

DIVISION REPORT

Cardiology



Dr. P.J. Devereaux
MD, PhD, FRCPC
Division Director

EDUCATIONAL ACTIVITIES

Under the leadership of Dr. Matt Sibbald, the Cardiology Residency Program received full approval and was granted accredited program status by the Royal College of Physicians and Surgeons. Dr. Nick Valettas has taken on the role of competency committee chair for our Cardiology Residency Program. Our fellowships in echocardiography, electrophysiology, heart failure, interventional cardiology, and peri-operative medicine continue to flourish under the leadership of Drs. Omid Salehian, Syam Divakaramenon, Eva Lonn, Shamir Mehta, and Vikas Tandon, respectively. We continue to attract outstanding residents and fellows from within and outside of Canada. The adult echocardiography and the interventional cardiology training programs received RCPS accreditation as new programs.

Dr. Craig Ainsworth received the 2018 PARO Excellence in Clinical Teaching Award for McMaster University. Dr. Matt Sibbald won the 2018 Postgraduate Medical Education Faculty Award for Excellence and Innovation. This award recognizes the outstanding contributions made by a faculty member in advancing residency education. Dr. P.J. Devereaux received the Canadian Association for Medical Education Certificate of Merit Award for Contributions to

Medical Education. Dr. Hassan Mir won the Postgraduate Medical Education Resident Leader Award. This award recognizes a resident who has demonstrated outstanding contributions to residency education. Dr. Ahmed Zeeshan won the Medical Subspecialty Selective Resident Teaching Award 2018. Dr. Alison Montgomery was appointed to the RCPS Committee of Specialty Education.

RESEARCH PROGRAM

We continue to have many successes in our research programs. Regarding publications, we continue to be one of the top research groups with the highest impact in the world. Drs. Yusuf, Teo, and Anand published two papers in the Lancet from the PURE Study that provided important insights into the impact of diet on cardiovascular disease. Drs. Devereaux, Yusuf, Tandon, and Connolly published in the Lancet the results of the first randomized controlled trial in patients with Myocardial Injury after Non-cardiac Surgery (MINS). In the MANAGE Trial, they demonstrated that dabigatran 110 mg twice daily reduced the risk of major vascular complications in the subsequent 16 months after MINS.

Dr. Salim Yusuf received an Honorary Doctorate in Medical Sciences from Charles University in Prague. Dr. Koon Teo delivered the annual Stokes Lecture at the Irish Cardiac Society Annual Meeting, and Dr. Teo was awarded the Stokes Medal.

MAJOR ACHIEVEMENTS

From August 2017 to June 2018, our ambulatory cardiology re-organization completed an intensive phase involving multiple working groups. During this time, the following was accomplished: single referral form for clinics and diagnostic testing; initiation of Comprehensive Cardiology Service (CCS) for outpatient consults; new echo machine for CCS service; central triage of new referrals for CCS and our previously established clinics; change in clinic booking rules resulting in greater clinic availability and scheduling

“...our ambulatory cardiology re-organization completed an intensive phase involving multiple working groups.”

— Dr. P.J. Devereaux

Major Accomplishments

- Single referral form for clinics and diagnostic testing
- Initiation of Comprehensive Cardiology Service (CCS) for outpatient consults
- New echo machine for CCS service
- Central triage of new referrals for CCS and our previously established clinics
- Change in clinic booking rules resulting in greater clinic availability and scheduling flexibility

flexibility; and strong endorsement by the HHS executive team of the cardiology ambulatory vision and plans.

Dr. David Conen was selected as the Juravinski Hospital and Cancer Centre site leader and Dr. Vikas Tandon was selected as the Saint Joseph's Healthcare site leader. Dr. James Velianou was awarded the Clive Davis Consultants Award.

FUTURE DIRECTIONS

With the creation of the CCS, the cardiology division is now in a position to recruit new members. Over the coming months we will initiate a process to determine how many and what type of phenotype we want to recruit. ■

DIVISION REPORT

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. David Fahmy is the education coordinator and Dr. Michael Cyr is the site director and deputy program director.

There are eight 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 as well as from other centres. Graduating trainees have proceeded to academic and clinical careers in Clinical Immunology and Allergy in Canada and internationally. In addition, a substantial number of postdoctoral PhD and MD research fellows, as well as visiting scientists, regularly join our division.

Undergraduate teaching is well supported by our divisional faculty. Our weekly Allergy and Immunology Rounds, with internationally renowned invited speakers on occasion, are a major success. Other seminars, journal clubs and teaching sessions are a regular feature including the weekly academic half-days.



Dr. Judah Denburg
MD, FRCPC
Division Director

RESEARCH PROGRAMS

Principal research themes are inflammation and immunity as they relate to the respiratory tract (allergic rhinitis, nasal polyposis, asthma and peptide immunotherapy), food allergy (peanut desensitization, peanut allergy threshold studies, clinical food allergy challenges, pathophysiology of anaphylaxis), autoimmune diseases, hereditary angioedema, and hemopoietic stem cells in the development and maintenance of allergy. Peer-reviewed and private sector funding, including trials of new biologics and peptide vaccines in pre-clinical and clinical models, continues to grow. Thus, there exist many research opportunities for students, postdoctoral fellows and others pursuing continuing medical education for an investigative career. The presence of AllerGen NCE at McMaster has allowed for major expansion of ongoing research collaborations, especially in food allergy, asthma and the development of atopy.

The Division hosts an NIH-funded T cell Epitope Research and Validation Centre, focusing on understanding the modulation of allergen-specific T cell function and trafficking, following interventions such as bronchial allergen challenge and peptide immunotherapy. Mechanistic studies of peptide immunotherapy are funded by CIHR. Development of a therapeutic vaccine for rheumatoid arthritis continues with CIHR and industry funding, directed by Dr. Mark Larché.

“... there exist many research opportunities for students, postdoctoral fellows and others pursuing continuing medical education for an investigative career.”

— Dr. Judah Denburg

MAJOR ACHIEVEMENTS

Dr. Susan Waserman is president of the Canadian Allergy, Asthma and Immunology Foundation and Dr. Harold Kim holds the position of president, Canadian Society of Allergy and Clinical Immunology. Dr. Mark Larché holds the Canada Research Chair in Allergy & Immune Tolerance and the McMaster University/GlaxoSmithKline Chair in Lung Immunology at St. Joseph's Healthcare. Dr. Denburg continues as CEO/scientific director of AllerGen NCE, which is in its second funding cycle (to 2019); see the separate report on AllerGen. Dr. Maggie Larché sits on the Annual Scientific Meeting Program Committee for the Canadian Rheumatology Association.

FUTURE DIRECTIONS

With all of the above activity, maintenance of a critical mass of academically committed members of our division is a high priority. The growing outpatient load and the hospital restructuring make it necessary to provide greater service to a larger volume of both adult and pediatric patients over a larger area. Moreover, the international stature of research emanating from our division at McMaster, with new opportunities of linkage to respiratory health, rheumatology and inflammation, provide continued opportunities for academic growth of our division. ■

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 service. Faculty members are active supervisors in the undergraduate medicine program as well as postgraduate education at the masters and PhD level in health research methodology, medical sciences, e-health, global health, and pharmaceutical sciences at both McMaster University and the University of Toronto. The division draws doctor of pharmacy students from across the country, as well as undergraduate pharmacology, health sciences, 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.

