



Department of Medicine  
Annual Report 2018-2020

**DIVISION REPORTS**



## DIVISION REPORT

# Cardiology



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

### EDUCATIONAL ACTIVITIES

Under the leadership of Dr. Matt Sibbald, the Cardiology Residency Program has accredited program status by the Royal College of Physicians and Surgeons. Dr. Nick Valettas continues in the role of Competency Committee Chair for our Cardiology Residency Program and Dr. Montgomery continues her educational roles at the university and at the Royal College. Our fellowship programs in echocardiography, electrophysiology, heart failure, interventional cardiology, and perioperative medicine continue to flourish under the leadership of Drs. Omid Salehian, Syam Divakaramenon, Eva Lonn, Shamir Mehta, and Vikas Tandon, respectively, and the division has approved sub-specialty programs for echocardiography, arrhythmia and interventional cardiology. We continue to attract outstanding residents and fellows from within and outside of Canada.

Dr. Matt Sibbald was recently selected as the Associated Dean for Undergraduate Medical Education.

### RESEARCH PROGRAM

The research program of McMaster's division of cardiology continues to be world-leading. In the past year, Dr. Yusuf has published the results of the TIPS-3/Polycap study in the New England Journal of medicine, demonstrating a benefit for the

polypill among individuals with average cardiovascular risk. He also published data in the Lancet on modifiable risk factors among more than 150,000 participants in the PURE study. Dr. PJ Devereux published the results of the HIP-ATTACK trial in the Lancet, examining the timing of surgery for hip fracture. Members of the division were also instrumental in setting up the ACT program of trials, to search for therapies to treat COVID-19 infection.

Dr. Sanjit Jolly received a 2.75-million dollar grant from the CIHR for the CLEAR-SYNERGY study.

### MAJOR ACHIEVEMENTS

Our ambulatory care clinic continues to grow under the leadership of Dr. Doug Wright, and is evolving to enter the new, post-COVID era of remote cardiac care. Many members of the division are active in launching the EPIC system at Hamilton Health Sciences (HHS) and managing the post-implementation phase at St. Joseph's hospital. Most members are active in virtual care and members of the St. Joseph's group are developing an outpatient clinic in Brantford. Many individuals, including Dr. Craig Ainsworth have taken a significant role in the management of COVID-related issues at HHS.

### FUTURE DIRECTIONS

Over the past two years, the division of cardiology has recruited several outstanding individuals, who have developed strong, specialized programs. Dr. Jeremy Adams was recruited to the St. Joseph's site, where he anchors the cardio-renal program. Dr. Nazanin Aghel has joined the cardio-oncology program at the Juravinski Hospital where she is establishing a research program. Dr. Katherine Connolly has also joined at St. Joseph's, while serving the city in the field of heart failure and cardiac amyloidosis. Dr. William McIntyre has completed his PhD and is leading a large program of research at PHRI examining atrial fibrillation occurring with stress, and contributes clinically to St. Joseph's arrhythmia and perioperative services. Dr. Emilie Belley-Cote has transformed the management of patients following cardiac surgery; with the establishment of an inpatient and outpatient program for post-operative care. Dr. Jason Roberts has joined the arrhythmia service and is leading an exciting program of interventional trials for patients with genetic arrhythmia conditions. ■

“Members of the division were also **instrumental** in setting up the **ACT trials...** for therapies to treat **COVID-19 infection.**”



DR. JEREMY ADAMS



DR. NAZANIN AGHEL



DR. KATHERINE CONNOLLY



DR. WILLIAM MCINTYRE



DR. EMILIE BELLEY-COTE



DR. JASON ROBERTS

# Clinical immunology & allergy



## EDUCATIONAL ACTIVITIES

Dr. Jaclyn Quirt is the director of the McMaster Clinical Immunology and Allergy Training Program, a highly integrated, accredited adult/pediatric program. Dr. Michael Cyr is the site director and deputy program director.

There are seven residents from both Pediatrics and Internal Medicine currently in full-time training. Our division is very active in teaching medical and pediatric residents, and clinical clerks from McMaster and elsewhere. Graduating trainees have proceeded to academic and clinical careers in Clinical Immunology and Allergy in Canada and internationally.

In July 2021, the program will be transitioning to Competence-by-Design with Dr. David Fahmy designated as the Competency Based Medical Education lead and Competence Committee (CC) chair.

The CC is comprised of seven faculty members from both the pediatric and adult programs who will also serve as academic coaches.

An area in which the McMaster Immunology Research Centre (MIRC),

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

recently integrated with our Division is undergraduate teaching. This area is very active and very well supported by our divisional faculty. Our weekly Clinical Immunology Allergy Rounds, which include internationally renowned invited speakers, are a major success. Other seminars, journal clubs, and teaching sessions occur regularly including weekly academic half-days.

## RESEARCH PROGRAMS

The Division continues to be extremely active in a variety of areas. Principal research themes are therapeutics related to the respiratory tract (Keith), food allergy and anaphylaxis (Waserman, Jordana Chu), autoimmune disease (Denburg, Haaland, Larché), hereditary angioedema (Waserman, Keith), peptide immunotherapy in allergic and autoimmune disease (Denburg, Larché, Haaland), systematic reviews (Chu), hemopoietic stem cells in allergy (Denburg), and urticaria/eczema (Lima, Waserman). Peer-reviewed, private sector and Foundation 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 discovery. The AllerGen NCE, which came to a close in 2019, has

Years of research development for AllerGen NCD, under the leadership of Dr. Judah Denburg



nurtured and supported these research developments for 15 successful years under the leadership of Dr. Judah Denburg, Scientific Director and CEO.

In January 2021, the Division experienced a significant advancement with the incorporation of five faculty members from the McMaster Immunology Research Centre (MIRC) as they migrated from the Department of Pathology and Molecular Medicine. They are all internationally recognized experts in their respective fields of mucosal immunology research. Dr. Manel Jordana MD, PhD, is an expert on the basic immune pathogenesis of food allergy and anaphylaxis; Dr. Ali Ashkar DVM, PhD is an expert on NK biology and its application to

cancer immunotherapy; Dr. Charu Kaushic's research is focused on women's reproductive health and the impact of infections and she is also the Director of the CIHR Institute of Infection and Immunity based at McMaster; Dr. Amy Gilgrass PhD has expertise in HIV-tuberculosis (TB) co-infections and Dr. Zhou Xing MD, PhD is a world expert on respiratory mucosal immunity with an emphasis on tuberculosis and vaccine development against TB and Covid-19.

## MAJOR ACHIEVEMENTS

An exciting development in 2021 will be the deployment of the Schroeder Allergy and Immunology Research Institute through a generous gift from the Walter and Maria Schroeder Foundation. Dr. Susan Waserman will be the inaugural Director, and Dr. Manel Jordana the Coordinator of the Translational branch. The Institute will be 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 when embedded in the community.



HEALTH LEADERSHIP

## FUTURE DIRECTIONS

The maintenance of 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. The incorporation of MIRC faculty offers incredible opportunities for further collaboration in research, education and training. The Schroeder Allergy and Immunology Research Institute similarly will foster interdisciplinary cooperation and advancement in our field. ■

## DIVISION REPORT

# Clinical pharmacology and toxicology

### EDUCATIONAL ACTIVITIES

Although our division is the smallest, it leads the Department in academic contributions overall and for education. This includes year-round supervision of 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 elective rotations through our specialty inpatient and eConsult service. Faculty members are active supervisors and program leaders in the undergraduate and postgraduate Medicine program as well as postgraduate education at the Masters and PhD level 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 pharmacology, health sciences, pharmacy and health technology assessment students. We play a leading role in several national and provincial training programs in drug safety and effectiveness, and in drug policy.

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

Clinical Pharmacology and Toxicology (CPT) participates in Clinical Pharmacology and Toxicology Residency Training Programs accredited by the Royal College of Physicians and Surgeons of Canada. We are actively recruiting

“One of the unique features of our division is its ability to directly impact professional practice and patient care through drug policy decision-making”

trainees and graduates. We continue to advocate for other formal specialty-clinical pharmacology training.

### RESEARCH PROGRAMS

Despite its small numbers, the division continues to be highly successful in attracting research funding, largely because of a very wide collaborative network within medicine, pharmacy, nursing, epidemiology, economics and the social sciences. Grants come from a variety of peer-review sources. Our research topics focus on the benefits, harms, economics and potential vs actual use of therapies, and include projects examining methods of improving prescribing, the impact of electronic medical records and computer-based decision support, the impact of changes in drug policies on health and health care utilization, patient preferences regarding therapies, the development, dissemination and implementation of evidence-based guidelines for therapies, medication management interventions, drug interactions, comparative effectiveness and safety of competing medications, and the international benchmarking of prescribing skills. As well as scholarly papers and presentations, members of the division hold multiple copyrights and patents on research products, software, reports and guidances.

