



Medicine
UNIVERSITY OF TORONTO

SELF-STUDY REPORT

External Review 2013–2018
Volume 2: Division Reports



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VICTORIA UNIVERSITY
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Glossary of Abbreviations

AACU	Acute Ambulatory Care Unit	COPD	chronic obstructive pulmonary disease	GEMINI	General Medicine Inpatient Initiative
AFP	Alternate Funding Plan	CPA	creative professional activities	GI	Gastroenterology
APD	academic position description	CPD	Continuing Professional Development	GIM	General Internal Medicine
BBDC	Banting and Best Diabetes Centre	CP&T	Clinical Pharmacology and Toxicology	HSF	Heart and Stroke Foundation
BMJ	BMJ (formerly British Medical Journal)	C-QuIPS	Centre for Quality Improvement and Patient Safety	HSRLCE	Heart and Stroke/ Richard Lewar Centre of Excellence
CaRMS	Canadian Resident Matching Service	CREMS	Comprehensive Research Experience for Medical Students	ICES	Institute for Clinical and Evaluative Sciences
CBD	Competence by Design	CREOD	Centre of Research Expertise in Occupational Disease	ICU	Intensive Care Unit
CBME	competency-based medical education	CSTP	Clinician Scientist Training Program	ID	Infectious Diseases
CCO	Cancer Care Ontario	CTU	Clinical Teaching Unit	IDCCM	Interdepartmental Division of Critical Care Medicine
CDA	Diabetes Canada (formerly Canadian Diabetes Association)	CWC	Choosing Wisely Canada	JAMA	Journal of the American Medical Association
CFAR	Continuing Faculty Appointment Review	DDD	Departmental Division Director	JDRF	formerly Junior Diabetes Research Foundation
CGS	Canadian Geriatrics Society	DFCM	Department of Family and Community Medicine	KT	knowledge translation
CIA	Clinical Immunology and Allergy	DoM	Department of Medicine	MAM	Mississauga Academy of Medicine
CIHI	Canadian Institute of Health Information	EM	Emergency Medicine	MD	Medical Doctor
CIHR	Canadian Institutes of Health Research	EPA	entrustable professional activities	MED	Membership, Equity and Diversity
CISEPO	Canada International Scientific Exchange Program	FoM	Faculty of Medicine	MERS	Medical Education Research & Scholarship
CME	continuing medical education			MOHLTC	Ministry of Health and Long-Term Care (in Ontario)

MOTP	Medical Oncology Training Program
MSc	Master of Science
MScCH	Master of Science in Community Health
MSB	Medical Sciences Building (at U of T)
MSH	Mount Sinai Hospital
NIH	National Institutes of Health
OSCE	objective structured clinical examination
OTN	Ontario Telemedicine Network
PARO	Professional Association of Residents of Ontario
PBL	problem-based learning
PCC	person-centred care
PD	Program Director
PGME	Postgraduate Medical Education
PGY	postgraduate year
PhD	Doctor of Philosophy
PHO	Public Health Ontario
PI	Principal Investigator
PIC	Physician-in-Chief
PMCC	Princess Margaret Cancer Centre
PM&R	Physical Medicine and Rehabilitation

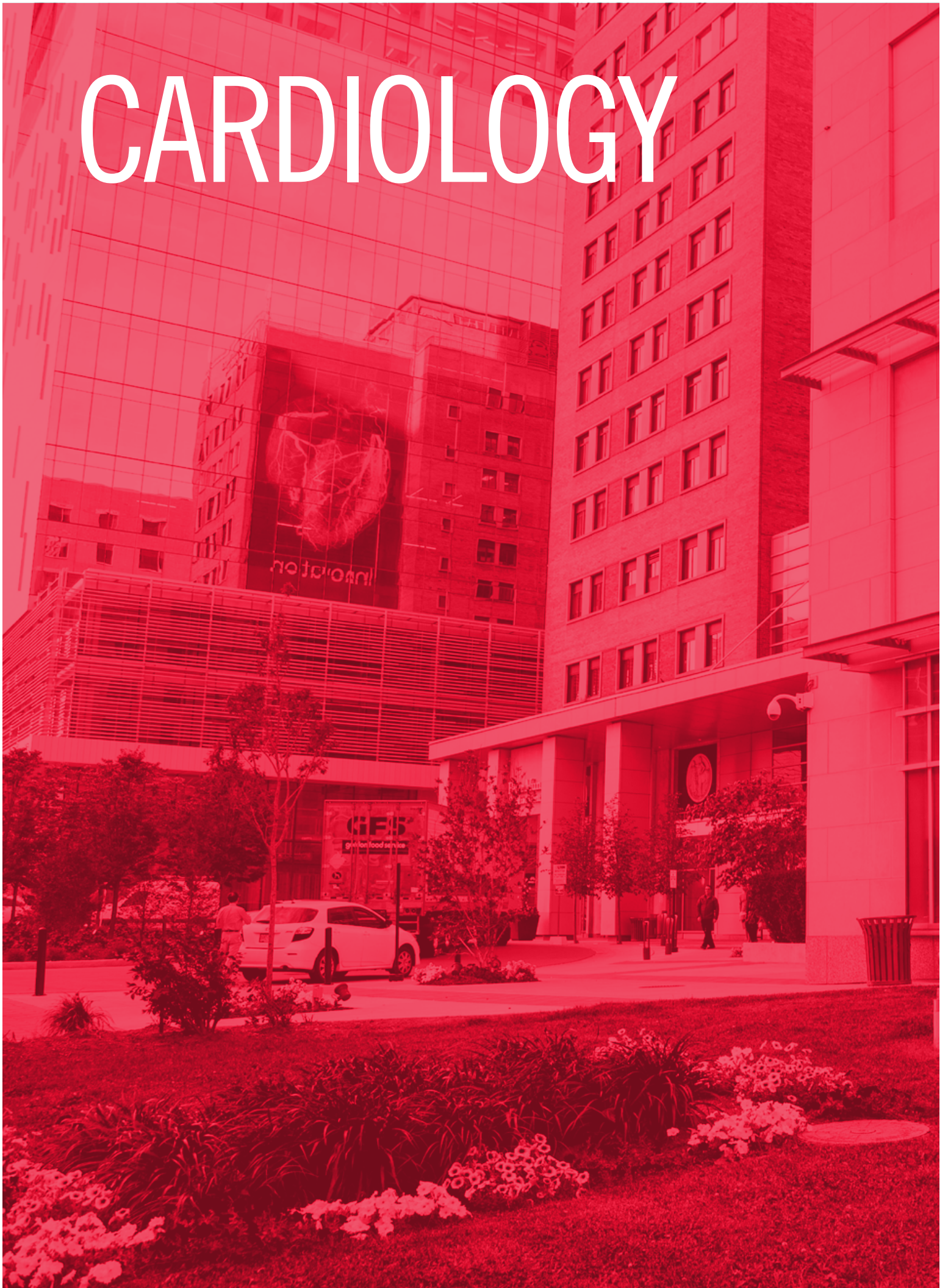
RCPSC	Royal College of Physicians and Surgeons of Canada
RPC	Residency Program Committee
SCOPE	Seamless Care Optimizing the Patient Experience
SHS	Sinai Health System
SMH	St. Michael's Hospital
SMPA	St. Michael's Hospital Physicians Association
SPOR	Strategy for Patient-Oriented Research
TAAAC	Toronto Addis Ababa Academic Collaboration
TAHSN	Toronto Academic Health Science Network
TARRN	Toronto Antibiotic Resistance Research Network
TES	teaching effectiveness scores
TGH	Toronto General Hospital
TRI	Toronto Rehabilitation Institute
TWH	Toronto Western Hospital
UGME	Undergraduate Medical Education
UHN	University Health Network

UME	Undergraduate Medical Education
U of T	University of Toronto
VC	Vice Chair
WCH	Women's College Hospital
WCRI	Women's College Research Institute
WIHV	WCH Institute for Health Systems Solutions and Virtual Care

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CARDIOLOGY



OVERVIEW

The Division of Cardiology strives to be a national and international leader in the clinical care of patients with complex cardiac disorders, the education of future academic and community-based cardiologists and the development of leaders in basic, clinical and epidemiologic cardiac research.

The Division operates at five of the six fully affiliated hospital sites and is one of the largest academic divisions in the country. It includes the largest component of clinician scientists and clinician investigators. High-quality basic, clinical and epidemiologic science has been a hallmark of the output of the Division of Cardiology for the past several decades. The Division is equally committed to the highest possible training program quality, ensuring that residents are fully equipped for academic as well as clinical practice in large and small communities alike.

The Division has made, and will continue to make, improvements in the quality of its training program, particularly in the areas of Competence by Design (CBD), frequency of evaluation, assessment and feedback. The Division emphasizes the quality and quantity of faculty/trainee interactions in a culture of support, leadership and professionalism.

The Division has promoted the generation and translation of new knowledge through a robust research program that collaborates across subspecialties, departments and hospital sites. Faculty members have taken leadership positions in large international clinical trials.

Under the direction of Dr. Paul Dorian, the Division's objective has been to continuously assess and improve the delivery of clinical, educational and research outputs across the spectrum of cardiac diseases. The Cardiology Division is led by a Divisional Executive, which meets once a month and provides direction to the whole Division through the hospital site leads. Items of divisional interest as well as specific issues that may pertain to faculty members at each hospital are discussed in this forum. In addition, there is a Divisional Education Committee under the direction of Dr. Eric Yu and a formal Divisional Research Committee led by Dr. Michael Farkouh.

Close collaborations and relationships exist between the Division and the Heart and Stroke/Richard Lewar Centre of Excellence (HSRLCE). The HSRLCE is a University extra-departmental unit that supports and promotes cardiovascular research across the teaching hospitals at the University of Toronto (U of T).

EDUCATION

Undergraduate Education

The Division of Cardiology has been highly involved in the cardiovascular portion of the new undergraduate medical curriculum. The Department Division Director (DDD), along with extremely engaged teaching faculty including Drs. Michael McDonald [University Health Network (UHN)], Jeremy Edwards (St. Michael's Hospital) and Victoria Korley (St. Michael's Hospital), has been actively preparing the relatively new undergraduate curriculum at U of T. They were given the job of developing general and specific educational objectives and delivering cardiovascular physiology, pharmacology, pathophysiology and diagnostic tools in cardiology teaching modules. The effectiveness of this new curriculum is constantly evaluated.

Postgraduate Education

U of T has one of the largest cardiology training programs worldwide. It has 27–30 cardiology residents in the PGY4–PGY6 years and an additional 70–75 subspecialty fellows in one of 10 subspecialty areas of cardiology. The educational objectives, achievements and outcomes are regularly monitored by the Cardiology Training Committee and the Fellowship Directors.

The training program has distinguished itself as a national leader in the establishment of standardized objectives and curriculums. It includes a core curriculum in cardiology and a detailed course given to first-year trainees in essential diagnostic and therapeutic procedures in cardiology. The Division continues to emphasize educational scholarship and research with an annual research competition, in which all program residents participate.

Under the leadership of Dr. Eric Yu, Program Director, an extremely active Education Committee regularly reviews specific educational objectives for each rotation.

The Committee sets annual formative and evaluative examinations with detailed and individual and group feedback. This aligns with educational scholarship and original research evaluating the best strategies for learning, clinical test interpretation and skill testing. They lead to peer-reviewed publications.

One of the most important achievements has been the establishment of a cohesive, collaborative group of dedicated clinician teachers and clinician educators who meet three to four times per year to set educational priorities, review residents' collective performance and align educational priorities with changing clinical and scientific advances.

The Division has been approved by the Royal College of Physicians and Surgeons for two certificates of special competence (areas of focused competence or AFC) in electrophysiology and invasive cardiology; the Division is preparing a submission about echocardiography. A result is increasing coordination and harmonization of fellowship programs in these areas among the affiliated teaching hospitals. The Division has newly established fellowship committees at each hospital and at the University to ensure that all post-cardiology training subspecialty fellowships adhere to the guidelines and principles outlined by the Department of Medicine's (DoM) recommendations and requirements.

There are exceptional educational opportunities for the cardiology trainees. They include

- local bedside and professorial rounds, ward cardiology,
- local teaching rounds in the cardiac intensive care unit (CICU),
- Echo-Doppler,
- nuclear cardiology
- advanced cardiac imaging,
- electrophysiology, cardiac implanted devices and arrhythmias,
- cardiac catheterization and hemodynamic laboratories,
- general and specialized outpatient clinics and
- community cardiology rotation.

Trainees are expected to participate in Cardiology Grand Rounds, Research Rounds and City-Wide University Rounds. In addition, monthly cardiology core teaching rounds are held on Tuesday afternoons. Trainees are expected to partake in research projects and are afforded

opportunities to present their projects to peers, to the Division and at national and international cardiology meetings. To ensure that educational objectives are being achieved, the Postgraduate Training Committee—which consists of the Training Program Director, local hospital training coordinators and resident representatives from each year of training—meet regularly. The program is extremely receptive to trainee feedback on educational experiences.

Almost all cardiology trainees at U of T pursue further subspecialized training after their PGY6 year and after they have succeeded in obtaining academic and non-academic positions after the completion of training. The Division is particularly proud of the high-quality and high-volume scientific publication and presentation output of its current and recent trainees. Dr. Shaun Goodman, the current Heart and Stroke Foundation/ University of Toronto Polo Chair in Cardiology, has established a mentoring program to help support residents in their academic activities. In addition, direct financial support from the Division is provided for (a) resident travel to meetings for peer-reviewed accepted abstract presentations and (b) an organized mentorship program for resident research activities, which will be continued and enhanced in future years.

Fellowships

There are at least 75 subspecialty fellows in cardiology in one of four hospitals in at least eight to ten different programs in cardiology. AFC Royal College programs have been approved in invasive cardiology and cardiac electrophysiology; programs to harmonize educational materials and sessions for these fellows are continual. All fellowships have or will have specific objectives, protocols and standard operating procedures that conform to the DoM's requirements for fellowships. The fellowship directors will be appointed at each hospital to oversee the harmonization of the structure of these fellowships.



RESEARCH

Under the leadership of Dr. Michael Farkouh, Director of Research, emphasis on the contribution of faculty—and particularly young faculty—in collaborative and multi-centre clinical trials has increased. The Division, together with the HSRLCE and Polo Chair, has financially supported and assisted mentorship of faculty in developing small-scale or pilot studies. They then go on to grant application and peer review in various areas of research.

The Division has been enormously successful in its research output as a consequence of these initiatives. There has been particularly strong collaboration between the diabetes research group and the cardiovascular research group, between the Department of Medical Imaging and Basic Science at Sunnybrook Hospital, and between researchers across the Division with collaborative projects in heart failure, cardiac electrophysiology, clinical epidemiology and health-services research as well as clinical trials.

Cardiology is particularly proud of the leadership of Drs. Michael Farkouh, Shaun Goodman and Andrew Yan at U of T in large-scale clinical trials and registries in



Dr. Heather Ross (centre), recipient of the 2017 Department of Medicine Teacher of the Year Award

coronary artery disease. The Division members are now leaders as principal investigators and members of steering committees in very large international clinical trials, particularly in coronary artery disease and heart failure.

The Division will continue to emphasize leadership in multi-centre clinical trials in collaboration with the Applied Health Research Centre (AHRC) at U of T and in cutting-edge epidemiologic and health-services research in collaboration with the Institute of Clinical and Evaluative Sciences (ICES) and the HSRLCE.

The UHN has been a strong leader in the establishment of infrastructure to permit, with philanthropic support, the establishment of research chairs in various areas of cardiology. This support helps excellent research teams focus on heart failure, molecular biology and heritable heart diseases, and adult congenital heart disease. The UHN team is a world leader in research on heritable cardiac arrhythmia syndromes and in the development of policies and protocols for the follow-up of large numbers of adult patients with repaired congenital cardiac disease.

The individual teaching hospitals that make up the University Division, in association with the HSRLCE, have established an innovation fund for the development and promotion of cutting-edge innovations in cardiology, including those that may lead to unique intellectual property protection and commercialization.

The Division has established important partnerships with resuscitation researchers in Toronto and across Canada and with the Departments of Emergency Medicine and Emergency Medical Services (EMS) systems. These

partnerships conduct U of T–led randomized clinical trials in prehospital care.

The Division continues its record of producing national and international leaders in cardiology. Noteworthy areas include the following:

- cardiac electrophysiology and innovative use of cardiac electrical recordings of cardiac electrical activity (Dr. Kumaraswamy Nanthakumar);
- identification of genes involved in heritable cardiac arrhythmia syndromes (Dr. Michael Gollob);
- the molecular biology and basic science of cardiac regeneration and adaptation to stress and repair (Drs. Phyllis Billia and Slava Epelman);
- innovative animal and early phase clinical research in stem cell therapy and the molecular biology of cardiac injury and diabetes (Drs. Kim Connelly, Howard Leong-Poi, and Tom Parker);
- world-leading engineering innovations in intravascular imaging, including highly successful start-up commercial application of technologies invented at U of T (Dr. Brian Courtney);
- internationally renowned research in cardiac epidemiology and health services and the use of big data in providing insights on disease expression, progression and health-care system responses (the late Dr. Jack Tu, and Drs. Dennis Ko and Harindra Wijeyesundera); and
- quality assurance and appropriate resource stewardship (Dr. Sacha Bhatia, a lead in the pan-Canadian Choosing Wisely initiative).

The breadth of this research excellence is reflected in the Division’s publication outputs and funding success. Over the five-year review period, Division of Cardiology members published 2,310 publications, which generated 24,038 citations and resulted in an 11.29 citation impact. The Division reported research funding for the reporting period totalling \$77.659 million and saw a steady increase year over year in the total number and value of grants. Funds were secured from a variety of sources including peer-reviewed granting agencies, industrial partners and hospital foundations. Granting agencies included significant contributions from the Canadian Institutes for Health Research (CIHR) and the Heart and Stroke Foundation (HSF).

FACULTY

The Division of Cardiology consists of 112 full-time, 15 part-time and 58 adjunct faculty members.

Distribution of full-time faculty according to job description includes 30 clinician scientists, 48 clinician teachers, 24 clinician investigators, two clinicians in quality and innovation, one clinician educator and seven clinician administrators.

The distribution of faculty varies across sites. The highest number of members appear at UHN (42), St. Michael's Hospital (29), Sunnybrook Health Sciences Centre (20), Sinai Health System (13) and Women's College (6).

The Division undergoes continuous renewal; in the last five years, 23 new faculty have been appointed to the University and all of the affiliated teaching hospitals. These appointments have been balanced among clinician teachers, clinician educators, clinician scientists and clinician investigators.

In 2017, seven members of the Division received national recognition at the Canadian Cardiovascular Society's annual meeting: Drs. Robert Chisholm, the late Michael Freeman, Paul Dorian, Chi-Ming Chow, Peter Seidelin, Jacob Udell and Dinesh Thavendiranathan.

Dr. Harindra Wijeyesundera was recently appointed Vice President, Medical Devices and Clinical Interventions, at the Canadian Agency for Drugs and Technologies in Health (CADTH).

