Duong.

*PLOS ONE*

Comparison of three dosing intervals for the primary vaccination of the SARS-CoV-2 mRNA Vaccine (BNT162b2) on magnitude, neutralization capacity and durability of the humoral immune response in health care workers: A prospective cohort study

## March 2023

Mahshid Dehghan, Andrew Mente, Sumathy Rangarajan, Viswanathan Mohan, Sumathi Swaminathan, Alvaro Avezum, Scott A. Lear, Annika Rosengren, Paul Poirier, Fernando Lanas, Patricio Lopez-Jaramillo, Biju Soman, Chuangshi Wang, Andrés Orlandini, Noushin Mohammadifard, Khalid F. AlHabib, Jephth Chifamba, Afzal Hussein Yusufali, Romaina Iqbal, Rasha Khatib, Karen Yeates, Thandi Puoane, Yuksel Altuntas, Homer Uy Co, Sidong Li, Weida Liu, Katarzyna Zatońska, Rita Yusuf, Noorhassim Ismail, Victoria Miller, Salim Yusuf on behalf of the Prospective Urban Rural Epidemiology (PURE) study investigators.

*The American Journal of Clinical Nutrition*

Ultra-processed foods and mortality: analysis from the Prospective Urban and Rural Epidemiology study

## April 2023

Eugene Wang, Emilie P. Belley-Côté, Jack Young, Henry He, Haris Saud, Frederick D'Aragnon, Kevin Um, Waleed Alhazzani, Joshua Piticar, Matthew Hedden, Richard Whitlock, C. David Mazer, Hessam H. Kashani, Sarah Yang Zhang, Amanda Lucas, Nicholas Timmerman, Cameron Nishi, Davinder Jain, Aaron Kugler, Chris Beaver, Shelley Kloppenburg, Sam Schulman, Flavia K. Borges,

Morvarid Kavosh, Chihiro Wada, Sabrina Lin, Serena Sibilio, Mandy Lauw, Alexander Benz, Wojciech Szczeklik, Arastoo Mokhtari, Eric Jacobsohn, Jessica Spence.

*BJA*

Effect of perioperative benzodiazepine use on intraoperative awareness and postoperative delirium: a systematic review and meta-analysis of randomised controlled trials and observational studies

## May 2023

Gary Liu, Denise B. Catacutan, Khushi Rathod, Kyle Swanson, Wengong Jin, Jody C. Mohammed, Anush Chiappino-Pepe, Saad A. Syed, Meghan Fragis, Kenneth Rachwalski, Jakob Magolan, Michael G. Surette, Brian K. Coombes, Tommi Jaakkola, Regina Barzilay, James J. Collins, Jonathan M. Stokes.

*Nature Chemical Biology*

Deep learning-guided discovery of an antibiotic targeting *Acinetobacter baumannii*

## June 2023

Ruoting Wang, Hertzel C Gerstein, Harriette G C Van Spall, Gregory Y H Lip, Ivan Olier, Sandra Ortega-Martorell, Lehana Thabane, Zebing Ye, Guowei Li.

*EHJ-QCCO (European Heart Journal - Quality of Care & Clinical Outcomes)*

Relationship Between Remnant Cholesterol and Risk of Heart Failure in Participants with Diabetes Mellitus





**Dr. Anne Holbrook**  
Division Director  
Clinical Pharmacology  
and Toxicology



**Dr. Martin Kolb**  
Division Director  
Respirology



**Dr. John Marshall**  
Division Director  
Gastroenterology



**Dr. Nora Cullen**  
Division Director  
Physical Medicine  
and Rehabilitation

## Division Reports

### Department of Medicine Annual Report 2021-2023

- Cardiology
- Clinical immunology & allergy
- Clinical pharmacology and toxicology
- Critical care
- Education and innovation
- Emergency medicine
- Endocrinology
- Gastroenterology
- General internal medicine
- Geriatric medicine
- Hematology and thromboembolism
- Infectious diseases
- Nephrology
- Neurology
- Physical medicine and rehabilitation
- Respirology
- Rheumatology

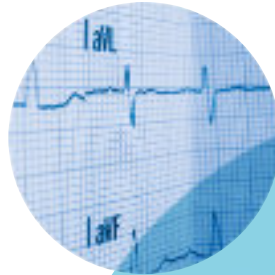
*embracing recovery  
reimagining futures  
reconnecting communities*

# Cardiology

In recognition of his leading research, Dr. Shamir Mehta was awarded this year's Canadian Cardiovascular Society's Research Achievement award.

Dr. Jeff Healey, director of the Division of Cardiology, has helped lead the division through the COVID-19 pandemic and its supply chain and human resource challenges. Despite many challenges, the Division of Cardiology delivered excellent clinical care and took on new roles, including as a regional centre for extra-corporal membrane oxygenation (ECMO) to support the most critically ill patients with COVID-19. The division also increased its delivery of echocardiography (ECG) and has transitioned to providing ambulatory ECG monitoring and a significant proportion of pacemaker and implanted defibrillator follow-up care to patients without the need for hospital or clinic visits.

In education, the Division of Cardiology has received full accreditation from the Royal College of Physicians and Surgeons for its residency program and its three new fellowship programs in echocardiography, interventional cardiology and electrophysiology.



**Dr. Jeff Healey**  
MD MSc FRCPC  
Division Director

*...full accreditation from the Royal College of Physicians and Surgeons for its residency program*

The division's research program continues to be world-leading. In recognition of his leading research, Dr. Shamir Mehta was awarded this year's Canadian Cardiovascular Society's Research Achievement award.

The Division of Cardiology continues to add new members, while two prominent members, Dr. Koon Teo and Dr. Deborah Hastings, retired in 2023.

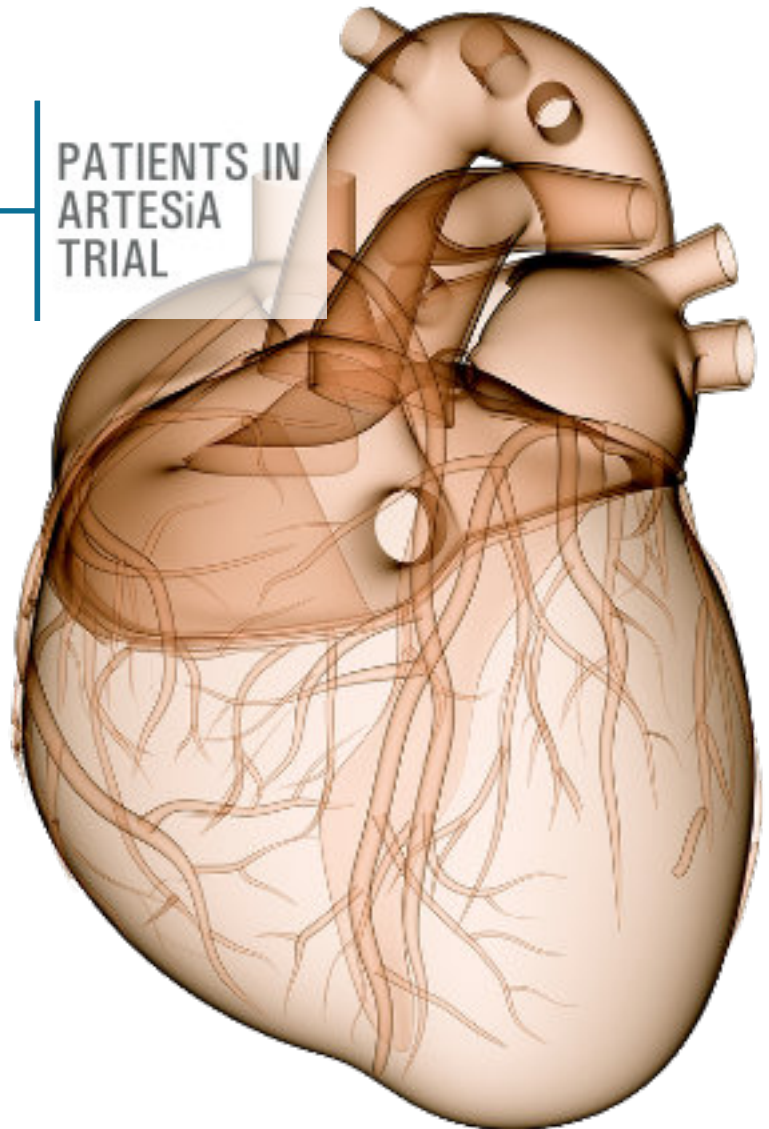
## NEW FELLOWSHIP PROGRAMS

- Echocardiography
- Interventional Cardiology
- Electrophysiology

As director of the Division of Cardiology, Dr. Healey is leading the 4000-patient ARTESiA trial, which will determine if treatment with direct anticoagulants can prevent stroke in patients with sub-clinical atrial fibrillation. He is also studying outcomes for patients receiving implantable defibrillators, specifically to find ways to reduce the morbidity associated with these life-saving devices. He is currently leading the ATLAS trial, which is comparing a new, totally sub-cutaneous defibrillator against the traditional defibrillator, which requires a lead to be placed through a vein and into the heart. ■

4,000

PATIENTS IN  
ARTESiA  
TRIAL



# Clinical Immunology & Allergy

Dr. David Fahmy (Medicine) is the training program director (TPD) and Dr. Rae Brager (Pediatrics) is the Deputy TPD of the McMaster clinical immunology and allergy training program, a highly integrated accredited adult/pediatric program.

## Educational Activities

In 2023, our training program had a successful Royal College of Physicians and Surgeons of Canada accreditation, with no weaknesses identified.

Eight residents from both pediatrics and internal medicine are currently in full-time training. Our division is very active in teaching medical and pediatric residents and medical students from McMaster and elsewhere. Graduating trainees have proceeded to academic and clinical careers in clinical immunology and allergy in Canada and internationally.

We have a highly invested and committed core faculty (six full-time, seven part-time) who strongly support our educational and research programs. Most have taken on important roles, including Competency Committee chair (Dr. Rae Brager), wellness representative and quality improvement (Dr. Carol Saleh), research lead (Dr. Derek Chu), education coordinator (Dr. Michael Cyr) and journal club coordinator (Dr. Mary Messieh).

Recent advancements in our clinical teaching program at the Boris Clinic, McMaster site, have included the drug safety clinic, a combined clinical immunology and allergy/rheumatology autoinflammatory clinic, a combined clinical immunology and allergy/gastroenterology eosinophilic esophagitis clinic, and clinical immunology and allergy clinics at the David Braley Health Sciences Centre. These services have fostered interdisciplinary collaboration, a rich training environment and more specialized care for our patients.



**Dr. Susan Waserman**  
MSc MD FRCPC  
Division Director

Our divisional faculty are highly supportive of undergraduate teaching, an area in which the McMaster Immunology Research Centre (MIRC), which was integrated into our division in 2021, is especially active. Our weekly clinical immunology and allergy rounds, which includes internationally renowned invited speakers, is a major success. The division hosts regular journal clubs and teaching sessions, including a weekly national academic half-day. More recently, the prestigious International Eosinophil Society meeting was hosted in Hamilton under the leadership of Drs. Judah Denburg and Mark Larche, similarly they are expected to host the "Collegium Internationale Allergologicum" to be held this year in Montreal.

## Research Programs

The division continues to be extremely active in a variety of research areas. This was significantly advanced by the incorporation of five faculty members from MIRC, who are all internationally recognized experts in their respective fields of mucosal immunology research, as they migrated from the Department of Pathology and Molecular Medicine. The newest faculty member is Joshua Koenig, who joined in July 2023 and is an expert in technology development for allergy research.

Principal research themes are discovery and therapeutics related to allergic rhinitis (Dr. Paul Keith), food allergy and anaphylaxis (Drs. Chu, Manel Jordana, Koenig and Susan Waserman), autoimmune disease (Drs. Denburg, Derek Haaland and Larche), hereditary angioedema (Drs. Waserman and Keith), peptide immunotherapy in allergic and autoimmune disease (Drs. Denburg, Larche and Haaland), nasal polyposis (Drs. Chu, Jordana and Koenig), systematic reviews (Dr. Chu), hemopoietic stem cells in allergy (Dr. Denburg), COVID-19 (Drs. Chu, Denburg and Waserman), immunodeficiency (Drs. Brager and Jenny Garkaby), Natural Killer biology and cancer immunotherapy (Ali Ashkar), women's reproductive health (Charu Kaushic), HIV-tuberculosis co-infections (Amy Gillgrass) and vaccine development against tuberculosis and COVID-19 (Dr. Zhou Xing). Peer-reviewed, private sector and philanthropic funding for studies of basic mechanisms in allergy and novel therapeutics/biologics in pre-clinical and clinical models continue to grow and yield exciting scientific discoveries.

Division members have also both led and participated in national and international guidelines on a variety of allergy practices. These guidelines include the American Academy/American College of Allergy, Asthma and Immunology (Joint Task Force) practice parameter on anaphylaxis (Dr. Waserman), World Allergy

# 6

## FULL TIME STAFF

# 7

## PART TIME STAFF

# 8

## RESIDENTS

## DEVELOPED NATIONAL & INTERNATIONAL GUIDELINES:

- Practice parameter on anaphylaxis
- Rationale for action against cow's milk allergy
- Guidance on rational use of infant formula during recent shortage
- Guideline on urticaria
- Guideline on COVID-19 vaccine allergy
- Guidelines on biologics in rhinosinusitis/nasal polyps

Organization diagnosis and rationale for action against cow's milk allergy (Drs. Jan Brozek, Chu and Waserman), guidance on rational use of infant formula during the recent infant formula shortage (Dr. Waserman), American Academy/American College of Allergy, Asthma and Immunology (Joint Task Force) guideline on urticaria (Drs. Waserman and Chu), guideline on COVID-19 vaccine allergy (Drs. Waserman and Chu), and Canadian guidelines on biologics in rhinosinusitis/nasal polyps (Drs. Keith and Waserman). These guidelines have been published in high-impact journals and have helped set the standard for evidence-based care globally. Dr. Chu was recently appointed the official methodologist for the American Academy/American College of Allergy, Asthma and Immunology (Joint Task Force). Dr. Xing received the Hardy Cinader Award by the Canadian Society for Immunology for exceptional immunology research.



## Major Achievements

An exciting development in 2021 was the deployment of the Schroeder Allergy and Immunology Research Institute through a generous gift from the Walter and Maria Schroeder Foundation. Dr. Susan Waserman is the inaugural director, and Dr. Manel Jordana is the coordinator of the translational branch. The institute is a partnership between the basic research expertise at McMaster and the population-level research of the Canadian Healthy Infant Longitudinal Development (CHILD) prospective cohort study. The institute was established on the principle that foundational strides in the prevention and treatment of allergic disease are best achieved when interdisciplinary discovery proceeds in close collaboration with industry partners and embedded in the community. The institute has already made important contributions to allergy research and has succeeded in leveraging funding through grants, industry and philanthropy.

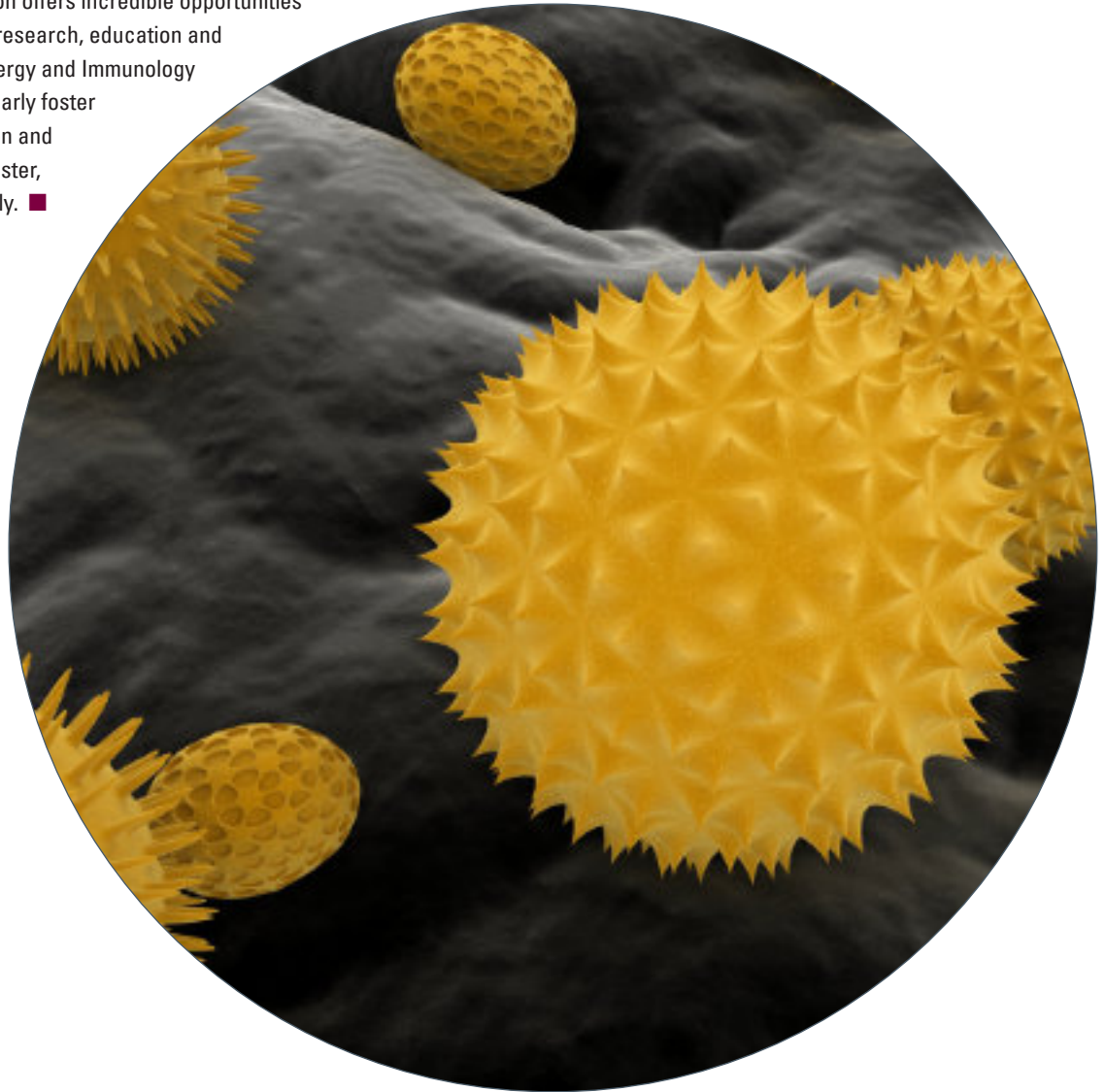
Student Emily Grydziuszko with researchers Joshua Koenig and Manel Jordana looking at microplate. Photo from inside of Schroeder Labs.



*The institute was established on the principle that foundational strides in the prevention and treatment of allergic disease are best achieved when interdisciplinary discovery proceeds in close collaboration in industry partners...*

## Future Directions

Maintaining a critical mass of academically committed members within our division remains an important priority. We expect our discipline to continue to grow, in keeping with the rising prevalence of all allergic and immunologic diseases and the public demand for expert clinical services and discovery in these areas. Incorporating MIRC faculty into the division offers incredible opportunities for further collaboration in research, education and training. The Schroeder Allergy and Immunology Research Institute will similarly foster interdisciplinary cooperation and advancement within McMaster, nationally and internationally. ■



## DIVISION REPORT

# Clinical Pharmacology & Toxicology

Although our division is the smallest, it leads the department in academic contributions overall and in education.

### Educational Activities

These contributions include supervising medical students and residents on internal medicine, critical care and emergency department clinical services at St. Joseph's Healthcare and Hamilton Health Sciences, as well as those on elective rotations through our specialty inpatient and eConsult services. Faculty members are active supervisors and program leaders in the undergraduate and postgraduate medicine programs, as well as in postgraduate education at the master's and PhD levels in health research methodology, medical sciences, eHealth, global health and pharmaceutical sciences at both McMaster University and the University of Toronto. The division draws undergraduate students from pharmacology, health sciences, pharmacy and health technology assessments. We play a leading role in several national and provincial training programs in drug safety and effectiveness and drug policy.

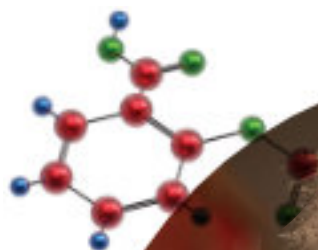
The division participates in clinical pharmacology and toxicology residency training programs accredited by the Royal College of Physicians and Surgeons of Canada. We are actively recruiting trainees and graduates. A new internal medicine-clinical pharmacology fellowship was recently approved and will soon welcome its first fellow.

### Research Programs

The division continues to be highly successful in attracting research funding, largely because of its wide collaborative network within medicine, pharmacy, nursing, epidemiology, economics and social sciences. Grants come from a variety of peer-reviewed



*Grants come from a variety of peer-reviewed sources for research focusing on the benefits, harms and economics of therapies, as well as optimal versus actual use.*



**Dr. Anne Holbrook**  
MD PharmD MSc  
FRCPC  
Division Director

sources for research focusing on the benefits, harms and economics of therapies, as well as optimal versus actual use. Projects include examining methods to improve prescribing; the impact of electronic medical records and computer-based decision support; the impact of changes to drug policies on health and health care utilization; patient preferences about therapies; the development, dissemination and implementation of evidence-based guidelines for therapies, medication management interventions and drug interactions; comparative effectiveness and safety of competing medications; and international benchmarking of prescribing competence. As well as producing scholarly papers and presentations, members of the division hold multiple copyrights and patents on research products, software, reports and guidelines.



*...faculty being appointed to major advisory roles with federal and provincial governments, influencing budgets in excess of \$10 billion annually...*

## Major Achievements

The department's initiative to quantify and rank academic activities of all faculty has shown that clinical pharmacologists are among the top percentile group. One of the unique features of our division is its ability to directly impact professional practice and patient care through drug policy decision-making. Our leadership in evidence-based therapeutics and interprofessional practice has resulted in multiple faculty being appointed to major advisory roles with federal and provincial governments, influencing budgets in excess of \$10 billion annually, as well as to leadership positions in provincial and national professional societies. National pharmacare implementation and upgrading national pharmaceutical pricing processes have been areas of focus in the past year.

## Future Directions

Since therapies are a prevalent and increasingly costly sector of health care, clinical pharmacologists with training in medicine plus epidemiology or quality assurance are in high demand but critically short supply. Thus, a major immediate goal of the division is to recruit new faculty to allow us to address the significant needs for therapeutics and toxicology consultations, to provide education to improve prescribing practices and medication safety, and to expand our involvement in health policy and research. ■

# Critical Care

Our faculty members have earned international acclaim for their outstanding contributions to both research and education, all while maintaining an exceptionally high standard of care for critically ill patients.