### MAJOR ACHIEVEMENTS

The recent department initiative to quantify and rank academic activities of all faculty has shown that clinical pharmacologists are amongst 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 inter-professional practice leads to multiple major advisory roles with the federal and provincial governments influencing budgets in excess of \$10 billion annually, as well as leadership positions in provincial and national professional societies. National Pharmacare implementation and upgrading national pharmaceutical pricing processes, are recent areas of focus this 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 the recruitment of new members to allow us to address the significant needs for therapeutics and toxicology consultation, for education to improve prescribing practices and medication safety, and to expand our involvement in health policy and research. ■

# Critical care

Our faculty have an international reputation for excellence in research and education all the while maintaining an extremely high level of care to critically ill patients. We are dedicated to supporting a broad range of academic programs through collaboration and partnerships with national and international critical care organizations. As a diverse group of clinicians, we care for patients at the McMaster teaching hospitals in Hamilton, Niagara and Waterloo regions.

## EDUCATIONAL ACTIVITIES

The McMaster Critical Care Medicine Residency Program is a Royal College accredited program that is highly sought after by trainees. National & international fellows undertake rigorous competency-based training, including simulation-based education and bedside ultrasonography. The program offers a novel scheduling model for fellows, which closely matches that of a consultant. This provides a unique educational experience while also allowing for sufficient non-clinical time to foster academic pursuits. Our faculty experts foster scholarship which includes a research mentorship program culminating in the annual

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



McMaster/Western Fellows' Research Day, showcasing all the fellow's research. External elective requests in our critical care units have grown in popularity in recent years with numerous trainees from across the country hoping to come to our centre.

## RESEARCH ACTIVITIES

There is tremendous breadth and diversity to critical care research at McMaster. We are dedicated to designing and conducting large pragmatic clinical trials and many of our faculty have CIHR grants aimed at improving the care of our ICU patients. Our research programs focus on knowledge translation for the prevention and reduction of complications of critical illness; management of respiratory failure; resuscitation and sepsis; optimizing end-of-life care; organ donation; as well as rehabilitation and mobility in the ICU. Our faculty are also innovative leaders in guideline development, including the GUIDE group, which provides methodological support for several national and international critical care societies.

## MAJOR ACHIEVEMENTS

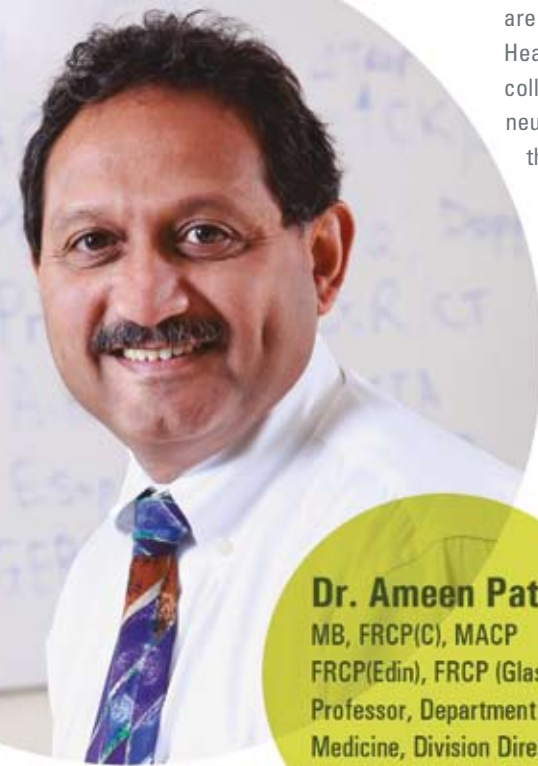
Members of our division have leading roles in the Canadian Critical Care Trials Group, Canadian Critical Care Society, Society of Critical Care Medicine, Community ICU Research Network, and the Canadian Sepsis Research Network as well as having active critical care journal editorial boards. Several faculty have joint appointments with the Department of Health Research Methods, Evidence and Impact and are involved in supervising MSc and PhD students.

“Our faculty have an **international reputation for excellence in research** and education, *all the while maintaining an extremely high level of care to critically ill patients.*”

## FUTURE DIRECTIONS

The division remains committed to providing high-quality patient and family-centred care while increasing our commitment to excellence in research and supporting mentorship of the next generation of physicians and scientists in critical care. ■

# Education and innovation



**Dr. Ameen Patel**  
MB, FRCP(C), MACP  
FRCP(Edin), FRCP (Glasg)  
Professor, Department of  
Medicine, Division Director

The Division of Education and Innovation was established in 2019 and is the newest Division in the Department of Medicine. It is made up of Clinician and Non-Clinician Educators, and has affiliated members from many divisions within the Department of Medicine, senior hospital administration and other departments within the Faculty of Health Sciences (FHS). The Division brings together members who are exploring innovative pedagogical approaches in Health Sciences education and who are exploring collaborative opportunities to generate entrepreneurship and commercialization. The Division is the inspiration of Drs. John Kelton, Paul O'Byrne, and Mark Crowther to create a home within the Department of Medicine for faculty within the FHS with a mission to enhance innovation, health leadership, entrepreneurship, and commercialization.

**EDUCATION:**

Sean Park, Anna Korol, Carol Bassim and Kenneth Owen all contribute substantially to education within the Integrated Biomedical Engineering (iBioMED) and Health Sciences Program. Dr. Park teaches courses on human-centered design, creative problem-solving and strategic foresight in the iBioMed Program and the Michael G. DeGroot (MGD) Health Leadership Academy (HLA). He is a McPherson Fellow



INNOVATION



COMMERCIALIZATION

who is leading education research and capacity building activities. Dr. Korol also teaches in the iBioMed (Health Engineering Entrepreneurship stream) HLA Programs and develops new educational programs in the MGD Health Innovation, Commercialization and Entrepreneurship Program. She is a member of the iBioMed Curriculum

Committee and MGD Health Innovation, Commercialization and Entrepreneurship Advisory Board. Dr. Bassim graduated from dental school in 2004 and was a member of the Department of Health Research Methods, Evidence and Impact, before joining the Division of Education and Innovation. She teaches in the iBioMed Program and is an instructor in the Health Research Methodology Program. Dr. Kenneth Owen obtained his PhD in Business Administration from McMaster. He has contributed to the iBioMed Program as a teacher, lecturer and has been active in student and community engagement activities.

Sarrah Lal leads several educational programs and courses in Health Innovation and Entrepreneurship in the MGD Initiative for Innovation in Healthcare, including Health Ventures, Clinical Health Innovation, Frameshift Innovations Lab, and Innovators in Scrubs.



HEALTH LEADERSHIP

Dr. Deborah Diliberto is an interdisciplinary researcher with interests in the design and evaluation of health services interventions in low resource settings. She contributes as a course coordinator and lecturer for an MSc Global Health course on research methods, as a tutor on the MSc Global Health courses, and has developed and taught three scholarly skills workshops for the MSc Global Health Program.



ENTREPRENEURSHIP

Dr. Gail Martin is the Executive Director of the Research Institute at St. Joseph's Hamilton. Gail facilitates education, research, coaching and mentoring of members within the SJH Research Institute. Sandra Ramelli is an important contributor to faculty leadership devel-

“... a **MISSION** to  
*enhance innovation,*  
**HEALTH LEADERSHIP,**  
*ENTREPRENEURSHIP,*  
and **COMMERCIALIZATION.**”



Carol Walker Bassim



Deborah DiLiberto



Anna Korol



Dr. Karim Ladak



Sarrah Lal



Kenneth Owen



Sean Park



Sandra Ramelli

opment. She is co-leading the Bridging Leader's Program and is a leadership coach for faculty members.

Dr. Karim Ladak is an Assistant Clinical Professor in the Division. Dr. Ladak provides substantial clinical teaching and has received funding from industry and the McPherson Institute to develop an educational podcast on complex rheumatological conditions. To date, he has completed five episodes and has had multiple downloads from listeners across the globe. Dr. Ladak also Co-Chairs the International Medical Graduate Internal Medicine Residency Application Committee.

The Nuclear Medicine physicians were part of the Division of Education and Innovation and made important contributions to patient care, teaching and research. Their primary appointment has since been moved to the Department of Radiology. The Division thanks Drs. Christopher Marriott, Karen Gulenchyn, William Wong-Pac, Katherine Zukotynski, Valerie Yakemchuk and Olfat Kamel Hasan for their contributions while members of the Division.