Table 1.1: Academic Position Description of Full-Time Cardiology Faculty

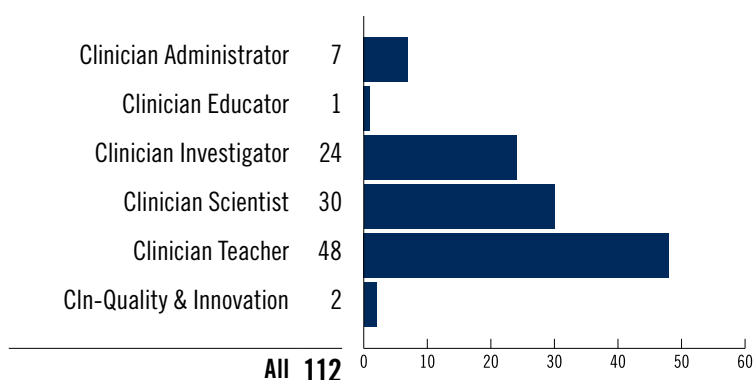


Table 1.2: Affiliation of Full-Time Cardiology Faculty

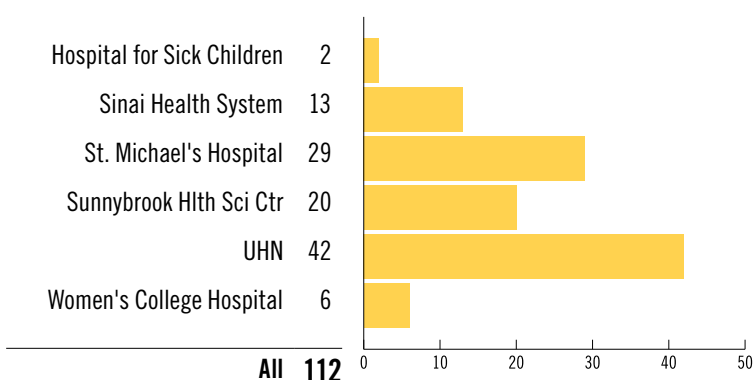
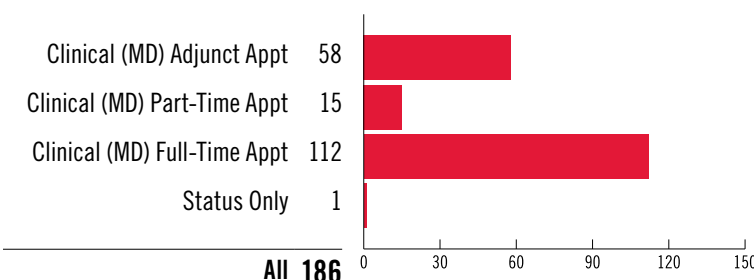


Table 1.3: Primary Appointment of Cardiology Faculty



The outgoing President of the Canadian Cardiovascular Society, Dr. Heather Ross, is a Division faculty member. Dr. Paul Dorian is the Chair of the Quality Program of the Canadian Cardiovascular Society.



MENTORSHIP

The Division recognizes its outstanding teachers and mentors with several annual teaching and mentorship awards at the university and hospital level. The Division maintains an active University-wide engagement in academic development, including city-wide cardiology rounds, collaborative research rounds and Academic Days with the HSRLCE.

All new faculty are annually reviewed by the Divisional Director and the Hospital Directors, and all new faculty receive detailed mentorship and individual support during the Continuing Faculty Appointment Review. The Division has established a two-person Mentorship Committee (Drs. Louise Harris and Eric Cohen) with a mandate to review, enhance and support mentorship for all faculty at all stages of their careers.

QUALITY AND INNOVATION

The Division is committed to quality improvement and patient safety initiatives. Dr. Sacha Bhatia is a leader in this area; electives and research programs in quality are available through the training program under the supervision of Dr. Bhatia or one of his colleagues. The Division continues to promote quality objectives both as electives within the cardiology training program and with respect to research opportunities in quality-related projects.

RECRUITMENT AND SUCCESSION PLANNING

The current Division Director has been in place for almost 12 years. In the summer of 2018, the search for a new Division Director continues. The current Program Director has been in place for more than 14 years, and in the summer of 2018 advertisements for a new Program Director and Associate Program Director will appear. The primary job description of the Associate Program Director will be to implement CBD plans for the Division of Cardiology training program.

Recruitment for new members of the Division of Cardiology is done jointly between the specific hospital Division Head, the Division Director and the Divisional Executive. Current openings for which active recruitment is

underway include a clinician investigator or scientist in adult congenital heart disease. A detailed international search is continuing. A search for a clinician scientist in cardiac electrophysiology at Sunnybrook Hospital has been conducted and also continues. St. Michael's Hospital has recently appointed a new faculty member as a clinician investigator in structural heart disease/ echocardiography.

No specific openings for which there is great academic need have been currently identified in any subspecialty in Cardiology. Faculty renewal will occur as individuals retire or make late-career job description changes. It is anticipated that the future balance of clinician scientists/ investigators/teachers/quality program subspecialists will resemble the current balance.

CHALLENGES

The Division continues to be aware of the challenges posed by the large depth and breadth of cardiology care delivery: 122 faculty in seven buildings, five different hospitals and four practice plans, outreach in the community and an extraordinary range of specialty and subspecialty patterns of practice.

The decreasing number of general internal medicine residents and cardiology residents has put increasing pressure on cardiac faculty to deliver routine and specialized clinical care for patients with complex cardiac illnesses. As a result, increased time is spent on clinical activities, including routine activities that were performed with the help of residents, extended-practice nurses or nurse practitioners. These pressures on the time of cardiac faculty, along with the increasing requirement for documentation using inefficient, outdated and time-consuming electronic medical records, mean that faculty have less time for academic activities.

Additional pressures on Cardiology Division faculty will become evident with the roll-out of CBD. The task will require substantially more face-to-face interaction with cardiology residents during evaluations (and observation during routine clinical-care activities). We anticipate that these additional pressures on faculty will result in challenges to the equitable distribution of labour, an increased faculty effort and challenges to faculty expectations about work-life balance.

The current Executive Committee for the Division of Cardiology consists of the following people:

- Department Division Director: Paul Dorian;
- Hospital Division Head: Howard Leong-Poi, St. Michael's Hospital; Anna Woo, Interim Division Head, University Health Network; Sacha Bhatia, Division Head, Women's College Hospital; Bradley Strauss, Division Head, Sunnybrook Health Sciences Centre;
- Director of Research: Michael Farkouh;
- Faculty and Resident Advocate: Sean Balmain;
- Program Director: Eric Yu;
- New Faculty Research Mentor: Shaun Goodman; and
- Mentorship Committee: Eric Cohen and Louise Harris.

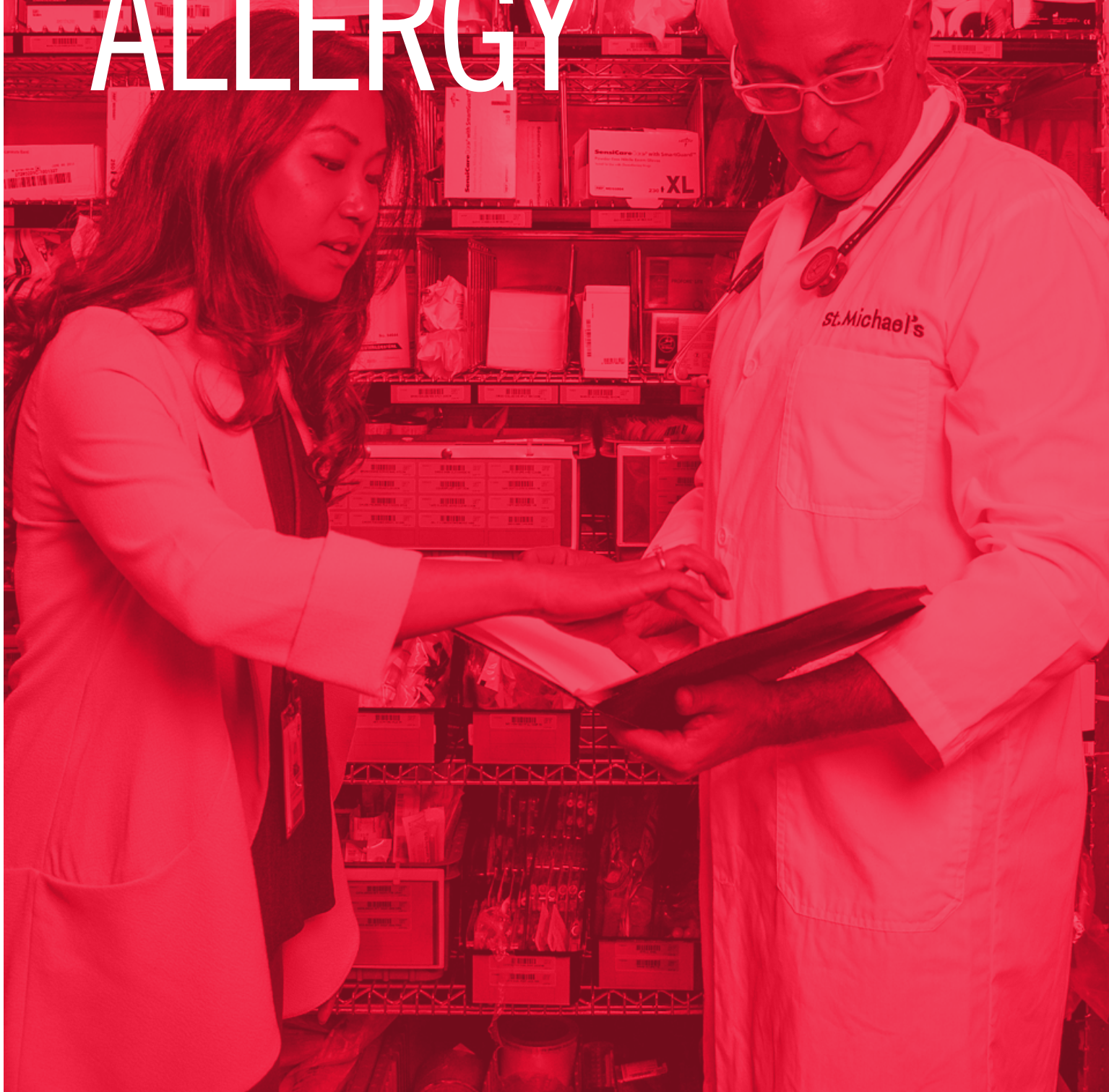
The Committee of Educators oversees the training program and resident evaluation. Core members of the Committee include the Residency Program Committee (RPC):

- Dr. Eric Yu, Program Director;
- Paul Dorian, DDD;
- Victoria Korley, Shaheeda Ahmed and John Janevski (hospital-based education leads);
- three residents enrolled in the program (on a rotating basis); and
- an ad hoc Residency Evaluation Committee.

Members of the Residency Evaluation Committee are Hani Ahmad, Krishnakumar Nair, Jeremy Edwards, Ted Davies, Sean Balmain, Marko Hansen and the members of the RPC above.



CLINICAL IMMUNOLOGY & ALLERGY



OVERVIEW

The Division of Clinical Immunology and Allergy (CIA) is a specialty of renewed interest and untapped potential. The past five years have seen our division grow to accommodate new educational programs and research initiatives. We continue to enhance knowledge and understanding in the pathophysiology and treatment of anaphylaxis, and have made significant strides these past 10 years in understanding the pathogenesis and treatment of urticaria, angioedema and immunodeficiency. We have established the first and largest rapid drug desensitization program in Canada. We have studied and identified new allergens and mechanisms for these diseases and have developed novel treatment modalities. Of further note, our teaching and educational programs continue to grow with new partnerships and collaborative efforts between medical specialties.

In recent years, immunologic treatments have come to the forefront in the treatment of diseases as diverse as cancers, asthma, multiple sclerosis and inflammatory bowel disease. These therapies have markedly improved the outlook for patients and at the same time have also triggered unique immunologic disorders.

CIA has established collaborations with many DoM divisions across sites in the management of complex acute and chronic diseases. Some examples include

- cystic fibrosis: adverse drug reactions and rapid drug desensitization in patients with severe respiratory impairment (with Respiriology);
- systemic mastocytosis: CIA manages the largest cohort of highly symptomatic patients with mastocytosis in Canada in conjunction with Hematology and Dermatology;
- treatment of severe asthma with novel biologics (with Respiriology – omalizumab, anti-IL-5 and anti-IL-4/IL-13 agents);
- primary immunodeficiency (Hematology, Infectious Diseases, Gastroenterology).

Organizational Structure

Dr. Peter Vadas has served as Acting Department Division Director (DDD) since January 2018, taking over for Dr. Gord Sussman. Dr. Christine Song has taken over as Program Director (PD) from Dr. Stephen Betschel.

Our administration is simplified due to the smaller nature of our division. However, as the team continues to grow we are working to develop research and recruitment committees.

Monthly meetings are held to discuss research, mentorship, teaching and administrative issues as they arise. Our Research Program Committee (RPC) meets at least quarterly to review the program and evaluate trainees. The PD also participates in the pediatric clinical immunology and allergy RPC meetings.

EDUCATION

Overview

The educational initiatives of CIA focus on point-of-care learning and team-based care in both the inpatient and ambulatory settings. We are also increasing our focus on resource stewardship and quality improvement in education and patient care. Not only does CIA have a robust training program for our core trainees, but the Division is also active in training other specialties, including dermatology, rheumatology, infectious diseases, family medicine, occupational medicine and clinical pharmacology. We have trainees from across Canada and internationally, including Thailand, Ireland, Germany and Cayman Islands. Our adult CIA program is well-integrated with the paediatric program at the Hospital for Sick Children.

We have increased and promoted learning that takes place at point of care. As CIA is primarily an outpatient specialty, much of our undergraduate and post-graduate training and education takes place in an ambulatory setting. However, there are specific areas within the specialty that focus on inpatients, including diagnosis and management of adverse drug reactions, rapid drug desensitization, diagnosis and management of primary immune deficiencies, angioedema and anaphylaxis. For these areas, learning takes place at point of care.

In emphasizing our training on patient-centred team-based care in both the in-patient and ambulatory settings, our trainees have an opportunity to supervise rapid drug desensitization protocols in a multidisciplinary critical care setting. Teams comprise intensivists, pharmacists, nurses, respiratory therapists, and other specialists (typically, infectious disease, respirology, hematology/oncology). Further, trainees gain experience in management of in-patients with anaphylaxis, angioedema, adverse drug reactions, and auto-inflammatory diseases; the patients are admitted into General Internal Medicine (GIM), intensive care, cystic fibrosis program and other units. Investigation and management of patients in an outpatient setting typically involves nursing (immunodeficiency, hereditary angioedema), pharmacists (drug allergy), and nutritionists (food allergy/immunodeficiency). Lastly, resource stewardship and continuous quality improvements, such as anti-microbial stewardship (in-patient and out-patient drug allergy testing to reduce unnecessary use of expensive, broad-spectrum antibiotics) foster multidisciplinary collaborations between teams of investigators to address complex chronic diseases.

Our Programs

Undergraduates

Dr. Christine Song is the Immunology course lead for the Foundations curriculum for first-year medical students at the University of Toronto (U of T). She both developed and teaches the two-week course covering all of basic immunology and introducing clinical concepts in allergy, immunology, rheumatology and transplantation. Teaching modalities include live lectures, online modules and pre-recorded video lectures. There are weekly and end-of-block assessments. An emphasis on the flipped classroom model required the development of self-learning tools and practice assessments for learners. This curriculum has led to vastly increased visibility for the specialty, which in turn has translated into an increase in the numbers of medical students who have requested to shadow staff and participate in research projects.

Residents

CIA trains competent allergists and clinical Immunologists who are well prepared for a career in academic medicine or community practice. The Division has developed a comprehensive training program addressing both adult and paediatric CIA as well as relevant off-service rotations (dermatology, respirology, laboratory medicine, rheumatology, ENT) to fulfill the Royal College of

Physicians and Surgeons of Canada (RCPSC) objectives as they relate to the medical expert role. Residents assess and manage patients in both academic and community settings, with a focus on ambulatory care. Residents also see in-patient consults in adverse drug reactions, anaphylaxis, immunodeficiency, angioedema and mast cell disorders. All trainees complete at least one scholarly project during their two-year program and present their work as a poster or podium presentation, culminating in a peer-reviewed publication. Residents are encouraged to attend and present their studies at national and international conferences and are eligible for a \$1,200/year academic stipend to help cover costs.

Non-medical expert roles are assessed in both ambulatory and in-patient settings. Trainees are expected to complete mini-CEX's (clinical evaluation exercise) to encourage frequent feedback and coaching. Trainees also reflect on the non-medical expert activities that they perform, through the CanMEDS-in-action forms. The Division believes that encouraging trainees to reflect on these roles, such as health advocate, communicator and leader, promotes patient-centered care and resource allocation (with exposure to the Choosing Wisely campaign). Trainees also participate in telemedicine clinics, serving remote and often Indigenous populations. Trainees gain exposure to the use of technology in underserved communities and to peoples who are culturally distinct from those in the St. Michael's Hospital (SMH) catchment area.

Members of the CIA faculty also regularly teach allergy and immunology topics during core internal medicine half-days, medicine noon rounds and hospital grand rounds. Resident training has also benefitted from the implementation of regular journal clubs and complex case rounds.

An anaphylaxis simulation tool has been incorporated into the training program, allowing trainees to hone their diagnostic and management skills in a controlled environment. This simulation tool has proven to be very helpful in assessment of trainees.

Continuing Medical Education

Members of CIA are active in continuing medical education with programs aimed at community-based allergists/immunologists, paediatricians, family physicians, dermatologists and otolaryngologists. Curriculum focuses on enhancing collaborative interactions between 'primary



care' providers and our internal medicine faculty. Various venues for interaction and collaboration include the Annual Allergy Update, the Food Allergy Symposium, the American Academy of Allergy Asthma and Immunology, and the Canadian Hereditary Angioedema Network.

RESEARCH

Overview

The Division's research programs are broad in scope and have resulted in innovative research discoveries that can support patients with diseases who require treatment to live normal lives.

CIA members published 180 papers over the review period, which were cited 1,418 times. The citation impact factor was 7.88. Division members held, on average, eight grants per year over the same period, totalling \$1.854 million.

Faculty is actively engaged in research at basic, translational and clinical levels with meaningful outputs in the areas of adverse drug reaction and rapid drug desensitization, primary immune deficiencies, mast cell disorders, C1 esterase inhibitor deficiency, chronic spontaneous urticaria (CSU). Notable multidisciplinary collaborations within CIA include cholinergic urticaria with anaphylaxis, mast cell activation syndrome (MCAS), and platinum allergy in patients with advanced ovarian cancer.

The Adverse Drug Reaction and Rapid Drug Desensitization Program was established by the Division of CIA in 2001 to quickly identify and treat hospitalized



patients experiencing adverse reactions, thereby reducing morbidity, length of stay and attendant costs. The Rapid Drug Desensitization (RDD) Program was established when this form of therapy was in its infancy. It is now a routine, implemented treatment that allows patients to safely receive a wide range of anti-microbial, chemotherapeutic and non-antimicrobial therapies to drugs that had caused life-threatening allergic reactions. RDD is routinely used in patients with cystic fibrosis and antibiotic allergy and in patients with acute coronary syndromes and ASA allergy, among others. This program is the only one of its kind in Canada.