As a diverse group of clinicians, we are committed to fostering collaboration and partnerships with national and international critical care organizations and providing patient care at the McMaster teaching hospitals located in Hamilton, Niagara and Waterloo regions.

### Educational Activities

Under the leadership of Dr. John Centofanti, the adult critical care medicine residency program, accredited by the Royal College of Physicians and Surgeons of Canada, thrives as a highly sought-after program for trainees. Both national and international fellows engage in rigorous competency-based training, including simulation-based education (led by Dr. Thiago Appoloni Moreira) and bedside ultrasonography (led by Drs. Hailey Hobbs and Steven Skitch). The program features an innovative scheduling model mirroring that of a consultant, offering a distinctive educational experience. This approach allows for ample non-clinical time to support fellows' academic pursuits. Faculty members actively promote scholarship through a research mentorship program, culminating in the annual McMaster/Western Fellows' Research Day, where fellows showcase their research endeavours.



**Dr. John Centofanti**  
Critical Care



**Dr. Tim Karachi**  
MD FRCPC DRCPC FCCM  
Division Director

### CRITICAL CARE SOCIETIES:

- Canadian Critical Care Trials Group
- Community ICU Research Network
- Canadian Sepsis Research Network

### Research Activities

McMaster excels in its breadth and diversity of critical care research. Our dedication to designing and conducting large pragmatic clinical trials is evident, with many faculty members securing CIHR grants aimed at enhancing patient care in the intensive care unit (ICU). Drs. Deborah Cook, Michelle Kho, Kimberley Lewis and Bram Rochwerg have received substantial research funding from CIHR, focusing on knowledge translation for critical illness prevention, respiratory failure management, resuscitation and sepsis, end-of-life care optimization, and rehabilitation and mobility in the ICU. Drs. Lewis and Joanna Dionne, recent recipients of prestigious early career awards from the Department of Medicine, contribute significantly to our research endeavours. Dr. Cook is also a distinguished professor and holds a Canada Research Chair in Knowledge Translation in the ICU. Our faculty also play pivotal roles in guideline development through the GUIDE Group (led by Drs. Waleed Alhazzani, Emilie Belley-Côté and Simon Oczkowski), providing methodological support for various national and international critical care societies.

*“Our dedication to designing and conducting large pragmatic clinical trials is evident, with many faculty members securing CIHR grants aimed at enhancing patient care in the intensive care unit (ICU).”*

## Major Achievements

Our division members hold key positions in critical care societies, including the Canadian Critical Care Trials Group (Dr. Rochwerg, chair-elect), the Community ICU Research Network (Drs. Jennifer Tsang, and Erick Duan, co-founders) and the Canadian Sepsis Research Network (Dr. Alison Fox-Robichaud, scientific director). Several faculty members actively participate in critical care journal editorial boards, and Dr. Roman Jaeschke serves as editor-in-chief of the McMaster Textbook of Internal Medicine. Faculty members with joint appointments in the Department of Health Research Methods, Evidence and Impact supervise MSc and PhD students.

Dr. Steven Skitch at the Hamilton General Hospital, and Drs. Hailey Hobbs and Sameer Sharif at the Juravinski Hospital. We are excited for the promising future that lies ahead.

## Future Directions

Our division remains steadfast in delivering high-quality patient- and family-centred care. Simultaneously, we are committed to advancing excellence in research and fostering mentorship for the next generation of physicians and scientists in critical care. ■

## Transitions

We express our sincere gratitude to Drs. Maureen Meade, Graham Jones and Cindy Hamielec for their years of dedicated commitment to advancing patient care and contributing to scholarly excellence in critical care. Their invaluable contributions continue to inspire our academic community, and we wish them well as they step down from clinical care.



**Dr. Maureen Meade**  
Critical Care



**Dr. Graham Jones**  
Critical Care



**Dr. Cindy Hamielec**  
Critical Care

We are pleased to introduce several new members to our division:

## DIVISION REPORT

# Education and Innovation

Our faculty members have earned international acclaim for their outstanding contributions to both research and education.

Established in 2019, the Division of Education and Innovation is the newest division in the Department of Medicine and is composed of clinicians and non-clinician educators and members from across divisions. The Department of Medicine and the Division of Education and Innovation provide a home for faculty members making important teaching and scholarship contributions and whose initiatives span several departments within the Faculty of Health Sciences. Our mandate is to facilitate collaboration between clinicians and non-clinicians, promote health leadership, and identify and build opportunities for entrepreneurship and commercialization.

## Educational Activities

The division includes eight full-time members (all non-clinician educators) and numerous other members (clinician and non-clinician educators) from other divisions including Cardiology, Emergency Medicine, Endocrinology, General Internal Medicine, Hematology and Thromboembolism, Nephrology and Rheumatology.

Anna Korol, Carol Bassim, Sean Park and Kenneth Owen make substantial contributions to the integrated biomedical engineering and health sciences (iBioMed) program, and Park also contributes to the Health Leadership Academy and continuing professional development. Sandra Monteiro and Renate Kahlke are teachers and education researchers, and their scholarship is delivered through the McMaster Education Research, Innovation and Theory (MERIT) program. Monteiro has a second appointment as assistant director of simulation scholarship at the Centre for Simulation-Based Learning. Deborah DiLiberto, who works in global health, is appointed to the Global Health Office. Michael Hartmann is co-director of the Health Leadership Academy (HLA) with David Price, overseeing all aspects of its administrative and educational portfolios. He is also the academic director at the DeGroote School of Business's Directors College and, together with Price, leads the National Health Fellows Program. Korol and Hartmann also make significant contributions to entrepreneurship and commercialization within the Faculty of Health Sciences. All the



division's members contribute substantially to the iBioMed program, Health Leadership Academy, global health initiatives, entrepreneurship, the McPherson Institute for Leadership, Innovation and Excellence in Teaching, and the MERIT program.

**Dr. Amin Patel**  
MD MSc FRCP(C) MACP  
FRCP(Edin) FRCP (Glasg)  
Professor, Department  
of Medicine, Division  
Director

## Major Achievements



Bill Tholl  
LEADS Leadership

In the 2022/2023 academic year, the division welcomed three new members. Bill Tholl has served as a senior policy advisor and executive consultant and has collaborated with Dixon in LEADS. Tholl will contribute to the department's leadership programs. He will add important experience, networking opportunities and coaching/mentoring for the department's and Faculty's continuing education leadership programs.

## CONTRIBUTIONS TO THESE INITIATIVES:

- iBioMed Program
- Health Leadership Academy
- MERIT Program
- Centre for Simulation-Based Learning
- Global Health Initiative
- National Health Fellows Program
- Entrepreneurship
- McPherson Institute for Leadership



Dr. Piyush Patel  
Developing Collaborations

Dr. Piyush Patel is a pediatrician, venture capitalist and industry opinion leader who has extensive experience in working with startup companies and developing collaborations between industry, universities and individuals. Dr. Patel will work closely with Mark Larche, a member of the Division of Clinical Immunology and Allergy.



Brady Wood  
McMaster Textbook  
of Medicine

Brady Wood is the division's newest member. Wood was already involved with the Department of Medicine as a consultant on strategic matters including the communities of practice, McMaster Textbook of Medicine and the internal medicine residency program. Wood has a private strategic consultancy, has previously scaled a nationwide beauty and wellness chain, served as an executive in the local health system and acted as a resource to Ontario's Ministry of Health and Long-Term Care on select files. Wood will continue his current Department of Medicine initiatives and will also contribute to faculty development and coaching with a focus on communication, media training and program reputation.

Sandra Monteiro was awarded a KIPRIME Fellowship from the Karolinska Institutet in Sweden, recognizing her research in medical education. This is a high international accolade and a testament to her work, and we congratulate her on this achievement.



Sandra Monteiro  
KIPRIME Fellowship

Michael Hartmann leads the HLA, a unique partnership between the DeGroote School of Business and the Faculty of Health Sciences. The HLA is creating a platform to mobilize and enable Canadian health care with a model of how to move forward through the National Health Fellows Program, which is aimed at



Three Health Sciences Students caring for patient inside Centre for Simulated based Learning. CSBLStudents Leo Liu, Marian Armanious, Yvgeniy Oparin. Patient Sasha Sandmaire.



Michael Hartmann  
Health Leadership  
Academy

senior leaders who have opportunities to implement systemic improvements. The six-month program includes several modules on health system challenges, how health care disruptors are making change happen – which takes place in Palo Alto and is delivered in collaboration with Stanford University – and a health forum dialogue that will allow participants to

share their learnings with health policy leaders from across the country.

The Faculty of Health Sciences began offering a new master's degree in biomedical innovation in September 2023. Korol and Hartmann will contribute significantly to this innovative graduate program. Korol is helping to develop several new courses and will sit on several committees, including serving as chair of the Curriculum Development Committee. Hartmann will serve as curriculum contributor, facilitator and teacher for entrepreneurship and leadership courses within the program.

Sean Park is working through the Continuing Professional Development Office to create a "consultancy service" to enhance the faculty's problem-solving capacity. This pilot project offers



Sean Park  
Continuing Professional  
Development Office

three main services: strategic and design thinking; evaluation, audit and feedback; and facilitation and team coaching. The goal is to create a service that leverages the Faculty's talent, existing resources, processes and data to design timely solutions tailored to the Faculty's unique

needs and challenges and reduces costs by avoiding fees associated with hiring external consultants. In the future, this service could generate revenue and promote the Faculty by offering its services to other institutions and industry.

Deborah DiLiberto is an interdisciplinary researcher with a focus on the design and evaluation of complex interventions and health service delivery in low-resource countries. She works closely with



Deborah DiLiberto  
Global Health

Andrea Baumann, associate vice-president of global health. Global health is a priority for the Faculty of Health Sciences, and Paul O'Byrne and Andrea Baumann, with input from DiLiberto, are exploring the creation of a new Department of Global Health.

Carol Bassim is the scientific manager for the Canadian Longitudinal Study on Aging. In 2022/2023, she published articles in



Carol Bassim  
Canadian Longitudinal  
Study on Aging

the International Journal of Environmental Research and Public Health, BMC Oral Health, iScience and PLOS. Bassim was a contributing author to Oral Health in America: Advances and Challenges (Oral Health in America), published by the US Department of Health and Human Services. She also serves as a CIHR grant reviewer.

Renate Kahlke is a researcher, qualitative methodologist, theorist and educator who was a research associate at the Royal College



Renate Kahlke  
MERIT

of Physicians and Surgeons of Canada prior to joining McMaster. She works closely with Sandra Monteiro and Jonathan Sherbino (assistant dean, health professions education research, and leader, MERIT). In addition to her scholarship work, Kahlke offers workshops to help faculty develop education research

questions, methodology and funding.

Kenneth Owen, who received a PhD in business administration from McMaster, started one of Canada's first internet companies



Kenneth Owen  
Entrepreneurship

and shares his experience in entrepreneurship and innovation through teaching and scholarship in the iBioMed program and through the innovation program within the DeGroote School of Business. The DeGroote School of Business partners with the Faculty of Engineering to offer students from all

Faculties the opportunity to pursue a minor in innovation. Owen also contributes extensively to student supervision, course and curriculum development, and committee work promoting the iBioMed and innovation programs.

Sandra Ramelli is a strategist, learning facilitator and certified LEADS coach and facilitator. She has held several senior roles in health care and assists the department chair and leadership team with leadership development, team performance, organizational change and design, and staff and physician engagement.

## Future Directions

We congratulate Deborah DiLiberto and Renate Kahlke on new additions to their families and look forward to welcoming them back from their maternity leaves. Carol Bassim will take a professional leave of absence for 2023/2024, and we wish her and her family the best. Division members will continue to make important and impactful contributions to the iBiomed, MERIT, and health leadership programs. The division will continue to explore opportunities to facilitate entrepreneurship and commercialization.

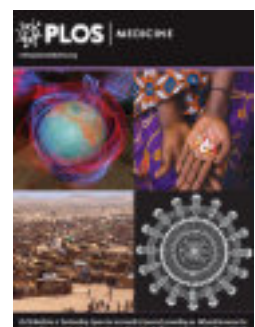


John Kelton  
Master of Biomedical  
Innovation Program

Led by John Kelton, the new master of biomedical innovation program, which started in September, is an exciting and important initiative that will fall under the newly approved Marnix E. Heersink School of Biomedical Innovation and

Entrepreneurship. The program will offer an integrated curriculum and environment that enables the design, development and implementation of high-impact biomedical technologies and services, such as medical devices, drug delivery platforms, digital applications, and health systems and processes.

I look forward to another year of important and impactful contributions by members of the division. ■



## DIVISION REPORT

# Emergency Medicine

The first year of the COVID-19 pandemic highlighted the resilience, teamwork and ingenuity of our faculty, but as the pandemic continued over the subsequent two years, it has also uncovered the fractured foundations of our Canadian health care system and led to significant burnout in emergency physicians and staff across the country.

We must acknowledge the fortitude along with the fatigue. Our faculty showcased their training and experience in handling a new threat and shifting environment. They innovated to provide solutions to save lives, provide protection, and comfort patients and families. In this report, I would like to highlight many of the successes of our resilient faculty during these tumultuous times. .

## Educational Activities

The postgraduate emergency medicine residency program has a strong focus on education, with a culture of support and social connection. The five-year program, led by program director Dr. Alim Pardhan, currently has over 40 residents. The program thrives with the support of many faculty, including Drs. Kelly van Diepen and Caillin Langmann (assistant program directors), Drs. Ashley Lubberdink and Ali Mulla (simulation leads), Dr. Mat Mercuri (research and best bets curriculum lead) and Dr. Shawn Mondoux (Continuous Quality Improvement curriculum lead).

The undergraduate emergency medicine curriculum underwent dramatic changes to deliver core content in a virtual format, including using virtual resuscitation simulation and Slack communication for asynchronous group case-based education.



**Dr. Michelle Welsford**  
BSc MD FACEP CCPE  
FRCPC  
Professor & Division Director

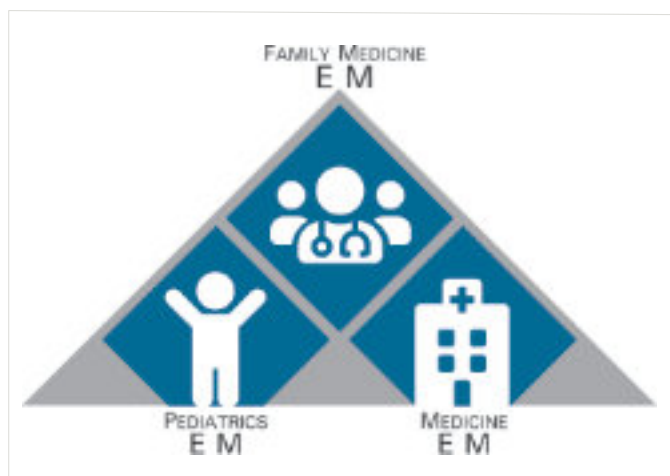
Annually, 150 core clerks rotate through the emergency departments in Hamilton, along with many more on the distributed campuses. An additional 70 elective clerks are also accommodated thanks to the leadership of Dr. Serena Sennik..

### *Continuing Professional Development (CPD)*

The MacEmerg podcast is a novel initiative to connect our distributed faculty through asynchronous digital CPD. Other CPD initiatives, including PERC rounds and grand rounds, have been virtual for the last few years; while this makes it easier for many to attend, we also look forward to returning to in-person rounds.

### *Areas of Focused Competence (AFC) and Fellowship Programs*

The point of care ultrasound (PoCUS) program, led by Dr. Ian Buchanan, achieved AFC accreditation from the Royal College of Physicians and Surgeons of Canada in 2021 and has been taking one to three candidates each year. The prehospital care fellowship



has also continued with one candidate annually and is eligible to apply for AFC accreditation.

## Research Program

The division has a strong national and international presence in educational research thanks to the great work of Drs. Jonathan Sherbino and Teresa Chan and their large network of collaborators. Several faculty are involved with national and international guidelines and systematic reviews, including Drs. Suneel Upadhye, Sameer Sharif and Michelle Welsford. Several of our faculty were able to capitalize on COVID-19 grant funding and initiatives, leading to numerous publications in the last two years. .

## Major Achievements

- Dr. Ian Buchanan, Professional Association of Residents of Ontario (PARO), Excellence in Clinical Teaching Award Recipient
- Dr. Alex Chorley, @MacEmerg Excellence in Teaching Award
- Dr. Teresa Chan, Royal College of Physicians and Surgeons of Canada Early Career Leadership in Medical Education/CPD Award
- Dr. Teresa Chan, Canadian Association for Medical Education (CAME) Early Career Medical Educator's Champion Award
- Dr. Teresa Chan, University Scholar, McMaster University
- Dr. Teresa Chan, Associate Dean, Continuing Professional Development, McMaster University
- Dr. Teresa Chan, Association of Faculties of Medicine of Canada (AFMC) Award for Outstanding Contributions to Faculty Development in Canada

- Dr. Teresa Chan, U21 Health Sciences Group Teaching Excellence Award
- Dr. Alim Pardhan, 2022 Canadian Association of Emergency Physicians (CAEP) Physician of the Year
- Dr. Alim Pardhan, College of Physicians and Surgeons of Ontario (CPSO) Council Award
- Dr. Kaitlynn Rigg, @MacEmerg Excellence in Teaching Award
- Dr. Jillian Roberge, 2022 CAEP Alan Drummond Advocacy Award
- Dr. Sameer Sharif, Early Career Award, Department of Medicine
- Dr. Jonathan Sherbino, William Walsh Award for Outstanding Education Achievement, Department of Medicine
- Dr. Jonathan Sherbino, 3M National Teaching Fellowship Award
- Dr. Jonathan Sherbino, Memorial University Meredith Marks Mentorship Award
- Dr. Suneel Upadhye, International Conference on Emergency Medicine (ICEM) Best Paper – Evidence into Action Award
- Dr. Andrew Worster retired in June of 2022 at the rank of professor after nearly 25 years at McMaster University. He had a prolific career as a clinician, educator and researcher. He is still working on some of his previous research projects and continues to publish, with over 20 publications in the year after his retirement. ■

**40+**  
**RESIDENTS**

## DIVISION REPORT

# Endocrinology and Metabolism

Endocrinology remains a very productive Division for the Department of Medicine supporting all academic endeavours including research, medical education and clinical care.



## Education

Undergraduates in the Michael DeGroote School of medicine have many educational activities supported by Endocrine Division faculty including large group lectures, horizontal electives, problem-based learning (PBL) tutorials, and Clinical Skills preceptorships. Endocrine Division faculty contribute as lecturers, tutors and preceptors for all these activities as well as leadership of Medical Foundation 3, a 12-week block that integrates reproductive physiology, nutrition, gastroenterology and endocrinology to equip medical school learners with a framework towards understanding energy homeostasis.

Postgraduate medical trainees interact with Endocrine Division faculty on the hospital Clinical Teaching Units, in Academic Half-Day lectures, and during a variety of rounds and presentations. Internal Medicine residents rotate through an endocrine rotation block that includes both in-patient consultations and out-patient endocrine/diabetes clinics. In 2023 the Endocrine Division launched a successful 12-week pilot testing a new model of clinical education incorporating a Citywide Endocrine Clinical Teaching Unit that covered all the hospital inpatients in the city. Endocrine Division members continue to contribute to the transition of postgraduate trainee evaluation towards a competency by design model which will be formally adopted by all endocrine programs across Canada in 2025.

The Division has a two-year subspecialty residency program in endocrinology and metabolism which accommodates upwards of two to three Canadian and global trainees. In 2023 the program passed its external review by the Royal College and remains highly ranked by candidates in the CARMs Medicine Subspecialty match every year. The Division also runs a very successful one-year



**Dr. William Harper**  
MD FRCPC  
Division Director

fellowship in metabolic bone disease attracting both Canadian and global trainees.

Divisional faculty are extensively involved in non-clinical education as PhD comprehensive and defense examiners, mentors and graduate thesis committee members. They also teach undergraduates, master's level, and PhD students every year and currently accommodate postdoctoral fellows.

Divisional faculty are actively engaged in leading the development of clinical practice guidelines and quality assurance initiatives; provide continuing medical education in diabetes, hypertension, parathyroid disease and general endocrinology; speak internationally on endocrine topics; educating the public about diabetes, osteoporosis, endocrine hypertension and related disorders; and provide departmental leadership in global health education and training.

## Research Programs

All members of the Division are involved in a variety of research activities ranging from genetic mendelian randomization, biochemistry and physiology to epidemiology and large international clinical trials. From 2023 to 2024 the Division's main areas of research study included preventing cardiovascular outcomes in diabetes, diabetes remission, obesity, brown adipose tissue metabolism, the function of AMP activated kinase, GDF-15 biology pertaining to obesity, inflammation, fatty liver disease, dysglycemia and serious health outcomes, pediatric to adult care transitions, imaging modalities and therapies for osteoporosis, hypophosphatasia, hypoparathyroidism, DNA methylation signatures, novel biomarkers for body fat and diabetes risk and mendelian randomization analysis of circulating proteomes linked to brain health. Members of the Division launched McMaster's state-of-the-art indirect calorimeter Energy Lab which utilizes cutting-edge technology to measure energy burning to illuminate study into the integrative pathophysiology behind obesity, diabetes, fatty liver and other metabolic disorders.

## Major Achievements/Recognitions

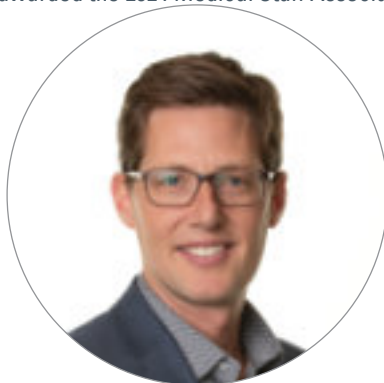
Dr. Hertz Gerstein, recipient of the prestigious 2022 American Diabetes Association Outstanding Achievement in Clinical Diabetes Research Award, was elected as a Fellow to the Royal Society of Canada (RSC) in November 2023. Dr. Greg Steinberg was named to Clarivate Analytics' 2023 list of the world's most Highly Cited Researchers and in September 2023 was named a fellow of the Canadian Academy of Health Sciences (CAHS). Dr. Prebtani was the recipient of the International Initiatives Micro Fund (IIMF) for his work on hypertension education in Uganda. Dr. Aliya Khan was awarded the 2024 Medical Staff Association Humanitarian

Award from Hamilton Health Sciences for her volunteer medical services extending beyond the hospital's walls.