Members of the Division have played an important role in the Department's Community of Practice in Quality Improvement and Patient Safety and Medical Education. The Department welcomes individuals with an interest in innovation, entrepreneurship, and collaboration to consider affiliate membership. ■

# Emergency medicine



## FUTURE DIRECTIONS & HIGHLIGHTS

Early 2020 brought the announcement of Dr. Michelle Welsford as the Division Director, after serving in the “interim” position for the prior two years.

As part of her interim role, Dr. Welsford reached out to the other Divisions of Emergency Medicine (EM) under the Departments of Pediatrics and Family Medicine to strengthen collaboration and envision other models that may help the faculty across the three divisions succeed.

The EM tri-division leaders worked together to invite our national organization, the Canadian Association of Emergency Physicians (CAEP), to conduct an external assessment of our Divisions. This process was exceedingly helpful to provide comparison data with similar academic programs across the country, confirm our strengths, and provide advice and recommendations that will allow us to move forward with strategic planning. Several new initiatives have started as part of this tri-division collaboration process.

These initiatives included launching a Hamilton Emergency Medicine Executive in the summer of 2018 comprised of the clinical and academic EM leads at the three



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

Hamilton sites that meets quarterly or more frequently, and several new committees, events, and joint recruitment efforts focused on tri-division collaboration. In February of 2019 we launched the inaugural Faculty Project Day (Brag & Steal) hosted by Drs. Michelle Welsford and Raj Vadera which included faculty in Hamilton and regional campuses to provide an opportunity for faculty across all 3 divisions to present on projects that are completed, in-process, or being planned. This event was a great opportunity to discuss results and plan future multi-site collaboration and teamwork. In April of 2019, we had our first Tri-Division Spring Retreat facilitated by Drs. April Kam, Liane Shipp-Dey, and Teresa Chan. The retreat focused on brainstorming and solution building activities based on the external consultation and focused on 3 areas:

1. improving hiring/recruitment/retention;
2. rethinking educational leadership; and
3. enhancing research & scholarship.

We hope to work on several of the key recommendations over the next several years to make the Divisions stronger. In September of 2019 we also hosted the first city-wide Hamilton Faculty Emergency Physician/Faculty Recruitment event.

Building on the success of these initiatives in 2019, we planned to continue all of these activities in 2020, although some modifications needed to be made due to the pandemic and restrictions of in-person events. We moved our annual @MacEmerg Faculty Awards Dinner to a virtual video format in June of 2020. Additionally, as many of our national meetings were cancelled in the Spring of 2020, and to support our learners and junior faculty that missed out on presenting their projects, we held the inaugural @MacEmerg abstract presentation event virtually in June of 2020.

Through much of 2020, our faculty along with our hospital-based and first responder colleagues have been at the

coal-face on the front-lines of the COVID-19 pandemic. The work has been difficult but fulfilling and our families have been worried. The faculty are looking forward to a future where we can gather in person again and celebrate our achievements, perseverance, and innovations.

## EDUCATIONAL ACTIVITIES

### POSTGRADUATE (PG) PROGRAM

The McMaster EM PG residency has over 40 residents and is well supported by the leadership (Drs. Alim Pardhan and Kelly van Diepen), our strong faculty and our unmatched program management and administration (Teresa Vallera and Julia Smerilli). Now entering its’ 4th year, the program has been well prepared to implement the Competency by Design (CBD) curriculum and evaluation (Dr. Alex Chorley). We will have our double cohort of residents challenging the Royal College exam this coming year. Simulation (Dr. Chris Heyd), research boot camp (Dr. Mat Mercuri), and continuous quality improvement (CQI, Dr. Shawn Mondoux) curricula continue to strengthen our core content curriculum. Large skills and simulation events, critical care and disaster simulation days, respectively, are run on a 2-year cycle. Our junior ultrasound scanning weekend will now be running on an annual basis in conjunction with our CCFP-EM colleagues. In addition to our resident-led wellness curriculum, Ice Cream Rounds allow celebration of successes and peer support for the challenges of residency. Transitions throughout residency and into staff life are supported by PGY specific Bootcamps. This coming year we will be piloting our Inclusion, Diversity, Equity and Anti-Racism (IDEA) curriculum, designed by our EM Residents. This curriculum builds on existing programming, adding a structural framework, additional lectures, a journal club and learning activities in a longitudinal format. Finally, our administration curriculum and transition to practice bootcamp will undergo a restructuring and merging this coming year. COVID has posed

an interesting challenge this year, however, has successfully pivoted the majority of our teaching to online. We look forward to being able to pivot back once restrictions are lifted.

Critical Care Day, CBME launched in 2018, first simulation OSCE in 2019

#### UNDERGRADUATE (UG) PROGRAM

The UG EM program leadership passed from the capable Dr. Massoud Jalayer to the eager Dr. Alim Nagji in December 2019. Dr. Massoud led a successful curriculum change and implementation that has been highly valued by the clerkship learners. The program had its own “boot camp”, a one-week non-clinical case-based introduction to core topic areas, resuscitation, and procedural skills. Coordinated across the Hamilton, Niagara, and Kitchener-Waterloo sites, the program has always been highly rated by students. The EM faculty continue to foster medical student-faculty research collaboration via annual Medical Student EM Research Awards.

In the spring of 2020 as the pandemic began, clerks were withdrawn from the clinical environment. True to our chameleon nature, the EM faculty pivoted quickly to help support the longitudinal virtual clerkship learning and start designing a new virtual interactive curriculum for clerkship return in July 2020.

#### CONTINUING PROFESSIONAL DEVELOPMENT (CPD)

The CPD director (Dr. Alex Chorley) organized a tri-divisional “Design Thinking” CPD retreat in September 2018 and came up with 5 items to focus on:

1. Clinically-oriented small group learning
2. Clinical coaching experiences
3. Career-enhancing mentorship program
4. Simulation & procedure labs
5. On-line portal and offerings (including a podcast).

The faculty have been involved in a number of innovative programming including REACH rounds (Research, Education, Administration, Clinical, Health) and BEER Rounds (Beginner to Expert Education Rounds) #FoamED including international blogs and podcasts such as ALiEM.com, CanadiEM.org, and more. Following the retreat, the following new initiatives followed:

1. @MacEmerg Podcast Launch in February 2019;
2. Coaching & Mentorship Interactive Sessions in 2019-2020;
3. Formal @MacEmerg Mentorship Program Launch;
4. Do-it-yourself Mentorship Guidebook published 2020;
5. Faculty Simulation launch in 2019 (placed on hold due to pandemic in 2020);
6. PERC (Practice Excellence through Collaboration and Review) Rounds launched in 2019 and is held 6-10 times annually.

#### RESEARCH ACTIVITIES

The Division has a burgeoning clinical research program (led by Drs. Kerstin de Wit, Mathew Mercuri and many others) and research synthesis and knowledge translation group (Drs. Andrew Worster, Suneel Upadhye, and Michelle Welsford). The educational research program continues to flourish (Drs. Jonathan Sherbino and Teresa Chan), with strong connections to the McMaster Faculty of Health Sciences Program in Education Research, Innovation and Theory (MERIT) with Dr. Jonathan Sherbino as the Assistant Dean. The faculty continue to have numerous high-profile publications including those that focus on up-to-date evidence evaluations on key EM and resuscitation treatments.

#### MAJOR ACHIEVEMENTS

##### 2018

- Dr. Teresa Chan, Program Director, AFC – Clinician Educator Program
- Dr. Shawn Mondoux, E.J. Moran Campbell Internal Career Research Award
- Dr. Shawn Mondoux, ALiEM Faculty Incubator (2018-2019)

##### 2019

- Dr. Ian Buchanan, Outstanding Contributions to FRCPC Residency Program Award
- Dr. Ian Buchanan, Internal Medicine, EM Mentor Award
- Dr. Teresa Chan, Assistant Dean, Faculty Development, Faculty of Health Sciences, McMaster University

“ *This coming year, we will be piloting our Inclusion, Diversity, Equity and Anti-Racism (IDEA) curriculum, designed by our EM Residents.* ”

- Dr. Teresa Chan, Excellence in Teaching Award, Emergency Medicine
- Dr. Teresa Chan, CAME Meridith Marks New Educator Award
- Dr. RJ Eby, EM Clinical Teaching Unit SJHH Award
- Dr. Mike Hatcher, Postgraduate Community Teacher of the Year Award
- Dr. Brian Levy, Undergraduate Community Teacher of the Year Award
- Dr. Mathew Mercuri, Editor-in-Chief of the Journal of Evaluation in Clinical Practice

##### 2020

- Dr. Teresa Chan, CAEP Ian Stiell Researcher of the Year Award
- Dr. Alex Chorley, Outstanding Contributions to FRCPC Residency Program Award
- Dr. Jonathan Taves, EM Clinical Teaching Unit HHS Award
- Dr. Noura Labib, EM Clinical Teaching Unit SJHH Award