Significantly, CIA has advanced clinical research in milk and peanut anaphylaxis using novel epicutaneous desensitization techniques, expertise in primary immune deficiency and gamma-globulin replacement treatment. Faculty also lead international collaborations in the study of sequestered auto-antigens in inducible forms of physical urticaria (i.e., cholinergic, exercise and cold-induced urticaria). Recent collaborations with basic scientists have resulted in an uptake of evidence-based care into clinical practice and health policy. A high-impact publication on platelet activating factor (PAF) synthesis and release during mast cell activation and degranulation has served as a nidus for ongoing research into the mechanisms leading to severe and fatal anaphylaxis. In patients with acute anaphylaxis, serum PAF levels correlate with anaphylaxis severity. CIA is developing a clinical trial of PAF receptor blockers as rescue therapy in acute anaphylaxis in conjunction with the Food Allergy and Anaphylaxis Program at the Hospital for Sick Children.

The CIA basic research program continues to grow, as is demonstrated by a recently established collaboration between CIA and the Chair of the Department of Immunology, Dr. Juan Carlos Zúñiga-Pflücker. Together we strive to promote teaching and discussion about translational research in clinical immunology and plan to co-supervise graduate students.

Collaborations/Networks

The Division has made significant strides toward growing its academic and clinical networks.

Multidisciplinary collaborations have been fostered to address a number of complex acute and chronic diseases as follows:

(i) Cholinergic Urticaria with Anaphylaxis

Cholinergic urticaria with anaphylaxis is a chronic condition with recurrent life-threatening multisystem reactions. Division members are investigating the role of IgE against HSP70, a heat shock protein released during physiologic stress (high ambient temperature and strenuous exertion) in collaboration with basic scientists at the Hospital for Sick Children and with the Urticaria Research Group at Charite Hospital in Berlin.

(ii) Mast Cell Activation Syndrome

The cause of MCAS is unknown. The vast majority of affected individuals are female and many report a sudden onset of symptoms. We hypothesize that one form of MCAS is autoimmune, caused by autoantibody to the kit receptor on mast cells, causing activation and mast cell degranulation with mediator release. We are investigating this mechanism in collaboration with Dean Metcalfe, Director, Laboratory of Allergic Disease, and Joshua Milner, Chief of Genetics and Pathogenesis of Allergy Section, NIH and Eyal Grunebaum, Head, Division of Clinical Immunology and Allergy, Hospital for Sick Children.

(iii) Platin Allergy in Patients with Advanced Ovarian Cancer

Platin salts are first-line therapy in women with ovarian cancer. Approximately 5%–20% of patients treated with either cisplatin or carboplatin will develop allergy to this drug, necessitating treatment with less effective chemotherapeutic agents. The Division has established protocols to safely desensitize patients with platin allergy allowing them to receive best available therapy. We are now assisting the Genitourinary Oncology Group (Amit Oza and Neesha Dhani) at Princess Margaret Cancer Centre to establish a Rapid Drug Desensitization Program in-house in order to provide their patients with this life-extending therapy.

Locally, CIA is working to establish ties with the Tumor Immunology Program (TIP) at Princess Margaret Cancer Centre.

At a provincial level, CIA at U of T has established the Alliance of Academic Allergy Divisions of Ontario. The mandate of this alliance is to (i) facilitate coordination and communication between the faculty members of the Divisions of Allergy and Clinical Immunology of Ontario universities; (ii) advance education, promote research and ensure trainee success in academic programs in Allergy and Clinical Immunology in Ontario; and (iii) advance the knowledge and practice of allergy, asthma and immunology for optimal patient care. The first meeting was held on February 12, 2018, and a follow-up meeting was held on April 29, 2018. Members of the Alliance were enthusiastic in taking this initiative up at a national level.

The American Academy of Allergy, Asthma and Immunology has established a Division Heads Committee, which aims to share innovations in training and education, administration and development of strategic alliances within the DoM. The Division has joined this new initiative in order to adapt noteworthy innovations into its program.

Other knowledge translation initiatives include preliminary plans to create an annual Adverse Drug Reaction Symposium geared towards primary care providers. Adverse drug reactions are often first seen by primary care physicians (PCPs) who have often had little exposure to recognition and management. Adverse drug reactions are also a frequent cause of medical-legal complaints. The objective of an Adverse Drug Reaction Symposium is to establish a forum by which to transmit the basic information required to PCPs to establish competence in an area that is otherwise not amenable to traditional continuing medical education.

FACULTY

The Division of Clinical Immunology and Allergy consists of three full-time and five part-time faculty members.

Table 2.1: Academic Position Description of Full-Time Clinical Immunology and Allergy Faculty

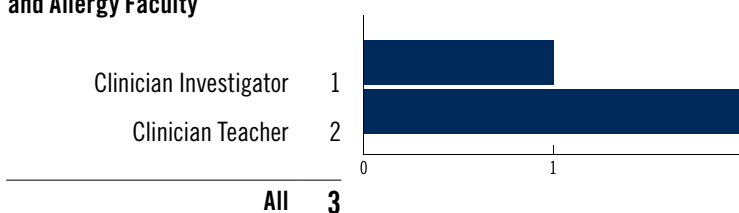


Table 2.2: Affiliation of Full-Time Clinical Immunology and Allergy Faculty

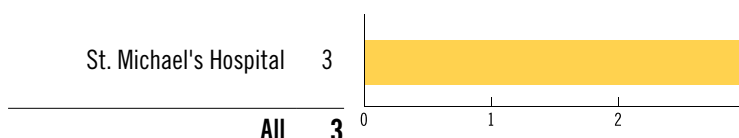
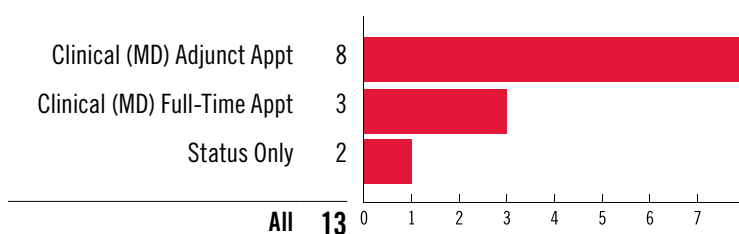


Table 2.3: Primary Appointment Clinical Immunology and Allergy Faculty





Dr. Peter Vadas, Acting Department Division Director

The Division of Clinical Immunology and Allergy by job description includes one clinician investigator and two clinician teachers. CIA within the Department of Medicine resides entirely at St. Michael's Hospital.

CIA faculty members are actively engaged in research at basic, translational and clinical levels. In order to leverage limited faculty and resources, we are working to establish strategic partnerships with new sites, divisions and basic research. The division is working to create a viable recruitment and succession plan to support these initiatives. Expansion to other teaching hospitals will require recruitment of clinician investigators and clinician scientists, but also division support of mid-level career faculty with capacity to develop leadership skills. Significant investment into leadership training has begun, as is demonstrated by division superstars: Dr. Stephen Betschel (established one of the largest adult primary immunodeficiency clinics in Canada), Dr. Christine Song (current program director and co-director of the Rapid Drug Desensitization program), and Dr. Nina Jindal (developed a general allergy and clinical immunology clinic), but still more is needed.

Planning for recruitment of CIA faculty in other hospitals will be critical to successful implementation of the new Competence by Design (CBD) curriculum. The CBD curriculum is resource intensive and requires additional teaching faculty to provide supervision to core and elective trainees. Other considerations include the allocation of adequate space, which, while at a premium, will be required to implement the CBD curriculum and optimize suitable patient encounters. Planning the management of these needs will occur at the next strategic planning meeting.

Communications

Rounds

High-quality Division rounds are now attracting community allergists. Complex case rounds are held twice per year to discuss patients that pose difficult diagnostic and treatment challenges. These rounds are led by CIA staff. Weekly CIA rounds are held on Friday mornings, typically led by trainees. Typical rounds will attract 8–12 attendees. Notices of upcoming rounds are distributed by email to faculty in adult and paediatric programs, as well as to community-based allergists/immunologists (see appendix).

A Facebook page is being developed that will serve as means of more broadly advertising upcoming educational events.

QUALITY AND INNOVATION

The Division of CIA has made significant local, national and in some instances international impact these past five years. Programs established years ago have reached maturity and are being established in other centres (e.g., a chemotherapeutic drug desensitization program at Princess Margaret Cancer Centre). Clinical services have been provided via Ontario Telemedicine Network (OTN) to remote indigenous communities in Northern Ontario. The Division has also developed diagnostic tools, such as a screening tool for hereditary angioedema for emergency department use, and an anaphylaxis simulation tool for CIA trainees (funded by a DoM innovation grant).

An economic study of home vs. hospital care in treatment of primary immunodeficiency had national impact by showing increased capacity of care in the home setting. Data from this study was used by Health Quality Ontario to recommend the funding of home care at a provincial level.

Lastly, an Alternate Funding Plan Innovation-Funded QI study titled “Inpatient beta-lactam allergy assessment by antimicrobial stewardship programs: a multicenter prospective study” considers data from U.S. centres that have shown that “de-labelling” of patients with beta-lactam allergy has reduced length of stay, reduced hospital re-admission rates, and reduced use of second- and third-line antibiotics with a corresponding reduction in the incidence of MRSA, VRE and *C. difficile*. If these outcomes are shown to be applicable in Canada, there will be significant cost reductions and corresponding improvement in patient outcomes.

MENTORSHIP, EQUITY & DIVERSITY

The Division of CIA is proud to note that Division members (full-time and part-time) reflect the diversity of the Canadian population. Dr. Stephen Betschel has been an official mentor to Dr. Christine Song and now serves as official mentor for LGBT undergraduate medical students.



Dr. Christine Song



FUTURE PLANS

Divisional challenges that CIA will address in the coming years are not unique, but warrant careful strategic planning. CIA will enhance representation and collaboration across sites and specialties to build capacity and promote education and quality patient care. Second, CIA will pursue space and revenue to accelerate the recruitment of both early- and mid-career faculty. Early-career CIA faculty are needed as a prerequisite to meet CBD needs and strategic growth; mid-career CIA faculty are needed for succession planning and leadership development.

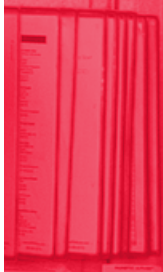
Establishment of a critical mass is a requirement for a vibrant and energetic academic program. At this time, the major bottleneck to growing a successful high-impact program is the lack of penetration in other teaching hospitals. The Division seeks to strategically place highly qualified early career faculty at our other fully-affiliated hospitals that would give our program the clinical and teaching depth and breadth required for the recruitment of clinician investigators and clinician scientists. We will continue to seek out strategic partnerships with basic science departments, such as the Department of Immunology, in order to facilitate cross-fertilization in areas of mutual interest.

CLINICAL PHARMACOLOGY & TOXICOLOGY



D4 Acute
Medical Unit

Station



OVERVIEW

The University of Toronto's Division of Clinical Pharmacology and Toxicology (CP&T) is one of only a handful of such programs in North America. Division members are engaged to varying degrees in research, teaching and the provision of clinical care, principally in the fields of adverse drug reactions/drug safety and acute-care toxicology at a cross-divisional level. Historically, these activities have been concentrated at Sunnybrook Health Sciences Centre (SHSC) and the Hospital for Sick Children (HSC), although a formal inpatient consultation service at Toronto General Hospital/ University Health Network (UHN) is imminent following the recruitment of a recent graduate of our training program. The acute-care toxicology presence is particularly strong at St. Michael's Hospital.

In the years ahead, CP&T aims to expand its clinical and teaching activities to other university-affiliated hospitals, develop a focus on quality improvement and encourage growth of the specialty by attracting trainees who appreciate the diversity of career options created by training in CP&T.

The Division undertook a strategic planning retreat in 2017. Division members as well as current trainees and recent graduates attended. The retreat identified the Division's areas of strength as well as actionable short- and long-term priorities. The full report is attached in the appendix.

ADMINISTRATION

As one of the smallest divisions in the Department of Medicine, and with most faculty cross-appointed from other divisions [General Internal Medicine (GIM), Emergency Medicine (EM)] and departments (Paediatrics), CP&T does not have formal executive or research committees. Divisional principals (Drs. Juurlink, Ito, Lazongas and Thompson) meet several times each year to review the educational program and trainees' progress. Other divisional matters are addressed on an ad-hoc basis.

EDUCATION

Graduate

CP&T plays a major role in the education of postgraduate medical trainees at Sunnybrook Health Sciences Centre (SHSC) and Hospital for Sick Children (HSC). The former involves an elective rotation for senior residents in GIM and Anesthesia, who serve as the first contact for inpatient consultations. Most of these relate to adverse drug reactions or overdoses. This consulting service is one of roughly four in Canada. More senior trainees from across Ontario (most of them in Adult and Paediatric Critical Care and EM) rotate through the Ontario Poison Centre (OPC), where they participate in the care of poisoned patients throughout Ontario, Manitoba and Nunavut. This service includes the provision of 24-hour telephone guidance to staff at the OPC and physicians at the bedside and backup by a medical toxicologist.

The subspecialty training program in CP&T is a two-year program accredited by the Royal College of Physicians and Surgeons of Canada (RCPSC). Generally, one or two trainees are accepted each year. Most applicants have previously trained in internal medicine or emergency medicine, but paediatrics, psychiatry, occupational medicine and anesthesia are other Royal College–approved entry streams.

The training program is concentrated at two sites: SHSC and HSC. Training is heavily customized to the interests of individual trainees, and this flexibility is a major strength of the program. Trainees focus their educational and research efforts in the area that best aligns with their career goals (e.g., acute-care toxicology, quality improvement or drug safety). Some trainees—especially those interested in academic careers—combine subspecialty training with a MSc or PhD, typically in either of Clinical Epidemiology, Quality Improvement, or Education. In some instances, trainees have been able to complete dual subspecialty training in CP&T along with another subspecialty program, such as geriatrics or critical care.

Regardless of a trainee’s area of focus, the RCPSC Specialty Training Requirements (see appendix) are addressed through a mix of clinical activities and educational sessions: toxicology rounds, one-on-one teaching, a journal club and joint educational sessions with trainees at the Western University. In addition,



trainees are required to audit PCL100Y, a graduate-level course offered by the Department of Pharmacology.

Training within CP&T is cross-divisional by design, and trainees work closely with faculty in EM, GIM, and Paediatrics. They acquire in-depth knowledge of human pharmacology, pharmacokinetics, pharmacodynamics, therapeutics, toxicology tailored to different age groups (paediatric and adult) and diverse populations. They address aspects of gender and ethics. They also receive exposure to concepts in pharmacogenetics, pharmacoeconomics, pharmacoepidemiology, complementary and alternative medicine, and drug regulation.

The program integrates the CanMEDS roles and encourages trainees to undertake electives outside Toronto. Recent graduates have undertaken electives in Arizona, Denver, Vancouver and London, Ontario. The past several years have seen interest in CP&T grow; two or three applicants annually apply for one or two positions. On occasion, we also support the training of independently funded fellows.

Continuing Medical Education

Trainees and faculty regularly attend (and present at) a variety of educational rounds. They include the following:

- **Sunnybrook Clinical Pharmacology Grand Rounds.** These occur weekly from September until May-June each year and cover a range of topics in clinical pharmacology. The primary audience for these rounds is physicians, pharmacists and scientists who have an interest in the topics.
- **Poison Centre Rounds.** These occur weekly at HSC during the academic year. Remote video access is available for those not on site. Residents rotating through the Poison Centre discuss interesting cases encountered over the preceding week. An hour of teaching about toxicology typically follows; Drs. Thompson, Mackenzie, Lazongas or Juurlink speak. Postgraduate trainees in EM, ICU and CP&T constitute the primary audience for these rounds.
- **Clinical Pharmacology Case-Based Rounds.** These occur monthly at SHSC throughout the year and involve detailed discussions of interesting cases

seen on the service. The primary audience consists of undergraduate and postgraduate medical trainees.

- **Clinical Pharmacology Journal Club.** These occur quarterly at HSC. Residents and faculty discuss relevant papers in the field over dinner. A social event offsite generally follows.

Residents also have the option of attending medical grand rounds (SHSC and HSC) and pharmacy journal club, each of which is held weekly from September to June. Finally, residents are encouraged to attend national and international meetings in pharmacology and toxicology. The cost is partially offset by funds provided by the DoM.

RESEARCH

Research in the Division of CP&T has several foci. They include the following:

- health services research in the fields of post-market drug safety, drug interactions and suicide/self-harm; the bulk of this research is conducted at the Institute for Clinical Evaluative Sciences;



- cardiovascular disease, including primary/secondary prevention and cardiac rehabilitation, heart rhythm disorders and hypertension; this research is conducted by Division members at Toronto Rehabilitation Institute (TRI), St. Michael's Hospital and Women's College Hospital; and
- drug use in pregnancy and lactation and paediatric drug safety. This research is primarily conducted at HSC.

Members of the Division of CP&T published 383 publications from 2012 to 2017, generating a total of 3,621 citations and a citation impact factor of 5.83. Faculty collaborate extensively with colleagues nationally and internationally on topics such as adverse drug reactions (Dr. Shear), drug safety (Drs. Shear and Juurlink), toxicology (Dr. Juurlink), pharmacokinetics (Dr. Ito), maternal-fetal medicine (Dr. Ito), geriatrics (Dr. Liu) and cardiovascular disease (Drs. Oh, Dorian, Harvey). Between 2012 to 2017, the Division averaged approximately eight grants per year, and total research funding for this period was \$1.908 million.



FACULTY

The appointment of divisional faculty is unique with the DoM: while 13 clinicians have divisional affiliations, only one faculty member (Dr. Oh) has a primary appointment within CP&T. The others have primary appointments in other divisions (e.g., GIM, EM, Cardiology) or the Department of Paediatrics or they are primarily affiliated with other universities. Within these other divisions and departments, mentoring and promotional activities take place.

Recruitment of faculty has long been a challenge because of the small number (<60) of active clinical pharmacologists in North America and because recruitment generally necessitates an accompanying position within another division (GIM, EM, etc.). Barring an interested candidate from abroad or from one of the other two Canadian programs (in London and the fledgling program in Calgary), the recruitment of qualified graduates of our program offers the most realistic opportunity for divisional success in the future.

A key long-term divisional objective is recruitment of recent graduates to strengthen the clinical, teaching and research activities of the division. To this end, Dr. Peter Wu (an internist and clinician in quality and innovation) has recently been recruited at UHN-Toronto General Hospital and has a cross-appointment in CP&T. Another recent graduate, Dr. Emily Austin (an EM physician and clinician teacher), has been recruited to EM at St. Michael's Hospital and continues to work with trainees



in CP&T. Finally, Dr. Chris Lazongas (a Critical Care physician and graduate of our program in 2012) has recently assumed the role of Program Director and has a primary appointment in the Department of Paediatrics.

QI: QUALITY AND INNOVATION/ADVOCACY

This has not historically been a focus at CP&T, but Dr. Peter Wu is engaged in research and stewardship involving medication rationalization, sedative reduction and “deprescribing” at TGH.