Clinical Pharmacology and Toxicology (CPT) participates in a University of Toronto-coordinated Clinical Pharmacology and Toxicology Residency Training Program accredited by the Royal College of Physicians and Surgeons of Canada. We are actively recruiting trainees and graduates. We continue to lobby for joint specialty-clinical pharmacology training.

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

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

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— Dr. Ann Holbrook

"As well as scholarly papers and presentations, members of the division hold multiple copyrights and patents on research products, software, reports and guidances."

— Dr. Anne Holbrook

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 leadership activities are developing into a major 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



“We continue to create the evidence within critical care, which has and will change clinical practice internationally.”

— Dr. Andreas Freitag

EDUCATIONAL ACTIVITIES

The Critical Care Program offers a Royal College accredited two-year Fellowship Program (program director: Dr. T. Karachi). We currently have 12 national/international fellows in the program. The program offers formal rotations for residents from a variety of other specialties, as well as block electives/selective rotations in critical care to medical students (organizer: Dr. S. Sharma). We continue to provide a Critical Care Simulator Course as well as formal bedside ultra-sound/echocardiography course for faculty/residents (organizers: Dr. A. Fox-Robichaud; C. Ainsworth). Faculty provide formal educational sessions on a daily basis, as well as once weekly academic half days for critical care residents/fellows.

RESEARCH

The Critical Care Program mandates all fellows to complete a research project under the supervision of faculty. There is an Annual Fellows Research Day in conjunction with the Fellowship Program at the University of Western Ontario. Many of the abstracts/projects are also presented at a variety of international conferences with subsequent peer-reviewed publications. Drs. D. Cook/M. Meade

500

Number of participants in the first inaugural Day in Critical Care Medicine

co-chair a research mentorship program dedicated to formal training in research methodology and stewardship. Various members of the division are active participants in the Canadian Critical Care Trials Group. Several members of the division are either principal or co-investigators in a variety of trials studying the management/mechanisms in septic shock; stress ulcer prophylaxis; end of life care; the role of probiotics in critical ill patients receiving antibiotics, just to name a few.

MAJOR ACHIEVEMENTS

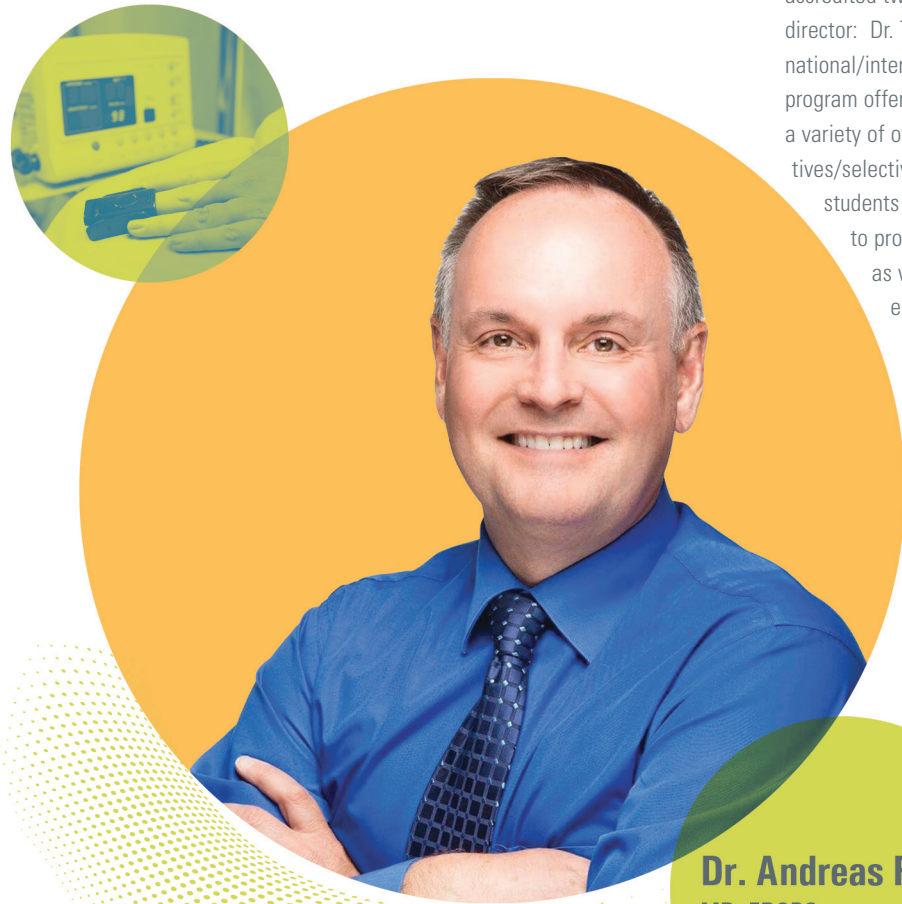
Dr. D. Cook is the co-chair of the Evidence-Based Practice Centre at McMaster University, as well as the director of ICU Clinical Effectiveness and Outcomes Research at St. Joseph’s Healthcare, Hamilton. She is the McMaster University/St. Joseph’s Healthcare Regional Academic Chair in Critical Care Medicine, as well as being the Canadian Research Chair of Research Transfer in Intensive Care. Dr. A. Fox-Robichaud is the President of the Canadian Critical Care Society (CCCS).

Dr. P. Kraus is the LHIN lead for critical care medicine, which advises government and/or creates policy with regards to future directions in critical care utilization, funding and standards of care. There is ongoing financial support for the Clinical Critical Care Assistants Program sponsored by the Ministry of Health and Long-term Care. Dr. J. Rudkowski is the Clinical Clerkship

Coordinator. Dr. M. Soth is the medical director for critical care of medicine at St. Joseph’s Healthcare, Hamilton. Dr. B. Rochweg is the new medical director, of the Intensive Care Unit at the Juravinski Hospital. Dr. S. Oczkowski is the new medical director, for the Women’s Reproductive Health ICU at McMaster’s Women’s and Children’s Hospital, Hamilton Health Science. Dr. T. Karachi will be the new director for the Division of Critical Care Medicine Department of Medicine, McMaster University in January 2019. Dr. M. Mead is the regional medical director of Trillium Gift of Life based at Hamilton Health Sciences. We expanded our divisional membership into the Niagara Healthcare Organization with Drs. J. Tsang, E. Duong. We have created the Guide Program which is designed to provide guidance and development of both national/international guidelines on a variety of topics beyond critical care of medicine for organizations such as, the American Thoracic Society, European Thoracic Society and Society of Critical Care of Medicine. We had the first inaugural Day in Critical Care Medicine in the spring of 2018 which was a phenomenal success and had 500 participants.

FUTURE DIRECTIONS

We continue to provide support and leadership in the delivery of critical care services both in Hamilton and in the LHIN. We continue to create the evidence within critical care, which has and will change clinical practice internationally. We have expanded our clinical borders by way of our critical care response teams. We have developed and/or implemented the hospital early warning scores locally and will presumably be adopted across the province. We continue to work with our colleagues on quality of life as well as end of life decision making. We will continue on with our education and research endeavours including an annual Day in Critical Care of Medicine. We continue to develop a network of critical care consultants across the LHIN and through the Division of Critical Care to better coordinate and provide ongoing excellence in clinical care, education and future research. ■



Dr. Andreas Freitag
MD, FRCPC
Division Director

Dermatology



EDUCATIONAL ACTIVITIES

The Division of Dermatology at McMaster University promotes a high-quality patient-centered dermatology service to the population of Hamilton, Niagara, and Waterloo metropolitan areas or Southwest of Ontario regions, serving both inpatient and outpatient activity.