##### Promotions:

##### 2018

- Dr. Alim Pardhan, Associate Professor (GFT)
- Dr. Bandar Bar, Associate Professor (GFT)
- Dr. Jonathan Sherbino, Professor (GFT)

##### 2019

- Dr. Teresa Chan, Associate Professor (GFT) ciation Young Leader Award. ■



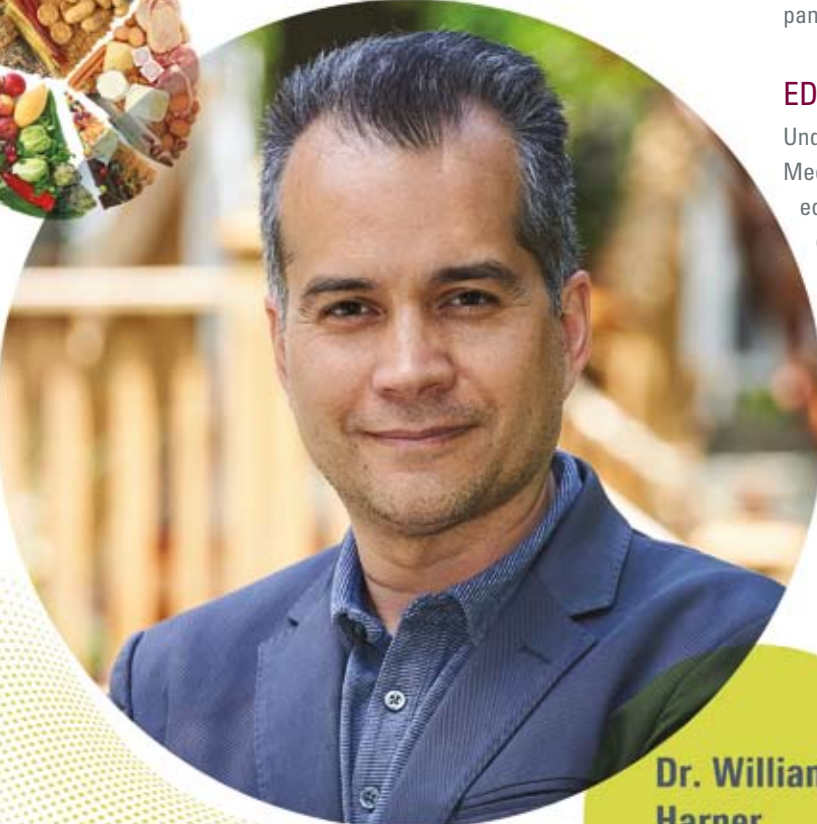
# Endocrinology and metabolism

Endocrinology and metabolism is a highly productive Division that supports all academic endeavours including: research, medical education and clinical care. Throughout 2020 many members of the Endocrine Division have also contributed to the COVID-19 pandemic effort.

## 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 contributed to the curriculum development and subunit planning leadership through a major renewal of the Compass Curriculum that integrated reproductive endocrinology and shifted the energy homeostasis domains of nutrition, gastroenterology, and endocrinology away from their prior home in Medical Foundation 2. After this curriculum renewal an Endocrine Division member has assumed the Directorship of the new Medical Foundation 3.

Postgraduate residents interact with Endocrine Division faculty on the 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/diabe-



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

“Divisional faculty are **actively engaged** in leading the development of **clinical, practice guidelines and quality assurance initiatives.**”



Dr. Ally Prebtani

Awarded Presidential Award from OMA for longstanding humanitarian work and community service

tes clinics. Endocrine Division faculty also contribute as Internal Medicine examination board members for the Royal College of Physicians and Surgeons. Members have contributed to and helped lead the transition of postgraduate trainee evaluation towards a Competency By Design Model.

The Division has a two-year subspecialty residency program in endocrinology and metabolism which accommodates the entry of up to two new residents per annum. This program has passed every accreditation with the most recent reviews being externally by the Royal College in 2017 and internally in November 2020. With the next external review is due in 2022. The program is consistently ranked highly by candidates in the Canadian Resident Matching Service (CaRMS) Medicine Subspecialty match. The Division also runs a successful one-year fellowship in metabolic bone disease.

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. They provide continuing medical education in diabetes, hypertension, parathyroid disease and general endocrinology, speak internationally on endocrine topics, educate 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 genetics, biochemistry and physiology to epidemiology and large international clinical trials. Current research topics include prevention of cardiovascular outcomes in diabetes, diabetes remission, obesity, brown adipose tissue metabolism, AMP-activated protein kinase, inflammation, fatty liver disease, dysglycemia and serious health outcomes, pediatric to adult care transitions, imaging modalities and therapies for osteonecrosis of the jaw, osteoporosis, hypoparathyroidism and metabolic bone disease, and identification of novel biomarkers pertaining to diabetes care. Endocrine Division members also contributed to launching a clinical trial investigating therapies against COVID-19 in 2020.

## MAJOR ACHIEVEMENTS/RECOGNITIONS

In 2020, Dr. Ally Prebtani was awarded the Presidential Award from the Ontario Medical Association in honour of longstanding humanitarian work and community service.

## FUTURE DIRECTIONS

The current focus of research in the Division is on identifying an effective and robust means of achieving type 2 diabetes remission using medical approaches, and on understanding the pathophysiology behind diabetes remission. Members are continuing to research ways of characterizing and preventing obesity in children and adults, reducing the metabolic consequences of obesity, and identifying therapies that may mitigate both obesity and diabetes. Members are also involved in research on atypical femoral fractures, metabolic bone disease, hyperparathyroidism, and hypoparathyroidism. As well, members are contributing to research and administrative reform on equity, diversity, and inclusion. ■

# Gastroenterology

## EDUCATIONAL ACTIVITIES

The adult gastroenterology residency program continues to thrive with high-caliber Canadian and international trainees, under the leadership of its Program Director, Dr. Eric Greenwald. McMaster continues to host the annual Residents' Endoscopy Training Course (RETC) for first-year residents in adult gastroenterology from across Canada. This course continues to grow in popularity, under the leadership of Drs. David Armstrong, Frances Tse and Eric Greenwald. McMaster is also a lead site for Skills Enhancement in Endoscopy (SEE) programs and a related Train the Endoscopy Trainers (TET) program, aimed at improving and teaching advanced skills for practicing gastroenterologists. This program is coordinated by the Canadian Association of Gastroenterology (CAG) and run by local faculty including Drs. Greenwald, Armstrong and Tse.

We have also launched a successful annual Gastroenterology and Liver Disorders CME 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 also remain active in both undergraduate and graduate education.

This year the Division of Gastroenterology will welcome a new faculty member. Dr. Christopher Stallwood will be based at St. Joseph's Hospital with training

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

in advanced therapeutic endoscopy and a strong interest in postgraduate education. On a local level, we were proud to see our GI resident Lindsay Russell awarded the 2021 PARO Teaching Award.

## 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 appointed recently as Associate Director.

McMaster University was recently selected to host Cochrane Gut, which combines the previous upper gastrointestinal and IBD groups and is led by 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 high-impact national and global clinical practice guidelines.

Dr. Moayyedi holds the Audrey Campbell Chair in Ulcerative Colitis Research and is also the Assistant Dean for Clinical Research. He continues to lead the national, multi-centre Inflammation, Microbiome and Alimentation: Gastro-intestinal and Neuropsychiatric Effects (IMAGINE) network, with over \$35M in funding from the CIHR Strategy for Patient-Oriented Research (SPOR) and industry partners. This program is evaluating the roles of gut microbiome and diet on inflammatory bowel disease, irritable bowel syndrome and associated psychiatric disorders.

Dr. Premysl Bercik holds the Richard H. Hunt Astra-Zeneca Chair in Gastroenterology and holds NIH 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 (CCC) Promoting Access and Care Through Centres of Excellence (PACE) with a focus on remote patient management.

The HHS Digestive Diseases Clinic was formally recognized as a Celiac Disease Unit by the Society for the Study of Celiac Disease, with advanced clinical care and translational research led by members of our Division including Drs. Ines Pinto Sanchez, David Armstrong and Elena Verdu.

“... **NIMBLE** in its adoption of **virtual technologies** and new models **OF WORK** in healthcare delivery, research and education.”

## MAJOR ACHIEVEMENTS

Members of the Division of Gastroenterology are recognized nationally and internationally for their work. Dr. Elena Verdu was awarded both the 2020 CAG Research Excellence Award and the 2020 CCC/Pfizer Women in IBD Outstanding Research Award. Dr. Premysl Bercik won the 2021 CAG Research Excellence Award. Dr. John Marshall was awarded the 2020 CAG Clinical Professorship and continues as Editor-in-Chief of the Journal of the Canadian Association of Gastroenterology. Dr. Neeraj Narula was awarded the 2020 Meeting of the Minds Junior Investigator Award. In 2021, Dr. David Armstrong became President of the OAG and Dr. Moayyedi was appointed as President-Elect of the CAG. Dr. Moayyedi was also noted to be among the top 1% of global researchers and was awarded the prestigious 2019 Jack Hirsh Award for outstanding academic achievement.