LOOKING FORWARD

The greatest challenge faced by the Division of CP&T is its small size. Most Division members are cross-appointed from other divisions (or departments) where

they have clinical, teaching and research obligations that are often unrelated to their activities within CP&T. Consequently, a small group of “core” faculty provides most CP&T-related clinical care, teaching and trainee supervision in addition to their existing responsibilities. Faculty recruitment is a critical long-term divisional objective, although the recent recruitment of Drs. Emily Austin and Peter Wu has begun to address this, as has the appointment of Dr. Chris Lazongas as Program Director.

Because a small number of faculty is scattered across the city, geography is another challenge to clinical care and divisional cohesiveness. This challenge is partially offset by weekly toxicology rounds and quarterly journal clubs. Finally, financial support of trainees’ educational initiatives (e.g., remote electives, conference travel, invited speakers, etc.) is a challenge faced by all divisions. Unlike many other divisions, CP&T has not historically received philanthropic support or unrestricted funds from industry. While support from the DoM has been historically generous, efforts are underway to seek support for trainees from both philanthropists and industry.

CRITICAL CARE



OVERVIEW

The Interdepartmental Division of Critical Care Medicine (IDCCM) is an interdepartmental division of the Faculty of Medicine (FoM) at the University of Toronto (U of T). It has grown from close to 80 full-time and part-time faculty members to more than one hundred, including those who are cross-appointed to their base-specialty departments (Anesthesia, Medicine, Paediatrics and Surgery). Amongst the Division's faculty, 30 members have achieved the academic rank of full professor.

This interdisciplinary Division sees the greatest patient population (more than five million) of any Canadian university critical care division; it sees the greatest diversity of patients and complexity of cases. Residents and fellows in the Division see cases and treatments that may be only heard of in other centres. Residents and fellows have not only outstanding opportunities for research, but also a means to introduce them to faculty at the forefront of critical care.

The Division is renowned for its clinical expertise and research leadership in a broad range of fields including acute lung injury, mechanical ventilation, critical care physiology, sepsis, trauma, critical care education, outcomes after critical illness and health services research, neuroscience and the cellular and molecular biology of critical illness. The Division has developed strong city-wide communication and representation of Division members. Equally important is the facilitation of mentorship, which is viewed as vital to the success of the program and the happiness of all divisional faculty, trainees and staff.

Critical Care's mandate is to develop leaders in critical care and foster the development of competent, caring and resourceful intensivists. Their vision is to consider the critically ill patient in his/her global trajectory, sometimes well beyond the ICU walls. There are many opportunities for research and development in basic science, physiology, clinical trials, clinical epidemiology, ethics and education. The success of the program lies in the diversity of faculty and breadth of the educational opportunities provided by the various academic and community intensive care units (ICUs).



Organization

At the end of 2013, Dr. Laurent Brochard was appointed Division Director. In collaboration with the Division's Faculty and Executive Committee, he developed a five-year strategic plan (2015–20). Since the plan's implementation, Critical Care Medicine (CCM) has ranked second among its CCM peers worldwide.¹

The Executive Committee consists of Dr. Brochard and the Department Heads at the affiliated hospital sites (Dr. Andrew Baker, St. Michael's Hospital; Dr. Brian Cuthbertson, Sunnybrook Health Sciences Centre; Dr. Niall Ferguson, University Health Network and Sinai Health System; Dr. Peter Laussen, The Hospital for Sick Children).

Critical Care has initially been supported by a 16-person Steering Committee which has representation at partner sites. The Program Director, Research Director and Associate Research Director are also members. The committee has evolved towards a regular Faculty meeting to engage members of the Division in appropriate discussions.

EDUCATION

Postgraduate Medical Education

The Critical Care Medicine Education Program at U of T is a two-year curriculum. It reflects the length and learning objectives of the Royal College of Physicians and

Surgeons of Canada (RCPSC) CanMEDS 2014 Physician Competency Framework for subspecialty training. The core lecture series, designed and implemented over the past five years, has been updated this year to enable a transition to competency-based training. This progressive change from July 2015 will be completed in three years. Formative workplace assessments and In-Training Evaluation Reports (ITERS) have been introduced as well as more tailored educational plans structured to meet Critical Care Medicine's entrustable professional activities (EPAs). Critical Care is working with U of T's Post MD Education office as well as the RCPSC to ensure the most efficient and effective onboarding of competency-based medical education.

The program is delivered through blended learning techniques, including interactive didactic lectures, pro-con debates, high-fidelity simulation-based training and hands-on workshops. Throughout the program, all trainees are afforded unique access to world-class educators, scientists and investigators. After two years, trainees acquire the core competencies required to function as a critical care consultant. They also gain the chance to excel—to develop a career as an expert and leader in their chosen clinical or academic field.

At least 12 months of the two-year CCM program involves clinical rotations in critical care units. There is also a requirement to complete one month in a community ICU. Rotations are customized to the individual needs of the resident.

Six months of the two years are dedicated to scholarly activities, including research, quality improvement, education, etc. These activities are supervised by a

¹ Center for World University Rankings (CWUR), April 2017

member of the program committee and the output is presented to a jury at the end of each academic year.

The resident participates in the day-to-day running of an ICU, the supervision of all junior medical staff, the comprehensive care of critically ill patients, the interhospital transportation of critically ill patients and the organization of rounds, seminars and teaching sessions. The resident gains significant experience in the administrative, quality initiative, supervisory and consultative roles required to function as an attending critical care physician. During each rotation and throughout the two-year program, the resident also has graded responsibility so that at the beginning the resident will be involved to a greater degree in primary care and subsequently involved more in a supervisory capacity.

During the academic year, the residents attend a mandatory academic half-day didactic lecture every week at which core topics in intensive care are reviewed. A two-year core lecture series has been designed and implemented over the past five years and runs from September to June each academic year. The core lecture series was developed to fulfill the education objectives outlined in the Specialty Training Requirements. These sessions focus on normal cardiorespiratory physiology and the pathophysiology of critical illness.

Most topics are presented in didactic fashion. There is also hands-on learning for ventilator and dialysis machine parameters and settings. Informal teaching sessions are also held on topics of the residents' choice. Residents are expected to attend at least 90 per cent of the Tuesday lectures.

Once each month, an Ethics Roundtable Discussion takes place during the academic half-day. Participants discuss an ethical principle that pertains to the practice of critical care. Experts from the Centre for Bioethics at U of T are regularly invited to moderate discussions.

Other monthly activities for residents include a Journal Club, a simulation activity, city-wide rounds and Research in Progress Rounds.

Fellowships

Critical Care runs a highly successful International Fellowships Program. Fellowship opportunities are offered at St. Michael's Hospital, Sunnybrook Health

Sciences Centre and a joint program through the University Health Network and Mt. Sinai Hospital. All clinical and research fellows are enrolled as full-time postgraduate students in the FoM at U of T and, as such, enjoy all the academic resources of a large university program. Upon completion, all our fellows are awarded a certificate from the University.

Protected time for the pursuit of academic goals is essential and comprises not less than 25 per cent of the fellowship time. Fellows are strongly encouraged to pursue higher qualifications, and many choose to sit the American Board of Internal Medicine Critical Care examinations and work toward the European Diploma of Intensive Care Medicine during their fellowship. The well-structured and comprehensive teaching provided has proven invaluable to those preparing for examinations. The Critical Care Medicine Clinical Fellowship at U of T is truly an international program. Our alumni, with whom we continue to collaborate, hail from countries all over the world, including Australia, Brazil, the United States, Italy, Japan, Switzerland, the United Kingdom, Singapore, Argentina, Ireland, Spain, India, Nepal and Israel. The program has trained leaders in critical care throughout the world. The Clinical Fellowship is an essential vehicle for the Division's Global Outreach Program, helping to improve the quality and delivery of patient care on every continent.

The Critical Care Medicine Program provides clinical fellows with an exceptional clinical, educational and research experience. The aim is to recruit those trainees who are about to or have recently completed critical care training in their home country. It is important to the success of our educational programs that we have learners who are at different postgraduate levels, who have different educational and professional goals and who will augment one another's learning.

The combined Trauma Surgery and Critical Care Fellowship is highly competitive with other programs in Canada and the United States and continues to draw outstanding surgeons. It represents an important innovation in critical care education in the IDCCM and adds breadth and depth to the program. It also continues to be a very successful collaboration between IDCCM and the Division of Trauma Surgery.

RESEARCH

As members of an interdepartmental division, Critical Care faculty generate and translate new knowledge across the Departments of Medicine, Paediatrics, Anesthesia and Surgery.

While the Interdepartmental Division of Critical Care has more than 100 members, there are 19 full-time faculty members who have a primary appointment in the Department of Medicine (DoM). Over the review period, divisional faculty with a primary or secondary appointment in the DoM produced 1,258 Web of Science documents with more than 32 thousand citations. The 19 DoM faculty with a primary appointment in the Division held grants totaling \$6.779 million over the five-year period; they were primarily awarded by Canadian Institutes of Health Research and hospital foundations.

The structure of IDCCM is unique. Faculty members work at six different academic hospitals across Toronto collaborating with scientists for improving the care of the critically ill.

Collaboration is therefore a priority. Dr. Margaret Herridge and Dr. Hannah Wunsch serve, respectively, as the Division's Research Director and Associate Director. Under their leadership, many high-impact projects have been initiated; an exciting research environment is developing within Critical Care. The annual Day of the Division has been reshaped to make it a research Day: now referred to as the Art Slutsky Day, up to 45 original research works are presented and the best presentations awarded.

In 2017, the Division held its first Alliance Days, when faculty members presented and discussed projects and formed working groups on specific themes such as the NeuroCritical Care Group. These days provide key opportunities to network and create new connections within our "Toronto critical care virtual campus."



Dr. Arno Kumagai with Dr. Christie Lee, recipient of the 2018 Willian Goldie Award in Teaching

Visiting Professor Rounds and Clinical Research in Progress

For the last six years, IDCCM has been hosting routine Clinical Research in Progress (CRIP) and Visiting Professor (VP) Rounds. In that time, we have received more than 50 visiting professors spanning a broad range of seniority and research interests (sepsis, respiratory failure, ethics, education, neurocritical care, etc.). The VP Rounds were designed to be more than typical Grand Rounds and Go experiences. The visiting professors typically spend two full days shuttling around Toronto and meeting with trainees, faculty and research staff. They give two lectures, one for the trainees and one Grand Rounds talk. This program also includes the annual or biannual named lectureships in critical care: Resident's Day Lecture, the Sibbald Lecture and the Goldstein Lecture.

The CRIP Rounds occur roughly monthly during the academic year and provide an informal forum to discuss research ideas at their earliest phase and socialize at the same time. When possible, we link CRIP presentations to the visiting professor's interest and get feedback.

In the past year, IDCCM welcomed more than 20 new "cross-appointed" members. They came from different disciplines but were involved in improving the care of critically ill patients (e.g., rehabilitation, pharmacy, nursing). Promoting young talents is a priority. Critical Care has created the Nuts and Bolts of Research sessions to offer some clues about the complexity of clinical research. These sessions are a useful complement to the monthly CRIP sessions attached to the Visiting Professor program or the Physiology Rounds.

IDCCM has recently initiated a Scholar Award program and is proud to have Dr. Liz Wilcox as the first IDCCM Scholar. The program provides academic recognition and operating funds for two years to support the research career of a junior faculty member.

Annual International Meeting

The Critical Care Canada Forum is a four-day conference focusing on topics relevant to the care of critically ill patients, wherever the patients are located. Internationally recognized, the Critical Care Canada Forum focuses on leading-edge science through informative and interactive sessions, led by an outstanding international faculty and organized by members of the Division (scientific chair:

Niall Ferguson). About one thousand attendees come every year and the meeting is also the official meeting of the Canadian Critical Care Society.

City-Wide Research or Education Rounds

The Division has instituted a program called Critical Care Physiology Rounds, which monthly presents two lectures. One is more education/state-of-the-art oriented and the other is more research oriented. This is organized by Dr. Ewan Goligher. Other city-wide research rounds exist, such as the Mechanisms of Associative Injury (MOAI) sessions organized by the Mechanical Ventilation group, and the Research Rounds at SickKids Hospital.

Research Challenges

In 2015, IDCCM produced a five-year strategic plan. In identifying new pathways for research collaboration, the Division recognized the need to establish a unifying framework that will define the Division across U of T. Individual research groups exist, but there was no IDCCM research framework that incorporated and integrated all the Division’s scientists and researchers involved in basic science, translational and physiological research, clinical research, health-services research, education and quality. Rallying everyone together within such a framework through an emerging theme in critical care—that critical illness is only part of a continuum—is the purpose of the “Alliance” vision. To reach this vision, the Division decided to have a Research Director and a Research Associate Director, who have been able to achieve a considerable work.

There are challenges to overcome. Critical Care needs enough funding to build a common research infrastructure—this particularly robust theme came up in the planning process – and a culture change – one that emphasizes collaboration more than competition across institutions – which is gradually taking place.

FACULTY

IDCCM annually announces the John Granton Award, which recognizes and celebrates a faculty member’s outstanding contribution to critical care education, in addition to an award for the best educator at each site. The award candidates are nominated by trainees are considered for their contributions to education that have local, national or international significance.

Table 4.1: Academic Position Description of Full-Time Critical Care Faculty

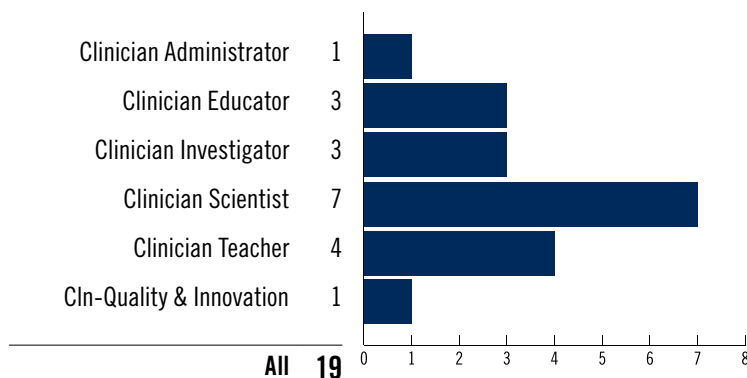


Table 4.2: Affiliation of Full-Time Critical Care Faculty

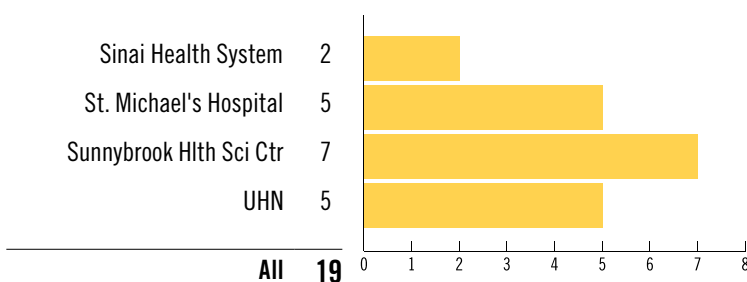
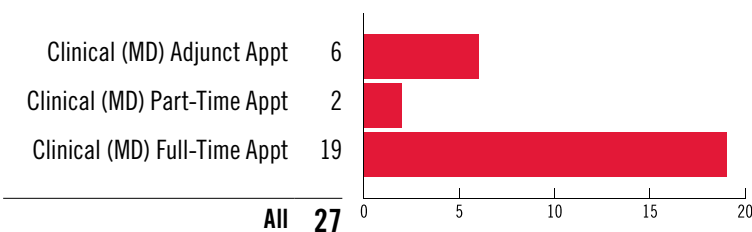


Table 4.3: Primary Appointment of Critical Care Faculty



Other awards reflect priorities of the Division such as the Simon Abrahamson Award to an exceptional trainee, the John Laffey Research Award to a fellow achieving important research success, and the Humanitarian Award, which has been already given to two members of the Division dedicating time and compassion to important humanitarian projects.

The IDCCM, in partnership with the DoM, makes physician and trainee wellness a priority. We are taking steps to implement a longitudinal wellness curriculum to engage staff and trainees in discussions about wellness and burnout and to collectively explore diverse approaches to achieve a healthier way of living as physicians. This mandate will include exploring the impact of and approach to time management, nutrition, sleep, stress reduction and mindfulness meditation.

QUALITY IMPROVEMENT AND PATIENT SAFETY

The Division's ultimate objective, as outlined in its current strategic plan, is to become a leader in critical care quality improvement (QI) through a collaborative infrastructure that promotes sustainable, evidence-based and cost-effective care that leads to reduced harms and improved outcomes while increasing efficiency and value for the health-care system.

There are ongoing initiatives at hospital sites and collaborations across sites.



At St. Michael's Hospital, Dr. Andrew Baker, David Hall and their group work on a project: Improving Procedural Quality and Safety in the ICU through the Introduction of a Procedural Checklist and Pause: An Interprofessional Quality Improvement Initiative. They were selected as the first-place recipient of the 2017 Spacelabs Innovative Project Award.

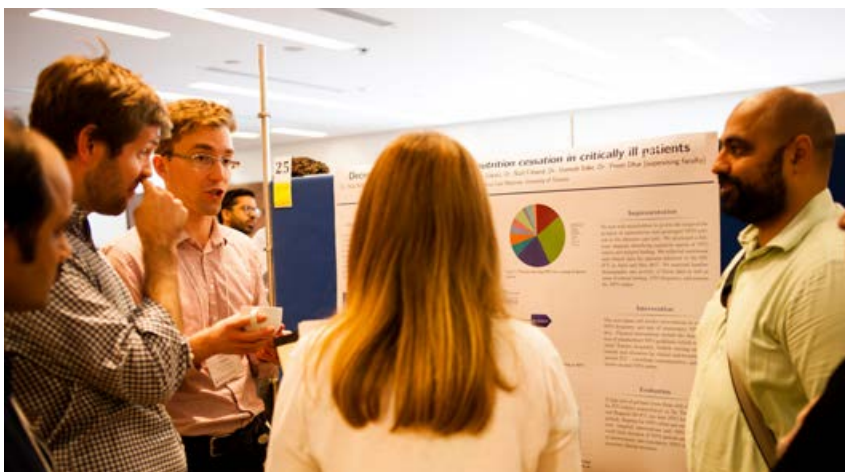
At Sunnybrook Health Sciences Centre, a Process of Care database was developed and validated based on data collected through the iCORE registry. Dr. Eddy Fan led the project. The database assists reporting about early mobility, lung protective ventilation, DVT prophylaxis, delirium screening, sedation management and spontaneous breathing trials. All units collecting data on iCORE are receiving reports, and quality reports are posted monthly. The current indicators were revised at an interprofessional meeting. After the further refinement of definitions occurs and the data becomes more appealing to clinicians, the new dataset will be distributed in 2018.

Work continues to expand the database to community hospitals, and Drs. Amaral and Fan have been actively engaged with stakeholders to increase adoption. Scarborough and Rouge Hospital, St. Joseph's Health Centre, Niagara Health System (St. Catharines site) and Michael Garron Hospital are partners, and each is in various stages of contractual development to contribute to the registry.

IDCCM continues to present projects and share ideas in an annual multiprofessional quality meeting (QUICK-ICU project). We get encouraging feedback. This collaborative group also uses Basecamp online to discuss QI ideas and problems in real time.

In association with the Canadian Critical Care Society, the Canadian Association of Critical Care Nurses and the Canadian Society of Respiratory Therapists, Dr. Amaral led and published online the Choosing Wisely Campaign items for Critical Care in Canada.