## Future Directions

Recent recruitment to the Division in 2023-24 includes faculty with a focus on thyroid cancer as well as diabetes and pregnancy. Increasing collaboration in multidisciplinary clinics and rounds with surgeons and oncologists will help promote optimal and patient-centred care in the areas of thyroid malignancy, pituitary disease and transgender care. A multidisciplinary collaboration with obstetric medicine is underway to bring diabetes and pregnancy care through a quality improvement lens to facilitate both research into and care of pregnant women with diabetes and other endocrine disorders. The Division has also recently recruited a new non-clinical research faculty member with a focus on finding new medical therapies for metabolic diseases through artificial intelligence models as applied to in-vitro platforms which can then be verified by in-vivo cell and animal models as well as in human study through biobank data analysis and indirect calorimeter measurement in the Energy Lab. ■

Dr. Hertz Gerstein was elected as a Fellow to the Royal Society of Canada (RSC)



Dr. Greg Steinberg was named to Clarivate Analytics' 2023 list of the world's most Highly Cited Researchers and named a fellow of the Canadian Academy of Health Sciences (CAHS)



Dr. Aliya Khan was awarded the 2024 Medical Staff Association Humanitarian Award from Hamilton Health Sciences.



Dr. Ally Prebtani was the recipient of the International Initiatives Micro Fund (IIMF) for his work on hypertension education in Uganda.

## DIVISION REPORT

# Gastroenterology

The adult gastroenterology residency program continues to provide comprehensive training to residents from Canada and institutions in the Middle East and Caribbean under the leadership of its program director, Dr. Eric Greenwald.

### Educational Activities

McMaster also continues to host the annual Residents' Endoscopy Training Course (RETC) for first-year residents in adult gastroenterology from across Canada, under the leadership of Drs. Greenwald, David Armstrong and Frances Tse. McMaster is also a lead site for skills enhancement in endoscopy programs and the related train-the-endoscopy-trainers program, which are aimed at both improving and teaching advanced skills for practising gastroenterologists. These programs are coordinated by the Canadian Association of Gastroenterology and run by local faculty, including Drs. Greenwald, Armstrong and Tse.

The Division of Gastroenterology hosts a variety of advanced fellowships, including in inflammatory bowel disease (directed by Dr. Neeraj Narula), advanced endoscopy (directed by Dr. Tse), nutrition (directed by Dr. Armstrong) and motility (directed by Dr. Stephen Collins). These fellowships, which host trainees from Canada and around the world, enhance subspecialty care and support subspecialty research programs.

In 2022, the division hosted its fourth annual Gastroenterology and Liver Disorders Continuing Medical Education Day for local physicians, residents and allied health providers under the directorship of Drs. Armstrong, Tse, John Marshall and Khurram Khan. Many members of the division have also remained active in both undergraduate and graduate education. Of note, Dr. Robert Spaziani assumed the role of specialty electives clerkship director for the undergraduate medical program.



**Dr. John K Marshall**  
MD MSc FRCPC AGAF  
CAGF  
Division Director

### New Faculty

We were pleased to welcome Dr. Katie Woodman to the Division of Gastroenterology in 2022. Based at Hamilton Health Sciences (HHS), Dr. Woodman has advanced training in gastrointestinal motility and has joined Drs. Stephen Collins, Premysl Bercik and Jihong Chen in running our quaternary motility service. We were also pleased to welcome Dr. Matthew Collins in 2023. Also based at HHS, Dr. Collins has advanced training in hepatology and will be working with Dr. Marco Puglia to enhance our hepatology consultation services for both in-patients and outpatients.

### Retirement

Dr. David Morgan retired in 2023 following a long and illustrious career in the Division of Gastroenterology. A graduate of McMaster University's medical school, he joined our division in 1991 and retired as head of service at St. Joseph's Healthcare. Along the way, he made many contributions and remains the only individual to have served as president of both the Ontario Association of

Gastroenterology and the Canadian Association of Gastroenterology. In June 2023, the division hosted a retirement dinner, where division members were unanimous in wishing Dr. Morgan a healthy and happy retirement.

## Research Programs

The Division of Gastroenterology remains highly productive in bench-to-bedside research, with many faculty members also appointed to the Farncombe Family Digestive Health Research Institute (FFDHRI). FFDHRI is directed by Dr. Stephen Collins, with Dr. Elena Verdu as associate director.

McMaster University continues to co-host Cochrane Gut, under the leadership of Drs. Paul Moayyedi, Frances Tse and Grigoris Leontiadis. This team produces systematic reviews published in the Cochrane Library and provides methodologic support to a number of clinical practice guidelines produced by the Canadian Association of Gastroenterology and other international societies. Many members of the division play prominent roles in developing high-impact national and global clinical practice guidelines.

Dr. Moayyedi, who holds the Audrey Campbell Chair in Ulcerative Colitis Research, serves as assistant dean for clinical research. He continues to lead the national, multi-centre Inflammation, Microbiome and Alimentation: Gastro-Intestinal and Neuropsychiatric Effects (IMAGINE) network, which has received over \$35 million in funding from the CIHR Strategy for Patient-Oriented

Research and industry partners. This program is evaluating the roles of the gut microbiome and diet on inflammatory bowel disease (IBD), irritable bowel syndrome and associated psychiatric disorders.

Dr. Premysl Bercik, who holds the Richard Hunt Astra-Zeneca Chair in Gastroenterology, received National Institute of Health funding for cutting-edge research on the role of the microbiome on the gut-brain axis and functional bowel disorders. Drs. Marshall and Narula lead McMaster's participation in the Crohn's and Colitis Canada's initiative Promoting Access and Care through Centres of Excellence (PACE), with a focus on remote patient management.

Dr. Pinto Sanchez hosts the HHS celiac disease clinic, which has been endorsed by the Society for the Study of Celiac Disease, and conducts clinical research in various gluten-related disorders. Dr. Narula directs the HHS IBD clinic in collaboration with Drs. Marshall, Armstrong, Tse, Smita Halder, and Siwar Albashir, in addition to conducting clinical research

in IBD focused on medical therapy, nutrition and outcome assessment. Dr. Puglia leads clinical trials in medical therapy for liver disorders, including non-alcoholic liver disease, in collaboration with Drs. Keith Tsoi and Matthew Collins. Dr. Jihong Chen leads innovative research in the diagnosis and treatment of colonic and anorectal motility disorders. Dr. Halder runs the HHS IBD transition clinic in collaboration with Dr. Kate Prowse from pediatric gastroenterology and is a site investigator for the IBD-TrAYN study funded by Crohn's and Colitis Canada.

Dr. Verdu was awarded a Tier 1 Canada Research Chair in Microbial Therapeutics and Nutrition in Gastroenterology and directs the Axenic Gnotobiotic Unit at FFDHRI. Dr. Armstrong was announced as the inaugural holder of the Douglas Family Chair in Nutrition Research and is directing the development of a new nutrition centre based at the McMaster campus that will integrate clinical care, clinical and translational research, and outreach programs related to nutrition.

## Major Achievements

Members of the Division of Gastroenterology are recognized nationally and internationally for their work. Dr. Moayyedi was appointed president of the Canadian Association of Gastroenterology and co-editor-in-chief of *Gastroenterology*, the highest-impact journal in its field, with Dr. Verdu as a senior associate editor. Dr. Marshall continues as editor-in-chief of the *Journal of the Canadian Association of Gastroenterology*. Dr. Morgan continues as president of the Ontario Association of Gastroenterology.



## Future Directions

The Division of Gastroenterology and FFDHRI continue to enjoy a productive partnership that spans the spectrum of luminal gastroenterology, with strong clinical and translational interests in nutrition, inflammation, and the role of the microbiome in health and disease. A new nutrition initiative led by Dr. Armstrong will align with global interests in both food security and obesity and an enhanced awareness of the role of the intestinal ecosystem in human health and disease. We also plan to recruit new academic clinical faculty with interests in nutrition, hepatology and IBD. Our regional clinical services will continue to embrace discovery of new drugs, development and implementation of new technologies, and more comprehensive and accessible models of patient care. The future of regional digestive care and the Division of Gastroenterology is bright. ■

## DIVISION REPORT

# General Internal Medicine

### Educational Activities

Dr. Leslie Martin was appointed program director of the internal medicine residency program in 2021, joining Drs. Zahira Khalid (general internal medicine) and Mino Mitri (palliative medicine) as program directors within our division. All three of these programs were successfully accredited by the Royal College of Physicians and Surgeons of Canada (RCPSC) in 2023, the first such accreditation for palliative medicine. Dr. Andrew Cheung became the citywide internal medicine clerkship director for the undergraduate medical education program. Dr. Conor Cox became program director of the PGY4 internal medicine training program. Dr. Ahraaz Wyne successfully established a fellowship program in obstetrical medicine, and the first graduate of the program, Dr. Amanda Huynh, was recruited to our division as our fourth obstetrical internist. Dr. Haroon Yousuf successfully established a fellowship program in hospitalist medicine.

### Research Programs

Dr. Flavia Kessler Borges has taken over as research director of our division. Our research faculty, which includes Drs. Borges, Gordon Guyatt, James Douketis and Reed Siemieniuk, continue to be exceptionally productive. Two of our other outstanding research faculty (Drs. Maura Marcucci and Holger Schünemann) have recently accepted professorships overseas; we will miss them, but we congratulate them on their many accomplishments.



**Dr. John Neary**  
MD MSc FRCP(C)  
Division Director

*All three of these programs were successfully accredited... the first such accreditation for palliative medicine.*



Flavia Kessler Borges  
Research Faculty



Gord Guyatt  
Research Faculty



James Douketis  
Research Faculty



Reed Siemieniuk  
Research Faculty

## Clinical Services Restructuring

The Division of General Internal Medicine (GIM) played a major role in the reorganization of the citywide GIM service into two traditional academic sites (Hamilton General Hospital and St. Joseph's Healthcare Hamilton) and one site (Juravinski Hospital) with three preceptor-based academic teams and a 24-hour academic hospitalist service. Drs. Mohamed Panju and Shariq Haider (co-chairs of the GIM Restructuring Committee) and Haroon Yousuf (founding program director of the hospitalist fellowship program) played crucial roles in this restructuring. ■



### JURAVINSKI HOSPITAL

- Three preceptor-based academic teams
- 24-hour academic hospitalist service

## Traditional Academic Sites



### HAMILTON GENERAL HOSPITAL



### ST. JOSEPH'S HOSPITAL

## DIVISION REPORT

# Geriatric Medicine

Thanks to the outstanding commitment of our faculty, we were able to offer plentiful clinical training to learners at all levels from multiple programs.

### Educational Activities

Across Hamilton and the distributed medical education network, the division collectively supervises over 170 learners annually. We have an excellent subspecialty residency program that is now fully transitioned to competency-based medical education, with five superb trainees enrolled. The interdivisional geriatric nephrology fellowship program had a successful inaugural year and has now drawn interest from national and international prospective fellows. We expanded placement options for undergraduate medical and physician assistant clerks, with a broader menu of educational sites. In partnership with the Regional Geriatric Program, division members supported the 11th and 12th Annual Updates in Geriatrics, events that attracted 500 participants nationally and internationally. GeriMedRisk monthly educational rounds continue to thrive, also attracting participants from around the globe. In October 2022, we were able to gather for our first in-person education retreat following the COVID-19 pandemic.

### Research Programs

Many of our faculty have had achievements that will reinforce the foundation of our research programs. Dr. Alexandra Papaioannou received a Tier 1 Canada Research Chair in Geriatric Medicine and Healthy Aging. Dr. Joanne Ho received the Schlegel Chair in Geriatrics and Pharmacotherapy. Dr. Justin Lee assumed the position of associate research director of St. Joseph's Health System Centre for Integrated Care. The Geras Centre for Aging Research led CIHR-funded randomized controlled trials examining community-based frailty rehabilitation, a multimodal frailty reduction strategy before joint replacement surgery, and fracture

prevention in long-term care. Discovery and development work is ongoing with the Geras-dance therapeutic mind-body program, technology-enabled frailty assessment, and a testing environment for innovative products and technology designed to improve the care and quality of life of patients living with frailty. Division research and scholarship are also focused on high-risk medications, delirium prevention, virtual care and geriatric medicine in critical care. Division members supervised multiple resident and student projects that received awards at the Department of Medicine Resident Research Day and the Canadian Geriatrics Society Annual Scientific Meeting.



**Dr. Joye  
St. Onge**  
BSc MD FRCP(C) MEd  
Division Director

## Future Directions

The pandemic challenged us with a practice environment that required constant change. Now with relative stability, we have an opportunity to review and renew our specialized geriatric services to ensure that they provide the highest quality care and meaningful benefits for patients and caregivers. Academically, we progressed steadily on directions identified for development in 2020 – research that leads the way in the geriatric 5Ms (mind, mobility, medications, multi-complexity, and what matters most), academic growth at regional campuses and cross-disciplinary collaboration – and we will continue to build on those successes. The special care that older adults require is a growing and pressing need in all disciplines, and recruitment of two full-time geriatrician educators is a high priority. ■



## MAJOR ACHIEVEMENTS

Faculty receiving recognition included :

- Dr. Alexandra Papaioannou received a Tier 1 Canada Research Chair in Geriatric Medicine and Healthy Aging.
- Dr. Joanne Ho received the Schlegel Chair in Geriatrics and Pharmacotherapy. Dr. Justin Lee assumed the position of associate research director of St. Joseph's Health System Centre for Integrated Care.
- The Geras Centre for Aging Research led CIHR-funded randomized controlled trials examining community-based frailty rehabilitation.
- Dr. Joanne Ho was awarded the Peter McCracken Physician Innovator in Education Award from the Canadian Geriatrics Society.
- Dr. Sam Thrall was awarded the Excellence in Teaching for Outstanding Support of Student Development Award at the Niagara Regional Campus.
- The geriatrics rotation at St. Joseph's Healthcare received the Internal Medicine Subspecialty Rotation Award.

## DIVISION REPORT

# Hematology and Thromboembolism

The Division of Hematology and Thromboembolism is internationally recognized for its excellence in research, education, and patient care.

Our members are derived from the Departments of Pathology and Molecular Medicine, Oncology and Medicine. Several division members also hold cross-appointments in Biochemistry and Biomedical Sciences and Health Research Methods, Evidence and Impact (HEI). Division members care for patients with hematologic disorders at the four acute care sites in Hamilton, in partnership with our part-time members at regional hospitals. Members of the division also hold leadership roles in the Hamilton Regional Laboratory Medicine Program.

## Educational Activities

Division members continued to contribute significantly to education at all levels, including providing clinical mentorship to medical students, residents in internal medicine and other specialty programs, and clinical fellows, as well as supervising students at the masters and PhD levels in the Departments of HEI, Biochemistry and Biomedical Sciences, and Medical Education. The adult hematology residency program, adult thrombosis medicine area of focused competence (AFC) program and transfusion medicine AFC program (housed in the Department of Pathology and Molecular Medicine) graduated successful trainees in 2021–2022. Importantly, the external accreditation in 2022–2023 was successful for all of our training programs, including the adult hematology residency program (led by Dr. Graeme Fraser), adult thrombosis medicine AFC program (led by Dr. Vinai Bhagirath) and transfusion medicine AFC program (led by Dr. Michelle Zeller). Dr. Cathy Hayward is the program director for the fellowship program in advanced clinical and laboratory coagulation/hemostasis; the first graduate of the program, Dr. Rahaf Altahan, has gone on to direct the hematopathology and TM program in Riyadh, Saudi Arabia.

In 2021, the division successfully held the inaugural McMaster Day in Hematology in June and the 17th McMaster Update in Thromboembolism and Hemostasis in October, both of which were well received. In 2022, the 2nd McMaster Day in Hematology and the 18th McMaster Update in Thromboembolism and Hemostasis were again successes. The International Society on Thrombosis and Haemostasis (ISTH) Congress was held in Montreal and involved a number of McMaster hematology faculty, including Drs. Sam Schulman and Davide Martino as part of the local organizing committee. Drs. Donald Arnold, Peter Gross, Paul Kim, Colin Kretz and Guillaume Pare were theme leaders.



**Dr. Wendy Lim**  
MD FRCP(C)  
Division Director

## Research Program

The division has achieved worldwide recognition for its research in thrombosis and hemostasis, platelet physiology and function, blood transfusion therapy, molecular biology of red cell disorders and clinical trials in malignant hematologic diseases. We house two research organizations: the Thrombosis and Atherosclerosis Research Institute (TaARI), directed by Dr. Jeffrey Weitz, and the McMaster Centre for Transfusion Research (MCTR), directed by Dr. Donald Arnold. Funding for our research comes from a variety of sources.

Division members received grants from CIHR, Heart and Stroke Foundation of Canada, Canadian Blood Services, Hamilton Health Sciences and Cancer Research Society. Drs. Donald Arnold, Ishac Nazy, John Eikelboom and Paul Kim received special funding for COVID-19 research in 2020. The MCTR led the CONCOR-1 convalescent plasma trial, which resulted in discontinuation of the convalescent plasma program in Canada and other countries around the world. MCTR also tested hundreds of vaccine-induced immune thrombotic thrombocytopenia (VITT) samples, which informed the Government of Canada's COVID-19 vaccination policies, including the optimal timing between doses and the need for vaccine booster shots in long-term care facilities. Dr. Weitz was involved in studies evaluating FXI inhibitors for thrombosis prevention. The Canadian Transfusion Trials Group (CTTG) was established in 2022, and MCTR is working within this platform on collaborative clinical trials in transfusion medicine.

Division members were responsible for over 100 manuscripts per year, including in leading journals like *The New England Journal of Medicine*, *BMJ*, *Lancet*, *JAMA*, *Annals of Internal Medicine*, *British Journal of Hematology*, *Journal of the American College of Cardiology*, *Blood*, and *Journal of Thrombosis and Hemostasis*.

The late McMaster University professor and thrombosis physician Clive Kearon was honoured with a new research chair in his name. The Jack Hirsh-Clive Kearon Chair in Thrombosis was announced in May 2022, with Dr. Patricia Liaw as the inaugural chair holder.

## Major Achievements

- Dr. Donald Arnold received the Canadian Society for Transfusion Medicine QuideOrtho Award for outstanding contribution to transfusion medicine in Canada and the William Walsh Award for Outstanding Educational Achievement from the Department of Medicine.
- Dr. Ronnie Barr was awarded a Lifetime Achievement Award from the International Society of Paediatric Oncology.

- Dr. Vinai Bhagirath was named the McMaster Thrombosis Program academic lead and was the Thrombosis and Hemostasis Societies of North America (THSNA) Summit co-chair.
- Dr. John Eikelboom has been among the top 1% of cited researchers globally since 2014. He continues to hold the Jack Hirsh/PHRI Chair in Thrombosis and Atherosclerosis Research.
- Dr. Cathy Hayward completed her term as ISLH past president in 2023 and is the immediate past president of THSNA.
- Dr. Patricia Liaw was named the Jack Hirsh-Clive Kearon Chair in Thrombosis.
- Dr. Siraj Mithoowani was awarded the Subspecialty Faculty Award for Excellence in Clinical Teaching in the McMaster internal medicine residency program as well as the W. Watson Buchanan Clinician Educator Award from the Department of Medicine.
- Dr. Menaka Pai was a member of the Ontario COVID-19 Science Advisory Table and co-chair of the Drugs and Biologics Clinical Practice Guideline Working Group. Between 2021 and 2023, this group published over 30 rapid guidelines, evidence summaries and knowledge translation summaries for health care professionals and the public during the COVID-19 pandemic.
- Dr. Anthony Rullo was a finalist for the Bickell Foundation Medical Research Grant.
- Dr. Sam Schulman chaired the ISTH Guidelines for Antithrombotic Treatment in COVID-19, which was published in 2022.
- Dr. Jeff Weitz was awarded the Canadian Hematology Society Lifetime Achievement Award in 2022 and appointed an Officer of the Order of Canada in 2023.
- Dr. Geoff Werstuck is the ISTH-McMaster Chair in Thrombosis and Hemostasis Research (2020–2025).
- Dr. Michelle Zeller was named the vice-chair of the Transfusion Medicine AFC Royal College Specialty Committee and Canadian Transfusion Trials Group (CTTG) co-chair of the Patient Engagement Working Group, and she joined the Ontario Transfusion Transmitted Injuries Surveillance System Education Committee, among her other provincial committee work. She also received the Clive Kearon Mid-Career Award from the Department of Medicine and a resident-nominated teaching award in the Department of Pathology and Molecular Medicine. ■

## DIVISION REPORT

# Infectious Diseases

The Division of Infectious Diseases has significantly grown with the addition of Drs. Anna Cvetkovic, Andrew Kapoor, Matthew Clifford Rashotte and Omar Mourad over the last couple of years.

### Educational Activities

Under the leadership of residency program director Dr. Eva Piessens, the infectious diseases residency program continues to provide outstanding support and guidance to trainees, in close collaboration with the medical microbiology training program led by division member Dr. Daniela Leto. Under Dr. Piessens and Dr. Leto, both programs sailed smoothly through accreditation this year with no major concerns.

We also have a well-established subspecialty fellowship program for HIV, led by Dr. Shariq Haider, and for infection prevention and control and antimicrobial stewardship, co-led by Dr. Dominik Mertz and Dr. Sarah Khan. In the current academic year,

*...both programs sailed smoothly through accreditation this year with no major concerns.*

we launched a third fellowship program co-led by Dr. Piessens and Dr. Mertz that offers a combined research and in-depth clinical experience focusing on the most complex patient populations.



**Dr. Dominic Mertz**  
MD MSc FMH(CH)  
Division Director

### Research Programs

Dr. Deb Yamamura is involved in several CIHR-funded research projects involving SARS-CoV-2 diagnostic platforms and point-of-care diagnostic screening for bacterial pathogens. She is also involved in research, supported by the David Braley Centre for Antibiotic Discovery, to evaluate mass spectrometry profiles to detect fungal resistance mechanisms.

Now-retired division member Dr. Fiona Smaill is leading a CIHR-funded study on inhaled SARS-CoV-2 vaccines.

Dr. Mertz, along with Dr. Marek Smieja and Dr. Mark Loeb, has been leading a research program around prevention of *Clostridium difficile* infections by identifying carriers, with a randomized controlled interventional pilot study. He also completed, along with Dr. Loeb, two pilot cluster randomized controlled trials (RCTs) to

# 10,000

## PATIENTS ENROLLED IN TRIALS

prevent infections after cardiac surgery, with more than 10,000 patients enrolled, and is now working toward completing the eventual full trial if funded.

Dr. Jeffrey Pernica has been working on two trials funded by the HAHSO Innovation Fund: an RCT to better define the

*Lactobacillus reuteri* supplementation for children hospitalized with severe diarrheal disease in Botswana (in BMJ Global Health).