## FUTURE DIRECTIONS

The Division of Gastroenterology and FFDHRI continue to enjoy strong collaboration and productivity across the spectrum of luminal gastroenterology with strong clinical and translational interests in nutrition, inflammation and the role of the microbiome in health and disease. Our prominence and focus on nutrition will grow, in alignment 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. The coronavirus pandemic has placed immense pressure on the healthcare system delivery, our academic mandate, and our collective mental health. The Division of Gastroenterology has been nimble in its adoption of virtual technologies and new models of work, and will continue to pursue innovation in healthcare delivery, research and education. ■

# General internal medicine

## EDUCATIONAL ACTIVITIES

The Division of General Internal Medicine (GIM) continues to play an essential role in the education of trainees in health professional programs, including Undergraduate Medical Education, the Physician Assistant Education Program, the IM and GIM Residency Programs, various fellowship programs, and the many residency programs whose trainees learn essential competencies in the IM inpatient Clinical Teaching Units (CTU) and the Ambulatory CTU at McMaster. Our faculty also contribute to education of graduate and undergraduate students in non-clinical university departments.

## RESEARCH PROGRAMS

Our Division continues its record of exceptional research contributions. The accomplishments of our senior researchers, including Drs. James Douketis, Gordon Guyatt, and Holger Schünemann, need no introduction. We are very fortunate to have recruited Dr. Flavia Kessler Borges to our Division as a new Research Educator; in her first year at McMaster, she was the first author of a paper describing the results of a landmark 3000-patient trial in timing of hip fracture surgery. Major areas of active research in the Division include health research methodology, perioperative medicine, thrombosis, and medical education.

**Dr. John Neary**  
MD, FRCP(C),  
Division Director



Dr. Akbar Panju

## MAJOR ACHIEVEMENTS

Many leadership roles in the Division have gone through a period of transition. Dr. Zahira Khalid took over as Director of the GIM Residency Program from Dr. Raj Hanmiah, the founding director of that program. Dr. Leslie Martin was appointed as a Deputy Program Director in the IM Residency Program, Dr. Maura Marcucci was named Research Director of the Division of GIM, and Dr. Serena Gundy became Head of Service for Obstetrical Medicine at Hamilton Health Sciences. Most notably, Dr. Akbar Panju stepped down as Division Director after 22 years of leadership. We are grateful to Dr. Panju for his leadership of the Division through a long period of growth and through a number of existential challenges.

Perhaps the greatest test faced by our Division (and the entire Department) in recent years has been the human resources challenge of sustaining three inpatient CTUs while maintaining excellence in education and patient care. Other academic health sciences centres in Ontario of comparable size maintain two CTUs. We have collaborated with our partners in the IM Residency Program, the academic hospitals, and the Chair's office to implement new models of weekend, evening, and overnight coverage that are less structurally reliant on residents. This collaboration paid unexpected dividends during the early stages of the Covid-19 pandemic, when the Department and its teaching hospitals were able to quickly reinforce our CTUs with 9 new physician assistants, whose presence has helped to sustain clinical and academic excellence during a time of unprecedented challenge. Many members of the Division played important leadership roles in the clinical and academic response to the Covid-19 pandemic.

“*Thank you*  
**Dr. Akbar Panju**  
*for 22 years of*  
*dedicated leadership as*  
**General Internal Medicine**  
**Division Director.**

Through your contributions to **education, research and clinical care**, you have **enhanced the lives of many**, and have made **a profound impact**

*on our community and beyond.*”

— Dr. Mark Crowther

## FUTURE DIRECTIONS

We have been very pleased to welcome five new full-time faculty to our Division: Drs. Flavia Kessler Borges, Kristen Burrows, Andrew Cheung, Conor Cox, and Haroon Yousuf. Dr. Burrows, the first full-time Physician Assistant member of our Division, is the Assistant Dean of the Physician Assistant Education Program. Conversely, we greatly miss our former faculty members who have retired (Dr. James Gibson) or moved their practice (Drs. Arthur Wong and John You.) We have every confidence that our early-career faculty will continue to have success in their educational and research endeavours.

Our Division has a number of members with specialized practices in such diverse fields such as addictions medicine, autonomic disorders, bariatric medicine, hypertension, obstetric medicine, perioperative medicine, and thrombosis. We hope to expand our education and research impact in these areas of excellence.

We will continue to identify opportunities for innovation and improvement in our inpatient CTU model. ■

DIVISION REPORT

# Geriatric medicine

“COVID-19 showed us the exigency TO HAVE BETTER HEALTHCARE for OUR SENIORS.”

120

Learners in clinical rotation each year from 10 different programs

2020 marks the last year of Dr. Sharon Marr’s tenure as the academic division director. We are deeply grateful for her support and outstanding leadership over the past decade and we will endeavor to build on the excellence she has helped us to achieve.

### EDUCATIONAL ACTIVITIES

Geriatric medicine is a strong contributor to education at all levels. Each year, we provide clinical rotations in geriatrics for over 120 learners, with backgrounds ranging from clinical clerk to PGY5, from 10 different educational programs. We’ve added rotations at our regional campuses, including an innovative interdisciplinary geriatric pharmacology and psychiatry elective. Under the program directorship of Dr. Woo and a highly committed planning committee, the subspecialty residency program has thrived, attracting excellent trainees. We have had a successful and smooth transition to Competency-Based Medical Education (CBME) thanks to leadership of Drs. Wang and McLeod, and our inaugural coaches Drs. Keen & Cowan. Dr. McLeod also supports Undergraduate Medical Education (UGME) as the clerkship director for concept integration and review.

**Dr. Joye St. Onge**  
BSc, MD, FRCP(C), MEd,  
Division Director



**DR. SHARON MARR**  
Awarded from the Canadian Geriatrics Society (2020)



**DR. CHRISTOPHER PATTERSON**  
(2019)



**DR. JOHN GONG**  
(2019)



**DR. ARMEEN JAFRI**  
Canadian Geriatrics Society Annual Scientific Meeting (2019)

The Annual Update in Geriatrics held every November remains a very popular CME event. Division members contribute to the Regional Geriatric Program’s Geriatric Certificate Program for regulated and non-regulated healthcare workers. This program has grown substantially in demand, geographic reach and enrolment, with more than 115 graduates in 2019. Many caregivers and patients living with dementia access online educational offerings through iGeriCare®. The clinical and educational services of GeriMedRisk® expanded geographically and are now provincial in scope. With established delivery through technological platforms, these programs were a natural fit with the pandemic world and have proven extremely valuable.

### RESEARCH PROGRAMS

Division members are actively involved in research related to the “5 Ms” of geriatric medicine: mind, mobility, medications, multi-complexity, and “what matters most” for older adults. Specific areas include delirium, therapeutic value of dance (GERAS-Dance), fracture risk assessment and prevention in LTC, frailty prevention, older high-cost healthcare users, and perioperative medicine. The GERAS centre for aging research, under the leadership of Dr. Papaioannou, celebrated its 5-year anniversary. With a distinctive vision for practical, intervention-based research that tangibly makes lives better for older adults, it continues to build on the momentum of its success.

### MAJOR ACHIEVEMENTS

Dr. Sharon Marr was awarded the Peter McCracken Physician Innovator in Education Award from the Canadian Geriatrics Society (2020). Dr. Christopher Patterson was awarded the lifelong achievement award at the Annual Update in Geriatrics (2019). Dr. John Gong, PGY5 won the Dr. Mark Crowther Resident Teaching Award (2019). Dr. Armeen Jafri, PGY5, won the Dr. Jack MacDonell Prize for her oral presen-

tation at the Canadian Geriatrics Society Annual Scientific Meeting (2019).

Outpatient access to geriatric care underwent major transformation with the launch and roll out of the BSO/SGS Central Clinical Intake program. There is now a streamlined, single point of access to community-based Specialized Geriatrics Services and Behavioural Supports Ontario.

### FUTURE DIRECTIONS

COVID-19 showed us the exigency to have better healthcare systems for our seniors. The division of geriatric medicine will continue to drive academic and clinical work that responds to this imperative. Over the next year, we will ensure that our strength as educators is preserved as we adapt to tremendous change and impacts of the global pandemic. In addition, we anticipate a focus on academic research and development in the following areas:

- Research that leads the way in the Geriatric 5Ms
- Academic growth at regional campuses
- Cross-disciplinary collaboration ■



## 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, as well as Medicine. Several division members also hold cross-appointments in Biochemistry & Biomedical Sciences and Health Research Methods, Evidence and Impact (HEI). Division members provide clinical care for patients with hematologic disorders at the four acute care sites in Hamilton and with our part-time members, at regional hospitals. Members of the Division are also involved in leadership roles in the Hamilton Regional Laboratory Medicine Program.