The Dermatology division has devoted its activities to education. It provides extensive undergraduate medical dermatology teaching and a broad range of postgraduate elective opportunities in Hamilton for medical students and postgraduate students in the Departments of Internal Medicine, Pathology, Pediatrics, Plastic Surgery, and Ophthalmology. This is an ongoing program to update and educate students, residents, fellows and clinical faculty through patient presentations/discussion which serve both an educational function through discussion of interesting or problematic cases, and to facilitate the exchange of ideas regarding patient care. Our faculty members have national and international recognition in their fields, and in providing front-line care to patients with skin problems ranging from common to unusual. Most dermatologists practice in the community while Dr. Hermenio Lima (division director) and Dr. Rosilene

Dr. Hermenio Lima
MD, PhD, FRCPC
Division Director

“The goal of these clinics and units are to provide Hamilton patients with the right care, at the right time, in the right place.”
— Dr. Hermenio Lima

Lanzini (assistant professor of Dermatology) practice in the medical school clinics.

CLINICAL RECRUITMENT

We are recruiting experienced qualified dermatologists to join our busy and expanding medical dermatology clinics at McMaster. Dermatology is part of a changed health care landscape. Recruitment and retention of new faculty are one of the main objectives of the dermatology division. The division will be recruiting new GFT faculty members shortly.

CLINICAL ACTIVITIES

Dermatology Division Academic Centre provides both, secondary dermatology and tertiary health care services to Hamilton and the catchments areas. The restructure creation of a Dermatological Health Care services follows the Royal College recommendations for Dermatology Division Academic Centres. The provided academic structure allows the opportunity to recognize and treat acute and chronic common and rare skin conditions with the best of evidence-based medicine. The goal of these clinics and units are to provide Hamilton patients with the right care, at the right time, in the right place.

MAJOR ACHIEVEMENTS

Creation of more academic dermatology clinic services as part of education contributions at McMaster University. More opportunity for dermatology teaching and training for learners. Increased number of medical students and residents' rotations. The implementation of the first fellowship program in dermatology with one fellow in training.

FUTURE DIRECTION

Patient Care: Increase the number of patient services; reduce the waiting list; and improve patient care outcomes.

Academic: Improve academic training and establishment of a McMaster Dermatology Residency Program. ■

Emergency medicine



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

FUTURE DIRECTIONS

Late 2017 brought a new division director (Dr. Michelle Welsford), and served as a great opportunity to look to the future. The Division has reached out to strengthen its collaboration with the other Divisions of Emergency Medicine (EM) under the Departments of Pediatrics and Family Medicine and envision other models that may help the faculty across the three divisions succeed. In the next annual report, you will hear more about the results of an external consultation, and the Division's strategic plan.

EDUCATIONAL ACTIVITIES

Postgraduate (PG) Program

The McMaster EM PG residency has nearly 40 residents and is well supported by the leadership (Drs. Alim Pardhan and Kelly van Diepen) and our strong faculty. The program has been well prepared to implement the Competency by Design (CBD) curriculum. The program has a new academic half day curriculum and created/piloted the McMAP assessment software. Simulation (Dr. Kyla Caners), research boot camp (Drs. Kerstin de Wit, Mat Mercuri), and continuous quality improvement (CQI, Dr. Shawn Mondoux) curriculae have further strengthened the curriculum, augmented by critical care and disaster simulation days. Led

40

Number of Postgraduate Program residents

by residents for residents, Ice Cream Rounds is a new innovation that allows celebration of successes and peer support for the challenges of residency.

Undergraduate (UG) Program

The UG EM program (Dr. Massoud Jalayer) has 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. In 2017 the rotation launched EM MacDOT (McMaster direct observation tool) and the program continues to foster medical student-faculty research collaboration via an annual Medical Student EM Research Awards.

Continuing Professional Development (CPD)

The associate CPD director (Dr. Alex Chorley), under the mentorship of the director (Dr. Teresa Chan), has been incredibly busy implementing new, innovative programming including REACH rounds (Research, Education, Administration, Clinical, Health) and BEER Rounds (Beginner to Expert Education Rounds). The 10:EM conference in 2017 focused on "Sports and the Great Outdoors" and featured many local experts. Many of our faculty and residents have contributed to numerous #FOAMed (Free Open Access Medical education) activities including international blogs and podcasts such as ALiEM.com, CanadiEM.org, and more.

RESEARCH ACTIVITIES

The Division has a burgeoning clinical research program (led by Dr. Kerstin de Wit supported by Mathew Mercuri and many others). Dr. de Wit was the recipient of a large CIHR grant and is supervising a recipient of a CanVECTOR fellowship. The educational research program continues to flourish (Drs. Jonathan Sherbino and Teresa Chan), with strong connections with the McMaster Faculty of Health Sciences Program in Education Research, Innovation and Theory (MERIT).

"In 2017 the rotation launched EM MacDOT (McMaster direct observation tool) "

— Dr. Michelle Welsford

MAJOR ACHIEVEMENTS

- Dr. Jonathan Sherbino, assistant dean of MERIT was promoted to professor in 2018 and received the national Terry Sosnowski Teacher of the Year Award
- Drs. Bandar Baw (McTox toxicology curriculum curriculum) and Alim Pardhan (PG program director and site chief Hamilton General EM) were promoted to associate professor
- Dr Shawn Mondoux (ED Process Improvement Team Chair) is a new GFT and was successful with the E.J. Moran Campbell Internal Career Research Award
- Dr. Teresa Chan assumed the role of the director of the Clinician Educator Area of Focused Competency in the January of 2018 and also received the 2018 PSI Graham Farquharson Knowledge Translation Fellowship

Congratulations and many thanks to Dr. Margaret Ackerman on her retirement. She is a foundational leader in EM. She served as PG program director in the 1990s, as the division director for the last 10 years, and received the 2017 Department of Medicine Postgraduate Teaching Award.

Kudos to our strong residents who have also received recognition:

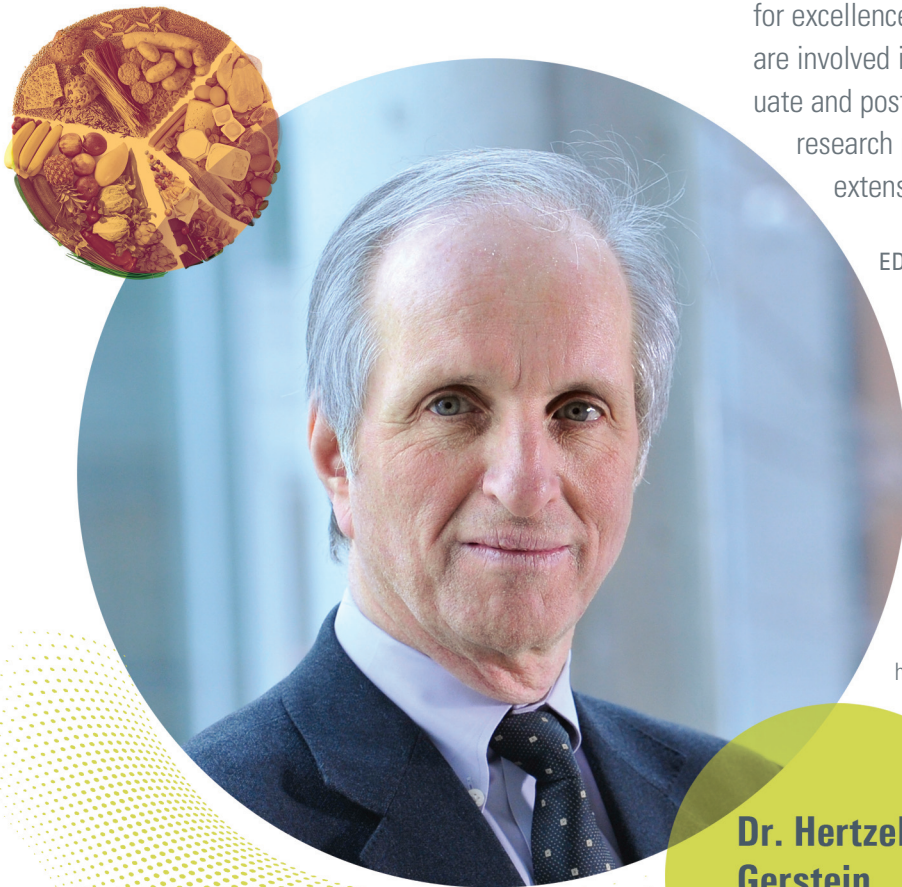
- Dr. Chris Heyd received the Hamilton Health Sciences Medical Staff Association Outstanding Resident of the Year award
- Dr. Blair Biggam received the Ontario Medical Association Resident Achievement Award, the national EM FRCPC Resident Leadership Award, and the Canadian Medical Association Young Leader Award. ■