Dr. Loeb led an international RCT, funded by the UK Medical Research Council and CIHR, examining use of influenza vaccine to prevent adverse vascular events in more than 5,000 participants, demonstrating a reduction in cardiovascular events and deaths during peak influenza seasons. Along with Drs. Mertz and Zain Chagla, he completed and published an international randomized trial comparing surgical masks to N95 respirators to prevent spread of COVID-19, demonstrating non-inferiority. This study was funded by CIHR, the World

# 350

## MEDIA INTERVIEWS

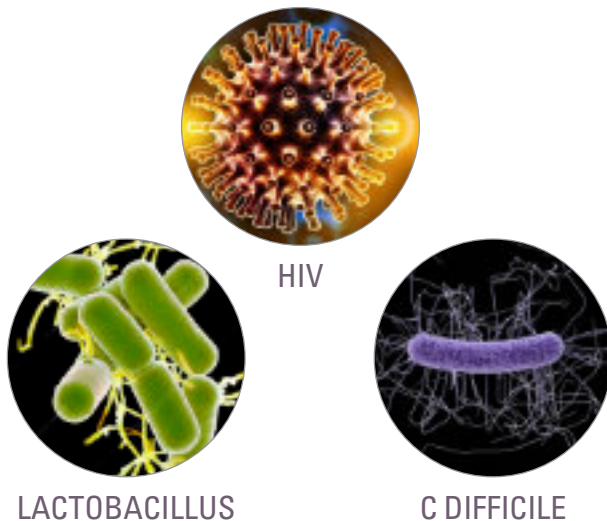
benefit of rapid molecular testing for group A streptococcus for children diagnosed with pharyngitis in the emergency department and a clinical trial of a novel care pathway to minimize unnecessary prescribing for pediatric non-severe community-acquired pneumonia. He also published an important RCT demonstrating effectiveness of short-course antibiotic therapy for non-severe community-acquired pneumonia (in JAMA Pediatrics) and an RCT exploring the usefulness of rapid enteric molecular testing and/or

# 22

## OP-EDS PUBLISHED

Health Organization (WHO) and the Juravinski Institute. He also received CIHR funding to conduct a cluster randomized trial of smallpox vaccines for primary prevention of monkey pox in household contacts of primary cases in Nigeria. He is leading a cohort study funded by CIHR and the COVID-19 Immunity Task Force to assess the effect of baseline antibodies and natural infection with SARS CoV-2 to prevent re-infection in members of Hutterite colonies, along with determination of herd effect. Finally, he is leading a CIHR-funded cohort study to assess physical, mental and immunological outcomes in patients with Lyme disease.

Dr. Haider is the lead investigator for the Canadian Mucormycosis Study, a multi-centre registry for mucormycosis in Canada, and is serving as the local principal investigator for several multi-centre trials.



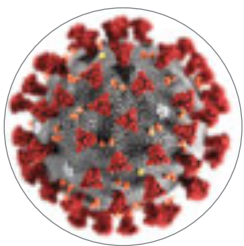
## MAJOR ACHIEVEMENTS

- Under the leadership of site lead Dr. Nishma Singhal, we created a new clinical service at the Hamilton General Hospital specifically for rehabilitation and cardiovascular diseases by splitting the pre-existing single clinical service into two services.
- Dr. Cheryl Main was selected as the new chair of the Department of Pathology and Laboratory Medicine.
- Dr. Leto was appointed associate chair of education and department education coordinator for the Department of Pathology and Molecular Medicine and is a recipient of the John Fernandes Clinical Faculty Teaching Award.
- Dr. Yamamura is currently serving as the president of the Association of Medical Microbiology and Infectious Diseases (AMMI). She also chaired the Royal College Medical Microbiology Examination Committee from 2015 to 2022 and is currently past chair, supporting the new chair.
- In 2022, Dr. Mertz started his term as chair of the Provincial Infectious Diseases Advisory Committee, a committee that informs Public Health Ontario on infection prevention and control policy across the province and beyond. He continues to serve as an inaugural member of AMMI's Canadian Research Network steering committee.
- Dr. Kevin Woodward has continued to provide HIV prevention in Hamilton, is leading provincial initiatives for pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP), and contributes to Ontario's HIV testing guidelines. He is also the medical director for HQ Toronto, a new multi-disciplinary clinic in Toronto that provides access to testing for HIV and other sexually transmittable diseases with rapid results through an onsite laboratory, 24-hour initiation of PrEP and HIV treatment, and mental health services. In its first year, the clinic has had over 19,500 patient visits, and the onsite laboratory completed over 100,000 tests. The clinic is now a training site for infectious diseases, medical microbiology and family medicine residents from McMaster and the University of Toronto.
- Dr. Mazen Bader received the Juravinski Hospital Dr. Dan Dwyer Award.
- Dr. Haider is president-elect for the Canadian Association of HIV Research and served as president of the Canadian Foundation of Infectious Diseases from 2021 to 2023. He was also named the infectious diseases lead for the newly formed Division of Perioperative Medicine. He is a surveyor for accreditation for the Canadian postgraduate training programs and for Royal College of Physicians and Surgeons of Canada (RCPSC) accreditation for international postgraduate programs seeking RCPSC certification. He was also selected as the AMMI representative for the Infectious Diseases Specialty Committee at the RCPSC.
- Dr. Tim O'Shea and colleagues with the Hamilton Social Medicine Response Team received funding from Health Canada to expand their support and safer supply clinic, which has a strong focus on treating and preventing hepatitis C and HIV infection. The clinic now runs four half-days per week and is staffed by specialists in addiction medicine, psychiatry, primary care and infectious diseases.
- Dr. Chagla has been in the spotlight throughout the COVID-19 pandemic as a trusted source for information, with an estimated 350 media interviews in local, national and international news outlets. He also authored more than 22 op-eds over the last three years.

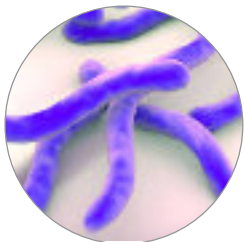
## Future Directions

After having grown significantly over the last few years, we will continue strengthening the clinical expertise with a new hire focused on solid organ transplant infectious diseases. Collaboration within and across divisions and departments, as well as quality improvement, will continue to be goals for the division.

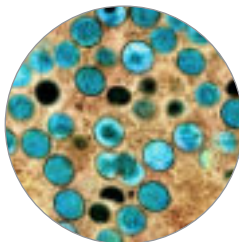
Our research direction continues to be randomized trials and observational studies, systematic reviews, diagnostic and immunologic studies, and research in hospital epidemiology. We continue to work closely with local colleagues at McMaster doing bench (Michael G. DeGroote Institute for Infectious Disease Research) and pandemic (Global Nexus) research. ■



COVID 19



LYME DISEASE



MONKEY POX



Dr. Gerry Wright

100,000

TESTS in  
HQ TORONTO

PATIENT VISITS

19,500

## DIVISION REPORT

# Nephrology

### Educational Activities

The Division of Nephrology is composed of 19 nephrologists and two PhD research scientists. Our members care for patients with kidney disease and kidney transplant recipients. We continue to add to our specialized clinics in glomerulonephritis, vasculitis, conservative renal care, genetics, resistant hypertension and geriatric nephrology, delivering high-quality care according to best practices. In addition to the Hamilton academic hospital sites, we provide care in the neighbouring communities of Six Nations of the Grand River, Brantford, Niagara and Burlington. Six members of our faculty hold provincial leadership roles in Ontario Health, an agency created by the Government of Ontario, with a mandate to provide patients with chronic kidney disease (CKD) and transplant with the best possible care. The growth in our regional renal program, specialty clinics and patient population has contributed to the recruitment of two nephrologists and built upon the already strong foundation of education and research in our division.

Dedication to teaching continues to be a strength in the Division of Nephrology. Undergraduate and postgraduate medical education in the Department of Medicine continues to be a priority, and we offer a breadth of in-patient, outpatient and research mentorship opportunities to medical students and internal medicine residents. One of the educational strengths in our division is a well-organized rotation for internal medicine trainees that includes dedicated teaching and a strong curriculum in simulated procedures and evaluation exercises, such as the renal objective structured clinical examination (OSCE) developed by our faculty.

The nephrology fellowship program continues to be well-recognized and competitive, with over 20 residents, fellows and clinical scholars in the program. There are also one-year fellowship programs in geriatric nephrology, genetics, home dialysis and

**20**  
**RESIDENTS, FELLOWS**  
**+ SCHOLARS**

glomerulonephritis, which have attracted fellows annually. The solid organ transplant fellowship continues to have dual certification as an area of focused competence training program with the Royal College of Physicians and Surgeons of Canada (RCPSC) and by the American Society of Transplantation (AST). In addition to our faculty's teaching contributions to our fellowship programs, many faculty members also have leadership roles in fellowship, curriculum and exam development with the RCPSC.

Our division also offers innovative educational opportunities created by our faculty. For example, our faculty relaunched their high-fidelity, multi-professional peritoneal dialysis catheter insertion simulation course in the McMaster PD Access Centre. Nephrologists and nurses from across Canada registered for this interactive and hands-on course and provided very positive feedback.



**Dr. Christine Ribic**  
**MD MSc FRCPC**  
**Division Director**

## Research Programs

The division's major academic focus continues to be the study of kidney disease at both basic science and patient levels. Closely affiliated with the Division of Nephrology, the Hamilton Centre for Kidney Research

(HCKR) brings clinical and biomedical researchers together with the goal of improving the lives of people with CKD through leading-edge research. The HCKR includes three primary clinician-scientists and two PhD scientists. HCKR investigators currently receive approximately \$1.4 million per year in peer-reviewed research funding.

Divisional members have published more than 200 peer-reviewed original research publications over the past five years, with substantial funding from CIHR and other prestigious granting agencies.

Clinical research continues to thrive in the division. The division is home to one of the largest randomized controlled trials ever undertaken in nephrology – the Aldosterone Blockade for Health Improvement Evaluation in End-Stage Renal Disease (ACHIEVE) trial. This international, placebo-controlled randomized controlled trial is determining if spironolactone (an inexpensive, widely available mineralocorticoid receptor antagonist) reduces cardiovascular deaths and heart failure hospitalizations in patients with kidney failure. This study was one of the 11 successful studies across Canada to be additionally funded and recognized by the Accelerating Clinical Trials (ACT) Consortium as high quality in design and execution with a high probability of leading to meaningful impact for patients.

We also have ongoing research that focuses on the use of large databases to understand clinically important associations and improve the care of patients with kidney disease. Our researchers have also secured CIHR funding to use

administrative data to examine dialysate bicarbonate settings on patient outcomes, in collaboration with the Institute for Clinical Evaluative Sciences Kidney, Dialysis and Transplantation Research Group (ICES-KDT).



*Our goal is to be the pre-eminent nephrology program for clinical research in Canada.*

Biomedical research being done by several divisional

members continues to be widely recognized. A major unmet need is the lack of therapeutic treatment strategies aimed at vascular calcification in patients with CKD, which significantly accelerates the development and progression of cardiovascular disease. Our researchers have recently discovered several cellular factors that contribute to vascular calcification and are potential targets for

therapeutic intervention. Their work is widely acknowledged; one publication focused on the evidence of how caffeine can help fight cardiovascular disease was ranked in the top 25 most downloaded life and biological sciences articles published in *Nature Communications* in 2022.



## Major Achievements

Our renal transplant program continues to grow both in numbers and scope, providing care to over 1,500 transplant patients. We are now the second-largest transplant program in Ontario and continue to expand our deceased donor and living

donor programs. We have also contributed to innovation and leadership in solid organ transplantation at the provincial and national levels. For example, the one-day living donor

assessment clinic, which is aimed at increasing the efficiency of donor work-up, was the first of its kind in Canada and is now the model for other programs across the country.

1,500

TRANSPLANT  
PATIENTS

We have been leaders in promoting new policies and funding structures at the provincial and national level, with our faculty holding various medical lead and director roles at the Trillium Gift of Life Network, Ontario Health and Canadian Blood Services. We continue to be key leaders in new initiatives in Canada, including the

"Willing to Cross Program," which will increase opportunity for those patients who are most difficult to transplant due to

increased immunological risk. We continue to advocate for our patients through the National Kidney Paired Exchange Program and locally with collaborations and new initiatives aimed at increasing kidney transplantation. Our faculty members are invited to speak at national conferences and have led educational initiatives for trainees in developing the curriculum for the National Canadian Transplant Fellows Symposium.

The division also now has an established nephrology genetics clinic that provides early genetic testing, which could point to a specific diagnosis of the underlying cause of CKD and ultimately prevent or delay progression to kidney failure. This innovative specialized clinic dovetails with the translational research work in our nephrogenetics laboratory to examine new therapeutic targets for CKD.

In addition to research, many division members are renowned leaders in education, quality improvement and patient safety, which have provided education opportunities for both learners and faculty. Our joint faculty-fellow patient safety rounds exemplify innovation in our division, and it is now being implemented across other divisions in the Department of Medicine.

PEER-REVIEWED  
Research Funding for  
Hamilton Centre for  
Kidney Research

\$1.4M



19

NEPHROLOGISTS

2

PhD Research  
Scientists

200+

PEER-REVIEWED  
PUBLICATIONS



The division is home to one of the largest randomized controlled trials ever undertaken in nephrology – the Aldosterone Blockade for Health Improvement Evaluation in End-Stage Renal Disease (ACHIEVE) trial

## Future Directions

The division continues to be dedicated to building innovative clinical, educational and research initiatives. We have dramatically expanded our clinical specialty clinics and expertise, which have formed a strong foundation for new fellowship training programs and research opportunities. We have also partnered with other divisions to expand patient care and education and have built a geriatric nephrology fellowship program. Additional collaborations include the already-established combined internal medicine and nephrology hypertension clinic and the onco-nephrology clinic that will launch in the new year. These collaborations will also expand our offerings of fellowship training programs and research opportunities. As our patient population grows in number and complexity, we have grown in cross-disciplinary collaboration and will continue to do so.

Our goal is to be the pre-eminent nephrology program for clinical research in Canada and attract national and international future clinical trialists who seek additional training. Furthermore, by increasing research collaborations between divisional members and adding a PhD researcher, we have begun to build new and exciting opportunities in translational research that may lead to novel therapies in the management of CKD and its complications.

The Division of Nephrology continues to be a cohesive group that is jointly invested in delivering high-quality, patient-partnered care. Our academic pursuits will always focus on improving the lives of people with kidney disease through clinical care, education of our learners and high-quality research that **together will result in earlier diagnoses, better treatments and, ultimately, prevention of kidney disease.** ■

## DIVISION REPORT

# Neurology

The Division of Neurology is one of the largest divisions in the Department of Medicine with 36 full-time and 25 part-time and affiliated academic faculty. It provides tertiary neurological consultation for over 2.3 million people, the largest regional service area in Ontario.

### Education

The Division of Neurology helps coordinate and teach the neuroscience curriculum and clinical skills in the MD undergraduate program. Many of the faculty are tutors.

The neurology residency training program has 20 residents, increasing to 25 over the next few years. All its graduates were successful in passing their Royal College of Physicians and Surgeons examinations. The residency program received full accreditation from the Royal College in 2023 and was one of the few programs with no identified areas of improvement. The division also offers an internationally recognized stroke fellowship program.

The training program has a robust teaching curriculum, which includes a problem-based academic half-day, daily teaching rounds including subspecialty rounds in electroencephalograms and movement disorders, stroke journal club, neuroradiology rounds, stroke grand rounds, neuroscience grand rounds, an annual resident's research day, and neuroscience half-day.

### Research

The division's stroke program is involved in multiple clinical trials, including testing acute stroke neuroprotective agents and

*The residency program received full accreditation... and was one of the few programs with no identified areas of improvement.*

endovascular interventions, as well as preventing stroke in patients with atrial fibrillation after intracerebral hemorrhage.

The multiple sclerosis and movement disorders programs are also involved in multiple clinical trials. Basic science research continues in amyotrophic lateral sclerosis, neuromuscular disorders and the neural mechanisms of consciousness.



**Dr. Demetrios Sahlas**  
MS&C MD FRCPC  
Division Director

## Major Achievements

The neurology training program has become a mature and coveted program that graduates excellent neurologists, many of whom pursue subspecialty fellowships. Several new faculty have been recruited in the areas of epilepsy and stroke, with plans for additional recruitment at all major teaching sites.

## Future Directions

The Division of Neurology will continue to focus on education and research as priorities for its academic mission. Based on growing regional needs, multiple sclerosis and movement disorders are top priority areas for recruitment and development. The division will also develop a surgical program for epilepsy, in concert with neurosurgery. ■

36

FULL TIME STAFF

25

PART TIME STAFF

20

RESIDENTS

PROVIDES TERTIARY  
Neurological  
Consultations for

2.3M

PEOPLE

## DIVISION REPORT

# Physical Medicine & Rehabilitation

It has been a terrific 3.5 years since I started as the division director and chief of Physical Medicine and Rehabilitation (PM&R).

Getting to know the division's members was challenging during the pandemic, but we connected and ensured that our goals were aligned. With that in mind, the division has agreed on a strategic plan that served as our compass for the first three years of my leadership. We have revisited the plan and found that most of the initiatives we set out to accomplish are now running smoothly. In the newly refreshed strategic plan, we remain committed to optimizing the health and function of our patients with disabilities, while providing educational and research opportunities for medical students, residents and fellows.

## Clinical Services

We continue to provide exceptional clinical services to a wide variety of patients with disabilities, including those recovering from stroke, spinal cord injury, brain injury, amputation and cancer, as well as those with bone, muscle and joint issues. Clinical services provide 40,000 outpatient visits a year, and the in-patient program has a complement of 120 beds. Most clinical services are delivered at the Regional Rehabilitation Centre located on the Hamilton General Hospital campus. Additional services are provided at the Juravinski Hospital, St. Joseph's Healthcare Hamilton, St. Peter's Hospital and McMaster University Medical Centre.

We are actively recruiting new faculty to support in-patient and outpatient programs. With an aging population and technological advances, we expect to be busy meeting the needs of the populations that we serve.

## Undergraduate and Residency Training Programs

Our residency program has continued to thrive under the leadership of Dr. Simran Basi. It is governed by the Residency Program Committee and is one of the largest PM&R programs in Canada, with 17 residents. The residency introduced Competence by Design in July 2020, providing a new platform for evaluation and feedback for residents during their training. Along the way, many changes were made to the program to meet the learning needs of our residents, including the addition of ultrasound training. I am thrilled to report that the Royal College of Physicians and Surgeons of Canada accreditation this past spring was successful, and faculty remain committed to making the program the best educational experience for our learners.



**Dr. Nora Cullen**  
MD MSc FRCPC  
Division Director  
and Chief

PM&R is highly sought after by medical students as a place to explore the specialty, meet the clinical faculty and consider PM&R as a career option. Our faculty have supervised many electives and student research projects.

## Fellowships

Following residency training, some PM&R physicians receive an extra year of subspecialty training through a PM&R fellowship. Dr. Agnes Chmiel has led this successful fellowship program since 2020. We have seen a remarkable flow of



individuals from other countries train in our program, ultimately returning to their home countries to become local leaders in their field.

## Research

The division hired a post-doctoral fellow in 2021 to assist with the research demands of our residents and faculty. Dr. Jessica Murphy has been an incredible catalyst for our academic



work, turning our clinical questions into hypotheses and study designs. We are currently facilitating research projects within the division to ensure that studies advance knowledge about optimal care of patients with disabilities. Our faculty have received multiple grants, with projects in progress and data being collected. Our faculty and residents have presented abstracts and posters at national and international research meetings, including the Canadian Association of PM&R and the International Brain Injury Association.

## Quality

Dr. Amanda Mayo, an expert in quality improvement (QI), joined the division last year. Dr. Mayo is helping us navigate our QI projects and ensuring they are implemented in the best possible way. Plan-Do-Study-Act is becoming embedded in our culture and residency program. One of our PGY5 residents has obtained a master's degree in QI, and we are invested in her success in helping guide the QI agenda.



## Future Directions

We have made enormous strides in our academic pursuits over the last three years, and a recent refresh of the strategic plan has given us a blueprint for the coming years. Technology is top of mind as we delve into the world of artificial intelligence. Generous donations of an exoskeleton robot and a 3D printer for creating prosthetic devices are launching us into new territory. I am excited about the future of PM&R at McMaster University. ■



40,000 OUT-PATIENT VISITS PER YEAR

## DIVISION REPORT

# Respirology

The Division of Respirology is the primary provider for tertiary care service in southern Ontario. The faculty and staff working in the division showed extraordinary resilience and passion during the COVID-19 pandemic, which hit respirology particularly hard. We embraced virtual care quickly and continued to provide excellent care to all our chronic and acute patients during that time. COVID-related closures of programs and clinics accelerated the transition to providing virtual care for respiratory rehabilitation. The virtual rehab post-discharge for patients with chronic obstructive pulmonary disease (COPD) was also launched during this time as a clinical/research collaboration and underscores the role of our divisional faculty caring for the most vulnerable populations. We offer many specialty clinics that attract patients from our region and beyond. These include our severe airway disease and interstitial lung disease clinics and, more recently, the pulmonary hypertension and respirology/infectious disease clinics (all at St. Joseph's Healthcare), the bronchiectasis clinic at Hamilton General Hospital and the adult cystic fibrosis clinic at the McMaster site.

## Faculty

Dr. Ciaran Scallan joined the division after completing additional training in the field of lung transplant in Toronto and interstitial lung disease in Seattle. He has established a lung satellite clinic at St. Joseph's Healthcare, which handles most of the transplant referrals to the Toronto Lung Transplant Program for southwestern Ontario. The clinic offers comprehensive pre-transplant assessment, transplant-related pulmonary rehabilitation and post-transplant care. Dr. Scallan is also involved in the interstitial lung disease clinics and has an active research program focused on patient-reported outcomes.

In 2022, we said a retirement farewell to three of our longest-serving faculty colleagues, Drs. Lori Whitehead, Stewart Pugsley and Peter Powles.

Dr. Kjetil Ask, who has led the research activities in molecular lung imaging and created the "Demystifying Medicine" undergraduate program, left the division as full-time faculty to pursue an opportunity in industry.