### EDUCATIONAL ACTIVITIES

Division members continued to make important educational contributions at all levels, including clinical mentorship of medical students, internal medicine residents, residents from other specialty programs, and clinical fellows; as well as supervision at the Masters and PhD level in HEI; Biochemistry & Biomedical Sciences and Medical Education. The Adult Hematology Residency Program, Adult Thrombosis Medicine Area of Focused Competence (AFC) Program and Transfusion Medicine AFC Program (which is housed

**Dr. Shannon Bates**  
MDCM, MSc, FRCP(C)  
Division Director

in the Department of Pathology & Molecular Medicine) underwent successful Internal Reviews. The Adult Thrombosis Medicine AFC Program graduated its first diplomates. The 15<sup>th</sup> McMaster Update in Thromboembolism and Hemostasis and the 4<sup>th</sup> Irwin Walker Day were great successes.

### RESEARCH PROGRAM

The division has achieved world-wide recognition for its research in thrombosis and hemostasis, platelet physiology and function, blood transfusion therapy, the 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, directed by Dr. Donald Arnold. Funding for our research comes from a variety of sources. Division members were successful in receiving grants from CIHR, Canadian Blood Services, and Hamilton Health Sciences. Drs. Donald Arnold, Ishac Nazy, John Eikelboom, and Paul Kim received special funding for COVID-19 research in 2020. Division members were responsible for over 100 manuscripts per year, including in leading journals like *New England Journal of Medicine*, *BMJ*, *Lancet*, *JAMA*, *Annals of Internal Medicine*, *British Journal of Hematology*, *Journal of the American College of Cardiology*, and *Blood*.

### MAJOR ACHIEVEMENTS

Faculty receiving academic recognition included Dr. Weitz (American Society of Hematology Ernest Beutler Lecture and Prize), Dr. James Douketis (American College of Physicians Laureate Award), Dr. Graham Turpie (inaugural TaARI Distinguished Career Award) and Dr. Deborah Siegal (2019 Postgraduate Medical Education Award – Faculty Mentor). Drs. John Eikelboom, Jeffrey Weitz and Mark Crowther were included in the 2018 and 2019 Highly Cited Researchers Lists. Dr. Menaka Pai was appointed the inaugural Head of Benign Hematology at Hamilton Health Sciences (HHS). Hematology Teaching Awards were presented to Dr. Mohammed Aljama (clinical teaching) and Dr. Michael Trus (laboratory teaching). The Adult Hematology Program residents presented a special award for Outstanding Leadership during the Pandemic to Dr. Graeme Fraser. Drs. Madeleine Verhovsek, Donald Arnold

and Mickey Zeller received 2019 Hematology & Thromboembolism AFP-Funded Student Research Awards. This competition was postponed in 2020 due to the COVID-19 pandemic and will be resumed in 2021.

### TRANSITIONS

On June 3, 2020, Dr. Clive Kearon passed away after a long illness. His death was an immeasurable loss to many. He is remembered for his kindness, wit, and impact on thrombosis research and the McMaster Clinical Investigator Program. Work is ongoing to establish a thrombosis fellowship and professorship in his name.



Dr. Clive Kearon

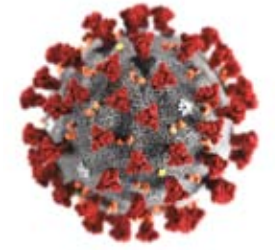
### FUTURE DIRECTIONS

We continue to recruit for both research-educators and clinician-educators and are especially interested in increasing the number of faculty in our division with formal training in education. The Adult Hematology Residency Program is closing in on transition to Competence by Design. Plans are underway for the initial Annual Update in Benign Hematology. Work is ongoing within the clinical and laboratory hematology services and in collaboration with other physician groups to enhance patient care. Participation in a large collaboration leading to an extracorporeal membrane oxygenation (ECMO) program at HHS (a service that would prove to be of particular value during the COVID-19 pandemic) is a prime example of the latter. To some extent, our immediate future directions are predicated by COVID-19. Our division members will work together to minimize the pandemic's impact on clinical care, education, and research and to explore any opportunities the pandemic might bring. ■

100+

Division members were responsible for over 100 manuscripts per year, including in leading journals like *New England Journal of Medicine*, *BMJ*, *Lancet*, *JAMA*, *Annals of Internal Medicine*, *British Journal of Hematology*, *Journal of the American College of Cardiology*, and *Blood*.

# Infectious diseases



## EDUCATIONAL ACTIVITIES

Under the new leadership of residency program director Dr. Eva Piessens, the Infectious Diseases Residency program continues to provide outstanding support and guidance to trainees in the program, in close collaboration with the medical microbiology training program which is under the leadership of division member Dr. Daniela Leto. In addition to these training programs, we have two well established subspecialty fellowship programs, one for HIV led by Dr. Shariq Haider, and one for infection prevention and control and antimicrobial stewardship, co-led by Dr. Dominik Mertz and Dr. Sarah Khan. Dr. Haider is also serving as a RCPSC surveyor for Canadian and International Residency Programs.

## RESEARCH PROGRAMS

Drs. Loeb (PI), Mertz, and Chagla are conducting a CIHR and WHO-funded trial comparing medical masks versus N95 respirators to prevent COVID-19 infections among healthcare workers. Dr. Loeb is also leading a CIHR-funded trial on determinants of COVID-19 community transmission among Hutterites. Furthermore, many division members have been involved in other investigator-initiated and a few industry-initiated studies related to the COVID-19 pandemic,



**Dr. Dominik Mertz**  
MD, MSc, FMH(CH)  
Division Director

## COVID RESEARCH

- Trial comparing medical masks versus N95 respirators to prevent COVID-19 infections
- Determinants of COVID-19 community transmission among Hutterites
- Treatment or prophylaxis trials
- Testing for SARS-CoV-2
- Protecting vulnerable populations



DR. ZAIN CHAGLA



DR. MAREK SMIEJA



DR. SHARIQ HAIDER



DR. CHERYL MAIN

being it on treatment or prophylaxis trials (Drs. Chagla, Mertz, Haider, and Loeb), various studies around testing for SARS-CoV-2 (Dr. Smieja), vaccines (Dr. Smaill), or protecting vulnerable populations (Drs. O'Shea and Dr. Smieja).

In terms of non-COVID-19 research, Dr. Mertz (PI), Dr. Smieja and Dr. Loeb continue to work on preventing Clostridium Difficile infections by identifying carriers. Dr. Mertz (PI) and Dr. Loeb also received an industry grant from a company to continue to conduct a cluster-randomized factorial crossover trial of antibiotic prophylaxis and negative pressure wound dressing to prevent surgical site infections. Dr. Haider developed and is leading CANMUS, the Canadian Mucormycosis Network.

## MAJOR ACHIEVEMENTS

Under the lead of Dr. Piessens, the Infectious Disease Handbook was launched online, a project with involvement of many division members (link: <https://idhandbook.hamiltonhealthsciences.ca/>). Drs. Loeb and Mertz continue to work on updating the list of antibiotics for the WHO Essential Medicine List. Dr. O'Shea was successful in obtaining an Ontario HIV Treatment Network (OHTN) grant for work in HIV treatment and prevention clinics. Drs. Mertz, Chagla, Loeb and Smieja have been serving on several local, regional, provincial (Ontario Health and Public Health Ontario, respectively), and national task forces, committees, and panels helping address the COVID-19 pandemic. Dr. Loeb also serves on the Infectious Diseases Society of America Guidelines panel on the diagnosis of COVID-19.

Dr. Haider was awarded the MSA President's Aware for Distinguished Service in 2019, serves as President Elect for the Canadian Foundation for Infectious Diseases (CFID), and sits on the Board of Directors of the Canadian Association of HIV Research (CAHR). Dr. Loeb was awarded the title of Fellow of the Royal Society of Canada and Fellow of the Canadian Academy of Health Sciences. Finally, Dr. Main received the Dr. Clive Davis award from the MSA. Finally, Dr. Yamamura is currently President Select for AMMI Canada and an IQMH Advisory Council Member.

## FUTURE DIRECTIONS

We are planning to recruit 2-3 new division members over the next two academic years. This will allow us to address the ever-increasing demand for clinical Infectious Disease expertise, and also to further broaden the clinical as well as research expertise within the division. Collaboration within and across divisions and departments as well as quality improvement work will continue to be a goal for the division.