Endocrinology and metabolism

CENTRE FOR METABOLISM, OBESITY AND DIABETES RESEARCH

The centre is focused on translating world-leading basic science into clinical practice to improve the diagnosis, prevention and treatment of metabolic diseases in children and adults.

Highly productive, creative and effective researchers and educators underlie the Division's local, and international reputation for excellence. Divisional faculty members are involved in all aspects of the undergraduate and postgraduate curriculum and their research productivity is reflected in their extensive publications.



Dr. Hertzell C. Gerstein
MD, MSc, FRCPC
Division Director

EDUCATION

Medical undergraduates have opportunities to interact with divisional faculty in large group sessions, horizontal electives, medical foundations and professional competencies tutorials, clinical skills preceptorships, and self-initiated research projects. Postgraduate medical residents interact with divisional faculty on the clinical teaching units, in academic half days, during a variety of rounds and presentations, and during rotations in in-patient and out-patient endocrine clinics. Divisional faculty are also internal medicine examiners for the Royal College.

The Division supports a full subspecialty residency program in endocrinology and metabolism which has now been operating for nine years and accom-

modates up to two fourth-year residents and up to two fifth-year residents. It also runs a 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, masters level, and PhD students every year (18); and currently accommodate five postdoctoral fellows.

Moreover, 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; educate the public about diabetes, osteoporosis, endocrine hypertension and related disorders; and provide departmental leadership in global health education and training.

RESEARCH PROGRAMS

Collaborative research across disciplines is the key distinguishing characteristic of the Division. All members of the Division are directly or indirectly involved in designing and leading research 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 and pathophysiology; obesity, brown and beige adipose tissue metabolism, AMP-activated protein kinase, inflammation, and fatty liver disease; the relationship between 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.

During the 2017-2018 academic year, research activities have led to the awarding of:

- Five new grants from peer-reviewed and industry sources
- One patent
- The publication of more than 64 peer-reviewed articles or book chapters

MAJOR ACHIEVEMENTS/RECOGNITIONS

This past year Dr. Steinberg was awarded the Diabetes Canada Young Scientist Award and the Endocrine Society Richard E. Weitzman Outstanding Early Career Investigator Award.

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 to understand 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 identify therapies that may mitigate both obesity and diabetes. Members are also involved in elucidating the treatment and prevention of atypical femoral fractures and metabolic bone disease. ■

DIVISION REPORT

Gastroenterology

35M

Dr. Paul Moayyedi continues to lead the national, multi-centre Inflammation, Microbiome and Alimentation: Gastro-intestinal and Neuropsychiatric Effects (IMAGINE) network, whose cumulative funding from the CIHR Strategy for Patient-Oriented Research (SPOR) and industry partners exceeds \$35 million.

EDUCATIONAL ACTIVITIES

The adult gastroenterology residency program continues to thrive under the leadership of its program director, Dr. Eric Greenwald, and to attract high-caliber Canadian and international trainees. Over the summer, McMaster also held its 12th annual Residents' Endoscopy Training Course (RETC), hosting 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. For this and many other initiatives related to endoscopy quality, Dr. David Armstrong won the 2019 CAG Excellence in Quality Innovation Award.

RESEARCH PROGRAMS

The Division of Gastroenterology has continued its top-tier productivity in bench-to-bedside research, with many faculty members also appointed to the Farncombe Family Digestive Health Research Institute (FFDHRI). This integration

of clinical and basic scientists helps to foster translational research, with Canada's first gnotobiotic facility. FFDHRI is directed by Dr. Stephen Collins, who holds the GlaxoSmithKline Chair in Gastroenterology.

Dr. Paul Moayyedi continues to lead the national, multi-centre Inflammation, Microbiome and Alimentation: Gastro-intestinal and Neuropsychiatric Effects (IMAGINE) network, whose cumulative funding from the CIHR Strategy for Patient-Oriented Research (SPOR) and industry partners exceeds \$35 million. 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 receives NIH funding for cutting-edge research on the role of the microbiome on the gut-brain axis and functional bowel disorders.

The Upper Gastrointestinal and Pancreatic Diseases (UGPD) Cochrane Review Group is based within the Division and FFDHRI under the leadership of Drs. Paul Moayyedi and Grigorios Leontiadis. This team produces systematic reviews published in the Cochrane Library, and provides methodologic support to 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.

The Division of Gastroenterology has welcomed two new faculty members with strong research agendas. Dr. Jihong Chen is pursuing clinical and translational research interests in gastrointestinal motility. Dr. Maria Ines Pinto-Sanchez has started a new clinical nutrition service and celiac clinic, with research interests in nutritional therapy for IBD, as well as the investigation and treatment of gluten sensitivity and enteropathy.

MAJOR ACHIEVEMENTS

Dr. Paul Moayyedi was appointed as assistant dean of research for the Faculty of Health Sciences. Dr. Premysl Bercik was the 2018 CAG Visiting Research Professor. Dr. John Marshall was appointed as the inaugural Editor-in-Chief of the Journal of the Canadian Association of Gastroenterology (JCAG).

FUTURE DIRECTIONS

The Division of Gastroenterology and FFDHRI continue to benefit from a strong collaborative spirit among clinicians, clinical researchers and wet lab investigators. A key challenge remains to sustain this integration within increasingly constrained clinical resources. The recruitment of new faculty with strong research mandates has energized our bench-to-bedside collaboration. Groundbreaking research on the role of the microbiome in gastrointestinal function will continue, with increasing interest in the role of diet. This broad research program recognizes the critical role of the intestinal ecosystem and its disruption in human health and disease. ■

"The recruitment of new faculty with strong research mandates has energized our bench-to-bedside collaboration."

— Dr. John Marshall



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

General internal medicine

The last twelve months have been very active for the academic Division of General Internal Medicine (GIM) at McMaster University.