## Educational Activities

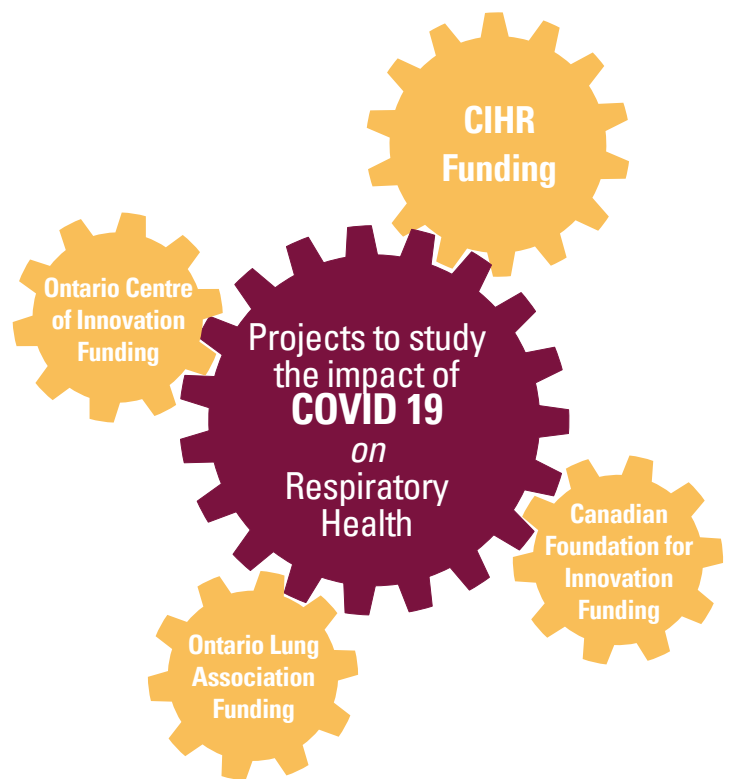
Under the leadership of program director Dr. Rebecca Amer, the respirology residency training program continued to attract top trainees from Canada and the Middle East. Dr. Amer then took on a clinical leadership role within St. Joseph's Healthcare, and Dr. Muntasir Saffie was appointed program director in July 2022. Our capacity to provide a respirology training experience for rotating residents from other postgraduate programs, such as internal medicine, anesthesia, radiation oncology, and head and neck surgery, has been considerably enhanced by offering electives at Hamilton General Hospital and Juravinski Hospital. In March 2022, Dr. Helen Neighbour became chair of clerkship and concept integration and review for the undergraduate medical education program.

## Research Programs

Research within the Division of Respiriology continues to be very diverse. Dr. Dawn Bowdish became a member of the division in 2021 and has been appointed executive director of the Firestone Institute for Respiratory Health. Her research includes immune aging and lung infections, covering disease models, microbiome diversity and epidemiology of infections, particularly in the elderly. The sputum lab at the Firestone Institute for Respiratory Health, under the leadership of Dr. Param Nair, is world-renowned and attracts many clinical trials aimed at personalized medicine to treat severe asthma and COPD. Dr. Imran Satia is active in clinical asthma research and has established a strong research and clinical program in chronic cough. The labs of Drs. Jeremy Hirota and Martin Kolb explore the cellular and molecular biology of pulmonary fibrosis with substantial translational research. The interstitial lung disease program has four faculty members (Drs. Gerard Cox, Nathan Hambly, Kolb and Scallan) who are leading contributors to the Canadian Registry for Pulmonary Fibrosis, which follows more than 5,000 patients across Canada. Under the direction of Dr. Hambly, the pulmonary hypertension program has become a major recruitment site for the Canadian Pulmonary Hypertension Registry, one of the largest registries in the world. Despite the restrictions imposed by the COVID-19 pandemic, the number of pre-clinical and early clinical trials being conducted in this field are increasing every year. Several of our researchers are also conducting projects to study the impact of COVID-19 on respiratory health. Funding for these research programs is provided by CIHR, Canadian Foundation for Innovation, Ontario Lung Association, Ontario Centre of Innovation and other public agencies.

## Future Directions

The development of collaborative clinical, educational and research programs across the City of Hamilton and within the larger region remains the major goal of our division. The plan is on track and will result in better integration between the sites and their respective strengths. Focused recruitment of new faculty with an interest in clinical research will assure our division maintains its strong academic profile. ■



5,000

PATIENTS  
in Canadian Registry for  
Pulmonary Fibrosis across  
Canada

## DIVISION REPORT

# Rheumatology

The Division of Rheumatology at McMaster remains dedicated to education, research and advanced clinical care. We continue to collaborate and be recognized locally, nationally and internationally.

### Educational Activities

The postgraduate training program remains very successful under the guidance of the program director, Dr. Kim Legault, and the program coordinator, Rennée Tremblay. Rheumatology continues to attract residents of the highest calibre to its training program. In 2023, with Dr. Legault and Tremblay at the helm, the rheumatology residency program successfully underwent an external review by the Royal College of Physicians and Surgeons of Canada. The Royal College required very little to no changes to the program and highly complimented its dedication to educating future rheumatologists.

Dr. Faiza Khokhar leads multiple educational initiatives as a Musculoskeletal (MSK) Boot Camp organizer/supervisor and clinical skills preceptor for medical students. Dr. Rajendra Carmona continues to guide undergraduate education as director of Medical Foundation 4 and MSK clinical skill coordinator for the MD program.

Dr. Arthur Lau is coordinator for the PGY 1–3 residents rotating through rheumatology as electives and continues to help residents learn about rheumatology as it fits into internal medicine.

Over the past five years, we have established several fellowships, including the vasculitis fellowship, which I oversee as program director, the MSK ultrasound fellowship and scleroderma fellowship, overseen by Dr. Maggie Larché, and most recently the lupus fellowship, led by Dr. Kostas Tselios.

Dr. Legault has been remarkable in her education role as co-chair of the Medicine Subspecialty Residency Program Directors' Committee, which has made major strides in collaborating with the other subspecialty training programs in internal medicine to share resources, educational materials and academic half-days.

A circular portrait of Dr. Nader Khalidi, a man with dark hair and glasses, wearing a white shirt and a dark tie. In the top right corner of the portrait, there is a small circular inset showing a close-up of a hand with a red, inflamed joint, likely representing a rheumatological condition.

**Dr. Nader Khalidi**  
MD, FRCPC  
Division Director

### Research

Research activities have continued to be productive in many fields, including osteoporosis, rheumatoid arthritis, psoriatic arthritis, MSK ultrasound, systemic lupus erythematosus (SLE), scleroderma and vasculitis.

Research activities have continued to be productive in many fields, including osteoporosis, rheumatoid arthritis, psoriatic arthritis, MSK ultrasound, systemic lupus erythematosus (SLE), scleroderma and vasculitis.

McMaster is linked to cutting-edge research through its involvement with international consortiums, including the Canadian Network for Improved Outcomes in SLE, the Canadian Scleroderma Group, the Canadian Network for Research on Vasculitides and the North American Vasculitis Clinical Research Consortium.

The McMaster/Western University Resident Research Day was successfully held on October 14, 2022, highlighting and promoting research for learners in rheumatology. This event attracted 40 to 50 attendees and featured multiple posters and oral presentations.

## Students Mentored in Research Studies

### INVOLVEMENT IN INTERNATIONAL CONSORTIUMS:

- Canadian Network for Improved Outcomes in SLE
- Canadian Scleroderma Group
- Canadian Network for Research on Vasculitides
- North American Vasculitis Clinical Research Consortium

Dr. Mark Matsos consistently rates as a teacher of excellence and has worked tirelessly in educational administration. He served for several

years on the Rheumatology Postgraduate Education Committee. He serves as the Hamilton Health Sciences head of service and is helping revamp the outpatient clinical space to further accommodate our call for an increase in the number of rheumatologists at McMaster.

Under the guidance of Dr. Tselios, the division has established a lupus database and biobank with the resources of Population Health Research Institute.

Dr. Maggie Larché continues her work in scleroderma and imaging in inflammatory arthritis. Her research attracts a high number of students, residents and fellows; in the last two to three years alone, she has mentored 14 phenomenal students involved in research studies. She continues to serve as the St. Joseph's Healthcare Hamilton head of service and has successfully brokered a move of clinical space to St. Joseph's Healthcare, where we hope to recruit another new divisional member.

Dr. Raj Carmona has been a pillar of the ongoing success of the Clinical Day in Rheumatology. Our 2023 event was an in-person conference and educated all learners to improve their knowledge base of rheumatology in clinical care.

## Major Achievements

McMaster campuses have developed to expand educational experiences and opportunities in rheumatology. In the past year, we have officially established and expanded these campuses, which now include Mississauga (led by Drs. Raj Carmona, Mary-Clair Yelovich and Andrew Chow), Kitchener/Waterloo (led by Drs. Yan Yeung, Sandeep Dhillon and Sabrina Lue) and St. Catharines (led by Drs. June Lee, Saeed Shaikh, Shahna Tariq and Rajwinder Dhillon). Drs. Sankalp Bhavsar and Sanjay Dixit (Burlington), Dr. Amina Lodhi (Oakville), Dr. Leilani Fomorca (Milton) and Dr. Viktoria Pavlova (Hamilton) remain committed to providing education and city-wide service. The many associated clinical faculty in Hamilton, Burlington and Milton also provide community learning experiences. These targeted expansions will tremendously increase the numbers of trainees exposed to rheumatology and contribute to increasing the number of rheumatology fellows.



As a testament to superb teaching, Dr. Pauline Boulos received the 2023 McMaster Subspecialty Faculty Teaching Award, and Dr. Maggie Larché received the 2023 McMaster Department of Medicine Award for Undergraduate Teaching.

On November 25, 2022, the division had a successful 7th Annual Clinical Day in Rheumatology, entitled "The Pearls You Need to Know."



Dr. Alfred Cividino  
2023 Ontario Rheumatology  
Association Distinguished  
Member Award

Dr. Arthur Lau has taken over as Actavis Chair in Rheumatology for Better Bone Health.

Dr. Alfred Cividino recently retired after many successful years as director of our division. He received the 2023 Ontario Rheumatology Association Distinguished Member Award, which recognizes rheumatologists who have led exemplary careers.

## Future Directions

The Division of Rheumatology's vision is to continue to be recognized for leadership and innovation in education, research and interdisciplinary patient-centred care. Education remains key to garnering interest in rheumatology. We will continue to build upon our past to create and expand these opportunities to help address the great need for increased human resources in rheumatology. ■



**Zaki Alhashimalsayed,**  
Internal Medicine



**Ghazal Haddad**  
Dr. Paul O'Byrne Research Grant recipient

## Resident Research Days

### Department of Medicine Annual Report 2021-2023

*embracing recovery  
reimagining futures  
reconnecting communities*



**Sharon Gui**  
Christopher Patterson Research Grant recipient



**Justin Senecal,**  
Panju Professionalism  
award winner



**Laura Spatafora, Keon Maleki-Yazdi, Barbara Gunka**  
Internal Medicine



**Grant recipient Arden Azim, Dr. Christine Ribic**



**Dr. Darryl Leong,**  
Research Director



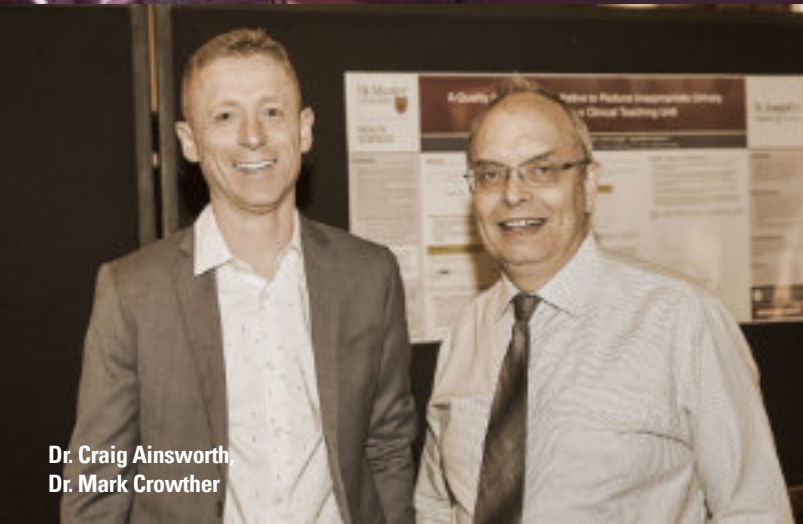
**Shamal Khattak, Kelsey MacEachern,**  
Internal Medicine



**Julian Li,**  
Internal Medicine



**Olivia Cook,**  
Endocrinology, centre,  
presented with the  
Ginsberg Award by  
Dr. Kim Legault, left and  
Dr. Meera Luthra



**Dr. Craig Ainsworth,**  
**Dr. Mark Crowther**



**Dr. Emilie Belley-Côté, Dr. William McIntyre**

# 32nd Annual Resident Research Day in Medicine 2021

The Department of Medicine celebrated the 32nd Annual Resident Research Day virtually on May 25 and 26, 2021. Sixty-seven abstracts were submitted and reviewed by Dr. Christine Ribic, Research Director, and Drs. Siraj Mithoowani, Matthew Lanktree and Mark Matsos. Judging was conducted by Drs. David Cohen, Amber Molnar and Anne Holbrook (Scientific); Drs. Amna Ahmed, Rebecca Amer and Jeremy Adams (Clinical); and Drs. Kevin Woodward, Joanna Dionne and Anna Mathew (Subspecialty).

## 2021 RESIDENT RESEARCH GRANT RECIPIENTS

DR. PAUL O'BYRNE RESIDENT RESEARCH GRANT	SUPERVISOR	PROJECT TITLE
Dr. Brittany Dennis, PGY2	Dr. Deborah Cook	Dying During the Pandemic: Preserving Compassionate End of Life Care with the Three Wishes Project
DR. PARVEEN WASI RESIDENT RESEARCH GRANT IN MEDICAL EDUCATION	SUPERVISOR	PROJECT TITLE
Dr. Arden Azim, PGY2	Dr. Matt Sibbald	Connecting Interprofessional Competencies to CanMEDS: Towards a Blueprint of IPE in PGME
DR. CHRISTOPHER PATTERSON RESIDENT RESEARCH GRANT	SUPERVISOR	PROJECT TITLE
Dr. Mercedes Lupo, PGY1	Dr. Chris Patterson	"How can we help you?" Asking older adults how to improve hospital stays: a mixed methods study
HAMILTON HEALTH SCIENCES RESIDENT RESEARCH GRANT IN PATIENT SAFETY	SUPERVISORS	PROJECT TITLE
Dr. Inna Berditchevskaia, PGY1	Dr. Andrew Cheung and Dr. Lisa Kim	Reducing Unnecessary Supplemental Oxygen Usage on Medicine Wards at St. Joseph's Healthcare Hamilton: A Quality Improvement Project
SJHH PGY1 QUALITY IMPROVEMENT GRANT	SUPERVISORS	PROJECT TITLE
Dr. Mercedes Lupo and Dr. Achieng Tago Dr. Rishi Sharma and Dr. Tina Zhou		Reducing sedative-hypnotic use for older adults in hospital Urinary Catheterization

Thank you to the Grant Review Committee: Drs. Hertzel Gerstein, Seychelle Yohanna, Wendy Ye, David Putman, Joye St. Onge. Subspecialty Grants were reviewed by Drs. Siraj Mithoowani, Matthew Lanktree, Seychelle Yohanna, Zubin Punthakee, Ankit Garg and Paula Pop.

ORAL PRESENTATIONS GOLD MEDAL	SUPERVISOR	PROJECT TITLE
Aram Karkar, PGY2	Dr. Hira Mian	Maintenance Therapy In Transplant Ineligible Adults With Newly-Diagnosed Multiple Myeloma: A Systematic Review And Meta-Analysis
ORAL PRESENTATIONS SILVER MEDAL	SUPERVISOR	PROJECT TITLE
Kumait Al Lawati, PGY5 Critical Care	Dr. Bram Rochweg	Efficacy and Safety of Tranexamic Acid in Acute Traumatic Brain Injury. A Systematic Review and Meta-analysis of Randomized Controlled Trials
ORAL PRESENTATIONS BRONZE MEDAL	SUPERVISOR	PROJECT TITLE
Meherzad Kutky, PGY5 Nephrology	Dr. Seychelle Yohann	A pilot study to reduce off-label telemetry on the Nephrology Unit
SCIENTIFIC POSTER MEDAL FIRST	SUPERVISOR	PROJECT TITLE
Tauben Averbuch, PGY2	Dr. Harriette Van Spall	The association between socioeconomic status, sex, race and in-hospital mortality among patients hospitalized for heart failure
SCIENTIFIC POSTER MEDAL SECOND	SUPERVISOR	PROJECT TITLE
Sama Anvari, PGY1	Dr. Aristithes Doumouras	Iron Supplementation Following Bariatric Surgery: A Systematic Review of Current Strategies
SCIENTIFIC POSTER MEDAL SUBSPECIALTY	SUPERVISOR	PROJECT TITLE
Clara Lu, PGY4 General Internal Medicine	Dr. Madeleine Verhovsek	Race-Based Data Collection Among COVID-19 Inpatients: A Retrospective Chart Review

CLINICAL POSTER MEDAL FIRST	SUPERVISOR	PROJECT TITLE
Kate Lovatt, PGY2	Dr. Mark Crowther	Heparin-induced-thrombocytopenia in first trimester of pregnancy: a rare complication and clinical therapeutic dilemma
CLINICAL POSTER MEDAL SECOND	SUPERVISOR	PROJECT TITLE
Brandon Budhram, PGY2	Dr. Helen Neighbour	Isolated Respiratory Failure as the Presenting Feature of Myasthenia Gravis: A Case Report and Review of the Literature
CLINICAL POSTER MEDAL SUBSPECIALTY	SUPERVISOR	PROJECT TITLE
Laura Goodliffe, PGY4 Cardiology	Dr. Craig Ainsworth	A Sticky Situation: Management of left atrial appendage thrombus due to atrial fibrillation in a patient with Quebec platelet disorder
<b>JEFF GINSBERG SUBSPECIALTY RESIDENT AWARD.</b>		

Demonstrating excellence in professionalism, leadership and education. This award has been made possible by a donation from a patient of Dr. Jeff Ginsberg. Candidates are recognized for consistently displaying outstanding performance in clinical rotations, excellence in teaching, research and professionalism and commitment to academic achievement.

**Recipients: Malik Farooqi, Respiriology | Laura Goodliffe, Cardiology**



# 33rd Annual Resident Research Day in Medicine 2022

The Department of Medicine gathered on May 18, 2022 to celebrate the 33rd annual Research Day. The abstract review committee composed of Dr. Darryl Leong, Research Director, Drs. Siraj Mithoowani and Jennifer Tsang, Deputy Research Directors and Dr. Noel Chan reviewed 71 submissions. Judging was conducted by Drs. Michael Walsh, Marie Pigeyre and Maura Marcucci (Scientific); Drs. Amna Ahmed, Imran Satia and Flavia Borges (Clinical); and Drs. Scott Brimble, Rick Ikesaka and Hertz Gerstein (Subspecialty).

## 2022 RESIDENT RESEARCH GRANT RECIPIENTS

DR. PAUL O'BYRNE RESIDENT RESEARCH GRANT	SUPERVISOR	PROJECT TITLE
Dr. Tyler Pitre, PGY2	Dr. Bram Rochweg	Meta-epidemiological studies of platform trials
DR. PARVEEN WASI RESIDENT RESEARCH GRANT IN MEDICAL EDUCATION	SUPERVISOR	PROJECT TITLE
Dr. Megan Smith-Uffen, PGY1	Dr. Hsien Seow	The ABCs of Serious Illness: Piloting a serious illness communication training curriculum among internal medicine residents
DR. CHRISTOPHER PATTERSON RESIDENT RESEARCH GRANT	SUPERVISOR	PROJECT TITLE
Dr. Matthew Patel, PGY1	Dr. Chris Patterson	Approach to Responsive Behaviours in Hospitalized Older Adults: A Retrospective Chart Review
HAMILTON HEALTH SCIENCES RESIDENT RESEARCH GRANT IN PATIENT SAFETY	SUPERVISORS	PROJECT TITLE
Dr. Tina Zhou, PGY2	Dr. Nathaniel Hawkins, UBC, Dr. Catherine Clase	Epidemiology and management of heart failure with concurrent DM in Canadian Primary care

Thank you to the Grant Review Committee: Drs. Mukul Sharma, Madhu Natarajan, Mercedes Lupo, Victoria David and Alexandra Papaioannou

ORAL PRESENTATIONS GOLD MEDAL	SUPERVISOR	PROJECT TITLE
Suk Joon (Michael) Ji, PGY1	Dr. Andrew McIvor, Dr. Paul Easton	Effect of Vilanterol Trifenatate/Fluticasone Furoate on Diaphragm Strength and Parasternal Intercostal Muscle Raw EMG Activity in Severe COPD
ORAL PRESENTATIONS SILVER MEDAL	SUPERVISOR	PROJECT TITLE
Tyler Pitre, PGY2	Dr. Bram Rochweg	The comparative effectiveness of vaso-active treatments for hepatorenal syndrome: a systematic review and network meta-analysis
ORAL PRESENTATIONS BRONZE MEDAL	SUPERVISOR	PROJECT TITLE
Mats Junek, PGY5 Rheumatology	Dr. Michael Walsh	The effects of initial treatment on relapse of ANCA-associated vasculitis in the PEXIVAS trial
SCIENTIFIC POSTER MEDAL FIRST	SUPERVISOR	PROJECT TITLE
Tauben Averbuch, PGY3	Dr. Harriette Van Spall	The Cost and Affordability of Heart Failure Pharmacotherapy in Ten High-, Middle-, and Low-Income Countries
SCIENTIFIC POSTER MEDAL SECOND	SUPERVISOR	PROJECT TITLE
Sama Anvari, PGY1	Dr. Aristithes Doumouras	Predictors of New Post-Operative Anemia after Bariatric Surgery
SCIENTIFIC POSTER MEDAL SUBSPECIALTY	SUPERVISOR	PROJECT TITLE
Radha Joseph, Claire Lee, PGY5 General Internal Medicine	Dr. Amna Ahmed, Dr. Amanda Huynh	Naloxone-In-Hand: A Quality Improvement Collaborative to Improve the Distribution of Take-Home Naloxone Kits to Inpatients with Opioid Use Disorder

CLINICAL POSTER MEDAL FIRST	SUPERVISOR	PROJECT TITLE
<b>Sze Wah (Samuel) Chan, PGY2</b>	Dr. Maria Tiboni	Paraneoplastic Cushing's Syndrome: A Case Report
CLINICAL POSTER MEDAL SECOND	SUPERVISOR	PROJECT TITLE
<b>Shannon Gui, PGY1</b>	Dr. Andrew Kapoor	Bartonella Henselae Infection with Concurrent Syphilis Positivity in a Patient with Unexplained Generalized Lymphadenopathy: A Case Report
CLINICAL POSTER MEDAL SUBSPECIALTY	SUPERVISOR	PROJECT TITLE
<b>Siobhan Deshauer, PGY5 Rheumatology</b>	Dr. Kostas Tselios	Cerebral Vasculitis as an Initial Presentation of Systemic Lupus Erythematosus
<b>JEFF GINSBERG SUBSPECIALTY RESIDENT AWARD.</b>		
<p>Demonstrating excellence in professionalism, leadership and education. This award has been made possible by a donation from a patient of Dr. Jeff Ginsberg. Candidates are recognized for consistently displaying outstanding performance in clinical rotations, excellence in teaching, research and professionalism and commitment to academic achievement.</p> <p><b>Recipients: Siobhan Deshauer, Rheumatology   Joanne Britto, Hematology</b></p>		



**Dr. Leslie Martin**, Internal Medicine Program Director, **Dr. Craig Ainsworth**, **Dr. Darryl Leong**, Research Director, **Dr. William McIntyre**, **Dr. Emilie Belley-Côté**