Many division members shifted their administrative, clinical and research focus to COVID-19 in 2020. Our research direction continues to be randomized trials and observational studies, systematic reviews, diagnostic and immunologic studies, research in hospital epidemiology, and we continue to work closely with colleagues doing bench and pandemic research. ■

# Nephrology

200+

Divisional members have published more than 200 peer-reviewed original research publications over the past five years.

## EDUCATIONAL ACTIVITIES

The Division of Nephrology is very influential in shaping undergraduate and postgraduate medical education in the Department of Medicine. Nephrology continues to be a popular rotation/selective amongst the medical students and internal medicine residents. Training is provided in in-patient nephrology, transplantation and out-patient clinics. Initiatives in simulated procedures and evaluation exercises, such as the Renal OSCE, continue to be educational foundations of the rotation.

Due to the strength and popularity of this program, there are over 20 residents, fellows, and clinical scholars in the program. There are 5 fellowship programs offered and the program is one of only two centres in the country to receive RCPSC/AFC accreditation for Solid Organ Transplantation.

## RESEARCH PROGRAMS

The study of kidney disease at both basic science and patient levels continues to be a major academic focus of the division. Closely affiliated with the Division of Nephrology, the Hamilton Centre for Kidney Research (HCKR) brings clinical and biomedical researchers together with the goal to improve the lives of people with chronic kidney disease (CKD) through leading-edge research. 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 grow in the division. The division is home to one of the largest randomized controlled trials in nephrology ever to be undertaken (ACHIEVE). This study is evaluating the role of aldosterone antagonism in reducing cardiovascular events in people on dialysis. The division also has expertise in utilizing large datasets to better understand the risk of thrombotic and cardiovascular complications in people with CKD.

A number of divisional members conduct cutting-edge biomedical research in their laboratories. One line of investigation focuses on the underlying mechanisms of atherogenesis and vascular calcification in CKD. Other areas of intense interest include studying the pathogenesis and potential therapies of diabetic and hypertensive kidney disease, progressive renal fibrosis, and monogenetic and polygenetic contributors to kidney disease.

## MAJOR ACHIEVEMENTS

Growth in our renal transplant program has been unparalleled, necessitating the recent recruitment of an additional transplant nephrologist. This has been a success story for our patients. Participation in the National Living Donor Paired Exchange registry has provided the opportunity for many patients, including those at high immunological risk, to receive a kidney transplant.

The division continues to make substantial contributions towards narrowing the long-standing evidence gap in the clinical care of people with kidney disease, and to better understand the pathophysiology and genetics of progressive kidney disease and vascular calcification.

## FUTURE DIRECTIONS

The division will continue to lead the way in educational

“Our program is one of only two centres in the country to receive RCPSC/AFC accreditation for SOLID ORGAN TRANSPLANTATION.”

innovation at an undergraduate and postgraduate level. We will continue to expand our offerings of additional fellowship training, including genetics in nephrology and geriatric nephrology. Simulation and “Competence by Design” are two areas in particular where we expect to lead the way.

Our goal is to be the preeminent nephrology program in Canada for clinical research, attracting national and international future clinical trialists who seek additional training. Furthermore, increasing research collaborations between divisional members has begun to yield exciting findings in translational research that may lead to novel therapies in the management of CKD and its complications.

The division continues to pride itself in the delivery of high-quality, patient-partnered care; its academic pursuits will always focus on the ultimate goal of improving the lives of people with kidney disease. Growing divisional expertise in quality improvement will further strengthen our strong relationships with hospitals and provincial agencies as we work together towards this common goal. ■



**Dr. Scott Brimble**  
MD, MSc, FRCPC  
Division Director

# DIVISION REPORT

## Neurology

20

Number of residents in the five-year neurology residency training program.

### INTRODUCTION

The Division of Neurology is one of the largest divisions in the Department of Medicine with 31 academic faculty. We provide tertiary neurological consultation for the largest regional service area in Ontario of over 2.3 million people.

### EDUCATIONAL ACTIVITIES

The Division of Neurology helps coordinate and run the neuroscience curriculum and clinical skills in the MD undergraduate program. Many of the faculty are tutors and most faculty supervise undergraduate students on the neurology teaching units and in their outpatient clinics.

The five-year neurology residency training program has grown to 20 residents. All our graduates have been successful in passing their Royal College examinations. Some have started in general neurological practice while others have continued their training in neurological subspecialties. The training program has a robust teaching



**Dr. Wes Oczkowski**  
MD, FRCPC  
Division Director

curriculum which includes a weekly problem-based academic half-day, daily teaching rounds, including subspecialty rounds in EEG, EMG, movement disorders, multiple sclerosis, stroke, and neuroradiology. Weekly Neuroscience Grand Rounds and Stroke Program Grand Rounds supplement our other teaching sessions. We host a successful annual Residents' Research Day and Neuroscience Half-Day.

The division offers fellowship programs in stroke, epilepsy, multiple sclerosis, and neuromuscular disorders. The stroke fellowship program is a fully funded program supported by the Marta and Owen Boris Foundation.

Continuing health education is provided at our annual Neuromuscular Day, Half-Day in Epilepsy, Stroke Update and Half-Day in Clinical Neurology.

### RESEARCH ACTIVITIES

COVID-19 has had a significant impact on clinical research, with much of it initially paused. However, it has also changed how we engage research patients, with telephone visits and video consent.

The Stroke Program continues to be very active in clinical trials research along with the Population Health Research Institute and Hamilton Health Sciences. We have been successful in continuing to run many of our clinical trials despite pandemic restrictions. Trials include testing acute stroke risk reduction and neuroprotective agents, endovascular interventional trials, prevention of stroke in patients with atrial fibrillation after intracerebral hemorrhage, and reducing the risk of stroke in patients with intracranial disease. The Epilepsy Program is investigating the prognosis of generalized epileptiform discharges, new agents in status epilepticus, trials on sudden unexpected death in epilepsy, and automated methods of EEG analysis. The Neuro-Oncology program is actively recruiting and running trials in treatments for patients with brain tumors. The Multiple Sclerosis program is participating in trials testing new agents to enhance remyelination and repair. Basic science research continues in ALS, neuromuscular disorders, and the neural mechanisms of consciousness. The neurocritical care and stroke groups are involved in national guideline development.

### MAJOR ACHIEVEMENTS

The division has grown substantially in the last 2 years, especially in the context of subspecialty program growth and moving towards gender equity. We now have 2 or more subspecialty trained full-time academic neurologists in each of stroke, epilepsy, movement disorders, multiple sclerosis, neuro-oncology, neuromuscular disorders, and ALS.

The neurology training program is a mature and coveted program that graduates excellent neurologists and is predicated on an exceptional teaching curriculum. Our faculty have received undergraduate and postgraduate teaching awards.

Many of the neurology subspecialty programs have a fellowship program and are actively involved in clinical research, either leading or participating in clinical trials.

### FUTURE DIRECTIONS

Neurology has recruited our first cognitive neurologist and plans to grow this high priority program. We have started the recruitment process for an epileptologist with expertise in surgery for epilepsy and a movement disorders neurologist with expertise in deep brain stimulation. Other priority clinical areas of headache, pain, and general neurology look to be filled by some of our exceptional senior graduates.

The division of neurology will continue to focus on clinical trials and education as priorities for its academic mission. ■

“We now have 2 or more...  
full-time neurologists  
in each of  
stroke, epilepsy,  
movement disorders,  
MULTIPLE SCLEROSIS,  
neuro-oncology,  
neuromuscular disorders,  
and ALS.”



## DIVISION REPORT

# Physical medicine and rehabilitation

It has been my honour to serve as the Division Director and Chief of Physical Medicine and Rehabilitation (PM&R) since March 2020. The journey continues to inspire as we move towards a highly productive academic and clinical enterprise. 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

Rehabilitation care in Hamilton is one of the largest clinical programs in North America. We provide services to a wide variety of patients including individuals recovering from stroke, spinal cord injury, brain injury, amputation, cancer, as well as bone and joint injuries. The in-patient program has a complement of over 100 beds. The majority of clinical services are delivered at the Regional Rehabilitation Center located on the Hamilton General Hospital campus. Additional services are provided at the Juravinski Hospital, St. Joseph's Healthcare Hamilton (SJHH), St Peter's Hospital and McMaster University Medical Centre. We conduct approximately 30,000 out-patient visits yearly.

**Dr. Nora Cullen**  
MD MSc FRCPC  
Division Director

### UNDERGRADUATE AND RESIDENCY TRAINING PROGRAM

The PM&R faculty supports the second largest residency program in Canada with approximately 20 post-graduate trainees, many medical students, as well as clinical fellows from other universities. The Residency Program Committee oversees the quality of teaching over the course of five years of training. Competency by Design will be introduced in July 2020, providing a new platform for evaluation and feedback for residents during their training. As well, the PM&R program will be undergoing an Internal Review in November 2020 to provide clarity on priorities. We are excited to embark on these important activities as they will enhance our program.