Following the IDCCM strategic plan, Drs. Amaral, Dhar, Orla Smith and Vagia Campbell continue to supervise voluntary fellows and residents in a Quality Improvement Workshop. Trainees attend a workshop created by Dr. Brian Wong from DoM, and they work on quality improvement projects throughout the year. One of last year's projects, which was devoted to decreasing blood work, received awards on U of T QI Day.



trainees with suitable (i) academic, and (ii) professional mentors. Each trainee is matched to mentors within the first quarter of the first academic year. Mentorship meetings held at least quarterly are encouraged and arranged. They afford opportunities for mentors and mentees to engage in formal bi-directional feedback, development on mutually agreed learning objectives and professional development activities.

The need to enhance mentoring in the Division is facilitated by simple but systematic rules. The IDCCM wants to assume a key role in connecting people across the city and in areas outside the Division.

The IDCCM Mentorship Working Group released an inventory survey that received a 60 per cent response rate. The survey will need to be completed and regularly updated to understand the complement of our research group and what people are doing—the nuts and bolts of their research activities.

INTERNATIONAL COLLABORATIONS AND HUMANITARIAN PROJECTS

Several members of the Division have a key role in the highly successful Canadian Critical Care Trial Group, including the chair-elect Rob Fowler, the Scientific Meeting Planning Director Margaret Herridge, the Treasurer Karen Burns and the past chair of the biology group Jamie Hutchinson.

The Division acknowledges the importance of international collaborations and of humanitarian works. John Marshall is a Trauma Surgeon and Intensivist at St. Michael's Hospital and he is the Founding Chair of the International Forum of Acute Care Trialists (InFACT)—a global network of investigator-led critical care clinical research groups.

Several members are strongly involved in humanitarian activities, such as Drs. Laura Hawryluck, Rob Fowler and Neill Adhikari.

MENTORSHIP

With a diverse, prolific and skilled faculty membership, the IDCCM aims to provide the best in trainee mentorship. A formalized mentorship program helps

TRANSPARENCY AND DIVERSITY

The Division has worked on different processes including the recruitment procedures to ensure transparency and support diversity, with a special attention paid to gender equity. The Division has been working closely with the Department of Medicine on these aspects.



DERMATOLOGY



OVERVIEW

The Division of Dermatology is housed in three main teaching sites (Women's College Hospital, Sunnybrook Health Sciences Centre, and UHN-Toronto General Hospital) with a strong connection to the Paediatrics Division at the Hospital for Sick Children. The Division provides patient care in areas of general dermatology and unique subspecialties including skin surgery (Mohs surgery), phototherapy, wound care, patch testing, and cosmetic and paediatric dermatology. There is a strong clinical research focus with emphasis on cutaneous malignancy, transplant dermatology and clinical trial quality.

The mission of the Division of Dermatology is to meaningfully affect health through international leadership in dermatology education, research and the translation of new knowledge into better care and health outcomes. The Division has established strategic objectives to achieve this mission.

Research. The Division seeks to enhance and grow its basic and clinical research program by engaging in new partnerships within the Department of Medicine's (DoM) subspecialties and specialties, with the University of Toronto's (U of T) basic scientists and with external partners in industry, foundations and institutes among others.

Quality and Innovation. The Division seeks to lead in quality and innovation (QI), improve patient care and create new training opportunities for trainees and faculty. The Division seeks to nurture faculty well-being and promote meaningful knowledge translation.

Recognition. The Division seeks to elevate the Division of Dermatology on an international scale. Our goal is to be among the top five dermatology divisions on the globe.

Recruitment. The Division seeks to recruit educators and scientists to sustain these objectives. The Division aims to elevate itself nationally and internationally on the scale of research and education. The Division seeks to be ranked in the top ten by 2028.

EDUCATION

U of T has the largest dermatology training program in Canada and one of the largest in North America. The teaching program is designed in the following way:

- an intern year of internal medicine and subspecialties in core dermatology weekly;
- a second year more focused on the various branches of dermatology and related fields;
- three core years of all aspects of dermatology (paediatric and adult);
- dermatologic surgery;
- dermatopathology; and
- cosmetic and procedural dermatology.

U of T collaborates with McMaster University in running a joint training position in Dermatology; the resident is based in Hamilton for the first two years and receives a large component of core dermatology in Toronto for the final three years of training. Research is a core focus of training in the residency program, and several residents have succeeded in securing grant funding from the Canadian Dermatology Foundation, among other funding agencies. Residents regularly present at national and international conferences and at the Division's own Resident Research Day.

The program also has a strong clinical base with subspecialty clinics in cutaneous lymphomas, immunobullous diseases, hair, vascular malformations, epidermolysis bullosa, complex medical dermatology and childhood morphea. A dedicated group of dermatopathologists teaches concepts



Dr. Scott Walsh (centre right), recipient of the 2018 Department of Medicine Teacher of the Year Award

in dermatopathology weekly as well as during dedicated rotations. Cosmetics and procedural dermatology, including Mohs micrographic surgery, have dedicated teachers and rotations.

Residents have been very successful in securing opportunities (including electives in Botswana and conferences in European countries) through the American Academy of Dermatology as well as the Canadian Dermatology Association. Several residents

have participated in Camp Liberté, a charitable organization that offers a unique experience for children with cutaneous disorders. The dedicated residents, and their innovations, continue to make the program grow, and a collegial group of committed staff ensures a solid and fulfilling residency experience.

Dermatology has 34 residents in the program and 12 fellows (medical, procedural, wound care, cosmetic and paediatric dermatology) who reflect the community's diversity. Education at the graduate level involves multiple academic and community sites; rotations give the residents knowledge and experiences in all aspects of adult, paediatric, academic and community dermatology as well as pathology, procedural dermatology and all related disciplines. The Division has many multidisciplinary subspecialized clinics, including the following:

- vascular anomalies (radiology);
- morphea/lichen sclerosis (rheumatology);
- a lymphoma clinic, both paediatric and adult (hematology);
- epidermolysis bullosa (plastic surgery);
- genodermatoses (genetics); and
- skin cancer (plastic surgery, pathology and radiation oncology).

The Division also has many partners in gastroenterology, otolaryngology (ENT), oncology, infectious diseases, allergy and immunology, nephrology, endocrinology, plastic surgery, radiation oncology, ophthalmology and dentistry to offer the best patient-centred care and training for our residents. Residents rotate through all of the related disciplines in the first two years of training and then focus on core dermatology, pathology and procedural training for the final three years. Scholarly projects are a mandatory component of the program, be it basic or clinical research or quality assurance.

Dermatology has the most teaching within the program of any residency program in North America:

- full academic days on Fridays;
- basic sciences of skin on Tuesdays;
- monthly dermatologic and cosmetic surgery training; and
- regular dermatology-focused training on each of the CanMEDS competencies.

The Division hosts a yearly three-day resident retreat at the beginning of the academic year that focuses on team building and addresses a CanMEDS competency

with focus on dermatology. This retreat has been held for the last 12 years and unites PGY1–PGY5 residents in a cohesive group. The Division also has a staff champion and resident lead for each of the CanMEDS competencies; they ensure that all aspects are covered within our academic curriculum. Finally, the teaching curriculum is mapped well to rotations and evaluations. The Dermatology Residency Program covers experiences and the knowledge base in all facets of dermatology over a three-year rotating plan (which includes both education and evaluation) for PGY3–PGY5 and a two-year rotating plan for PGY1 and PGY2 residents.

All residents participate in teaching at the peer level as well as at the undergraduate medical education level to train them to be the teachers of tomorrow. They receive feedback from teaching and presentations. The Professional Association of Residents of Ontario's teaching award has been won by dermatology residents five times in the last 15 years.

The Division recently undertook a survey of current residents and recent graduates to assess all aspects of the training program and instituted changes to develop consistency across teaching sites. One objective is to raise the quality of education in all sites to gain more consistency in teaching feedback from residents and other learners. Even though it has an understaffed program with 12 full-time faculty for 46 residents and fellows, the Division manages to provide in-depth teaching to undergraduates, graduates (dermatology and related disciplines), fellows and for postgraduate continuing medical education (CME).

Undergraduate Education

Dr. Perla Lansang is responsible for undergraduate education and has, in the past five years, created a new dermatology curriculum for undergraduate training. She is responsible for the curriculum and is the Chair of the Dermatology Education Committee and the Dermatology Undergraduate Education Committee. Other members of these committees include Dr. Yvette Miller-Monthrope, Dr. Geeta Yadav and Dr. Erin Dahlke.

The undergraduate curriculum at U of T spans all four years of medical school, increasing in complexity and medical-student involvement as the students progress through medical studies. The first-year course consists of a brief introduction to dermatologic history and a

physical exam during the Arts and Science of Clinical Medicine course. In second year, the students get a week of case-based lectures and seminars during Mechanism, Manifestations and Management of Disease. The lectures are held as large-group sessions. The seminars are designed as interactive small-group learning activities. Residents are heavily involved in these seminars, and the seminars also provide the residents opportunities to develop their teaching skills.

Just before starting clerkship at third year, students take the clerkship course. It comprises online modules and a day of patient viewing; there are more than 30 stations for students to see and learn about dermatological disease. The patient-viewing course aims to standardize the student experience and provide the students with enough exposure to dermatologic patients so that they will gain the ability to describe, recognize and manage common and important dermatological conditions when they graduate.

In fourth year, medical students can apply to do a two- to three-week clinical selective to consolidate their dermatologic learning. This selective course, known as Transition to Residency, provides students who are planning to specialize in other disciplines with adequate clinical time to see dermatological diseases that may be relevant to their eventual field of practice. This spiral-curriculum concept aims to increase difficulty and complexity as the students learn the basics of dermatology from year to year.

Postgraduate Education

The Division of Dermatology at U of T is the largest dermatology training program in Canada. Dermatology residents interact regularly with internal medicine residents and staff, usually in their capacity as dermatological consultants. Division members continue to be world leaders in dermatology research as well as drug interactions.

Residency training in dermatology involves the development of thorough knowledge of the skin, its appendages and visible mucous membranes both in health and disease, and the acquisition of clinical and technical skills and attributes for an independent consultant's practice. Residents must demonstrate the knowledge, skills and attitudes relating to gender, culture and ethnicity pertinent to dermatology.

In addition, all residents must demonstrate an ability to incorporate gender, cultural and ethnic perspectives into research methodology, data presentation and analysis. These objectives are based on the *Objectives of Training in Dermatology*, a document prepared in 2009 by the Special Committee in Dermatology of the Royal College of Physicians and Surgeons of Canada. (The document was reviewed in 2015. Version 1.2 is current.)

Dermatology Postgraduate Residency Program Committee

The members of this Committee are Drs. Scott Walsh [Program Director (PD)], Vincent Piguet [Departmental Division Director (DDD)], Neil Shear, Christian Murray, Cheryl Rosen, An-Wen Chan, Marissa Joseph, Nowell Solish, Joel DeKoven, Jensen Yeung, Jay Jambrosic, Dalal Assaad, Miriam Weinstein, Elena Pope, Hermenio Lima, Kucy Pon, Afsaneh Alavi, Aaron Drucker, Trevor Champagne, Geeta Yadav, Phil Doiron and one or two residents per year.

The Dermatology Postgraduate Residency Program Committee has been led by Dr. Scott Walsh (PD) since 2006. The PD reports to the DDD and to the PD for Specialty Programs, Dr. Jeannette Goguen. The Committee meets a minimum of four times per year and oversees all aspects of the residency program.

Fellowship Education

Currently, there are dermatology fellowships in Mohs surgery, cosmetic dermatology, advanced medical dermatology, wound care and paediatric dermatology.

In general, residents must have completed their residency training by the time their fellowship begins. Most often this means a full residency in Dermatology, but in some cases other specialists may be considered. Most people who are seriously interested in fellowships have either done electives or observerships or have contacted people involved in the program. There are seven physicians completing fellowship training at U of T: one in Mohs surgery; five in advanced medical dermatology; and one in laser and cosmetic dermatology.

Electives

The dermatology elective is designed for undergraduate medical students who are seriously considering dermatology as a career choice. Previous experience in dermatology is preferred. This elective includes

exposure to outpatient dermatology and inpatient consultation services. Preparation and basic dermatology knowledge are a prerequisite to taking this elective. Electives routinely run for a two-week period and can be scheduled at Sunnybrook Health Sciences Centre, Women’s College Hospital (WCH), University Health Network (UHN)/Toronto Western Hospital or with a private dermatology practitioner.

Continuing Education

CME-accredited programs regularly address subjects such as Wound Care and Dermatology in Women. Other CME events include the Robert Lester Postgraduate Seminar and Toronto Psoriasis Seminar.

Competence by Design

The Division is preparing for the implementation of Competence by Design in Dermatology. It is estimated to roll out in July 2021.



RESEARCH

The Division of Dermatology has a strong clinical research focus. Capacity in clinical epidemiology has been built over the past five years; the emphases are on cutaneous malignancy, transplant dermatology and clinical trial quality. The breadth of Dermatology research excellence is reflected in the Division’s publication outputs and funding success. Over the five

year review period the Division had 472 publications, generating 3,683 citations and resulting in a 7.8 citation impact. Over the past five years, 24 peer-reviewed grants and one industry-funded grant have been obtained totalling \$1.262 million; most of this funding came from extramural agencies, including the Canadian Institutes of Health Research (CIHR) and the Canadian Dermatology Foundation (CDF). The core research sites (Medical Sciences Building, U of T, etc.) and the hospital-based research institutes have traditionally supported basic wet-bench researchers over those conducting clinical and health-services research.

The Division of Dermatology has a range of collaborations in the dermatology research-intensive sites (WCH, Sunnybrook). These are just a few of the new initiatives in a variety of inflammatory skin diseases and skin cancers:

- A Cardio-Rheumatology initiative (with Drs. Paula Harvey, Lihi Eder and Vincent Piguet) closely collaborating with Dermatology;
- The Division has a network of international collaborations to study infections and skin mucosal transmission of HIV/HTLV-1 with the United Kingdom (University College London), the United States and Japan (Hamamatsu), as well as Toronto colleagues (Drs. Rupert Kaul and Mario Ostrowski in Infectious Diseases);
- The Keratinocyte Carcinoma Consortium, which includes collaborators from the United States, Australia and the Netherlands for pharmaco-epidemiological studies; and

- A transplant dermatology research collaboration, conducted with UHN's multi-organ transplant program and St. Michael's Hospital's (SMH) transplant program, that focuses on epidemiology and the prevention of skin cancer.

Expansion of research in the Division is possible if recruitment follows in certain specialized areas, such as skin inflammation cancer and others. Research capacity will grow as well with continued fundraising. The Division is pursuing grants through CIHR and CDF as well as support from the pharmaceutical industry and donors.

The Division has had two significant recruitments in 2017: Dr. Vincent Piguet, our new DDD, who has an extensive research background in basic and clinical research related to skin diseases (inflammation/infection), and Dr. Aaron Drucker, who has excellent clinical research skills in atopic eczema and inflammatory skin diseases. Furthermore, the Division has several residents who have high-impact-factor publications active in research.

Within two years, the Division aims to further develop clinical research. The plan is to start dermatology laboratories with initial data and recruit one to two research faculty in cutaneous oncology and inflammatory skin diseases. The Division will have explored options to establish capacity in core clinical research areas such as epidemiology, health-services research and clinical trials. The Division now lacks the infrastructure to perform clinical trials efficiently.

Table 5.1: Academic Position Description of Full-Time Dermatology Faculty

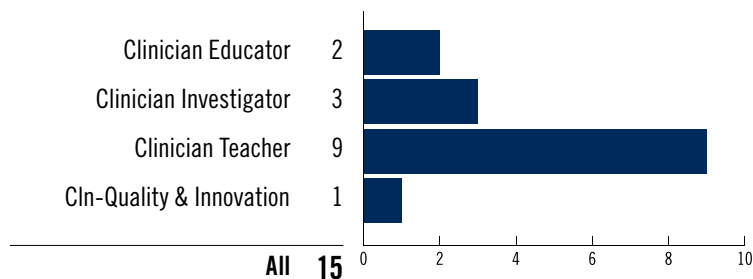


Table 5.2: Affiliation of Full-Time Dermatology Faculty

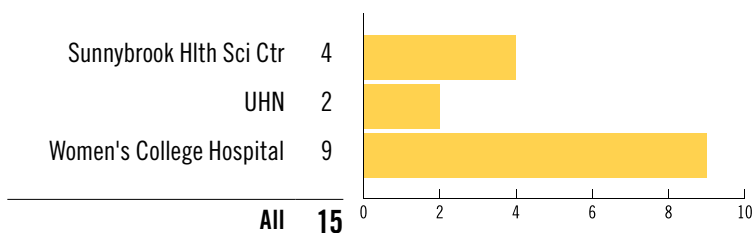
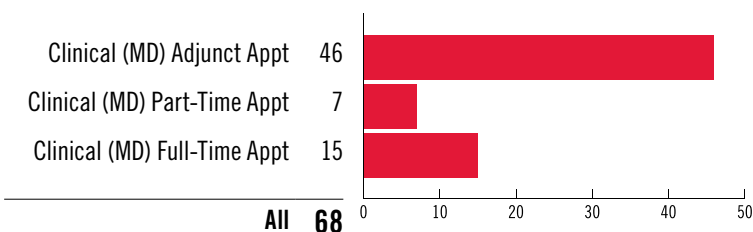


Table 5.3: Primary Appointment of Dermatology Faculty



After five years, the Division expects to see higher-impact publications more regularly and aims to recruit additional research faculty, secure multi-year grants and identify residents earlier for the clinician scientist training program.

FACULTY

Dermatology has disproportionately more part-time than full-time faculty members. Of the 16 full-time Dermatology faculty members, there are eight clinician teachers, two clinician educators, three clinician investigators, two clinician scientists and one clinician in quality and innovation. These full-time faculty members are sited at three of the fully affiliated teaching hospitals: four at Sunnybrook, 11 at WCH and one at Toronto Western Hospital/UHN.



Of the full-time faculty members, three are at the rank of lecturer, seven at assistant professor, three at associate professor and three at full professor.

The balance of staff at each site comprises part-time and adjunct faculty members. There are 13 office-based adjunct and part-time faculty members and 36 adjunct and part-time faculty members appointed to Dermatology affiliated with the fully affiliated or community-affiliated teaching hospitals. They provide clinical care and teaching services in one or more of the following areas: general dermatology, wound care, cosmetics, cancer, contact dermatitis (both within the occupational medicine program at SMH), laser treatments and dermatopathology.

Awards/Distinctions/Recognition

Dr. Vincent Piguet received an appointment to the distinguished scientific association Academia Europaea. As a member of the academy, Dr. Piguet joins the ranks of more than 70 Nobel laureates and other esteemed scientists. Dr. Piguet also gave the ninth annual prestigious J.B. Ross Lecture at Dalhousie University.

Dr. Phil Doiron has received three awards in the past year from U of T, the Canadian Dermatology Association and WCH respectively:

- U of T, Clinical Teacher of the Year (Dermatology Program);

- Canadian Dermatology Association Resident and Fellow Society, Excellence in Clinical Teaching Award; and
- WCH, Marion Hilliard Trust Fund Award.