# Our Faculty 2021-2023

## Professor Emeritus

Adachi, Rick	Rheumatology
Banerjee, Sikhar	PM&R
Brain, Michael	Hematology
Barr, Ronald	Hematology
Churchill, David	Nephrology
Cividino, Alfred	Rheumatology
Clark, David	Clinical Immunology
Connolly, Stuart	Cardiology
Cox, Gerard	Respirology
Fallen, Ernest	Cardiology
Fuller, Hugh	GIM
Ginsberg, Jeffrey (Jeff)	Hematology and Thromboembolism
Grover, Ashok	Gastroenterology
Hart, Lawrence	Rheumatology
Hart, Robert	Neurology
Heddle, Nancy	Hematology
Heigenhauser, George	Respirology
Hirsh, Jack	Hematology
Holder, Doug	Cardiology
Hunt, Richard	Gastroenterology
Ingram, Alistair	Nephrology
Janssen, Luke	Respirology
Jones, Norman	Respirology
Kamath, Mark	Education and Innovation
Killian, Kieran	Respirology
Kwan, David	Cardiology
Ludwin, David	Nephrology
Mandell, Lionel	Infectious Diseases
McComas, Alan	Neurology
McKelvie, Robert	Cardiology
Molloy, William (Willie)	Geriatric Medicine
Montgomery, Erwin	Neurology
Morse, John	Respirology
Neufeld, Victor	GIM
Oczkowski, Wieslaw	Neurology
Patterson, Christopher	Geriatric Medicine
Powles, Peter	Critical Care
Rangachari, Patangi K.	Gastroenterology
Rodger, Ian	Respirology
Rosenthal, Donald	Dermatology
Sears, Malcolm	Respirology
Smaill, Fiona	Infectious Diseases
Smith, Kinsey	Nephrology
Stampfli, Martin	Respirology
Sweeney, George	Gastroenterology
Tanser, Paul	Cardiology
Turpie, Alexander	Hematology
Turpie, Irene	Geriatric Medicine
Upton, Adrian	Neurology
Werstiuk, Eva	Hematology
Whitehead, Lori	Respirology
Worster, Andrew	Emergency Medicine

## Professor: Full Time, Part Time

Anand, Sonia	Cardiology
Armstrong, David	Gastroenterology
Arnold, Donald	Hematology
Ashkar, Ali	Clinical Immunology
Austin, Richard	Nephrology
Azzam, Khalid	GIM
Bates, Shannon	Hematology
Bercik, Premysl	Gastroenterology
Bowdish, Dawn	Respirology
Bramson, Jonathan	Hematology
Brimble, Scott	Nephrology
Brooks, Dina	Respirology
Brown, William (Bill)	Neurology
Clase, Catherine	Nephrology
Collins, Stephen	Gastroenterology
Cook, Deborah	Critical Care
Crowther, Mark	Hematology
Cullen, Nora	PM&R
Demers, Catherine	Cardiology
Denburg, Judah	Clinical Immunology
Devereaux, Philip	Cardiology
Don-Wauchope, Andrew	Endocrinology
Douketis, James	GIM
Fox-Robichaud, Alison	Critical Care
Freitag, Andreas	Critical Care
Gagnon, Michelle	Geriatric Medicine
Gangji, Azim	Nephrology
Gauvreau, Gail	Respirology
Gerstein, Hertz	Endocrinology
Guyatt, Gordon	GIM
Haider, Shariq	Infectious Diseases
Hartmann, Michael	Education and Innovation
Hayward, Catherine	Hematology
Healey, Jeffrey	Cardiology
Holbrook, Anne	Clinical Pharmacology
Huizinga, Jan	Gastroenterology
Inman, Mark	Respirology
Jaeschke, Roman	Critical Care
Jolly, Sanjit	Cardiology
Jordana, Manel	Clinical Immunology
Katz, Paul	Geriatric Medicine
Kaushic, Charu	Clinical Immunology
Keith, Paul	Clinical Immunology
Kelton, John	Hematology
Khalidi, Nader	Rheumatology
Kolb, Martin	Respirology
Krepinsky, Joan	Nephrology
Larche, Margaret	Rheumatology
Larche, Mark	Clinical Immunology
Leber, Brian	Hematology
Leontiadis, Grigorios	Gastroenterology
Levine, Mitchell	Clinical Pharmacology
Liaw, Patricia Chia-Ying	Hematology

Lim, Wendy	Hematology	Shargall, Yaron	Respirology
Loeb, Mark	Infectious Diseases	Sharma, Mukul	Neurology
Lonn, Eva	Cardiology	Sherbino, Jonathan	Emergency Medicine
Lumb, Barry	Gastroenterology	Spencer, Frederick (Fred)	Hematology
Margetts, Peter	Nephrology	Steinberg, Greg	Endocrinology
Marshall, John	Gastroenterology	Stewart, Thomas (Tom)	Critical Care
Mazurek, Michael	Neurology	Sur, Ranjan	GIM
McIvor, Andrew Robert	Respirology	Surette, Michael	Gastroenterology
Meade, Maureen	Critical Care	Tarnopolsky, Mark	Neurology
Mehta, Shamir	Cardiology	Teo, Koon	Cardiology
Moayyedi, Paul	Gastroenterology	Tse, Frances	Gastroenterology
Montgomery, Alison	Cardiology	Turnbull, John	Neurology
Morillo, Luis	Neurology	Verdu, Elena	Gastroenterology
Mossman, Karen	Infectious Diseases	Verhovsek, Madeleine	Hematology
Nair, Param	Respirology	Walker, Irwin	Hematology-Malignant
Natarajan, Madhu	Cardiology	Wan, Yonghong	Hematology
Nesathurai, Shanker	PM&R	Warkentin, Ted	Hematology and Thromboembolism
O'Byrne, Paul	Respirology	Waserman, Susan	Clinical Immunology
Pai, Menaka	Hematology	Wasi, Parveen	Hematology-Malignant
Panju, Akbar	GIM	Weitz, Jeffrey (Jeff)	Hematology
Papaioannou, Alexandra	Geriatric Medicine	Welsford, Michelle	Emergency Medicine
Patel, Ameen	GIM	Werstuck, Geoff	Hematology
Prebtani, Ally	Endocrinology	Woo, Tricia	Geriatric Medicine
Rathbone, Michel	Neurology	Xing, Zhou	Clinical Immunology
Richards, Carl	Respirology	Yusuf, Salim	Cardiology
Sagar, Stephen	GIM	Zukotynski, Katherine	Education & Innovation-Nuc Med
Sahlas, Demetrios	Neurology	Brown, William (Bill)	Neurology
Schulman, Sam	Hematology	Dolovich, Myrna	Respirology
Schunemann, Holger	GIM	Katz, Paul	Geriatric Medicine
Sehmi, Roma	Respirology		

### Associate Professor: Full Time, Clinical, Part Time, Adjunct

Abu-Hilal, Mohannad	Dermatology	Chagla, Zain	Infectious Diseases
Acosta Velez, Juan-Gabriel	Cardiology	Chakroborty, Amitabha	GIM
Ahmed, Amna	GIM	Chan, Noel	Hematology
Ainsworth, Craig	Cardiology	Chen, Jihong	Gastroenterology
Alhazzani, Waleed	Critical Care	Cheung, Jason	GIM
Allaby, Cheryl	Geriatric Medicine	Chmiel, Agnes	PM&R
Amer, Rebecca	Respirology	Chui, Betty	GIM
Amit, Guy	Cardiology	Chum, Marvin	Neurology
Baker, Steven	PM&R	Conen, David	Cardiology
Baw, Bandar	Emergency Medicine	Connolly, Barbara	Neurology
Beauchamp, Marla	Respirology	Cowan, David	Geriatric Medicine
Belley-Cote, Emilie	Cardiology	Deng, Zhihui (Joy)	PM&R
Bhagirath, Vinai	Hematology	Dickhout, Jeffrey	Nephrology
Bobba, Raja	Rheumatology	Divakaramenon, Syamkumar	Cardiology
Braga, Manoela	Endocrinology	Dorasamy, Punginathn	GIM
Brandt-Vegas, Daniel	GIM	Duong, Mylinh	Respirology
Brozek, Jan	Clinical Immunology	Eikelboom, John	Hematology
Catanese, Luciana	Neurology	El-Helou, Phillipe	Infectious Diseases

## Associate Professor: Full Time, Clinical, Part Time, Adjunct

Emerson, Claudia	Education and Innovation	Narula, Neeraj	Gastroenterology
Fraser, Graeme	Hematology	Nazy, Ishac	Hematology
Ganame, Javier	Cardiology	Neary, John	GIM
Ganguli, Subhas	Gastroenterology	Neighbour, Helen	Respirology
Gilani, Ammar	Neurology	Ng, Kuan Huei (Kelvin)	Neurology
Grad, Sharon	PM&R	Oczkowski, Simon	Critical Care
Greenwald, Eric	Gastroenterology	O'Shea, Tim	Infectious Diseases
Gross, Peter	Hematology	Panju, Mohamed	GIM
Gundy, Serena	GIM	Pardhan, Alim	Emergency Medicine
Guzman, Juan	GIM	Pare, Guillaume	Endocrinology
Halder, Smita	Gastroenterology	Perera, Kanjana	Neurology
Hambly, Nathan	Respirology	Perri, Dan	Clinical Pharmacology
Hanmiah, Raj	GIM	Piessens, Eva	Infectious Diseases
Harper, William	Endocrinology	Pinilla Echeverri, Natalia	Cardiology
Hirota, Jeremy	Respirology	Pinto Sanchez, Maria (Ines)	Gastroenterology
Ho, Joanne	Geriatric Medicine	Puglia, Marco	Gastroenterology
Hunt, Dereck	GIM	Punthakee, Zubin	Endocrinology
Hynes, Alexander	Gastroenterology	Rabbat, Christian	Nephrology
Ikesaka, Rick	Hematology	Raghavan, Natya	Respirology
Iorio, Alfonso	Hematology	Raza, Samir	GIM
Jones, Graham	Critical Care	Ribas, C. Sebastian	Cardiology
Joseph, Philip	Cardiology	Ribic, Christine	Nephrology
Karachi, Tim	Critical Care	Roberts, Jason	Cardiology
Karbassi, Arsha	Cardiology	Rochweg, Bram	Critical Care
Khalid, Zahira	GIM	Rodriguez, Amadeo	Neurology
Khan, Khurram	Gastroenterology	Rudkowski, Jill	Critical Care
Kim, Paul	Hematology	Rullo, Anthony	Hematology
Kraeker, Christian	GIM	Saffie, Muntasir	Respirology
Kraus, Peter	Critical Care	Salehian, Omid	Cardiology
Kretz, Collin	Hematology	Salena, Bruno	Gastroenterology
Lau, Arthur	Rheumatology	Schwalm, Jon-David	Cardiology
Legault, Kimberly	Rheumatology	Shapiro, Michelle	Neurology
Leong, Darryl	Cardiology	Sheth, Tej	Cardiology
Lepic, Kylie	Hematology-Malignant	Shoamanesh, Ashkan	Neurology
Leto, Daniela	Infectious Diseases	Shosha, Eslam	Neurology
Li, Juliana (Yanan)	Respirology	Shroff, Anjali	Infectious Diseases
Lichty, Brian	Hematology	Sibbald, Matthew	Cardiology
Linkins, Lori-Ann	Hematology	Simms, Taryn	Respirology
Luthra, Meera	Endocrinology	Singhal, Nishma	Infectious Diseases
Magloire, Patrick	Cardiology	Soth, Mark	Critical Care
Main, Cheryl	Infectious Diseases	Sovran, Steven	Endocrinology
Mallin, A. Rebecca	Emergency Medicine	Spaziani, Robert	Gastroenterology
Martin, Leslie	GIM	Srivaratharajah, Kajenny	GIM
Mathew, Anna	Nephrology	St. Onge, Joye	Geriatric Medicine
Matsos, Mark	Rheumatology	Talman, Marianne	GIM
Menkis, Alan	Cardiology	Tandon, Vikas	Cardiology
McInnes (nee Yakubovich), Natalia	Endocrinology	Thabane, Lehana	Education and Innovation
McLeod, Heather	Geriatric Medicine	Thompson, Stephen	Neurology
McMullin, Joseph	GIM	Tiboni, Maria	GIM
Menon, Suresh	Neurology	To, Karen	Nephrology
Mertz, Dominik	Infectious Diseases	Treleaven, Darin	Nephrology
Miller, Matthew	Nephrology	Tsang, Jennifer Lai-Yee	Critical Care
Misiaszek, Brian	Geriatric Medicine	Tsang, Michael	Cardiology
Mohammed, Naufal	GIM	Tsoi, Keith	Gastroenterology
Molnar, Amber	Nephrology	Tunks, Marcel	Respirology
Mondoux, Shawn	Emergency Medicine	Upadhye, Suneel	Emergency Medicine
Monteiro, Sandra	Education and Innovation	Valettas, Nicholas	Cardiology
Muniz Rodriguez, Flor Maria	PM&R	Van Adel, Brian	Neurology

## Associate Professor: Full Time, Clinical, Part Time, Adjunct

Van Spall, Harriette	Cardiology	Cyr, Michael	Clinical Immunology
Velianou, James	Cardiology	Davis, Clive	Respirology
Wald, Joshua	Respirology	Farrauto, Leonardo	PM&R
Walsh, Michael	Nephrology	Ghouse, Ali T.	PM&R
Wang, Xuyi (Mimi)	Geriatric Medicine	Giammarco, Rose	Neurology
Webert, Kathryn	Pathology and Molecular	Haaland, Derek	Clinical Immunology
Whittingham, Heather	Critical Care	Hamielec, Cindy	Critical Care
Wong, Raimond	General Internal Medicine	Healey, Andrew	Emergency Medicine
Woodward, Kevin	Infectious Diseases	Jalayer, Massoud	Emergency Medicine
Wright, Douglas	Cardiology	Jensen, Lorraine	Critical Care
Wyne, Ahraaz	GIM	Jichici, Draga	Critical Care
Xenodemetropoulos, Theodore	Gastroenterology	Keen, Sabina	Geriatric Medicine
Yaghoobi, Mohammad	Gastroenterology	Lanzini, Rosilene	Dermatology
Yamamura, Deborah	Infectious Diseases	Lima, Hermenio	Dermatology
Yang, Robert	Nephrology	Masood, Syed Faraz	GIM
Yohanna, Seychelle	Nephrology	Mathoo, Julian	PM&R
Zeller, Michelle	Hematology	Miller, Paul	Emergency Medicine
Ackerman, Margaret	Emergency Medicine	Morgan, David	Gastroenterology
Allen, Christopher	Respirology	O'Donnell, Martin	GIM
Ask, Kjetil	Respirology	Owen, Julian	Emergency Medicine
de Wit, Kerstin	Emergency Medicine	Pavlova, Viktoria	Rheumatology
Ioannidis, George	Rheumatology	Prasad, Sadhana	Geriatric Medicine
Mercuri, Mathew	Emergency Medicine	Prodger, Dwight	Critical Care
Moffat, Karen	Hematology	Puksa, Serge	Respirology
Pugsley, Stewart	Respirology	Quinlan, David	Emergency Medicine
Repa, Rebecca	Education and Innovation	Rabin, Eli	GIM
Siegal, Deborah	Hematology	Sebaltdt, Rolf	Rheumatology
Tholl, William ( Bill)	Education and Innovation	Smith, Ruth	PM&R
Trussler, Alex	GIM	Stanton, Eric	Cardiology
Abonowara, Abdulgani	Cardiology	Syed, Jaffer	Cardiology
Achong, Michael	GIM	Tomlinson, Charles	Cardiology
Bentley, Todd	PM&R	Tougas, Manon	Critical Care
Boulos, Pauline	Rheumatology	Varey, Peter	PM&R
Braun, Anne E.	Geriatric Medicine	Vender, Ron	Dermatology
Buchanan, Ian	Emergency Medicine	Visram, Farzin	Critical Care
Carmona, Rajendra	Rheumatology	You, John	GIM
Chan, Teresa	Emergency Medicine		
Curnew, Greg	Cardiology		
		Chari, Vinjamuri	PM&R
		Harvey, David	PM&R
		Marr, Sharon	Geriatric Medicine

## Lecturer: Adjunct

Bissonnette, Lyle	Gastroenterology
Dore, Kelly	Education and Innovation
Doxey, Andrew	Respirology
Forsythe, Paul	Respirology
Krishnaraj, Gautham	E&I
Li, Na	Hematology
Mayo, Amanda	PM&R
McConkey, Brendan	Respirology
Miliku, Kozeta	Respirology
Murphy, Brian	Education & Innovation
Murphy, Frank	Dermatology
Oliveria, John Paul	Respirology
Yuan, Cathy (Yuhong)	Gastroenterology

## Professor: Part Time, Clinical

Ducharme, James	Emergency Medicine
Kean, Walter	Rheumatology
Khan, Aliya	Endocrinology

## Assistant Professor: Full Time, Clinical, Part Time, Adjunct

Abbas, Minan	Endocrinology	Khokhar, Faiza	Rheumatology
Abu-Hijleh, Tala	Endocrinology	Korol, Anna	Education and Innovation
Adams, Jeremy	Cardiology	Lanktree, Matthew	Nephrology
Aghel, Nazanin	Cardiology	Lee, Justin	Geriatric Medicine
Ahmadbeigi, Niloufar	Cardiology	Lewis, Kimberly (Kim)	Critical Care
Ahmed, Khaled Hossam	Cardiology	Lin, Celina	PM&R
Alak, Aiman	Cardiology	Martin, Leslie	GIM
Albashir, Siwar Mazen	Gastroenterology	Marques, Paula Tiexeira	Neurology
Alhrbi, Mashael	Radiology	Matino, Davide	Hematology
Amin, Faizan	Cardiology	Matusiak, Kristina	Hematology
Bassim, Carol	Education and Innovation	Mazurek, Marcus	Neurology
Batthish, Michelle	Rheumatology	McDonough, John	Respirology
Berg, Britta	GIM	McIntyre, William	Cardiology
Burrows, Kristen	GIM	Mithoowani, Siraj	Hematology
Byworth, Miles	Neurology	Mitri, Mino	GIM
Caminero Fernandez, Alberto	Gastroenterology	Mourad, Omar	Infectious Diseases
Chari, Madhu	Respirology	Mukherjee, Manali	Respirology
Cheung, Andrew	GIM	Ning, Shuoyan	Hematology
Chu, Derek	Clinical Immunology	Ofori, Sandra	Cardiology
Chung, Han-Oh	Critical Care	Opala, Adrian	PM&R
Cirne, Filipe	Cardiology	Owen, Kenneth	Education & Innovation-iBio Med
Clifford-Rashotte, Matthew	Infectious Diseases	Park, Sean	Education & Innovation
Clotet-Freixas, Sergi	Nephrology	Patterson, Sarah	Hematology & Thromboembolism
Collins, Matthew	Gastroenterology	Pigeyre, Marie	Endocrinology
Conen, Katrin	GIM	Priel, Eldar	Respirology
Connolly, Colleen	Neurology	Pyne, Lonnie	Nephrology
Connolly, Katherine	Cardiology	Ramos, Ronald	Neurology
Corriveau, Sophie	Respirology	Satia, Imran	Respirology
Cox, Conor	GIM	Scallan, Ciaran	Respirology
Cvetkovic, Anna	Infectious Diseases	Shah, Reema	Endocrinology
da Cunha Zeno Borjaille, Cristiana	Cardiology	Sharif, Sameer	Emergency Medicine
De Sa Boasquevisque, Danielle	Neurology	Sidhu, Amanjot (Mona)	Geriatric Medicine
DiLiberto, Deborah	Education and Innovation	Siemieniuk, Reed	GIM
Dionne, Joanna	Critical Care	Skitch, Steven	Critical Care
Duan, Erick	Critical Care	Solomon, Jacqueline	Neurology
Durham, Kristina		Srivastava, Abhilekh	Neurology
Gillgrass, Amy	Clinical Immunology	Stallwood, Christopher	Gastroenterology
Gladman, Matthew	Neurology	Svenningsen, Sarah	Respirology
Guay, Meagan	Neurology	Thomaz de Freitas, Maria	Neurology
Hall, Devin	Neurology	Thrall, Sam	Geriatric Medicine
Herrera, Manuel	Neurology	Traquair, Hugh	GIM
Ho, Terence	Respirology	Tselios, Konstantinos	Rheumatology
Hobbs, Hailey	Critical Care	Turner, Jane	Respirology
Huynh, Amanda	GIM	Waserman, Sam	Dermatology
Huynh, Jessica	GIM	Wong, Jorge	Cardiology
Iqbal, Ali	Nephrology	Wong, Steven	GIM
Jackson-Best, Fatima	HEI	Woodman, Kathryn (Katie)	Gastroenterology
Joseph, Meera	Nephrology	Yousuf, Haroon	GIM
Josh Koenig	Immunology and Allergy		
Joundi, Raed A.	Neurology	Agro, Albert	Clinical Immunology & Allergy
Kacheri (Pathayappura), Smitha	Dermatology	De Palma, Giada	Gastroenterology
Kahlke, Renate	Education and Innovation	Durham, Kristina	
Kalidindi, Navya	Neurology	Gajewski, Piotr	GIM
Kamel Hasan, Olfat	Education and Innovation-Nuc Med	Gajewski, Piotr	Internal Medicine
Kapoor, Andrew	Infectious Diseases	Galipeau, Heather	Gastroenterology
Katsanos, Aristeidis	Neurology	Gallichan, Scott	Clinical Immunology & Allergy
Kessler-Borges, Flavia	GIM	Germini, Federico	Hematology & Thromboembolism
Khetan, Aditya	Cardiology	Jimenez-Saiz, Rodrigo	Clinical Immunology & Allergy