30,000

Number of out-patient visits to Physical Medicine and Rehabilitation

“**Rehabilitation care in Hamilton is one of the largest clinical programs in North America.**”

### RESEARCH

Our faculty and residents have presented abstracts and posters in recent years at national research meetings, including the American Congress of Rehabilitation Medicine, American Academy of Physiatry, and the American Academy of Neuropathology. We are currently facilitating research projects within the division to ensure that studies move towards advancing knowledge about optimal care of patients with disabilities.

### STRATEGIC PLANNING

We will be embarking on a multifaceted strategic planning process in September 2020, seeking a unified vision from members and residents of a roadmap for the next five years. We will hear from researchers and biotech scientists across

McMaster who will inform us of collaborative opportunities in related fields. We will do a deep dive into the results of an Internal Review for the residency program and seek consensus on identified priorities in improving our teaching, research and other priorities.

### FUTURE DIRECTIONS

The division of PM&R is a collaborative and academically productive group of committed individuals who are equipped to optimize our strengths in spite of the constraints of the pandemic. We are actively recruiting new faculty to support in-patient and out-patient programs. With an aging population and technological advances, we expect to be busy meeting the needs of the population that we serve.

I am very much looking forward to the future of PM&R at McMaster. ■

# Respirology

The Division of Respirology is the primary provider for tertiary care service for Southern Ontario. We offer many specialty clinics that attract patients from our region and beyond. Amongst the “flagships” are our severe airway disease and interstitial lung disease clinics, and more recently, the Pulmonary Hypertension and a Respirology/Infectious Disease Clinic (all at St. Joseph’s Hospital), and at the HGH site, a clinic for adult Cystic Fibrosis.

## FACULTY

Dr. Jane Turner has joined the Division after completing some additional training in the field of pulmonary complications post bone marrow transplant in Seattle. She is providing expert care in this area at the Juravinski Hospital. Dr. Terence Ho is another new recruit and he is particularly interested in complex airways disorders and chronic obstructive pulmonary disease. Both Drs. Turner and Ho have already been successful in obtaining funding for clinical research projects. Dr. Madhu Chari has been recruited to our group of sleep physicians after the retirement of Dr. Peter Powles in 2020.

**Dr. Martin Kolb**  
MD, PhD  
Division Director,  
Research Director,  
Associate Professor

## EDUCATIONAL ACTIVITIES

Under the leadership of our program director, Dr. Rebecca Amer, the Respirology Residency Training Program continues to attract top

trainees from Canada and the Middle East. For the first time we had a fellow join our program from the University of Tel Aviv in Israel. 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 the Hamilton General and Juravinski Hospitals.

## RESEARCH PROGRAMS

The research within the Division of Respirology continues to be very diverse. Dr. Malcolm Sears has retired as the director of the Canadian Healthy Infant Longitudinal Development study (CHILD) which has enrolled an impressive number of infants, almost 3,000, from across Canada. Dr. Padmaja Subbarao, who holds a primary appointment at the University of Toronto and an adjunct appointment with the Division of Respirology at McMaster has taken over as director of the CHILD study. The study continues to produce 10-15 publications per year. One of the many questions that will be addressed in this study are the identification and better understanding of early determinants of factors that lead to asthma in children, adolescents, and young adults. Our sputum lab at the Firestone Institute for Respiratory Health, under the leadership of Dr. Param Nair as medical director and Dr. Helen Neighbour as deputy director, is world-renowned and attracts many clinical trials that are aimed at personalized medicine to treat severe asthma and COPD. Peptide immunotherapy for allergic diseases and asthma is another major research area, led by Dr. Mark Larché. In addition, our faculty members continue to investigate the basic mechanisms of airway and vascular smooth muscle cells in airway disease. The labs of Drs. Ask, Hirota and Kolb explore the cellular and molecular biology of pulmonary fibrosis with substantial translational research. Dr. Janssen, an expert in smooth muscle cell biology, retired in 2020 after more than 25 years of service. The numbers of pre-clinical and early clinical trials that are 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, CFI, the OLA, and other public agencies.

“Several of our researchers are also conducting projects to study the impact of COVID-19 on respiratory health.”



DR. PADMAJA SUBBARAO



DR. PARAM NAIR



DR. HELEN NEIGHBOUR



DR. MARK LARCHE



DR. ASK



DR. HIROTA

## FUTURE DIRECTIONS

The development of collaborative clinical programs across the City of Hamilton and within the larger region remains the major goal for 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 the continuity of our profile as a strong academic division. ■

# Rheumatology

## EDUCATIONAL ACTIVITIES

The Postgraduate training program has flourished under Dr. Nader Khalidi's strong leadership and continues to do so under Dr. Kim Legault who recently took the reins on July 1, 2019. The program remains to be nationally recognized for its excellent teaching. The applicant pool for trainees continues to be of the highest caliber. The Division has embraced Competency by Design and has had a successful Internal Review of its newly redesigned evaluation system that Dr. Khalidi and Program Coordinator Rennée Tremblay worked tirelessly to implement (and currently Dr. Kim Legault alongside Rennée Tremblay).

The program offers sub-specialty clinics in lupus, scleroderma, vasculitis, metabolic bone disease as well as multi-disciplinary clinics with respirology, nephrology and neurology. The Division also provides educational support for neurology, physiatry, internal medicine, dermatology, family medicine and ophthalmology. Dr. Matsos will be co-chair of the recently established Internal Medicine Competency by Design Committee.

The faculty has strong representation across the undergraduate program in tutoring, professional skills, musculoskeletal boot camp, clerkship selective and supervising Medical Foundation 5 under Dr. Carmona's direction.

**Dr. Alfred Cividino**  
BASC, MD, FRCPC, FACR  
Division Director

Outreach and community learning experiences are provided by the many associated clinical faculty in Hamilton, Burlington, Milton, St. Catherine's, Cambridge and Kitchener-Waterloo.

Dr. June Lee, our first faculty at the St. Catherine's campus has completed her Master's in Education while providing leadership in the undergraduate program.

Our highly rated 'Clinical Day in Rheumatology: The Pearls you Need to Know' was held again this year.

## RESEARCH

Research activity and funding support has been broadly based in the areas of metabolic bone disease, lupus, scleroderma, inflammatory arthritis, and vasculitis.

Multiple grants have been supported by CIHR, HAHSO Innovation Fund, NIH, The Arthritis Society, The Canadian Rheumatology Association as well as industry partners.

Collaboration with radiology, respirology, nephrology, geriatrics, engineering and rehabilitation sciences have continued.

Dr. Rick Adachi's work continues to be recognized internationally as one of the most published faculty at St. Joseph's Health Care. He has several peer-reviewed grants.

Dr. Khalidi continues to be very productive in expanding work in new treatments for vasculitis with NIH and industry funding.

Dr. Larché continues her work in scleroderma and imaging in inflammatory arthritis.

## MAJOR ACHIEVEMENTS

- Dr. Maggie Larché has been awarded a \$1.1 million grant to study biomarkers in patients with Rheumatoid Arthritis and Interstitial Lung Disease in collaboration with respirologists, (Drs. Cox, Kolb, Hambly, Scallan, Ho, Nair) rheumatologists, (Drs. Khalidi and Garner) and scientists (Drs. Ask, Mukjerjee and Larché).

- Dr. Nader Khalidi remains the Vice-President of CanVasc (Canadian Vasculitis Research Network). He is involved in numerous international research projects in Vasculitis (VCRC/PEXIVAS/DCVAS).

- Dr. Kim Legault continues to work on several research projects including guidelines in SLE and CAPS, and the cohort study rivaroxaban in antiphospholipid syndrome. This has led to publication of new guidelines for CAPS and Lupus

- Dr. Mark Matsos is an investigator in the LuCIN (Lupus clinical investigator network) and co-author of new Lupus guidelines

- Our fifth annual Clinical Day in Rheumatology was extremely successful in a virtual format

- New Fellowships in Vasculitis and Scleroderma have been established

- New faculty recruitment; Dr. Stephanie Garner having completed a Vasculitis and Rare Disease fellowship and Dr. Kostas Tselios having extensive experience in Lupus Clinical research

- Clinical Scholars Dr. Faiza Khokhar and Dr. Mary-Clair Yelovich were supported by the division in completing their Master's in Education and Quality Improvement respectively

## FUTURE DIRECTIONS

Our vision is to be recognized for leadership and innovation in education, research and inter-disciplinary patient-centered care.

As division director, I am excited about the developments in the division and interest in new clinical scholars who will bring a new set of skills to expand our potential. ■