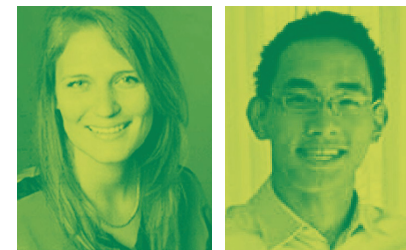
We continue to maintain vibrant Clinical Teaching Units at all three sites of our academic hospitals. The feedback we get from the learners has been extremely positive. We also continue to maintain a very novel and innovative Ambulatory Clinical Teaching Unit based at the Boris Clinic at McMaster Medical Centre. The experience that our learners get in managing complex internal medicine patients has been extremely well received.

Our educational activities on the Clinical Teaching Unit and in the Ambulatory CTU are done mostly by members of the general internal medicine division.

We have been fortunate in recruiting five general internists in the last 12 months. These are Dr. Leslie Martin, Dr. Amna Ahmed, Dr. Steven Wong, Dr. Kajenny Srivaratharajah, and Dr. Arthur Wong.

Most of our division members are also involved in multiple scholarly activities. These include evaluating point-of-care ultrasound, simulation, discussion on end of life care, quality improvement projects, peri-operative medicine and global health. We continue to offer AFP research funding on a competitive basis to the members of our Division.

Dr. Akbar Panju
MB ChB, FRCPC, FRCP(Edin),
FRCP(Glasg), FACP
Division Director



Dr. Leslie Martin, and Dr. Steven Wong are two of the five general internists recruited in the past twelve months

The last twelve months have been extremely busy in initiating and launching Competence By Design for both core internal medicine and GIM Fellowship Program. A lot of our GIM members have taken on leadership roles in CBD, both for GIM and subspecialties. We will be initiating a soft launch commencing July 1st, 2019. This has created a great deal of excitement and work for our membership.



The division maintains a novel and innovative Ambulatory Clinical Teaching Unit at the Boris Clinic at McMaster Medical Centre.

950

Number of physicians from across the country who attended the Internal Medicine Review course held in Hamilton.

The division hosted a very successful Internal Medicine Review Course in the March, 2018. There were over 950 physicians from across the country who attended this review course and we received excellent feedback from the participants. We will continue to maintain the annual review course in Hamilton.

The division continues to maintain quarterly meetings of the membership and the attendance at these meetings in excellent. During those meetings we discuss the achievements and challenges facing the Division of GIM.

Going forward, we have been challenged in maintaining a full complement of residents, both during daytime and at night-time at all three sites. Intense discussions are occurring at all levels to find a solution to this challenge and we may be restructuring one site in the coming year. Unfortunately, we are not able to expand our resident pool.

In spite of the challenges facing the General Internal Medicine Division, we feel the division is well-poised in maintaining and fulfilling its mandate of clinical service, education, and research. We are in the process of fine-tuning our recruitment plan to ensure we have the right mix of physicians to fulfill our mandate. ■

Geriatric medicine

Navigating our complex health care system can be challenging for our older adults and their caregivers. To improve access, equity, and promote continuum of evidence-based care, the division has been working to provide better integrated and coordinated service to our growing older adult population with diverse and complex needs. The division will remain committed to providing care, education and research that focuses on the “voice of older adults” to understand and listen to each of their stories.

EDUCATIONAL HIGHLIGHTS:

The division has continued to collaborate and support innovative educational initiatives. Programs such as the GeriMedRisk©, an interdisciplinary geriatric clinical pharmacology service developed by Dr. Joanne Ho, aims to prevent adverse drug events among older adults and empower clinicians through clinical service, education and research. Elective opportunities for medicine and psychiatry residents at McMaster University and other universities have been developed. In collaboration with the Geriatric Education Research and Aging Science (GERAS) program and e-learning partners, Dr. Richard Sztramko has developed iGeriCare©, which is an online resource for patients, families and caregivers who are living with a diagnosis of dementia. Lastly, Dr. Alexandra Papaio-

Dr. Sharon Marr
BSc, MD, FRCP(C), MEd
Division Director



Dr. Joanne Ho developed GeriMedRisk©, an interdisciplinary geriatric clinical pharmacology service

annou and her GERAS team have created GERAS Senior Women4-Change, a new evidence-informed workshop series led by senior women to enhance wellness, community knowledge and empower participants to create positive changes to age well.

Other highlights include Dr. Mimi Wang as our new Undergraduate Medical Education Program Geriatric Medicine Selective/Elective (UGME MS/E) Coordinator, and thank you to Dr. Heather McLeod for her support and dedication to the UGME MS/E Program who was our previous UGME MS/E Coordinator. The division would also like to congratulate Dr. Ronald Schlegel who is the 2017/2018 Life Long Achievement Award recipient and he will be receiving his award at the 2018, 8th Annual Update in Geriatrics Education Day. With the legalization of marijuana, Dr. Mona Sidhu has provided valuable education and expertise to older adults and health care providers on the use and impact of marijuana use. She is a member of the Canadian Coalition for Seniors' Mental Health Cannabis Use Disorder Working Group which is establishing much needed guidelines for clinicians.

RESEARCH HIGHLIGHTS INCLUDE

- Drs. Courtney Kennedy, George Ioannidis, Alexandra Papaioannou and the Geriatric Education Research in Aging Science (GERAS) team received Centre for Aging + Brain Health Innovation (CABHI)-SPARK Program Award for their Senior Friendly Frailty Fit App, and Researcher-Clinician Partnership Program Award for their Dancing for Cognition and Exercise (DANCE): A Mind-Body Health Platform for Frail Seniors study.
- CABHI Spark Grant awards were also awarded to Dr. Joanne Ho for GeriMedRisk and Dr. Richard Sztramko for iGeriCare programs.
- Additional highlights include Dr. Justin Lee, who received the McMaster Institute for Research on Aging Gold Award for his study characterizing healthcare utilization and medication use in older adult high cost healthcare users.

MAJOR ACHIEVEMENTS

We want to congratulate division members and students/residents for their outstanding accomplishments. Dr. Justin Lee received the Excellence in Oral Presentation Award for his outstanding performance at the 2018 Faculty of Health Sciences Research Plenary and was awarded the CIHR Young Investigator Award and the CIHR Silver Award at the Canadian Student Health Research Forum. Dr. Joye St. Onge received the Department of Medicine Teaching Award for Postgraduate Medical Education, and Dr. Sztramko received the W. Watson Buchanan Clinician Educator Award; Dr. Sharon Marr received the Canadian Association of Medical Education Certificate of Merit for her contributions to undergraduate medical education; Dr. Bahar Orang (MD Class 2018) received the Dr. Irene Turpie Award for her outstanding clinical performance during her Geriatric Subspecialty Selective Clerkship Rotation; and Internal Medicine residents, Dr.'s Christina Reppas and Maggie Lovett, received the Internal Medicine Geriatric Travel Awards.

Special thank you to: Dr. P. O'Byrne, Dr. J. Kelton, Dr. M. Crowther, Ms. A. Rosati and the Department of Medicine administrative staff, Ms. S. Pierson, Mr. K. Sulewski, Dr. B. Lumb, Dr. A. Ingram, Dr. A. Papaioannou, Dr. B. Misiaszek, Dr. J. St. Onge, Dr. T. Woo, Dr. H. McLeod, Dr. M. Wang, Ms. L. Pacheco, Ms. L. Consoli, Ms. M. Armstrong, Ms. J. McKinnon-Wilson, Regional Geriatric Program Central, geriatric medicine division members and their administrative staff for their exemplary support and dedication. ■



Dr. Alexandra Papaioannou and her GERAS team have created GERAS Senior Women4Change, a new evidence-informed workshop series led by senior women to enhance wellness, community knowledge and empower participants to create positive changes to age well.