## Assistant Professor: Full Time, Clinical, Part Time, Adjunct

Kennedy, Courtney	Geriatric Medicine	Greenwald, Ari Joseph	Emergency Medicine
Kurmi, Om Prakash	Respirology	Greer, Alisha	Dermatology
Lal, Sarrah	Emergency Medicine	Gregory, Kathleen	GIM
Medina, Maria	Hematology	Gupta, Gaurav	Emergency Medicine
Patel, Piyush	Education and Innovation	Ha, Michael	Emergency Medicine
Petch, Jeremy	Cardiology	Hameed, Adnan	Cardiology
Ramelli, Sandra	Education and Innovation	Hamilton, David	Emergency Medicine
Sivji, Yasmin	GIM	Harvey, David	
Tonti, Elena	Clinical Immunology	Hatcher, Michael	Emergency Medicine
Wood, Brady	Education and Innovation	Hawley, Kristopher	Emergency Medicine
Workenhe, Samuel	Infectious Diseases	Haynen, Bennett	Cardiology
		Heckman, George	Geriatric Medicine
Abid, Simona	Geriatric Medicine	Hersi, Ali	Emergency Medicine
Abouanaser, Salaheddin	Infectious Diseases	Hosseini, Seyed	PM&R
Al Azzoni, Baha	Internal Medicine	Husein, Nadira	Endocrinology
Bader, Mazen	Infectious Diseases	Ibrahim, Khaled	Gastroenterology
Bansal, Pankaj	PM&R	Jalali, Subash	Gastroenterology
Basi, Simran	PM&R	Jazuli, Farah	Emergency Medicine
Berardocco, Matthew	Physical Medicine & Rehabilitation	Kim, Harold	Clinical Immunology & Allergy
Berlingieri, Joseph	GIM	Kitching, Allan	Cardiology
Bertley, John	Respirology	Kruisselbrink, Rebecca	GIM
Beyea, Michael	Emergency Medicine	Labuda, Anna	PM&R
Bhavsar, Sankalp	Rheumatology	Ladak, Karim	Education & Innovation
Borgia, Sergio	Infectious Diseases	Langmann, Caillin	Emergency Medicine
Bulley, Sean	GIM	Langridge, Jonathon	Respirology
Chan, Daniel	Emergency Medicine	Lee, Hilary	Emergency Medicine
Channan, Peter	Emergency Medicine	Lee, June	Rheumatology
Chaudhuri, Dipayan	Critical Care	Liebrechts, Michelle	Emergency Medicine
Chick, Genevieve	GIM	Liu, Theresa	Infectious Diseases
Chorley, Alexander	Emergency Medicine	MacDonald, Spencer	Emergency Medicine
Ciprietti, Lucas	GIM	MacKenzie, Heather	Endocrinology
Cook-Chaimowitz, Lauren	Emergency Medicine	Maddison, Andre	GIM
Cowan, Hamish	Emergency Medicine	Mahabir, Vishwanath	GIM
Crossley, John	Emergency Medicine	Maida, Eugene	PM&R
Darvish-Kazem, Saeed	Cardiology	Marshall, Thomas	Emergency Medicine
Delrue, Andrea	GIM	Massarella, Carys	Emergency Medicine
Dessouki, Shariff	PM&R	McMillan, Richard	PM&R
Dicu, Armela	Hematology	Messieh, Mary	Clinical Immunology & Allergy
Dida, Joana	Emergency Medicine	Metrie, Mary	Neurology
Dixit, Sanjay	Rheumatology	Mohamed, Medina	Endocrinology
Djuric, Vladimir	PM&R	Mokashi, Vaibhav	Infectious Disease
D'Sa, Ryan	Critical Care	Needham-Nethercott, Natalie	Critical Care
Eby, Robbie-Jane	Emergency Medicine	O'Malley, Lauren	PM&R
Edstrom, Karen	Dermatology	O'Malley, Maureen	Dermatology
El Roubi, Doaa	GIM	Perera, Gihan	PM&R
Fahmy, David	Clinical Immunology	Preyra, Ian	Emergency Medicine
Famorca, Leilani	Rheumatology	Price, Ira	Emergency Medicine
Feloiu, Florin	PM&R	Prochazka, Paul	Emergency Medicine
Fergani, Houssein	Gastroenterology	Raco, Dominic	Cardiology
Fung, Filgen	Emergency Medicine	Refaei, Mohammad	GIM
Galvin, Michael	Emergency Medicine	Rehsia, Sachdeep	Critical Care
Ganapathy, Anusoumya	Critical Care	Richards, Douglas	Emergency Medicine
Gelberg, Jacob	Respirology	Rigg, Kaitlynn	Emergency Medicine
Gilck, Stephan	GIM	Roberge, Jillian	Emergency Medicine
Gottschalk, Raymond	Respirology	Safranyos, Richard	Geriatric Medicine
Graiss, Maryan	GIM	Salih, Bashar	GIM
Green, Jay		Sandhanwalia, Simerpreet	Emergency Medicine
Greenbaum, Joseph	Clinical Immunology	Saveriano, Nellina	Dermatology

## Assistant Professor: Full Time, Clinical, Part Time, Adjunct

Schiff, Karen	Emergency Medicine	Armstrong, Wesley	Emergency Medicine
Schwarz, Dan	Cardiology	Arning, Cristina	Endocrinology
Sellens, Catherine	Emergency Medicine	Arya, Naveen	Gastroenterology
Sennik, Serena	Emergency Medicine	Atrie, Damon	Emergency Medicine
Senthil, Prashanth	Internal Medicine	Babapulle, Mohan	Cardiology
Siddiqui, Sameerah	GIM	Bair, F. Douglas	Gastroenterology
Silva, Jaime	Neurology	Bajaj, Girish	Gastroenterology
Singh, Chad	Emergency Medicine	Bangert, Elvira	GIM
Siva, Ahilraj	PM&R	Batey, Cristina	Physical Medicine & Rehabilitation
Sneath, Paula	Emergency Medicine	Batool, Tahira	Clinical Immunology
Solomon, Jesse	GIM	Bawazir, Mohammed	Dermatology
Stacey, Paul	PM&R	Bazak, Stephanie	Emergency Medicine
Subbarao, Padmaja	Respirology	Behera, Suman	Nephrology
Sullivan, Brian	Cardiology	Benaroya, Mark	Nephrology
Sullivan, Hugh	Cardiology	Biman, Birubi	Respirology
Syed, Nabeel	Neurology	Bojcevski, Alexandra	Cardiology
Szczeklik, Wojciech	Cardiology	Brick, Craig	Emergency Medicine
Tam, Benjamin	Critical Care	Brooks, Annie	Infectious Diseases
Tang, Jennifer	Emergency Medicine	Burke, Andrew	Nephrology
Tarakji, Ahmad	Nephrology	Cameron, Kathryn Maureen	GIM
Taves, Jonathan	Emergency Medicine	Campbell, Carley	General Internal Medicine
Tchajkova, Natalja	Physical Medicine & Rehabilitation	Cao, Yang	GIM
Theune, Shannon	Emergency Medicine	Cape, David	Critical Care
Thompson, Jennifer	Emergency Medicine	Carpenter, Nathan	GIM
Trotter, Brendon	Emergency Medicine	Chan, Chris	Critical Care
Valani, Rahim	Emergency Medicine	Chan, Kathryn	Emergency Medicine
Van Alstine, Rebecca	GIM	Chan, Terence	GIM
Van Diepen, Kelly	Emergency Medicine	Chan, William	Cardiology
Vignjevic, Peter	Dermatology	Chan, Winnie	Cardiology
Vlahaki, Dean	Emergency Medicine	Chandok, Natasha	Gastroenterology
Warren, Indra	Cardiology	Chau, Laurence Kwok-Leong	Respirology
Warwas, Mark	General Internal Medicine	Cheung, Jessica	Emergency Medicine
Wassef, Anthony	Cardiology	Chernish, Robert	GIM
Williams, Ryan	PM&R	Chin, Alvin	Emergency Medicine
Witt-Sullivan, Helga	Gastroenterology	Chow, Andrew	Rheumatology
Wong, Darren	Emergency Medicine	Clifton, Vernon	General Internal Medicine
Zaki, Amna	Emergency Medicine	Comondore, Vikram	Respirology
Zandi Riahi, Shervin	GIM	Connolly, Michael	Dermatology
Zdravkovic, Tatjana	PM&R	Coyne, Jade	Respirology
		Cui, Fulan	GIM
		Cy, Ajith	Dermatology
Abdelshaheed, Rami	Respirology	Daweher, Serajedden	GIM
Aboo, Ismail Y.	Hematology	Ddungu, Henry	Hematology
Abou-Khamis, Rami	Internal Medicine	Dennis, Brittany	General Internal Medicine
Adams, Colin	Respirology	Dhillon, Rajwinder	Rheumatology
Ahmad, Ali	Geriatric Medicine	Dhillon, Sandeep	Rheumatology
Ahmed, Hanan	Clinical Immunology	Didyk, Nicole	Geriatric Medicine
Ahsan, Shoeb	GIM	Edwards, Michelle	GIM
Ajayi, Abayomi	GIM	Elsharif, Adell	GIM
Al Lawati, Kumait	Emergency Medicine	El-Sherbini, Hamdi	PM&R
Al-Den, Ahmed	Emergency Medicine	Farghaly, Ghada	GIM
Alexander, Michael	GIM	Fawcett, Adrain	Neurology
Alhussaini, Anhar	Cardiology	Fear, Thomas	Infectious Diseases
Ali, Karim	Infectious Diseases	Fernandes, Aaron	General Internal Medicine
Al-Khateeb, Ziyaad	Geriatric Medicine	Ferreira, Ivone	Respirology
Al-Riyami, Ahmed	Cardiology	Findlater, Aidan	Infectious Diseases
Alussaini, Anhar	Cardiology	Foster, Matthew	PM&R
Amdemichael, Eisahas	Dermatology	Friedman, Oded	Nephrology
Ansari, Tasjeel	Neurology		

## Assistant Professor: Full Time, Clinical, Part Time, Adjunct

Gallab, Nagy	GIM	Kuk, Joda	Hematology
Galvin, Patti	PM&R	Labib, Noura	Emergency Medicine
Gandhi, Mandark	Gastroenterology	Ladha, Jamil	Respirology
Gazala, Khalid	Neurology	Lagrotteria, Danny	Nephrology
George, Scaria	GIM	Lake, Kerry	Respirology
Ghavanini, Ahmad	Neurology	Lam, Joyce Nga Hei	Critical Care
Ghosh, Ananda	Infectious Diseases	Lamba, Jasmine	Cardiology
Gregor, Laura	Nephrology	L'Ami, Barbara	GIM
Gunton, Lara	Dermatology	Lang, Michael	PM&R
Gwardjan, Andrew	PM&R	Levy, Brian	Emergency Medicine
Haffner, Thomas	GIM	Li, Qin	Cardiology
Hasany, Aasim	Respirology	Liu, Eddie	Gastroenterology
Hayward, Melissa	Emergency Medicine	Liu, Ran	Respirology
Heffernan, Michael	Cardiology	Liutkus, Joanne	GIM
Hentschel, Eric	Respirology	Lodhi, Amina	Rheumatology
Hernandez, Jeremy	Emergency Medicine	Lubberdink, Ashley	Emergency Medicine
Hindieh, Waseem	Cardiology	Luca, Simina	GIM
Ho, Victoria	Respirology	Lue, Sabrina	Rheumatology
Hong, Paul	Cardiology	Maharaj, Neil	Respirology
Hosek, Paul	Critical Care	Maharaj, Shyam	Respirology
Howell, Brandon	Dermatology	Mak, Michael	Respirology
Husain, Saima	GIM	Malhotra, Neel	Gastroenterology
Hussain, Adnan	GIM	Malik, Kartika	Geriatric Medicine
Hussain, Fatima	Geriatric Medicine	Manian, Usha	Cardiology
Huynh, Jennifer	Endocrinology	Mandalfino, Patricia	Neurology
Hystad, Perry	Respirology	Marhong, Jonathan	Critical Care
Ip Fung Chun, Peter	Clinical Immunology and Allergy	Matiasz, Richard	Cardiology
Irfan, Neal	Infectious Diseases	Mattia, Alicia	Neurology
Jackson, Mary	Respirology	Mazzadi, Sergio	GIM
Jafri, Armeen	Geriatric Medicine	Mazzetti, Adam	GIM
Jain, Ankur	Emergency Medicine	Mazzetti, Gavin	GIM
Jain, Vipul	Clinical Immunology	Mazzetti, Gillian	Endocrinology
Jajarmi, Yasmin	General Internal Medicine	Meyers, Alison	Neurology
Kalenga, Jean-Claude	GIM	McConachie, David	Cardiology
Jolly, Shivinder	Nephrology	McCullagh, David	Infectious Diseases
Juma, Salina	GIM	McDonald, Melissa	General Internal Medicine
Jung, Patrick	GIM	McMillan, Ron	Emergency Medicine
Kagoma, Peter	Hematology	Meisami, Tina	Respirology
Kaleel, Abdel	Neurology	Merali, Abbas	Gastroenterology
Kalina, Dale	Infectious Diseases	Mihajlovic, Vesna	Rheumatology
Kalyesubula, Robert	GIM	Miles, Amy	Geriatric Medicine
Kang, Matthew	Hematology	Mokhtari, Arastoo	Cardiology
Kara, Ali	GIM	Molckovsky, Andrea	GIM
Kathrada, Yacoob	GIM	Morgan, Ingrid	Critical Care
Kehar, Rohan	Hematology	Mulla, Ali	Emergency Medicine
Khalifa, Abubaker	Critical Care	Mussani, Farheen	Dermatology
Khan, Mohammed Abdul-Wahab	PM&R	Naeem, Omer	Neurology
Khan, Omar	PM&R	Nagpal, Anil	Respirology
Khera, Vikas	Critical Care	Naser, Mohamed	Nephrology
Kim, Hahn Hoe	Cardiology	Nasser, Laila	Emergency Medicine
Kim, Simon	GIM	Nayar, Sumiti	Neurology
Kohli, Sandeep Singh	GIM	Ngai, Benjamin	GIM
Kotrec, Marian	Cardiology	Nicula, Mihaela	Geriatric Medicine
Kottachchi, Dan	Gastroenterology	Noor, Amra	Geriatric Medicine
Koubaesh, Yousery	GIM	Nuri, Khuloud	Infectious Diseases
Kozij, Natalie	Respirology	Ovtcharenko, Natalia (Natasha)	Critical Care
Krause, Joel	Emergency Medicine	Oykhman, Paul	Clinical Immunology
Kufasishi, Hala	Internal Medicine	Pandey, Amritanshu Shekhar	Cardiology

## Assistant Professor: Full Time, Clinical, Part Time, Adjunct

Pandeya, Sanjay	Nephrology	St. Bernard, Rosanne	GIM
Paolone, Stephanie	GIM	Strban, Martin	Respirology
Pasricha, Ajai	GIM	Sung, Melani	Infectious Diseases
Pearce, Murray	Cardiology	Swan, Thomas	Critical Care
Perez, Gavino	GIM	Tan, Micheal	GIM
Piersanti, Monique	Endocrinology	Tan, Nigel	Cardiology
Piotrowski, Michal	Emergency Medicine	Tang, Brooke	GIM
Piran, Sanaz	Cardiology	Tariq, Shahna	Rheumatology
Plaza, Katarzyna	GIM	Teschke, Susan	Endocrinology
Poddar, Megha	Endocrinology	Terpstra, Collin	GIM
Pogue, Elahn	General Internal Medicine	Thiyagarajah, Kartiga	Hematology
Pratt, Rebecca	Clinical Immunology	Utgikar, Rucha	GIM
Profiti, Raffaella	Gastroenterology	Vasan, Hariharan	Critical Care
Quinn, Kathleen	Nephrology	Vastraj, Mitali	Cardiology
Quirt, Jaclyn	Clinical Immunology	Vinjamuri, Chari	
Qureshi, Hamzah	GIM	Vitou, Louise	Nephrology
Rahman, Mashrur	Internal Medicine	Vivas, Lucas	GIM
Raizman, Alla	GIM	Vlahovic, Kristopher	General Internal Medicine
Randazzo, Michael	General Internal Medicine	Voglis, Stefanos	Gastroenterology
Raso, Dean	GIM	Waiswa, Musa	Hematology
Ratnaparkhe, Sushil	Nephrology	Wang, Angela	Emergency Medicine
Raut, Amol	General Internal Medicine	Wang, Charlie	Gastroenterology
Raut-Deshpande, Pooja	GIM	Wang, Michael	Nephrology
Raza, Uroos	Emergency Medicine	Warren, Heather	Cardiology
Rezaei Nejad, Mahsa	GIM	Warren, Thomas	Infectious Diseases
Riaz, Nida	GIM	Weaver, Darren	GIM
Riolo, Giovanna	Respirology	Wharton, Sean	GIM
Rofaiel, Rymon	GIM	Wu, Harry	Gastroenterology
Rosenstein, Gerald	Nephrology	Yelovich, Mary-Clair	Rheumatology
Roth, Lee	Gastroenterology	Yee, Colin	Hematology
Russell, David	Nephrology	Young, James	Geriatric Medicine
Saha, Sudip	Geriatric Medicine	Yeung, Yan	Rheumatology
Sajic, Dusan	Dermatology	Yip, Amelia	Cardiology
Saleh, Carol	Immunology and Allergy	Younan, Mark	Internal Medicine
Sapir, Daniel	Nephrology	Youssef, David	Respirology
Sarkaria, Gagandeep	Geriatric Medicine	Zamel, Rola	Endocrinology
Sarker, Avijeet	Gastroenterology	Zanoria, Catherine	Infectious Diseases
Saxena, Shiv	GIM	Zawadowski, Andrew	Cardiology
Schmidt, Marcello	Critical Care	Zimakas, George	GIM
Segal, Dan	Gastroenterology		
Sekhon, Gurbir	Nephrology		
Semplonius, Trevor	General Internal Medicine		
Shaarbaf, Raid	Internal Medicine		
Shah, Shalin	General Internal Medicine		
Shaikh, Saeed	Rheumatology		
Shaikh, Sameer	Critical Care		
Shaikholeslami, Roya	GIM		
Sharieff, Saleem	GIM		
Sheikh, Natasha	Internal Medicine		
Sheik-Yousouf, Mohammad "Amir"	GIM		
Shih, Elizabeth	Emergency Medicine		
Shukla, Rahul	Dermatology		
Shurrab, Mohammed	Cardiology		
Simard, Robert	Emergency Medicine		
Skanthan, Sithamparanathan	Geriatric Medicine		
Skogstad-Stubbs, David	GIM		
Snider, Tristian	Emergency Medicine		
Sohail, Qazi Zain	Nephrology		

## New Faculty Appointments

Adrian Opala	PM&R
Melissa Farrell (Ms.)	Education & Innovation
Stephanie Bazak	Emergency Medicine
Samuel Thrall	Geriatrics
Kostas Tselios	Rheumatology
Filgen Fung	Emergency Medicine
Na Li	Hematology & Thromboembolism
Usha Manian	Cardiology
Michal Piotrowski	Emergency Medicine
Lucas Vivas	GIM
Mino Mitri	GIM - Palliative Care
Matthew Gladman	Neurology
Fear, Thomas	Infectious Diseases
Yuhong, Yuan (Cathy)	Gastroenterology
Navya Kalidindi	Neurology
Ahmad Ghavanini	Neurology
Simina Luca	GIM
Benjamin Ngai	GIM
Kartiga Thiagarajah	Hematology & Thromboembolism
Reed Siemehcuk	GIM
Renate Kahlke	Education & Innovation
Ahilaraj Siva	Physical Medicine & Rehabilitation
Hamzah Qureshi	General Internal Medicine
Lee Roth	Gastroenterology
Mohammed Bawazir	Dermatology
Cristina Arning	Endocrinology & Metabolism
Kristin Burrows	GIM

### ACADEMIC YEAR 2021-22

Maria fe Medina	Hematology & Thromboembolism
Sam Workenhe	Infectious Diseases
Jay Green	Emergency Medicine
Justin Lee	Geriatrics
Kimberley Lewis	Critical Care
Joanna Dionne	Critical Care
Derek Chu	Allergy & Immunology
Sameer Sharif	Emergency Medicine
Faiza Khokhar	Rheumatology
Minan Abbas	Endocrinology & Metabolism
Sandra Monteiro	Education and Innovation
Farah Jazuli	Emergency Medicine
Spencer MacDonald	Emergency Medicine
Shannon Theune	Emergency Medicine
Alvin Chin	Emergency Medicine
William Chan	Cardiology
Barbara L-Ami	GIM
Giovanna Riolo	Respirology
Rymon Rofaiei	Geriatric Medicine
Mary-Clair Yelovich	Rheumatology
Christopher Stallwood	Gastroenterology
Hilary Lee	Emergency Medicine
Ali Mulla	Emergency Medicine
Alison Meyers	Neurology
Mohammad (Amir) Sheik-Yousouf	General Internal Medicine
Mihaela Nicula	Geriatric Medicine
Smitha Pathayappura	Dermatology
William McIntyre	Cardiology

Andrew Kapoor	Infectious Diseases
Jesse Solomon	GIM
Nathan Carpenter	GIM
Aristeidis Katsanos	Neurology
Amritanshu Pandey	Cardiology
Britta Berg	GIM/Palliative Care
Eddie Liu	Gastroenterology
Adnan Hussain	General Internal Medicine
Nida Riaz	General Internal Medicine
Douglas Wan	Cardiology
Matthew Collins	Gastroenterology
Ronald Ramos	Neurology
Andrew Chow	Rheumatology
Masha'al Alhrbi	Radiology/Medicine
Fatima Jackson Best	HEI/Medicine
Catherine Zanoria	Infectious Diseases
Elvira Bangert	GIM
Ahmad Tarakji	Nephrology
Amy Miles	Geriatric Medicine
Maryam Graiss	General Internal Medicine
Carol Saleh	Clinical Immunology and Allergy
Sushil Ratnaparkhe	Nephrology
Rami Abou-Khamis	General Internal Medicine
Hala Kufaishi	General Internal Medicine
Sandeep Dhillon	Rheumatology
Saeed Shaikh	Rheumatology
Vaibhav Mokashi	Infectious Diseases
Craig Brick	Emergency Medicine
Ali Ahmad	Geriatric Medicine
Sabrina Lue	Rheumatology
Shahna Tariq	Rheumatology
Vesna Mihajlovic	Cardiology
Mitali Vatsraj	GIM
Ajith Cy	Dermatology
William (Bill) Tholl	Education & Innovation
Uroos Raza	Emergency Medicine
Aidan Findlater	Infectious Diseases

### ACADEMIC YEAR 2022-23

Hugh Traquair	GIM
Danielle de Sa Boasquevisque	Neurology
Ofori, Sandra	Cardiology
Katherine Woodman	Gastroenterology
Raed Joundi	Neurology
Lonnie Pyne	Nephrology
Meera Joseph	Nephrology
Celina Lin	Physical Medicine & Rehabilitation
Anhar Alhussaini	Cardiology
David McCullagh	Infectious Diseases
Kozeta Miliku	Respirology
Jamil Ladha	Respirology
Ahmed Al-Den	Emergency Medicine
Kumait Al Lawati	Emergency Medicine
Ashley Lubberdink	Emergency Medicine
Agnes Chmiel	Physical Medicine & Rehabilitation
Sharon Grad	Physical Medicine & Rehabilitation
Jacqueline Solomon	Neurology