Dr. Neil Shear received the following awards:

- Canadian Skin Patient Alliance, Practitioner of the Year 2016; and
- Canadian Dermatology Association, Practitioner of the Year 2018.

Dr. Scott Walsh received the following award:

- U of T, Department of Medicine 2018 Teacher of the Year Award.

The Division holds regular meetings with faculty, including annual appraisals done by physicians-in-chief and/or the DDD at hospitals or U of T. The Division also supports faculty for promotion when a profile shows strength and compatibility with the next academic rank. The activity of faculty is monitored closely by the PD and his administrative office. Letters of thanks for various contributions are sent regularly, and data is captured both in terms of volume and quality.

Newsletter

As of January 2018, the Division created a tri-annual Dermatology newsletter that provides members of the Division with clinic and research updates as well as information about upcoming events and highlights of

any achievements and awards. The Division asks for contributions from faculty, residents and community dermatologists to best engage all audiences. This newsletter is emailed to all Division faculty, residents and fellows. It is also posted on the DoM's website.

Rounds

Rounds are given at the various hospitals. The Division can provide updates on novelties in the field, on new clinics and clinical services available in Dermatology. There are also regular presentations at grand rounds and research rounds at WCH, Sunnybrook and other sites.

QUALITY & INNOVATION

Under the leadership of Dr. Trevor Champagne, Dermatology's QI lead, the Division has several QI initiatives. They include the following:

- participation [as clinical lead(s)] in a pilot Ontario Telemedicine Network TeleWound care initiative;
- evaluation of a local teledermatology initiative at WCH to support the Canada Health Infoway Benefits Evaluation framework and the value of knowledge transfer;



- a robust Dermatology program review and data analysis using custom survey software; and
- changes to management analysis of clinic workflow in electronic medical records at the Ricky Kanee Schachter Dermatology Centre (RKS) at WCH.

Well-Being of Physicians and Trainees

The Division encourages regular discussion between full-time faculty members and the senior leadership team. We also consider personal circumstances as we work toward improving well-being. In a recent example, the Division had increasing concerns at WCH/RKS about physician wellness largely because of IT/EPIC issues related to a considerable increase in workload. As a result, the leadership of the hospital (PIC/Vice President Clinical) put a plan into place to improve the situation.

The Division is also trying to spread more evenly the burden of on-call time for sites that are less staffed, and the efforts are having early positive effects. Due to the small number of full-time faculty and the large clinical and teaching burden, this area is of serious concern. For trainees, the Division follows the recommendation of the Canadian Resident Matching Service (CaRMS), and well-being issues are discussed with the PD as they arise. The Division accommodates training needs and life events such as illness, maternity leaves and so on.

MENTORSHIP, EQUITY & DIVERSITY

To support mentorship, equity and diversity within the Division of Dermatology, the Division arranges meetings with faculty (e.g., a new assistant professor meets with an associate professor, following standard DoM and hospital policies). A dedicated staff member champions mentorship (Dr. Neil Shear), meets all PGY1 and PGY2 residents and identifies staff mentors and contacts for residents in PGY3–PGY5. Each resident in PGY1 is paired with a PGY2 or PGY3 mentor so that the residents have both staff and resident mentors throughout the program. The PD officially meets each resident twice yearly to address performance as well as career direction. The PD spends most weekly academic teaching days with the residents. Equity and diversity are not identified issues in Dermatology as there is strong representation from varying ethnicities, genders and sexual orientations within the residency program.

The Division follows U of T and hospital processes to ensure equity and diversity among faculty members and residents. The Division uses CaRMS E&D policies for resident selection.

We pay attention to the composition of committees for the recruitment of new faculty. We aim to ensure that at least one-third of Search Committee members are women to reflect the current number in the DoM. (We acknowledge that this proportion should increase as the recruitment of women to the DoM increases.) We also endeavour to raise awareness of committee members about the potential for unconscious bias. Approximately 43 per cent of full- and part-time faculty are female, and the Division aims to meet the goal of 50 per cent, as laid out in the Gender Equity Guidelines of the DoM.



EMERGENCY MEDICINE

R. Page
Elliott
Building

EMERGENCY

OVERVIEW

The Division of Emergency Medicine in the Department of Medicine (DoM) is one of three Emergency Medicine (EM) divisions in the Faculty of Medicine, alongside counterparts in the Department of Family and Community Medicine and the Department of Paediatrics. The three divisions run separate training streams for residents and fellows but cooperate closely in the planning of joint educational and wellness events, rounds and continuing education (CE) conferences. The DoM Division is led by a Director and a Divisional Executive Committee that meets monthly. It is supported financially by the DoM and by contributions from each of the three Emergency Department (ED) practice plans at the three core hospital sites at which the Division operates.

Strategic priorities were revisited in 2015, and an updated plan was developed. It focused on Quality Improvement (QI) and research collaborations across sites; faculty mentorship, recruitment and recognition; and exploring alternative funding and the possibility of establishing a University of Toronto (U of T) Department of Emergency Medicine. The Division will start another strategic-planning process in 2019, and a new strategic plan will be delivered by 2020.

In alignment with DoM guiding principles, the Division strives to accomplish the following tasks.

- **Promote equity, diversity and professionalism; be socially accountable and steward health-care resources; and align physician training to meet future population needs.** The residency program has a comprehensive full-day curriculum delivered through weekly academic sessions. The mornings are divided into teaching rounds (Group A for PGY1 and CFPC-EM residents; Group B for PGY2 and higher), resident case presentation and grand rounds. During the afternoons, the residents break out into different groups for other workshops, seminars, a simulation session and at times come together for Journal Club. The longitudinal curriculum includes leadership, ethics, geriatrics, administration, advocacy, quality improvement, disadvantaged populations and wellness rounds in addition to our robust simulation



and ultrasound curriculum. Residents may choose selectives in toxicology, advanced ultrasound and emergency medical services. Additional summer academic sessions focusing on equity and diversity—such as a day-long session dedicated to Indigenous culture—are also provided.

The Division ensures diversity and equity in the composition of recruitment committees for our leadership roles, new faculty recruits and Canadian Resident Matching Service (CaRMS) applicants.

The Division has two clinician leads in quality and innovation (CQI) on the Choosing Wisely campaign to increase accountability and stewardship of limited resources.

- **Recognize the contributions of all our faculty members, our interprofessional colleagues and both our hospital and university identities.** The Division’s monthly newsletter has a readership of more than 500 between sites and tri-division EM. The newsletter encourages collegiality among EM faculty and residents who are split between sites and divisions. It recognizes and shares faculty and resident awards and publications, and it announces new or promoted faculty.

Non-physician members are included on quality and research teams. They present and are recognized at the Division’s Research Day and are eligible to receive quality awards to acknowledge their accomplishments.

- **Enhance mentorship across the academic lifespan and optimize faculty members’ well-being and academic success.** The Division Mentorship Director meets with PGY5s and junior faculty to guide the selection of a mentor and ensure their mentorship needs are met. The Division Executive Committee has initiated discussions to identify mentorship needs for senior faculty. Emergency Department (ED) chiefs and the Departmental Divisional Director (DDD) meet all faculty regularly for annual performance appraisals and activity sheets to support academic success.

All academic sites have discussed physician burnout with faculty. One of the core EM sites is trialling a faculty wellness lead. The Division will monitor and review effectiveness to determine whether a divisional wellness lead position should be created. The Division also hosts monthly resident wellness rounds and recently hosted a faculty wellness retreat focusing on developing mindfulness and self-care.

Administration

The Executive Committee comprises the Division Director, Dr. Anil Chopra; Education Directors for Continuing, Postgraduate and Undergraduate Education; Core Site Chiefs from St. Michael's Hospital (SMH), University Health Network (UHN), and Sunnybrook Health Sciences Centre (SHSC); and the Mentorship Director. Ad hoc members include the previous Division Director; a clinician scientist (CS) representative; and the Assistant Program Director. The Division Executive Committee meets monthly. Please see full membership and terms of reference in the appendix.

EDUCATION

Undergraduate Medical Education

Emergency Medicine undergraduate teaching is a proud tradition and strength at U of T. Medical students are exposed to the practice of EM in both pre-clerkship and clerkship. In delivering Emergency Medical undergraduate education, faculty are involved in ultrasound instruction, core clerkship rotations, longitudinal clerkship, electives, selective observerships and the integrated Objective Structured Clinical Examination (iOSCE).

Emergency Medicine is the most highly rated clerkship course across Canada and at U of T. Over 250 undergraduate students rotate through six blocks in 10 affiliated hospital sites each year. The program also attracts a significant number of elective students from across North America: 103 individuals came to U of T in 2016–17.

As the class continues to grow and reach out further into the community, especially the new group at the Mississauga Academy of Medicine, the responsibilities of the Undergraduate Committee are expanding and increasing in importance. The Emergency Medicine Undergraduate Committee comprises site coordinators/representatives from each hospital where core clerks are placed for their third-year rotation. There is also an electives position and a Remediation Committee.

In June 2017, the Division launched a new immersion experience for 12 students at the end of year three. By getting hands-on experience early in training, students can better understand the EM specialty. Students saw

patients in three EDs, attended ultrasound rounds and participated in hands-on seminars and simulation. EM educators are leading a multidisciplinary Ultrasound Committee to help coordinate ultrasound teaching in all years of medical school. There are continual challenges:

- engaging staff in undergraduate EM activities to meet the demands of medical students;
- providing placements in the Division's EDs for all levels of students;
- providing excellent clinical instruction despite volume demands; and
- ensuring access to the required ultrasound machines.

EM staff and senior residents participate in the instruction of the EM Bootcamp Seminars. The series, run at the start of each clerkship rotation, is highly evaluated and a boost to learner confidence. EM Bootcamp Seminars prepare participants to move into the clinical units and start seeing patients at the bedside. Finally, *The ABCs of Emergency Medicine*, authored by 60 U of T faculty, has been made available through open access on the Division of Emergency Medicine website and attracts positive feedback from users

Postgraduate Medical Education

The Division oversees a five-year Royal College of Physicians and Surgeons of Canada (RCPCSC) postgraduate residency-training program. This program—the largest of its kind in the country—has a total current enrolment of 50 residents and an intake of 10 residents [seven Canadian Medical Graduates (CMG) and three International Medical Graduates (IMG)] per year. The Residency Training program is governed by a program director, an assistant program director and a program administrator. There is a highly functional Program Committee comprising two representatives from four core hospitals and multiple resident representatives [PGY1, PGY2, two PGY3 chief residents, Professional Association of Residents of Ontario (PARO) representation and outgoing chief residents who remain on the committee for PGY4 and PGY5]. The Program Committee is closely involved in decision making.

In the past five years, the Division has instituted the following changes:

- developed a robust ultrasound and simulation curriculum;
- set up a formal examination committee to oversee all in-training examinations;

- established a Scholarly Activities Committee involved in promoting and helping to develop resident research activity;
- implemented new longitudinal curriculums including Quality Improvement, Leadership and Geriatrics;
- implemented monthly “wellness rounds,” a dedicated time for residents to release the pressures and stressors of residency in a non-judgmental, peer-to-peer environment. The Office of Resident Wellness also provides formal wellness sessions;
- implemented mentorship programs, including the Buddy Group, which provides peer and faculty support for residents. This non-mandatory group has signed up 60 per cent of residents;
- improved attendance by faculty and residents at Academic Day;
- improved transparency and resident involvement in policy changes and updates; and
- improved communication through the development of the Emergency Medicine website, a monthly newsletter, and Program Director site visits every fall.

Every one of these initiatives has included representation from all three core hospitals and residents in every aspect of planning and operation.

As part of the Competence by Design (CBD) initiative, the Division has

- set up a CBD Planning Committee that oversees all CBD initiatives. The CBD committee, which has representation from all core sites and residents from different stages, has been meeting for the past two years. The committee has collaborated with U of T PGME (postgraduate medical education), the Wilson Centre, DoM divisions/committees, the Department of Community and Family Medicine (Emergency Medicine) and EM programs across the country;
- developed a “Transition to Discipline” Academic Day curriculum that was implemented in July 2018;
- designed and implemented the first objective structured clinical examination (OSCE);
- implemented a study to look at the number of resuscitations and procedure exposures for PGY1s to address competency requirements;
- developed and implemented a Competence Committee;
- redesigned curriculum and rotation plans (including the development of a new Sports Medicine rotation);

- developed a new assessment framework (the recipient of a DoM grant) and established new entrustable professional activities (EPA) assessment tools; and
- established faculty development sessions and training documents. EM has also collaborated on a pan-Canadian needs assessment.

CaRMS attracts upward of 150 applicants for seven CMG spots and three IMG spots and has filled them from the top 24 ranked candidates for several years. The EM program is structured in accordance with the Specialty Training Requirements of the RCPSC, with the aim of training high-calibre EM consultants. Over the course of five years, residents experience a full spectrum of clinical rotations across several different teaching hospitals. There is exposure to both large urban “core sites” as well as community hospitals, which are among the busiest in Canada.

Residents are excused from their clinical responsibilities to attend weekly full-day Academic Days. Both faculty and residents lead activities that include interactive case-based seminars, formal didactic rounds, procedural workshops, journal clubs and team-based simulation sessions. Formal courses are also provided in clinical epidemiology (PGY1), ethics (PGY2), geriatrics (PGY3), emergency medicine administration (PGY5), and quality improvement and patient safety (longitudinal). PGY1 residents have a dedicated ultrasound rotation that leads to certification. More senior years provide students with ample opportunity to pursue further ultrasound training and an elective rotation in advanced emergency department ultrasonography.

In the PGY4 year, each resident pursues a personally designed subspecialty curriculum (which requires program approval) to develop expertise in an area relevant to emergency medicine. In the past, areas of focus have included

- paediatric emergency medicine,
- clinical epidemiology,
- health professional education,
- health administration,
- inner city health,
- international health,
- toxicology,
- trauma,
- critical care medicine,
- sports medicine,
- prehospital care,

- medical informatics,
- research,
- aeromedical transport,
- clinician scientist program,
- bioethics,
- international emergency medicine,
- ultrasound,
- simulation,
- medical journalism, and
- geriatric emergency medicine.

The residency program is changing significantly as it begins to implement the CBD curriculum for the 2018 cohort. The Division is incredibly proud of the dedication of its faculty across all sites and its residents in all program initiatives.

Fellowships

The fellowship program in the Division was established in 2001 as a partnership between the academic emergency medicine physician groups at St. Michael's Hospital and Sunnybrook Health Sciences Centre. The program's mission is to train and mentor the highly competent experts in the EM-related domains of prehospital care, trauma, research or clinical care who will become leaders in parts of the world where these growing domains are not well established. The vision is to be a respected, highly sought, world-class program that attracts and trains outstanding physician leaders who will help define the future practice of emergency medicine and its related domains in their home countries through innovation, advocacy and scholarly work.

The program has partnered with University-affiliated programs and external partners to meet its mission and vision. These include the trauma, emergency and critical care services and related postgraduate teaching programs at the partner hospitals. They also include the academic emergency physician groups at the partner hospitals, the Sunnybrook Centre for Prehospital Care, the City of Toronto's Paramedic Services, Ornge Transport Medicine and the Keenan Research Centre at the Li Ka Shing Knowledge Institute. In the five most recent academic years (2012–17), 10 fellows from six different countries have completed the program, including four in the trauma track, three in prehospital care and three clinical fellows. The graduates have returned to their home countries to assume prominent subnational or national leadership roles. Program funding is variable. Eight fellows were funded by their home hospital, university, or government, and two were funded as a partnership between two partner hospitals in Toronto.

Given the growth of emergency medicine globally, the fellowship program is well positioned to achieve its mission and vision in providing excellent training opportunities for future leaders in these domains. The University fully supports the program. Its future, however, remains highly dependent on maintaining partnerships and secure funding to ensure its continual success. The Division has one fellow on a Clinical Emergency Medicine Fellowship. The fellow is supported in partnership between St. Michael's Hospital and University Health Network.





Continuing Education/Development

The Division hosts continuing education and social events to support and connect with faculty, tri-division EM and the larger EM community.

The divisional CE Director is the principal organizer of the Annual Update in Emergency Medicine, a four-day CE conference held in Whistler, British Columbia. This conference has been running for more than 30 years and helps to raise funds for divisional CE events. This conference attracts physicians from across Canada and abroad.

Faculty and residents from tri-division EM regularly attend biweekly city-wide morbidity and mortality (M&M) and grand rounds, organized by the City-wide Rounds Coordinator. Speakers include experts from paediatric and adult emergency medicine and community and downtown/urban teaching hospitals. In addition, EM hosts monthly journal clubs from September to May. Attendance at these events has increased significantly since the introduction of the “1, 3, 5 S” initiative (see appendix).

Additional continuing education events and workshops are developed to meet the needs of faculty. Toronto Emergency Medical Education Symposium (TEMES) provides EM educators with an opportunity to learn, share and collaborate with colleagues on best practices and innovations in education. Research Day brings together researchers, faculty and residents to share exciting new findings and aid scientific exchange (see appendix). The Faculty Wellness Retreat introduced mindfulness and encouraged self-care to decrease the risk of faculty burnout. Additional sessions are being discussed and approved at the Division Executive Committee and receive funding from CE or divisional budgets.

To encourage faculty and resident engagement, EM hosts a number of Division-wide social events. These events include the annual divisional holiday party, a CaRMS social, a golf day, a baseball social, a resident welcome party, the Canadian Association of Emergency Physicians (CAEP) conference social, a PGY5 resident graduation social, a visiting professor social and two resident/faculty one-day retreats.

RESEARCH

Emergency Medicine is home to a dynamic network of research and innovation. The Division continues to grow in academic productivity and is recognized internationally as a leader in advancing EM. The Division has demonstrated strength in multidisciplinary research and quality improvement projects that make a direct impact on patient care in the ED, in local, national and international communities, and in resource-poor environments abroad. Highly productive, EM at U of T has a substantial reputation and track record in prehospital research, resuscitation research, health-services research and educational research and has a growing reputation in other areas (e.g., global health). The Division employs six clinician scientists at its three core sites. Two are full professors, one is an associate professor, and the others are junior faculty at the assistant professor level. They work in productive and highly relevant research programs that have attracted external Canadian Institutes of Health Research (CIHR) and National Institutes of Health (NIH) funding.

The research funding report (appendix) shows an average of 33 principal investigator (PI) grants held yearly by EM faculty. Over the last five years, EM faculty have received PI grants totalling approximately \$17 million. Division faculty have published 397 Web Science papers and had 2,838 citations.

EM has developed strong relationships through research collaboration. Several such

partnerships include Rescu networks of Canadian and U.S. research teams, health policy-makers in Ontario [Institute for Clinical Evaluative Sciences (ICES) and the Ministry of Health and Long-Term Care (MHLTC)], the RCPSC (education scholarships) and Addis Ababa University (TAAAC-EM).

Dr. Laurie Morrison is the Director of Rescu, the most extensive research program of its kind in Canada. Rescu works with emergency responders, both on land and in air, to develop and evaluate processes of care and timely interventions to improve outcomes for patients who suffer life-threatening trauma and cardiac emergencies in out-of-hospital settings. Rescu is interconnected both nationally (Canadian Resuscitation Outcomes Consortium or CanROC) and internationally (Resuscitation Outcomes Consortium or ROC) and is devoted to producing high-impact research that can be translated into improved care and improved outcomes for patients.