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.

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 Health Research Methods, Evidence and Impact; Biochemistry & Biomedical Sciences and Medical Education. Hematology was the recipient of the 2018 Internal Medicine Rotation Award for the highest ranked rotation by internal medicine residents and Dr. Eric Tseng received the Subspecialty Faculty Teaching Award. Dr. Graeme Fraser succeeded Dr. Wendy Lim as Director for the Adult Hematology Residency Program effective March 1st 2018, while The Adult Thrombosis Medicine Area of Focused Competence (AFC) Diploma Program, led by Dr. Vinai Bhagirath, received Royal College of

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

Physicians and Surgeons of Canada accreditation in January 2018. The Transfusion Medicine AFC Diploma Program, which is housed in the Department of Pathology and Molecular Medicine and led by Dr. Michelle Zeller, and Fellowship programs in Malignant Hematology and Red Cell Disorders continued to flourish. The 13th McMaster Update in Thromboembolism and Hemostasis (co-chaired by Drs. Mark Crowther and Wendy Lim) was a great success.

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. Donnie Arnold. Funding for our research comes from a variety of sources, including CIHR, the Heart and Stroke Foundation, Canadian Blood Services, and Hamilton Health Sciences. In 2017-2018, division members were responsible for publications in leading journals, including *New England Journal of Medicine*, *BMJ*, *Lancet*, *Lancet Hematology*, *Annals of Internal Medicine*, *British Journal of Hematology*, *Journal of the American College of Cardiology*, and *Blood*. Two hematology faculty with outstanding research reputations were awarded research chairs. Dr. Alfonso Iorio was named the inaugural holder of the Bayer Chair for Clinical Epidemiology Research in Bleeding Disorders and Dr. John Eikelboom will hold the new Jack Hirsh/PHRI Chair in Thrombosis and Atherosclerosis Research.

MAJOR ACHIEVEMENTS

Dr. Ted Warkentin was the recipient of the Dr. Stephen Garnett Distinction Award, which is presented to physicians who have exemplified exceptional dedication and excellence at Hamilton Health Sciences. Previous award winners from our Division include Dr. Jeff Ginsberg and Dr. Irwin Walker. Professor Nancy Heddle received the Canadian Blood Services Lifetime Achievement Award and Dr. Mark Crowther was named a Fellow of the Royal Society of Canada. Other faculty receiving academic recognition this year included Dr. Jeffrey Weitz (new President-Elect of the International Society on Thrombosis and Hemostasis), Dr. Catherine Hayward (elected Vice-President and President-Elect of the Thrombosis and

“ In 2017-2018, division members were responsible for publications in leading journals, including *New England Journal of Medicine*, *BMJ*, *Lancet*, *Lancet Hematology*, *Annals of Internal Medicine*, *British Journal of Hematology*, *Journal of the American College of Cardiology*, and *Blood*. ”

— Dr. Shannon Bates

Hemostasis Societies of North America), Dr. Frederick Spencer (named HiREB's new Chair, Panel B), Dr. John Eikelboom (Jack Hirsh Award for Outstanding Academic Achievement), Dr. Wendy Lim (Department Teaching Award, Postgraduate Medicine), Dr. Noel Chan (E.J. Moran Campbell Internal Career Award), and Paul Kim, PhD (Medicine Internal Career Award). Hematology Teaching Awards were presented to Dr. Menaka Pai (Resident's Choice for Clinical Teaching) and Dr. Mike Trus (Resident's Choice for Laboratory Teaching). Drs. Jim Douketis with Sam Schulman, Ishac Nazi with Donnie Arnold, and Paul Kim with Peter Gross received this year's Hematology & Thromboembolism AFP-Funded Student Research Awards. One of our hematology residents, Dr. Siraj Mithoowani, was the recipient of the Jeff Ginsberg Subspecialty Resident Award.

FUTURE DIRECTIONS

As a specialty, we are facing rapidly increasing service demands regionally, as well as locally, and our challenge as a group will be to ensure that we continue to deliver exemplary clinical care while building on our educational and research successes. To this end, the benign and malignant hematology services across the city continue to work together and with local family physician groups to adopt standardized triage and referral pathways in order to address clinic wait-lists. 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. ■

DIVISION REPORT

Infectious diseases



EDUCATIONAL ACTIVITIES

Under the leadership of residency program director, Dr. Kevin Woodward, and deputy director, Dr. Eva Piessens, the residency program in infectious diseases provides outstanding support and guidance to trainees in the program. The division shared trainees with medical microbiology. Dr. Haider was the supervisor of a successful HIV Fellowship Program and was the supervisor of the recipient of the first Anita Rachlis Subspecialty Award for HIV training from OHTN Ontario HIV Treatment Network, Dr. Andrew Kapoor. Dr. Haider was also the supervisor of the recipient of the AMMI Review article award 2018, Dr. Nadine Kronfli. Drs. Anjali Schroff and Nishma Singhal were co-chairs of the Continuing Health Sciences Education (HSE) day in infectious diseases.

RESEARCH PROGRAMS

Dr. Smail continues to conduct a CIHR-funded Phase 1 clinical trial on adenovirus vector TB vaccine. Dr. Mertz (PI) and Dr. Loeb received a \$300,000 grant from Hamilton Health Sciences to prevent *Clostridium Difficile* infections by identifying carriers. Dr. Mertz (PI) and Dr. Loeb received a \$431,000 grant from the company to continue to conduct a cluster-randomized factorial crossover trial of antibiotic prophylaxis and negative pressure wound dressing to prevent surgical site

Dr. Mark Loeb
MD, MSc, FRCPC
Division Director

10

Number of countries involved in Joint Global Health Trials to assess whether inactivated vaccine can reduce adverse vascular events.

\$5M

Value of cluster-randomized factorial crossover trial of antibiotic prophylaxis and negative pressure wound dressing to prevent surgical site infections.

Completed second year of \$5M cluster randomized controlled trial to assess whether adjuvanted influenza vaccine in children leads to greater herd immunity.

\$431K

infections. Drs. Loeb (PI) and Mertz finalized a list of antibiotics for the WHO for the Essential List of Medicines, which will be available for use in countries around the world. Dr. Loeb has completed the second year of a \$5 million cluster randomized controlled trial to assess whether adjuvanted influenza vaccine in children leads to greater herd immunity. Dr. Loeb continues as the principal investigator of a trial funded by Joint Global Health Trials competition of UK MRC Wellcome Trust to assess whether inactivated vaccine can reduce adverse vascular events. This is an international trial being conducted in 10 countries involving collaboration from colleagues at Population Health Research Institute (PHRI). Using data from his previous Hutterite studies, Dr. Loeb continues to work on projects related to his CIHR Foundation Grant including the role of imprinting to assess future influenza vaccine response. Dr. Loeb finalized analyses assessing the genetic risk of developing polio through an international collaboration with the March of Dimes. Dr. Loeb completed a randomized controlled trial of probiotics to assess their effect in reducing viral respiratory infections in residents of long-term care facilities.

MAJOR ACHIEVEMENTS

Dr. Shariq Haider was appointed to the Board of Directors of the Canadian Association of HIV Research and to the Board of Directors of the Canadian Foundation of Infectious Diseases. Drs. Loeb and Mertz lead efforts to establish the basis for the updated list of antibiotics for the WHO Essential Medicine List. Dr. Loeb continued his role as Chair of the Data Safety and Monitoring Board of an important NIH vaccine trial on influenza H7N9. Dr. Loeb also became a member of the DSMB for the NIH study

“Dr. Mertz and I finalized a list of antibiotics for the WHO for the Essential List of Medicines, which will be available for use in countries around the world.”