## New Faculty Appointments

Medina Mohamed	Endocrinology & Metabolism
Lauren Cook-Chaimowitz	Emergency Medicine
Alisha Greer	Emergency Medicine
Paul Prochazka	Emergency Medicine
Jillian Roberge	Emergency Medicine
Ankur Jain	General Internal Medicine
Kerry Lake	Respirology
Serajedden Dawehr	General Internal Medicine
Laila Nasser	Emergency Medicine
Avijeet Sarker	Gastroenterology
Piyush Patel	Education & Innovation
Stephen Thompson	Neurology
Anna Cvetkovic	Infectious Diseases
Frank Murphy	Dermatology
Federico Germini	Hematology & Thromboembolism
Aditya Khetan	Cardiology
Angela Wang	Emergency Medicine
Michael Beyea	Emergency Medicine
Joana Dida	Emergency Medicine
Matthew Berardocco	Physical Medicine & Rehabilitation
Natalja Tchajkova	Physical Medicine & Rehabilitation
Colin Adams	Respirology
Tina Meisami	Respirology
Alexandra Bojceviski	Cardiology
Gautham Krishnaraj	E&I
Natasha Chandok	Gastroenterology
Amanda Mayo	Physical Medicine & Rehabilitation
Samuel Wasserman	Dermatology
Adrian Opala	Physical Medicine & Rehabilitation
Stephanie Carlin	Hematology & Thromboembolism
Jessica Huynh	General Internal Medicine
Benjamin Wyman	Neurology
Mohammed Shurrah	Cardiology
Nabeel Syed	Neurology
Qazi Zain Sohail	Nephrology
Gurbir Sekhon	Nephrology
Brandon Howell	Dermatology
Natalia Ovtcharenko	Critical Care
Mashrur Rahman	Internal Medicine
Khuloud Nuri	Infectious Diseases
Filipe Cirne	Cardiology
Heather Galipeau	Gastroenterology
Brady Wood	Education & Innovation
Michael Mak	Respirology
Ran Liu	Respirology
Niloufar Ahmadbeigi	Cardiology
Amanda Huynh	General Internal Medicine
Paula Marques	Neurology
Aaron Fernandes	General Internal Medicine
Carley Campbell	General Internal Medicine
Cristina Batey	Physical Medicine and Rehabilitation
Marcello Schmidt	Critical Care
Rola Zamel	Endocrinology
David Youssef	Respirology
Kristopher Vlahovic	General Internal Medicine
Manuel Herrera	Neurology
Baha Al Azzoni	General Internal Medicine

Prashanth Senthil	General Internal Medicine
Kristine Matusiak	Hematology & Thromboembolism

### ACADEMIC YEAR 2023-24

Kathryn Chan	Emergency Medicine
Lyle Bissonnette	Gastroenterology
Brittany Dennis	General Internal Medicine
Steven Skitch	Critical Care
Matthew Collins	Gastroenterology
Matthew Clifford-Rashotte	Infectious Diseases
Eldar Priel	Respirology
Tala Abu-Hijleh	Endocrinology
Sarah Patterson	Hematology & Thromboembolism
Omar Mourad	Endocrinology
Joshua Koenig	Clinical Immunology & Allergy
Darren Wong	Emergency Medicine
Daniel Chan	Emergency Medicine
Paula Sneath	Emergency Medicine
Chad Singh	Emergency Medicine
Tristan Snider	Emergency Medicine
Suman Behera	Nephrology
Hailey Hobbs	Critical Care Medicine
Sergi Clotet-Freixas	Nephrology
Vernon Clifton	General Internal Medicine
Peter Ip Fung Chun	Clinical Immunology & Allergy
Yasmin Jajarmi	General Internal Medicine
Elahn Pogue	General Internal Medicine
Trevor Semplonius	General Internal Medicine
Mark Warwas	General Internal Medicine
John McDonough	Respirology
Wesley Armstrong	Emergency Medicine
Shalin Shah	General Internal Medicine
Ahmed Al-Riyami	Cardiology
Charlie Wang	Gastroenterology
Mark Younan	General Internal Medicine
Brian Murphy	Education & Innovation
Heather Mackenzie	Endocrinology
Thomas Swan	Critical Care
Melissa McDonald	General Internal Medicine
Michael Randazzo	General Internal Medicine
Adrian Fawcett	Neurology
Cristiana da Cunha Zeno Borjaille	Cardiology
Miles Byworth	Neurology
Abhilekh Srivastava	Neurology
Natasha Sheikh	General Internal Medicine
Raid Shaaibaf	General Internal Medicine
Dipayan Chaudhuri	Critical Care
Khaled Hossam Ahmed	Cardiology

## Clinical Scholars

### ACADEMIC YEAR 2020-2021

Michael Beyea	Emergency Medicine
Aditya Khetan	Cardiology
William McIntyre	Cardiology
Amanda Huynh	GIM
Jessica Huynh	GIM
Michael Wang	GIM
Aidan Findlater	ID
Kim Lewis	Critical Care
Kristina Watt	Respirology/Sleep
Jamie Ladha	Respirology/Sleep
Minan Abbas	Endocrinology
Hilary Lee	EM
David McCullagh	ID
Lisa Kim	Respirology
Justin Lee	Geriatrics
Lonnie Pyne	Nephrology
Sultan Chaudhry	Nephrology
Medina Mohamed	Endocrinology
Sameer Sharif	Emergency Medicine
Faiza Khokhar	Rheumatology
Joanna Dionne	Critical Care
Derek Chu	Allergy & Immunology
Mary-Clair Yelovich	Rheumatology

### ACADEMIC YEAR 2021-2022

Judy Luu	Cardiology
Daryyl Wan	Cardiology
Kevin Kumar Singh	GIM
Hugh Traquair	GIM
Victoria David	Hematology
Chris Kawala	Respirology/Sleep
Vanessa Martelli	Respirology/Sleep
Raed A. Joundi	Neurology
Jacqueline Solomon	Neurology
Kumait AL Lawati	Emergency Medicine
Lauren Cook-Chaimowitz	Emergency Medicine
Jillian Roberge	Emergency Medicine
Calvin Yeh	Emergency Medicine
Katie Woodman	Gastro
Meherzad Kutky	Nephrology
Meera Joseph	Nephrology
Nima Zamiri	Cardiology
Dipayan Chaudhuri	Critical Care
Michael Beyea	Emergency Medicine
Aditya Khetan	Cardiology
Amanda Huynh	GIM
Jessica Huynh	GIM
Michael Wang	GIM
Medina Mohamed	Endocrinology & Metabolism

### ACADEMIC YEAR 2022-2023

Andrew Collins	Gastro
Sara Patterson	Hematology & Thromboembolism
Christopher Humphreys	Respirology/Sleep
Tanya Khaper	Respirology/Sleep
Hammad Rafay	Respirology/Sleep
Olivia Geen	Geriatrics
Mark Hewitt	Emerg
Darren Wong	Emerg
Calvin Yeh	Emerg
Gousia Dhhar	Clinical Pharmacology & Toxicology
Vanessa Martelli	Respirology/Sleep
Judy Luu	Cardiology
Michael Ke Wang	General Internal Medicine
Victoria David	Hematology & Thromboembolism
Radha Joseph	General Internal Medicine
Clara Lu	General Internal Medicine
Jessica Huynh	General Internal Medicine
Amanda Huynh	General Internal Medicine
Dipayan Chaudhuri	Critical Care
Laiya Carayannopolous	Critical Care
Justin Chow	Cardiology
Omar Mourad	Infectious Disease
Tala Abu-Hijleh	Endocrinology
Sofia Nene	Perioperative Care

### RESEARCH FELLOWS: 2021-2022 & 2022-2023

Mohamed Jalloh	Cardiology
Gaston Rueda	Gastroenterology
Thomas Scheier	Infectious Diseases
Tina Stegmann	Cardiology
Wael Damian	Infectious Diseases
Prashanth Kulkarni	Cardiology

## Clinical Fellows: Academic Year 2021-2022

Abdellah, Eslam Mahmoud Rashad	Neurology	Katsanos, Aristeidis	Neurology
Ahmadbeigi, Niloufar	Cardiology	Kelly, Andrew	Cardiology
Akbari, Vahid	Cardiology	Klimis, Harry Emanuel	Cardiology
Al-Alwani, Hatim Hmdan S.	Endocrinology and Metabolism	Lefebvre, Frédéric	Rheumatology
Alamri, Nada Abdulbasit M.	Nephrology	MacIsaac, Sarah	Respirology
Alansari, Omar E. A. E.	Cardiology	Masoom, Hassan	Cardiology
Al Arfaj, Abdulmajid Mohammed H.	Infectious Diseases	Matias, Evangelyn Grace	Nephrology
Alazwari, Monther Nasser A.	Nephrology	Merat, Shahin	Gastroenterology
Alessa, Fahed B. A. E. A.	Gastroenterology	Mohammad, Danah H. A. E. M.	Gastroenterology
Alexandre Dutra, Gustavo	Cardiology	Mouminah, Amr Sami H.	Neurology
Alghadeer, Saleh Abdulaziz I.	Cardiology	Nkurunziza, James	Cardiology
Alghamdi, Naif Ali A	Nephrology	Ofori, Sandra Nnedinma	Cardiology
Al Gharrash, Ahmed Ibrahim A.	Cardiology	Patterson, Sarah Elizabeth Bengier	Hematology
ALGhasab, Naif Saad M.	Cardiology	Popov, Jesse	Hematology
Ali, Dalal S. A. H. M.	Endocrinology and Metabolism	Raco, Michael	Cardiology
Aljarbou, Alanoud Zaid S.	Infectious Diseases	Roshanov, Pavel	Nephrology
Aljundi, Ziad Ezzat M.	Neurology	Russell, Lindsey	Gastroenterology
Almalki, Abdulmajeed Khedher A.	Infectious Diseases	Sardana, Vikas	Cardiology
Almarzouk, Saad Isam S.	Nephrology	Sebzali, Fatemah A H A	Nephrology
Almhri, Ali Hussain S.	Cardiology	Serajeddini, Hana	Respirology
Almomen, Mohammad J. S. M. A.	Nephrology	Sharaf Aldeen, Mohamad	Cardiology
Almonaei, Khulod Ibrahim A.	Endocrinology and Metabolism	Shawawrah, Mays Adel Krayyem	Neurology
AlMuthree, Souad Abdalkhaliq S.	Infectious Diseases	Singh, Baldeo	Nephrology
Alosaimi, Majed Mihmas E.	Nephrology	Srivastava, Abhilekh	Neurology
Alotaibi, Salem Muidh A.	Gastroenterology	Syed, Furrakh Omair	Nephrology
Alqahtani, Abdullah Nasser A	Physical Medicine and Rehab	Tsang, Michael Brennon	Cardiology
Alqatari, Sarah Samir A.	Physical Medicine and Rehab	Valenzuela Suarez, Andres Daniel	Hematology
Al-Rabai, Manal Moshabab A.	General Internal Medicine	Venegas Garrido, Carmen Paz	Respiratory Medicine Fellowship
Alrashidi, Sulaiman	Cardiology	Vo, Caroline Lan Huong	Respirology
Alsalem, Mohammad A. H. A.	Infectious Diseases	Wan, Darryl Ji Seng	Cardiology
Alsarra, Farah A. M. Q. H.	Endocrinology and Metabolism	Woodman, Kathryn	Gastroenterology
Alshaker, Ammar Mohammed M	Cardiology	Yusuf, Arif Mohamed	Gastroenterology
Alshatti, Ahmad F.M.M.A.	Cardiology	Zamiri, Nima	Cardiology
Alsoliahim, Alanood Abdulrahman	Physical Medicine And Rehab	Zapata Canivilo, Juan Marcelo	Critical Care Medicine
Basonbul, Faisal Abdullah S	Nephrology		
Blum, Steffen Christian	Cardiology		
Brochu, Bradley Daniel	Cardiology		
Chakraborty, Debarati	Respirology		
Chavarria Viquez, Jorge Andrés	Cardiology		
Chen, Min-Shien (Jerry)	Cardiology		
Choudhury, Rakeeb	Hematology		
Chow, Justin	Cardiology		
Cirne, Filipe	Cardiology		
da Cunha Zeno Borjaille, Cristiana	Cardiology		
Dadon, Ziv	Cardiology		
Dandurand, Karel	Endocrinology and Metabolism		
David, Victoria	Hematology		
de Andrade Falcão, Felipe José	Cardiology		
de Sá Boasquevisque, Danielle	Neurology		
Eltebi, Osama Essam Zuhdi	Cardiology		
Germini, Federico	Hematology		
Ghaemmaghami, Amir Babak	Neurology		
Gorman, Johnathon Brian	Hematology		
Guerrero Pinedo, Fernando Andres	Cardiology		
Hasan, Badar Mumtaz	Gastroenterology		
Hillani, Ali Mustapha	Cardiology		
Joseph, Meera	Nephrology		

## Clinical Fellows: Academic Year 2022-2023

Abdulhadi, Bayan Salem O.	General Internal Medicine	David, Victoria	Hematology
Abu-Amara, Abdul Rahman B.A.M.	Neurology	de Andrade Falcão, Felipe José	Cardiology
Ahmadbeigi, Niloufar	Cardiology	Germini, Federico	Hematology
Alahmari, Mohammed Saad M.	Gastroenterology	Ghaemmaghami, Amir Babak	Neurology
Al-Alwani, Hatim Hmdan S.	Endocrinology and Metabolism	Godoy, Alejandro Daniel	Hematology
Alamri, Abdulrahman Saad M.	Endocrinology and Metabolism	Gohar, Sandeep	Hematology
Alamri, Nada Abdulbasit M.	Nephrology	Gomez-Aldana, Andres Jose	Gastroenterology
Alansari, Omar E. A. E.	Cardiology	Guerrero Pinedo, Fernando Andres	Cardiology
Alawadhi, Esra'a KH A M A	Physical Medicine And Rehab	Hae, Richard	Nephrology
Alazwari, Monther Nasser A.	Nephrology	Hasan, Badar Mumtaz	Gastroenterology
Alessa. Fahed B. A. E. A.	Gastroenterology	Hemeda, Asem Abdallah Abdaleem	Cardiology
Alexandre Dutra, Gustavo	Cardiology	Humphreys, Christopher	Respirology
Algarni, Mohammad Ali A.	Physical Medicine And Rehab	Hussein, Salma Hussein Osman	Endocrinology and Metabolism
Al-Ghamdi, Abdullah Ashour A.	Nephrology	Joseph, Radha	General Internal Medicine
Alghamdi, Ahmad Mohammed S.	Infectious Diseases	JuneK, Mats Lyndon	Clinician Investigator Program
Alghamdi, Naif Ali A	Nephrology	Khaper, Tanya	Respirology
AlGhanemi, Logain Ghazi M.	General Internal Medicine	Khashab, Ali Mohamedsaied A.	Cardiology
Al Gharrash, Ahmed Ibrahim A.	Cardiology	Khawjah, Rayan FayeZ Q.	Physical Medicine And Rehab
Al-Housni, Zainab Salim Ali	Hematology	Klimis, Harry Emanuel	Cardiology
Ali, Dalal S. A. H. M.	Endocrinology and Metabolism	Kumar, Mitesh	Cardiology
Ali, Shaikha Rashed Obaid Rashid	Nephrology	MacIsaac, Sarah	Respirology
Ali Zadeh, Keivan	Cardiology	McGrath, Brian Patrick	Cardiology
Aljundi, Ziad Ezzat M.	Neurology	Merat, Shahin	Gastroenterology
Almarzouk, Saad Isam S.	Nephrology	Mohammad, Danah H. A. E. M.	Gastroenterology
Almhri, Ali Hussain S.	Cardiology	Moscote-Salazar, Luis Rafael	Neurology
AlMuthree, Souad Abdalkhaliq S.	Infectious Diseases	Nasseri-Moghaddam, Siavosh	Gastroenterology
Alotaibi, Bashayr Marzouq S.	Respirology	Nene, Sofia	Cardiology
Alotaibi, Salem Muidh A.	Gastroenterology	Nkurunziza, James	Cardiology
Alqahtani, Abdullah Nasser A	Physical Medicine And Rehab	Patterson, Sarah Elizabeth Benger	Hematology
Alqatari, Sarah Samir A.	Physical Medicine And Rehab	Perron, Pierre-Nicolas	Cardiology
Al-Rabai, Manal Moshabab A.	General Internal Medicine	Raco, Michael	Cardiology
Alraddadi, Hatim Osama H.	Cardiology	Rafay, Hammad	Respirology
Alrashidi, Sulaiman	Cardiology	Saleem, Ahmad H. A. H. A.	General Internal Medicine
Al-Rehaily, Ala'a Soud H.	Cardiology	Sardana, Vikas	Cardiology
Alsaidan, Muath Abdullah A.	General Internal Medicine	Sebzali, Fatemah A H A	Nephrology
Alsarraf, Farah A. M. Q. H.	Endocrinology and Metabolism	Sestier, Maude	Cardiology
Alsufyani. Eid Ateeq M.	Infectious Diseases	Sharaf Aldeen, Mohamad	Cardiology
Alsulami, Randa Ahmed M.	Nephrology	Shobian, Mohammad Sameer A.	Physical Medicine And Rehab
Al-Tourah, Lulwah F. A. S. J.	Hematology	Singh, Baldeo	Nephrology
Al Towyan, Essam Abdullah A.	Hematology	Somboonviboon, Dujrath	Respirology
Alvarado Mora, Hugo Oswaldo	Cardiology	Srivastava, Abhilekh	Neurology
Asiri, Yahya Omar A.	Respirology	Tarazan, Nehal Yahya F.	Emergency Medicine
Aziz, Amir	Cardiology	Tiong, Denise Tze Wei	Cardiology
Balubaid, Wejdan Omar A.	Neurology	Toliopoulos, Panagiota (Penny)	Cardiology
Baro Vila, Rocio Consuelo	Cardiology	Tonelli De Oliveira, Ana Claudia	Cardiology
Blum, Steffen Christian	Cardiology	Tsang, Michael Brennon	Cardiology
Brister, Danica Lee	Respirology	Valenzuela Suarez, Andres Daniel	Hematology
Chakraborty, Debarati	Respirology	Venegas Garrido, Carmen Paz	Respirology
Chavarria Viquez, Jorge Andrés	Cardiology	Vivekanantham, Hari	Cardiology
Chen, Min-Shien (Jerry)	Cardiology	Vo, Caroline Lan Huong	Respirology
Chibber, Tamanna	Cardiology	Wanner, Patrick Mark	Cardiology
Choudhury, Rakeeb	Hematology	Wright, Jennifer	Cardiology
Chow, Justin	Cardiology	Zapata Canivilo, Juan Marcelo	Critical Care Medicine
Chu, Raymond Wai Man	Rheumatology		
Cioffi, Giacomo Maria	Cardiology		
Cirne, Filipe	Cardiology		
Collins, Andrew William	Gastroenterology		
da Cunha Zeno Borjaille, Cristiana	Cardiology		
Dadon, Ziv	Cardiology		

## Endowed Chairs

AbbVie Chair in Education in Rheumatology	Khalidi, Nader
Actavis Chair in Rheumatology for Better Bone Health	Lau, Arthur
Amgen Canada Chair in Nephrology	Austin, Richard
Andrew Bruce Douglas Chair in Neurology	Turnbull, John
AstraZeneca Chair in Respiratory Epidemiology	Mukherjee, Manali
Audrey Campbell Chair in Ulcerative Colitis Research	Moayyedi, Paul
Bayer Chair for Clinical Epidemiology Research in Bleeding Disorders	Matino, Davide
Boris Family Chair in Education and Internal Medicine	Neary, John
David Braley and Nancy Gordon Chair in Thromboembolic Disease	Douketis, James
Douglas Family Chair in Gastroenterology Research	Caminero Fernandez, Alberto
Douglas Family Chair in Nutrition Research	Armstrong, David
Douglas Holder-PHRI Chair in Interventional Cardiology	Mehta, Shamir
Eli Lilly Canada / May Cohen Chair in Women's Health	Bates, Shannon
Eli Lilly Canada Chair in Osteoporosis	Vacant
Farncombe Family Chair in Digestive Health Research	Collins, Stephen
Farncombe Family Chair in Microbial Ecology and Bioinformatics	Vacant
Farncombe Family Chair in Phage Biology	Hynes, Alexander
Frederick Hargreave/Teva Innovation Chair in Airway Diseases	Nair, Parameswaran
GlaxoSmithKline Chair in Gastroenterology	Vacant
Hamilton Hospitals Assessment Centre Endowed Professorship in Neuromuscular Disease	Baker, Steven
Heart and Stroke Foundation / J. Fraser Mustard Chair in Cardiovascular Research	Weitz, Jeffrey
Heart and Stroke Foundation / Marion W. Burke Chair in Cardiovascular Disease	Yusuf, Salim
Heart and Stroke Foundation / Michael G. DeGroote Chair in Population Health Research	Anand, Sonia
ISTH-McMaster Chair in Thrombosis and Hemostasis	Werstuck, Geoff
J. Bruce Duncan Chair in Metabolic Diseases	Steinberg, Gregory
Jack Gaudie Boehringer Ingelheim Chair in Interstitial Lung Disease	Kolb, Martin
Jack Hirsh-Clive Kearon Chair in Thrombosis	Liaw, Patricia
Jack Hirsh/PHRI Chair in Thrombosis and Atherosclerosis Research	Eikelboom, John
John Bienenstock Chair in Molecular Medicine	Bramson, Jonathan
John G. Kelton Chair in Platelet Immunology	Vacant
John G. Kelton Chair in Translational Research	Arnold, Donald
Joseph E. DesRoches Chair in Bone Marrow Transplantation	Walker, Irwin
LEO Pharma Chair in Thromboembolism Research	Crowther, Mark
Marta and Owen Boris Chair in Stroke Research and Care	Shoamanesh, Ashkan
McMaster University/GlaxoSmithKline Chair in Lung Immunology at St. Joseph's Healthcare	Larché, Mark
Medard DeGroote Chair in Medicine	Panju, Akbar
Michael G. DeGooote Chair in Stroke Prevention	Sharma, Mukul (Mike)
Michael G. DeGooote Professorship in Stroke Management	Sahlas, Demetrios (Jim)
Michael G. DeGroote Chair in Infectious Diseases	Mertz, Dominik
Moran Campbell Chair in Respiratory Medicine	Vacant
Population Health Institute Chair in Diabetes Research and Care	Gerstein, Hertzl
Richard Hunt-AstraZeneca Chair in Gastroenterology	Bercik, Premysl
Salim Yusuf Chair in Cardiology	Healey, Jeff
Schroeder Chair in Allegory and Immunology Research	Waserman, Susan
St. Peter's/McMaster Chair in Aging	St Onge, Joye
Stuart Connolly-PHRI Chair in Cardiovascular Research	Jolly, Sanjit
William J. Walsh Chair in Medical Education	Patel, Ameen
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Natasha Hillier	Human Resources Assistant/Staff Operations Coordinator
Tanja Petrovic	Manager, Employee Operations
Leslie Steinberg	Manager Staff and and Program Operations
Gail Laforme	Operations Site Coordinator, Juravinski Hospital Site
Suzie Josipovic	Administrative Assistant
Gail Campbell	Administrative Assistant to the Chair
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Teresa Vallera	Program Manager, Emergency Medicine Residency Program

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Andrew Woodhall	Assistant Finance Manager
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### **Paul O'Byrne**

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Faculty of Health Sciences

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