Dr. Michael Schull, President, CEO and Senior Scientist at ICES, leads a vibrant program of research that focuses on health-service use, quality of care and patient outcomes as they relate to emergency care and the study of interventions designed to reduce ED waiting times. His studies use administrative datasets and linkages with clinical data and examine the causes and consequences of emergency department overcrowding, variations in patient waiting times and prehospital care. His work has influenced health-policy decisions at local, national and international levels.

FACULTY

Over the past five years (2012–17), the Division has worked to increase the number of faculty from 54 full-time and nine part-time to 69 full-time and 14 part-time members. Thirteen adjunct faculty are also associated with EM. The Division has been working to recognize faculty development and mentoring. EM faculty comprises 51 per cent assistant professors; 13 per cent of our faculty hold senior academic appointments at the associate professor or professor level.

Distribution of full-time faculty according to job description includes 46 clinician teachers, six clinician scientists, four clinician investigators, four clinicians

Table 6.1: Academic Position Description of Full-Time Emergency Medicine Faculty

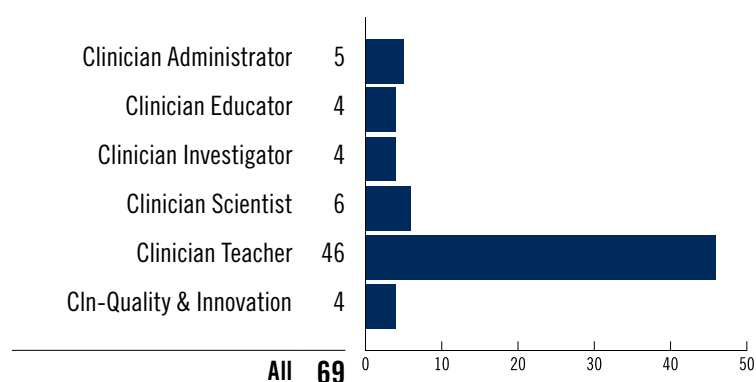


Table 6.2: Affiliation of Full-Time Emergency Medicine Faculty

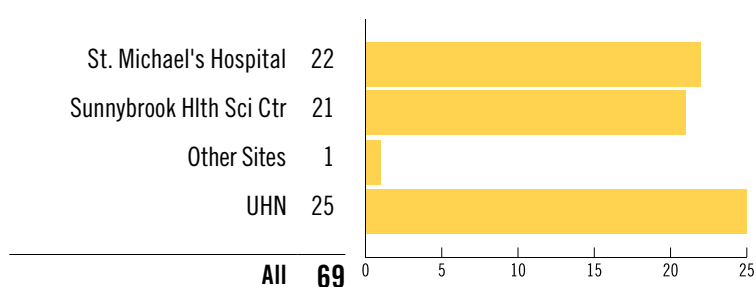
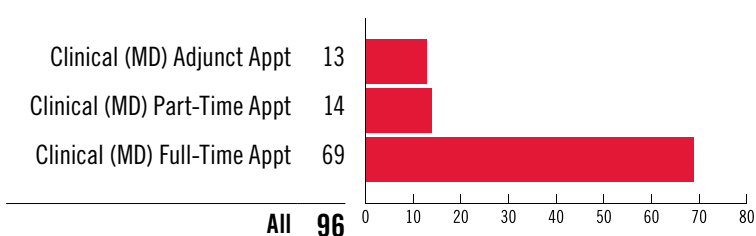


Table 6.3: Primary Appointment of Emergency Medicine Faculty



in quality and innovation, four clinician educators and five clinician administrators. Lastly, the distribution of full-time faculty varies across sites. The highest distribution is at UHN (25), St. Michael's Hospital (22) and Sunnybrook Health Sciences Centre (21).

EM faculty are a diverse, highly collaborative group, and this characteristic contributes to the Division's success. EM works well across disciplines and specialties, and this diversity allows the Division to provide rich and varied rotation options for trainees. Several faculty members are cross-appointed: appointments to other institutions include the Department of Paediatrics and the Institute for Health Policy, Management and Evaluation. Divisional representatives on University committees include the Continuing Faculty Appointment Review Committee, the Education Committee, the Promotions Committee in the DoM and the Toronto Trauma Committee, which works with the Department of Surgery. EM faculty occupy senior administrative

positions in affiliated hospitals and institutes, including the President and CEO at Providence Health (St. Michael's Hospital and St. Joseph's Health Centre), the Associate Dean of PGME, the CEO at ICES, the Director of the Ontario Poison Control Centre in Toronto and Medical Directors of Information Technology at St Michael's Hospital and the Hospital for Sick Children.

The Division faces the challenge of a clinical environment characterized by rising patient volumes and increasing patient acuity and complexity. This challenge has occurred in an environment of outdated infrastructure and technology and severely limited resources to manage ED volumes. ED overcrowding is a daily reality related to limited hospital bed capacity and inefficiencies in flow processes. These conditions have had a direct impact on faculty burnout, which is among the highest rate of any division within U of T. There is limited funding from the University, hospitals and MHLTC to help advance the Division's scholarly activities.

ADVANCEMENT AND EDUCATION

Supporting Faculty

Faculty members are subject to a Continuing Faculty Appointment Review (CFAR) at approximately the three-year mark. The process helps to ensure that they are on track academically and appropriately mentored and resourced. Faculty meet with the Division Director at least twice prior to CFAR for direction and support. Over the past five years, 19 EM faculty members have undergone CFAR. While 18 passed without issue, one was put on probation. The faculty member passed on the second review, after the job description was changed to more accurately match the member's academic contributions. CFAR Committee recommendations include direction to faculty to help them advance in their academic careers and move forward with promotion. Career advancement has become an expectation in EM, and a focus on good mentorship helps move this forward.

There have been 14 successful promotions in the Division of Emergency Medicine in the past five years (eight assistant professors, four associate professors and two

full professors). The DoM has been working to simplify promotion and decrease duplication of documentation. In addition, EM sites provide administrative support to faculty who seek promotions. Faculty promotions are discussed and supported at the divisional and site physician-in-chief (PIC) level. Faculty receive mentorship through the PIC office at their hospital and get additional mentorship from the EM Division Director.

The Division recognizes its faculty with two teaching awards. The Division's top teaching award is the Anna Jarvis Award for Teaching Excellence, which recognizes excellence in formal teaching among the faculty over the previous three academic years. The recipient of the Outstanding Clinical Teaching Award for faculty is nominated and selected by the Division's residents. Beyond these divisional awards, EM faculty have received a number of University honours. Recent awards include the 2017 Postgraduate Innovation Fund for a novel assessment tool development strategy for CBD and the 2016 and 2017 Faculty of Medicine Award for Excellence in Postgraduate Medical Education for Development and Innovation in Postgraduate Education, awarded respectively for simulation and ultrasound curriculums.

Award acknowledgements and faculty publications are posted in the Division's monthly newsletter. The





newsletter has a distribution of 500 EM faculty, residents and staff and has an open rate of 53 per cent. Divisional awards are also presented at the annual Research Day. Faculty appointments, CFAR success and promotions are recognized both on the DOM Emergency Medicine website and in the monthly newsletter. The outlets are used to share faculty success, contributions and academic interests. This not only provides acknowledgement of their achievements but also helps foster more collaboration.

Recruitment Plans

As new faculty members are recruited to affiliated hospitals to meet their clinical and academic needs, the Division also takes a broader view of its academic mission and responsibilities. Faculty are not recruited solely to provide excellent care to patients but to advance care. The Division has developed a centralized strategy for faculty recruitment. All new recruits are reviewed and discussed centrally at the Division Executive Committee for their suitability.

QUALITY AND INNOVATION

Simulation Curriculum

The simulation curriculum has been a successful city-wide collaboration. Previously there was no formal curriculum for simulation in the residency training program. A collaborative effort, spearheaded by a committee of educators from across training sites, resulted in the development of two two-year curriculums (junior and senior residents). Residents receive multiple simulation sessions per year with a well-defined longitudinal curriculum encompassing both medical-expert and intrinsic roles. These sessions provide residents the opportunity to learn how to function effectively in a dynamic, uncertain, high-stakes environment where residents can practise procedures and resuscitations safely. The program will continue to evolve the curriculum as it moves to CBD to ensure resident readiness for practice.

Ultrasound Curriculum

The Division has come a long way in EM ultrasound training in a very short time. The program has grown from a single instructor to dozens of active instructors who provide enough capacity today to enable a core ultrasound rotation for PGY1 residents and advanced ultrasound electives. These rotations provide hands-on training for what is becoming an essential skill for EM practitioners. The rotations use multiple teaching modalities to ensure an optimal educational experience. These include flipped classroom lectures, supervised scanning sessions at various sites with diverse faculty, specialized scanning training (e.g., in an echo lab), the presentation of scholarly articles at an ultrasound journal club, self-scanning time (with saved images for review by experts) as well as written, practical and visual exams to ensure that learners acquire the appropriate skills. EM faculty at Sunnybrook, North York General Hospital, University Health Network and the Hospital for Sick Children have become leaders in the education of trainees and faculty for EM and others (e.g., General Internal Medicine). An emergency ultrasound fellowship based at Sunnybrook has been running for the past four years and has helped to develop leaders in emergency ultrasound across Canada.

Choosing Wisely Campaign

Two EM faculty have national leadership roles in developing guidelines for emergency physicians to reduce unnecessary investigations and treatments. This work has resulted in publications and national recognition to reduce wasteful and potentially harmful imaging and prescribing. The evaluation of this initiative to determine the guidelines' impact on patient care in the emergency department continues. The current Chair of the national Quality and Innovation Committee for the Canadian Association of Emergency Physicians is an EM faculty member who leads many quality research initiatives between universities across Canada.

Quality Improvement Curriculum

In response to the increased focus on Quality Improvement and Patient Safety in CanMEDS in 2015, EM faculty developed one of the first longitudinal curriculums in Quality Improvement and Patient Safety among Emergency Medicine residency training programs in Canada. Evaluation of the first resident cohort demonstrated the effectiveness of this curriculum, and the design of this innovative curriculum was presented at national and international conferences.

MENTORSHIP, EQUITY & DIVERSITY

Mentorship

Division mentorship is coordinated by a formal mentorship coordinator, who meets with PGY5s and junior faculty to provide guidance on selecting a mentor and to ensure mentorship needs are met. Mentorship roles and responsibilities have been formalized, and mentors are provided with a mentorship meeting guide and log for tracking mentorship meetings. (See appendix.) The Division's ED chiefs and DDD regularly meet with all faculty for annual performance appraisals and collect activity sheets to support academic success.

Equity and Diversity—Recruitment

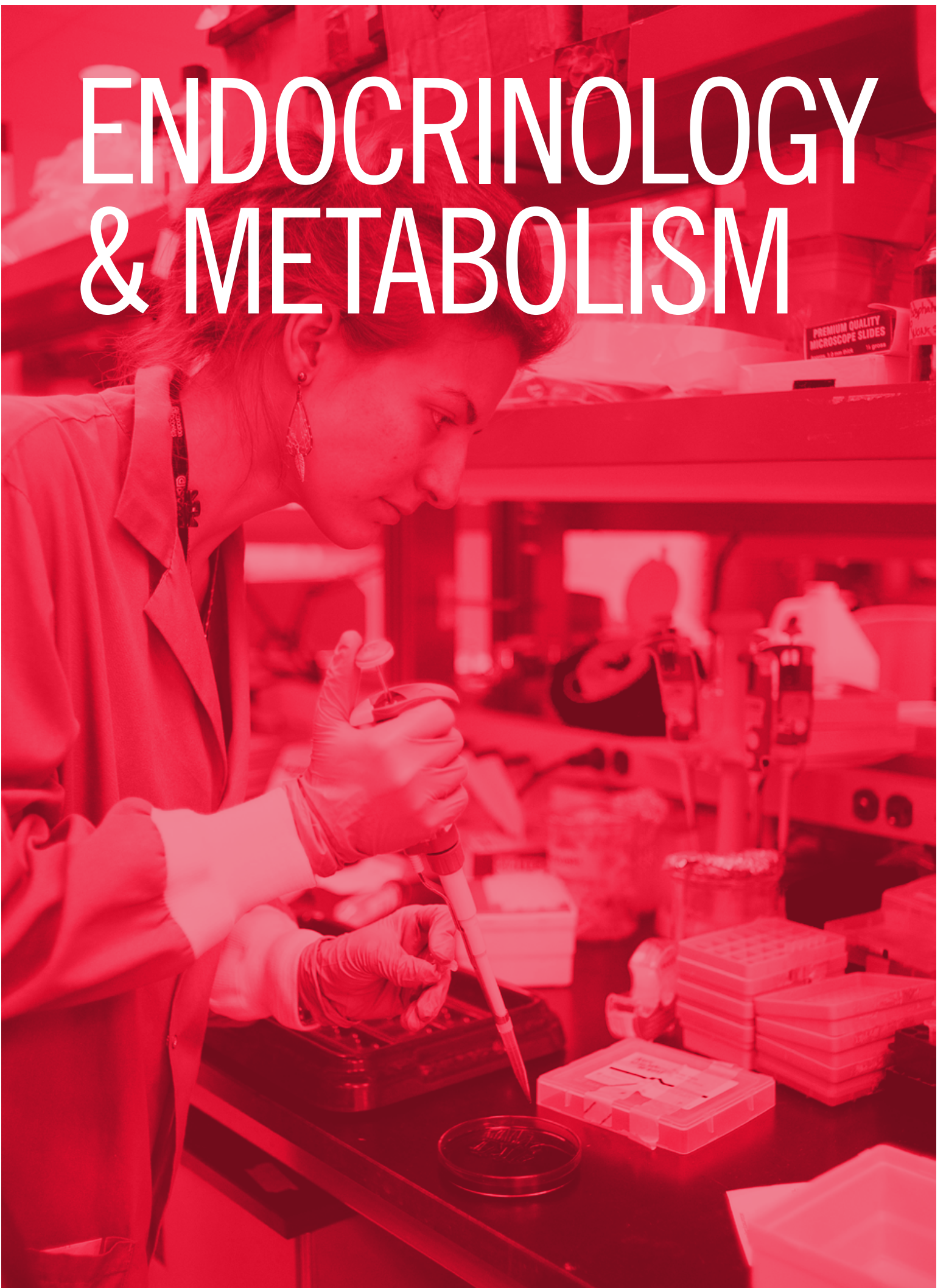
The affiliated sites' hiring bodies follow the DoM's Gender Equity Guidelines for search committees to ensure that equity and diversity are considerations in all hiring decisions. (See <http://www.deptmedicine.utoronto.ca/gender-equity-guidelines-department-medicine-search-committees>.)

PLANNING AHEAD

The next cycle of EM strategic planning will begin in 2019 to review current progress toward objectives and develop the vision for the next five years. There has been much progress made over the last five years in faculty recruitment and development, academic advancement, mentorship, scholarly activities and academic collaboration in education and research. There will be a renewed focus on trainee and faculty wellness as well as quality and innovative processes to address the increasing demands for emergency services in Toronto and the needs of our patients.

The current Division Director is finishing his first five-year term. Over the next five years, there will be a focus on developing internal candidates within the Division to build the leadership capacity of the Division.

ENDOCRINOLOGY & METABOLISM



OVERVIEW

The Division of Endocrinology and Metabolism spans five fully affiliated and four community-affiliated Toronto Academic Health Science Network (TAHSN) hospitals. The Division's faculty comprises 51 full-time faculty physicians, all of whom are actively engaged in a range of academic activities in patient care, education, research and health quality initiatives. There are 28 part-time or adjunct community physicians, seven cross-appointees and several collaborating PhD scientists from the Departments of Physiology, Nutritional Sciences, Lab Medicine and Pathobiology Medicine, Biochemistry, and Immunology. The Division has by far the largest endocrinology and metabolism training program in Canada, and it is one of the largest endocrinology and metabolism divisions in the world. It attracts trainees for highly sought subspecialty training positions.

The faculty has clinical expertise covering the breadth of endocrinology and metabolism, and provides specialist care for

- complex management of type 1 and type 2 diabetes,
- diabetes in pregnancy,
- osteoporosis,
- lipid disorders and obesity,
- thyroid, pituitary, adrenal and parathyroid diseases,
- andrology,
- transgender medicine, and
- endocrine oncology.

Teaching of core and specialty trainees occurs in all disciplines across the extensive network of clinical sites, and active research occurs in all sites. Many large clinical programs such as thyroid oncology, pituitary disorders, osteoporosis and diabetes are multidisciplinary and interprofessional. This collaborative environment promotes and facilitates the success of endocrinology and metabolism clinical care and research activities. The integration of diabetes research across multiple hospitals and basic science departments is actively supported by the Banting and Best Diabetes Centre (BBDC), an extra-departmental unit of the Faculty of Medicine at the University of Toronto (U of T) that is highly aligned with the Division's objectives for diabetes research and education.



Divisional Leadership

Dr. Gary Lewis was the Departmental Division Director (DDD) from July 2008 to May 2017, and Dr. Jacqueline James has been in the role since June 2017. Over the course of his leadership, Dr. Lewis and the divisional leadership aimed to fully integrate the academic activities across the teaching hospitals to harness the full potential of the patient care, teaching and research strengths across sites. The Division's vision is to make Toronto a leader in clinical trials in diabetes, osteoporosis and endocrine oncology, one able to perform landmark, practice-changing clinical trials. In addition the Division and broader scientific community of the University of Toronto have significant basic research expertise in the areas of diabetes and metabolism and more limited basic research expertise in other areas of endocrinology.

Under Dr. James's leadership, a formal strategic planning process is set to occur in 2018. It will renew the Division's vision and mission. The Divisional Executive—which in the past five years consisted of Dr. Lewis, the Residency Program Director, and the Hospital Division Directors—has recently been expanded under Dr. James's leadership to include appointed leads in Mentorship (Dr. Gillian Booth), Endocrine Oncology and Fellowship Programs (Dr. Afshan Zahedi) and Quality and Innovation (Dr. Ilana Halperin).

The BBDC remains closely integrated with the Division, and the Division has provided its leadership since its inception. The vision of the BBDC is to be Canada's leading centre of excellence for innovation in diabetes

research, education and clinical care. It has played a foundational role in supporting the Division's academic success in the field of diabetes research and education. Many of its research and clinical faculty members are endocrinologists, and the Division's collaborators in other divisions and departments, such as Physiology and Pathobiology, make up the core of basic scientists who are also members of the centre. Dr. Lewis has been its Director since 2011, and Dr. Tony Lam, a cross-appointee from Physiology, is Associate Director of Research. Dr. Phil Segal chairs the Quality Education and Safety (QUEST) Committee, a new committee that superseded the BBDC Care and Education Committee, previously chaired by Dr. Rene Wong. BBDC provides numerous grants, studentships and fellowships for research conducted by its members. It hosts an annual scientific day, has had a biannual clinical diabetes update and co-hosts an annual conference with the Joslin Diabetes Center of Harvard University and the University of Copenhagen. The BBDC website hosts important educational materials for clinicians, nurses and pharmacists who care for people with diabetes.