— Dr. Mark Loeb

Vesicular Stomatitis Vaccine for Ebola-Zaire (rVSVΔG-ZEBOV-GP) for Pre-Exposure Prophylaxis (PREP) in Individuals at Potential Occupational Risk for Ebola Virus Exposure. Dr. Loeb has become a member of the of the scientific board of the journal *Clinical Microbiology and Infection*.

FUTURE DIRECTIONS

Our direction continues to be the conduct of randomized trials and observational studies, assessing the use of biomarkers, such as genetic and immunologic studies, and we continue to work closely with colleagues doing bench research. Division members will continue to engage in various aspects of antibiotic stewardship, vaccination research, cluster randomized controlled trials, diagnostic research, and hospital epidemiology. ■

Nephrology

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. A tremendous amount of work has occurred to facilitate transition to the new Royal College-mandated approach to evaluation known as "Competence by Design".

Due to the strength and popularity of this program, there will be eight fellows pursuing subspecialty training in Nephrology in 2018-19 and an additional three clinical scholars. The division also has two fellows pursuing post-subspecialty training in transplantation and is one of 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 is 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 the largest randomized controlled trial 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, as well as progressive renal fibrosis.

MAJOR ACHIEVEMENTS

A success story for our patients, growth in our renal transplant program has been unparalleled, necessitating recruitment of an additional transplant nephrologist in the near future. 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 to narrow a long-standing evidence gap in the clinical care of people with kidney disease, and to better understand the pathophysiology of progressive kidney disease and vascular calcification.

8+3

Due to the strength and popularity of this program, there will be eight fellows pursuing subspecialty training in Nephrology in 2018-19 and an additional three clinical scholars

FUTURE DIRECTIONS

The division will continue to lead the way in educational innovation at an undergraduate and postgraduate level. 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

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.

The neurology residency training program has 14 residents presently and that will increase to 20 in the next few years. All our graduates were successful in passing their Royal College examination. The training program has a robust teaching curriculum which includes a problem-based academic half-day, daily teaching rounds, including subspecialty rounds in EEG, EMG, and movement disorders, stroke journal club, neuroradiology rounds, stroke grand rounds, neuroscience grand rounds, an annual resident's research day, and neuroscience half day.

The division offers fellowship programs in stroke, epilepsy, multiple sclerosis, and neuromuscular disorders.

Continuing health education is provided at our annual neuromuscular day, half-day in epilepsy, and, most recently, at our half-day in clinical neurology.

Dr. Wes Oczkowski
MD, FRCPC
Division Director

RESEARCH ACTIVITIES

This year, the Stroke Program published the results of the NAVIGATE ESUS trial in the *New England Journal of Medicine*. This international trial enrolled over 7,000 patients in 459 international sites to test if rivaroxaban, a direct oral anticoagulant, would lower the risk of recurrent stroke better than ASA in patients with embolic stroke of undetermined source. The division's Stroke Program is involved in other trials including testing acute stroke neuroprotective agents, endovascular interventional trials in management of aneurysms, prevention of stroke in patients with atrial fibrillation after intracerebral hemorrhage, and different approaches to exercise after stroke. The epilepsy program is investigating the prognosis of generalized epileptiform discharges, marijuana use in epilepsy, 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 guideline development.

MAJOR ACHIEVEMENTS

The neurology training program has become a mature and coveted program, that graduates excellent neurologists. Many of the neurology subspecialty programs now have a fellowship program and are actively involved in clinical research, either leading or participating in clinical trials.

The completion and publication of the NAVIGATE ESUS trial is a landmark achievement for the neurology stroke group.

+7,000

Number of patients enrolled in 459 international sites in the NAVIGATE ESUS trial. The results were published this year in the *New England Journal of Medicine*.

FUTURE DIRECTIONS

Based on the aging population, the division has identified cognitive neurology and dementia as a top priority area for recruitment and development. Also, in concert with neurosurgery, we will develop a surgical program for epilepsy, and deep brain stimulation for movement disorders.

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

14

Number of residents in the neurology residency training program.

DIVISION REPORT

Physical medicine and rehabilitation

CLINICAL SERVICES AND ACADEMIC PROGRAMS

The Division of Physical Medicine and Rehabilitation (PM&R) is committed to advancing the health of the community and providing educational opportunities for medical students, residents and fellows. The Rehabilitation Services Program is a substantial clinical and academic enterprise that encompasses three hospital campuses and two hospital systems. It is one of the largest clinical programs in North America.

Rehabilitation services are provided to a wide variety of patients, including individuals who are recovering from stroke, brain injury, amputation, cancer, as well as fractures. The in-patient program has a complement of approximately 140 beds. The majority of clinical services are delivered at the Regional Rehabilitation Center. This purpose-built rehabilitation hospital that is located on the Hamilton General Hospital campus. Additional services are provided at the Juravinski Hospital and St. Joseph's Healthcare Hamilton (SJHH). In addition, there are approximately 30,000 out-patient visits.

After eight years of service, Dr. Shanker Nesathurai has stepped down as division director. Dr. Peter Varey has assumed the role of interim division director. Dr. Anna Labuda was appointed the chief at St Joseph's Healthcare Hamilton, and Dr. Flor Muniz was appointed the interim chief at Hamilton Health Sciences.

Dr. Peter Varey
MD FRCPC
Division Director

Dr. Tatjana Zdravkovic and Dr. David Harvey, in collaboration with Hotel Dieu Shaver Hospital, have expanded cancer rehabilitation services in St. Catharines.

UNDERGRADUATE AND POST GRADUATE TRAINING PROGRAM

Dr. Agnes Chmiel has assumed the position of residency program director. Dr. Chmiel is leading the Division's "competency by design" initiatives. The faculty support the second largest residency program in Canada. There are approximately 20 post-graduate trainees.

Drs. Simran Basi and Tatjana Zdravkovic continue to co-lead the undergraduate clerkship program. The program has expanded the number of medical student clerkship opportunities. The faculty have worked diligently to provide an enhanced clerkship experience and expose students to the breadth of clinical experiences in PM&R.

"The Rehabilitation Services Program is a substantial clinical and academic enterprise that encompasses three hospital campuses and two hospital systems."
— Dr. Varey

RESEARCH

Dr. Steve Baker continues to be the leading researcher in neuromuscular rehabilitation in the country with tremendous innovation and groundbreaking research in peripheral nerve and neuromuscular disorders. In recent years, the faculty and residents have presented abstracts and posters at national research meetings including the Congress of Rehabilitation Medicine, American Academy of PM&R, and American Academy of Neuropathology.

FUTURE DIRECTIONS

The division continues to actively recruit new faculty to support in-patient and out-patient programs. In the context of patient expectations, aging population and technological advances, there remain many unmet clinical needs in the medical school's catchment area. ■

30,000

Number of out-patient visits to Physical Medicine and Rehabilitation

20

Number of post-graduate trainees

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 far beyond. Amongst the “flagships” are our severe airway disease and interstitial lung disease clinics. Our group is successful in a variety of educational and research activities.

FACULTY

Dr. Joshua Wald is a new recruit to the Division of Respirology and assistant professor since July, 2017. Dr. Wald’s clinical interests are focused on pulmonary rehabilitation and COPD care. He is leading the post-discharge follow up program for COPD.

Dr. Muntasir Saffie was also appointed as assistant professor in the Division of Respirology in July, 2017. Dr. Saffie’s special interest is in tuberculosis and bronchiectasis. He has a Master degree in Public Health and will be involved in provincial and national TB programs.

Dr. Saffie has recently taken the clinical leadership for the TB Clinic. The third recruit to the Division of Respirology is

Dr. Om Kurmi, also an assistant professor since July, 2017. Dr. Kurmi is a PhD scientist in epidemiology and has come from Oxford in the UK.

He works with Dr. Salim Yusuf at the Population Health Research Institute in respiratory epidemiology and the interactions between the cardiovascular and respiratory system.

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 welcomed four new trainees; Anurag Bhalla, Jafar Aljazeera, Abdullah Sakkat, and Ruobing Yang. 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 is 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 co-director of the CHILD study to work alongside Dr. Sears. The first series of publications have come out by now, and it is expected that this activity will be thriving for the next 10-15 years at least. One of the many questions that will be addressed in this study are to identify and better understand 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 Neighbor as deputy director, is world-renowned and attracts many clinical trials that aim 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 Larche. Further, our faculty members continue to investigate the basic mechanisms of airway and vascular smooth muscle cells in airway disease. The labs of Drs. Ask, Janssen, Hirota and Kolb explore the cellular and molecular biology of pulmonary fibrosis with a substantial translational research. The numbers of pre-clinical and early clinical trials that are conducted in this field are increasing every year. The new lead of the Pulmonary Hypertension Clinic, Dr. Nathan Hambly, has developed this into a thriving activity and started to participate in national programs

and international clinical trials in PH and ILD-PH. Funding for these research programs is provided by CIHR, CFI, the OTS, the NIH and other public agencies. Substantial support is also obtained through collaborative research with the pharmaceutical industry.

AWARDS

Dr. Parameswaran Nair received the 2016 Leadership Award for Health Research and Bastable-Potts Asthma Research Award. Dr. Malcolm Sears was awarded the J. Allyn Taylor International Prize in Medicine. Our residents vote each year for winners of two local awards, one for clinical education and one for research mentorship. The winners for 2017 were Dr. Gerard Cox and Dr. Kieran Killian, respectively.

FUTURE DIRECTIONS

The development of collaborative clinical programs across the City of Hamilton and within the larger region remains the major challenge and goal for our division. The most successful initiative is the Diagnostic Assessment Program for Lung Cancer, a joint undertaking with Cancer Care Ontario (CCO) and St. Joseph’s Healthcare, Hamilton that involves nursing, thoracic surgery, respirology, diagnostic imaging and pathology. This program has drastically reduced wait times for patients undergoing investigation of suspicious lung lesions. Since its initiation in 2010, it has grown to be one of the largest programs in the country. Another innovative program is the combined respirology/rheumatology/renal clinic that cares for patients with complex multi-system and lung disorders (Drs. Cox, Kolb, Hambly, Khalidi, and Walsh), a major attractant for trainees, not only from our own area but also from many other training programs across Ontario and Canada. Our Sleep Medicine Program continues its expansion and will require a new colleague soon. In the next years we will slowly reshape our division with recruitment of a few more young colleagues who will bring new expertise in subspecialty areas, such as adult cystic fibrosis, bone-marrow transplant related lung disease and lung transplant care. There are major challenges in research due to the ever changing funding environment and review system of the CIHR. The new competency-based training of residents and fellows will also require significant input from the leadership and all teaching faculty to be successful. However, the Division of Respirology has an enthusiastic faculty who are all committed to move towards the future. ■

Rheumatology

EDUCATIONAL ACTIVITIES

The Postgraduate training program continues to flourish under Dr. Khalidi's strong leadership and the program is nationally recognized for its excellent teaching. The applicant pool for trainees continues to be of the highest calibre.

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

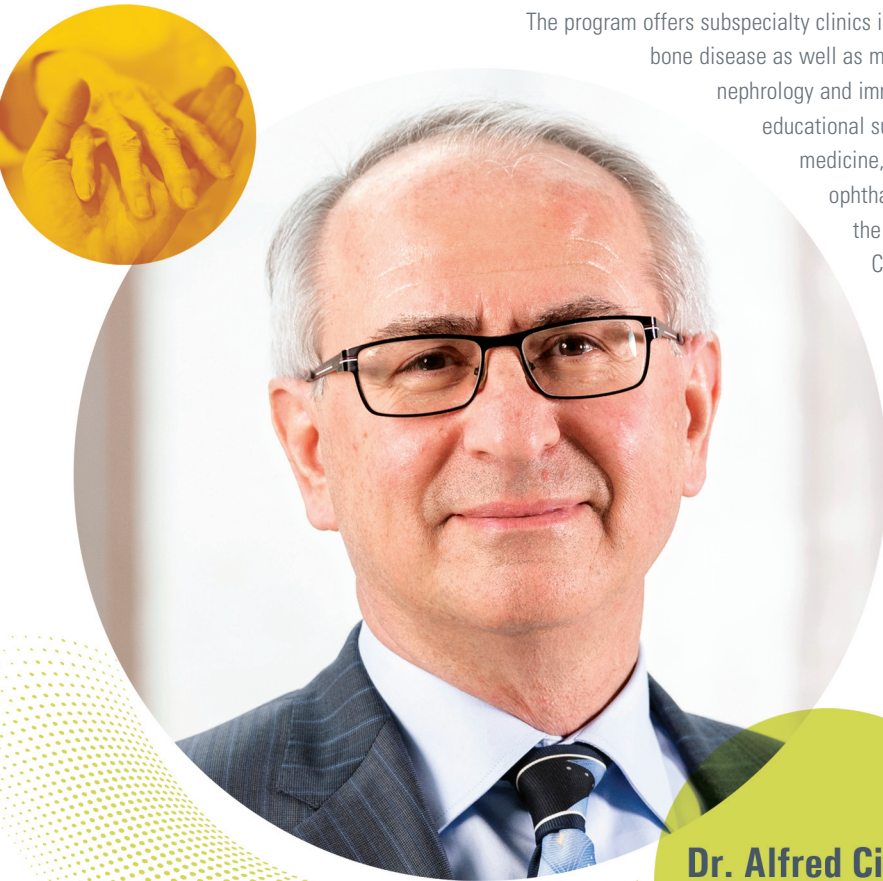
The faculty has strong representation across the undergraduate program in tutoring, professional skills, MSK boot camp, clerkship selective and supervising Medical Foundation 5.

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

Dr. June Lee, our first faculty at the St. Catharines campus is completing a Masters in Education while teaching in the undergraduate program.

Our highly rated 'Clinical Day in Rheumatology: the pearls you need to know' was held again this year in November.

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



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, geriatric medicine, 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 has been most 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. Khalidi is the vice-president of CanVasc (Canadian Vasculitis Research Network). He is involved in numerous international research projects in vasculitis (VCRC/PEXIVAS/DCVAS). He is the new program director for an international vasculitis training program (VCRC).
- 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 third annual Clinical Day in Rheumatology was extremely successful
- Dr. Karen Beattie has been successful in increasing productivity, scholarship and collaboration within the division
- Our program has expanded to three residency positions per year

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 sets of skills to expand our potential. ■

neurology
psychiatry
internal medicine
dermatology
family medicine
ophthalmology

The division provides educational support for these divisions.

Subspecialty clinics offered by the division

lupus
scleroderma
vasculitis
metabolic bone disease