FACULTY

In the past five years, there have been 14 full-time recruits; five junior clinical scientists (CSs), four junior and one mid-career clinician teachers (CTs), one senior clinician educator (CE) and three junior clinicians in health quality and innovation (CQIs). The CSs have been distributed across the campus, one at each of the fully

Table 7.1: Academic Position Description of Full-Time Endocrinology Faculty

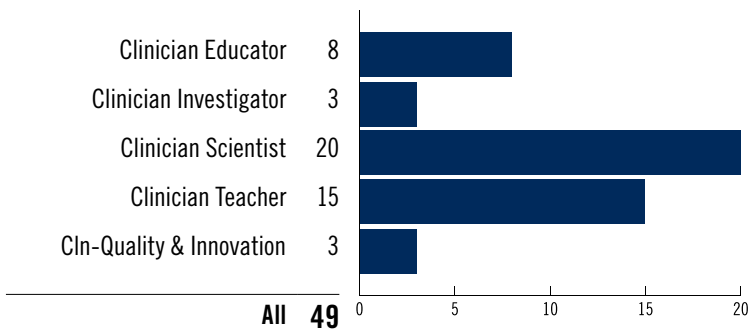


Table 7.2: Affiliation of Full-Time Endocrinology Faculty

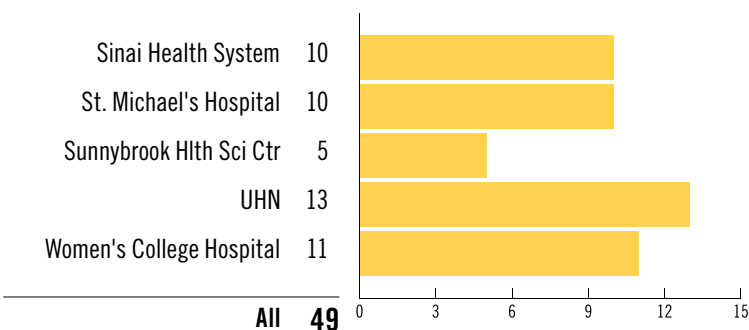
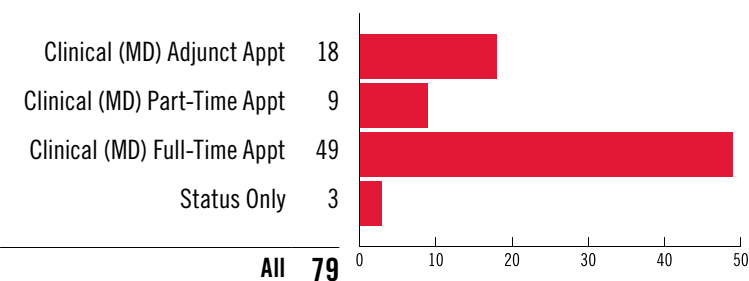


Table 7.3: Primary Appointment of Endocrinology Faculty



affiliated sites, and have financial and resource support, mentorship and collaborations established at the site or across the campus. Their success in Continuing Faculty Appointment Review is anticipated. CTs who have been recruited are all outstanding teachers and are filling crucial clinical work at each site in osteoporosis, endocrine oncology, pituitary disease, andrology and complex hospitalist care. The CQI recruits play critical roles in establishing a quality agenda for the Division along with existing clinicians. With these recruits, the Division is well balanced academically with 41 per cent CSs, 6 per cent clinician investigators (CIs), 16 per cent CEs, 31 per cent CTs and 6 per cent CQIs.

Communications

The DDD publishes a quarterly newsletter. The Division's website has been renewed, events are posted and up to date, and City Wide Endocrinology

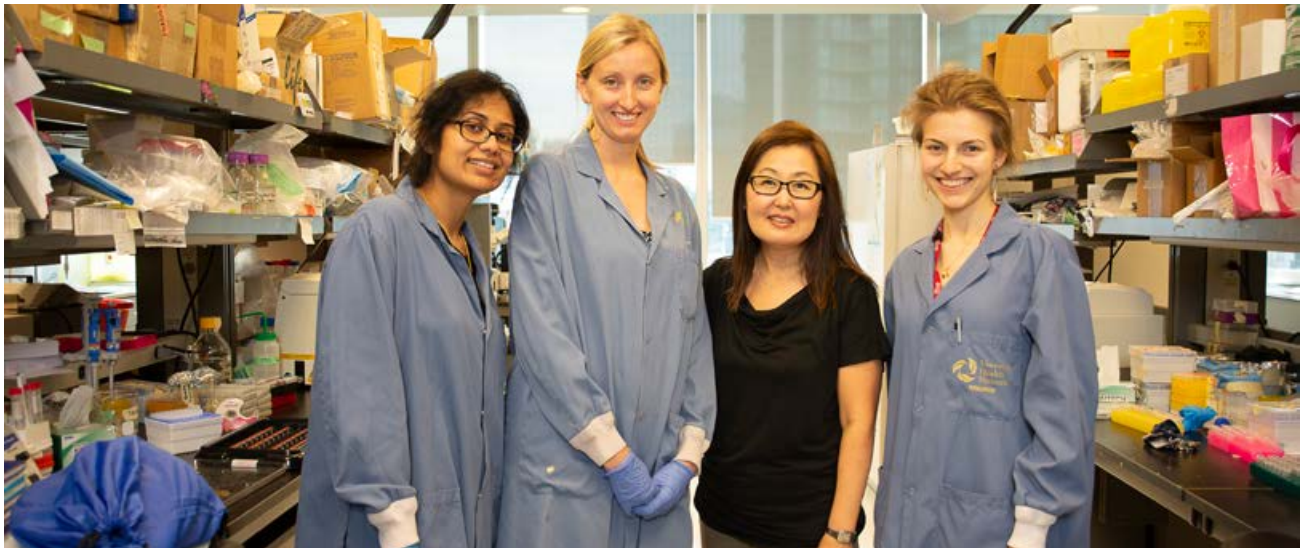
Rounds (CWER) notices go out weekly. There is an excellent new BBDC website, and activities are reported to members annually.

EDUCATION

The Division prides itself on outstanding clinical teaching and educational programs at all levels of training. The Division trains specialist endocrinologists—including scientists, educators and community endocrinologists—for a broad range of societal needs. The Division also provides core training for general internal medicine and other programs to teach students to manage complex diabetes, lipid, thyroid and other endocrine disorders in both inpatient and ambulatory settings. The Division is proud of its development of programs, which support training in advocacy and quality improvement.

Undergraduate MD

Faculty members have contributed to case week leadership, lectures, seminars and problem-based learning teaching in Year 1 and Year 2 undergraduate medical education courses. Division members participated in the creation of a new curriculum that started in 2016. This included week leadership and development of cases, lectures and teaching tools. Subjects are Diabetes (Drs. Phil Segal, Jeremy Gilbert), Reproductive Endocrinology (Drs. Adam Millar, Maria Wolfs), Adrenal, Pituitary and Thyroid Disease (Drs. Jeannette Goguen, Robert Goldberg) and Osteoporosis and Calcium Disorders (Dr. Julie Gilmour). Dr. James contributed to the overall planning and implementation of the Foundations



Curriculum as Wightman-Berris Academy Director and a member of the MD program executive.

Division members provide ambulatory clinical experiences as part of the Medicine Clerkship, the Longitudinal Integrated Clerkship and elective clerkship rotations. They routinely support preceptorship, objective structured clinical examination (OSCE) and mentorship for medical students.

Outstanding undergraduate teaching is recognized when the Division bestows its annual Robert Volpé Teaching Award. It has been won in the past five years by Drs. S. Kumar, A. Millar, J. Gilbert, R. Silver and M. Wolfs. Dr. Jackie James won the MD Program's W.T. Aikins Award in 2017 for contributing to the MD program.

Postgraduate Programs

The subspecialty trainee program accepts four to five PGY4s annually. In their first year, residents rotate throughout a fully affiliated hospital and have rotations in community sites for generalist and specific exposure. In their PGY5 year, residents continue with clinical-training experiences or begin graduate training in research or education. Each is required to complete a research project as well as Quality improvement (QI) and advocacy projects in their PGY5 year.

Since 2010, group projects that teach residents to develop advocacy skills have been led by Dr. Sheila Laredo. They include the following:

- creation of a diabetic neuropathy screening kit to be used in a psychiatry outreach program for marginalized populations at St. Michael's Hospital;

- work with the Ministry of Health to put into place measures to improve the rights of children with diabetes in Ontario's school system by creating a simplified tool to help parents put into place diabetes management plans for their children's schools;
- design of a program to deliver education about diabetes at a refugee centre to raise awareness of diabetes prevention and management in this high-risk group;
- creation of a culturally sensitive educational tool for First Nations communities about osteoporosis that includes advice from each community;
- creation of educational materials for community centres to best counsel Muslim patients who fast during Ramadan; and
- creation of a manual to assist patients who struggle with the costs of good diabetes care (including medications, equipment, supplies and the non-insured elements of care).

Quality improvement projects coordinated by Dr. Geetha Mukerji and undertaken by the endocrine residents include reducing unnecessary thyroid hormone testing as advocated by the Choosing Wisely campaign; improving hypoglycemia counselling, particularly for diabetes patients who need to drive safely; improving type 1 diabetes transitions of care; addressing care gaps in the management of diabetic ketoacidosis; and addressing gaps in counselling people with diabetes about recommended immunizations. This work has been done at an academic level and has been disseminated nationally and internationally.

The Division provides more than 160 four-week blocks of core endocrinology rotations annually for PGY1 to PGY4

residents in General Internal Medicine, Ophthalmology, Anesthesia, Family Medicine, Medical Genetics and others. The quality of the endocrinology rotation experience and teaching at every site is consistently high: the average divisional Teaching Effectiveness Score (TES) for the past five years ranges from 4.43 to 4.52 out of 5.00 for teaching effectiveness and from 4.39 to 4.42 out of 5.00 for rotation effectiveness.

Outstanding postgraduate teaching is recognized by the Dr. George From Award. The recipients of this award for the past five years were Drs. S. Laredo, A. Millar, A. Zahedi, C. Yu and R. Silver.

Clinical and research fellowships have been provided for five to seven trainees annually in endocrine oncology, women's health and diabetes research. After the appointment of a dedicated fellowship director and improvement in recruitment, these numbers are expected to grow.

Continuing education and professional development for faculty and residents is provided weekly at each site, and each has its own series of interprofessional clinical rounds. City Wide Endocrinology Rounds (CWER) run weekly during the academic year and provide lectures on basic and clinical science. The BBDC seminar series runs as part of CWER. These rounds have been webcast since fall 2017 and attendance varies from 20 to 50 people; webcast attendance ranges from five to ten per session. A needs assessment was conducted in the past year, and modifications to engage a wider audience are planned. In response to the assessment, we aim to increase the proportion of sessions on clinically relevant research

topics. Some rounds that bring together community and teaching-hospital endocrinologists are planned for 2018–19.

Faculty provided continuing education in the biannual BBDC updates held in 2013, 2015 and 2017, targeting health-care providers in primary and specialist care in diabetes education and management. These events attracted up to 600 attendees.

A working group on continuing education (CE), knowledge translation and faculty development has continued to produce an annual faculty development/continuing professional development day. It updates faculty members on current practice-changing basic science and clinical knowledge, relevant educational trends and teaching methods, and practical clinical management processes and skills. Planning of this event has been led by Dr. Shoba Sujana-Kumar since 2016.

Drs. Anna Sawka and Afshan Zahedi have been collaborating with the members of the Departments of Otolaryngology, Head and Neck Surgery (OHNS), General Surgery and Radiation Oncology to host an annual half-day CE event on the management of thyroid nodules and cancer. Dr. Denice Feig chairs the BBDC Diabetes In Pregnancy Study Group rounds which attracts participants locally and across Canada to discuss current research and management of endocrine diseases of pregnancy.

In the next five years, the Division will support the introduction of Competence by Design (CBD) for postgraduate training, increasing its capacity for and influence on clinical and research fellowships.



RESEARCH

Investigators in our group cover and generate knowledge across all four Canadian Institutes of Health Research (CIHR) pillars: basic, clinical, health sciences/services and population health. The Division maintains a high international profile, and its members have global reputations in diabetes and metabolism research. Over the past five years, the Division has published approximately 1,500 documents in Web of Science, with nearly 23 thousand citations, and a citation impact factor of 15.33.

The Division averaged approximately 150 grants held each year of the review period with a total value of \$72.661 million. These grants were secured through a number of peer-reviewed grant agencies including the CIHR, hospital-based foundations, as well as industry-sponsored clinical trials.

Several senior scientists have been internationally recognized for their achievements and impact.

Dr. Bernard Zinman was the lead author of a recent landmark trial that demonstrated significant reductions in cardiovascular and sudden death with the use of a new antidiabetic agent, empagliflozin. Dr. Zinman is in the top one per cent of cited researchers in the world.



Dr. Daniel Drucker is the world's leading expert on the incretin system, its basic biology and clinical application to the management of disease, earning him several major international awards.

Scientists including Drs. Richard Gilbert, Andrew Advani, Minna Woo and George Fantus have continued to make contributions to understanding the prevention and management of diabetes complications.

Clinical investigations conducted by Drs. Gary Lewis and Satya Dash elucidate the mechanisms and management of the complications of obesity, diabetes and dyslipidemia.

Dr. Dominic Ng studies the basic science of lipid metabolism.

Dr. Larry Leiter remains actively involved in clinical trials studying the outcomes of medications used to treat diabetes and dyslipidemia.

Drs. Gillian Booth, Baiju Shah, Lorraine Lipscomb and junior faculty Iliana Lega have increased our knowledge of how socioeconomic status and the built environment, ethnicity, gender and health access influence the risk of diabetes, obesity and their complications, including their relationship to cancer and its treatment.

A group at Leadership Sinai Centre for Diabetes successfully runs clinical trials in diabetes, type 1 and type 2, pregnancy and the prevention of diabetes development and complications. The group includes Drs. Ravi Retnakaran, Bruce Perkins, Denice Feig and junior faculty member Caroline Kramer.

The following internationally recognized experts are conducting other significant research efforts: Dr. Anna Sawka is studying thyroid cancer, its management and psychosocial implications for patients; Dr. Susan George is investigating a model of depression in females and dopamine receptor susceptibility; and Dr. Angela Cheung, a general internist working closely with the Division, is studying the risks of atypical femur fracture in women treated for osteoporosis.

In 2016, a major development that supports local and national research into diabetes and its complications began with the creation of Diabetes Action Canada (DAC), one of the five CIHR-SPOR (Strategy for Patient-Oriented Research) Networks. DAC received

\$12.45 million from CIHR over five years. Thanks to partnerships with Diabetes Canada, JDRF, other federal, provincial and private health-research foundations and the private sector, these funds have been matched and have added \$19 million. A total of more than \$31 million is available for DAC projects.

The DAC network is administered by U of T's Faculty of Medicine. Dr. Catharine Whiteside, former U of T Dean of Medicine and Professor of Medicine, is its Executive Director, and Dr. Gary Lewis is its principal Scientific Co-Lead. Members of the Division of Endocrinology are investigators with DAC and actively work alongside primary-care and other specialists on major DAC research and knowledge translation. This work aims at improving the access, efficiencies and effectiveness of care, especially of vulnerable populations including Indigenous peoples, immigrants, women and members of lower socio-economic groups. Current projects include creating Canada's first comprehensive national diabetes registry and reducing diabetes-related blindness. Other divisional members are involved in the Chronic Kidney Disease Network.

Scientists are members of research institutes such as ICES, the Lunenfeld-Tanenbaum Research Institute, the Toronto General Research Institute, the Women's College Research Institute and the Li Ka Shing Knowledge Institute.

Knowledge Translation

Dr. Anna Sawka was a co-author of the 2015 American Thyroid Association guidelines for managing thyroid nodules and differentiated thyroid cancer. Dr. Alice Cheng



was Chair of the 2013 Canadian Clinical Practice Guidelines for Diabetes, and several members were lead authors for the 2018 version. Dr. Catherine Yu was the lead for developing educational tools for the dissemination of Diabetes Canada (CDA) Guidelines.

Funding

Investigators have successfully obtained operational grants and salary support. The main sources are CIHR, Diabetes Canada, BBDC and industry donations for chairs and operations.

The BBDC has both an endowment and donated funding from industry, hospital and university partnerships and collaborations. This funding has increased gradually over the past five years and amounts to \$3 million annually for use in research and education. A considerable amount of this research support goes to Division of Endocrinology members.

Philanthropic and Industry Research Funding

Dr. Ravi Retnakaran was named the inaugural Boehringer Ingelheim Chair in Beta-Cell Preservation, Function and Regeneration. This Chair, and its operating budget of over \$820 thousand, will enable clinical research that focuses on type 2 diabetes prevention; the Leadership Sinai investigators—including Drs. Retnakaran, Caroline Kramer and Bruce Perkins—will lead the research. Sunlife Financial pledged \$750 thousand for diabetes prevention and research in women. Drs. Retnakaran and Denice Feig will coordinate the use of the funds. Eli Lilly has committed funding over three years to support the training of clinician scientists in the area of diabetes.

City Wide Endocrine Rounds are financed through unrestricted grants for education from industry. The amount is approximately \$40 thousand per year.

When the 100th anniversary of the discovery of insulin occurs in 2021, the Division will be poised to make ambitious fundraising efforts to support

continued outstanding research in the basic and clinical aspects of the prevention and management of diabetes.

To achieve the goal of expanding endocrine oncology research, a Chair to support research and fellowships will be created.

QUALITY AND INNOVATION



The Division has recruited clinicians in quality and innovation (CQIs) specifically to address this need in the Department at each site. Drs. Ilana Halperin and Geetha Mukerji led the development of an innovative Diabetes Score Card at all the academic hospitals. This included a patient-experience survey that measures diabetes-care performance indicators for care teams. Results have been presented to hospital divisions and individual physicians. Process-improvement discussions have taken place, work on improving data reporting and collection has begun, and preparing a second quality-improvement cycle is underway. This project aims directly at improving the quality of patient-focused care in our ambulatory clinics. This initiative has Division-wide support and aligns with DoM priorities, and it has resulted in two publications thus far for the junior faculty leads.

Processes are in place at sites to reduce the ordering of unnecessary thyroid testing, in accordance with Choosing Wisely Canada, across the teaching hospitals.

Advocacy

Dr. Sheila Laredo and PGY5 endocrine residents of 2016–18 have worked with allied health professionals locally and nationally as volunteers to create a *National Diabetes Resource Manual*. It is being edited with Diabetes Canada. This manual will improve the lives of those living with diabetes by providing them with tools to access local resources such as eye care, foot care, glucose-monitoring equipment and financial support to cover the costs of having this very expensive chronic disease. The group worked with those in other provinces to build and put in place a way of sustaining the resource.

MENTORSHIP, EQUITY & DIVERSITY

Faculty are given access to formal mentorship when recruited and are encouraged to seek mentorship relationships with members of the Division, across divisions or in other departments to ensure adequate support and advice as the need arises. In the 2017 Faculty Survey, half of faculty in the Division reported having a formal mentor, and 75 per cent reported having informal mentors, most of whom were internal to U of T. The DDD and the newly appointed Faculty Mentorship Facilitator, Gillian Booth, are working to match and enhance junior and mid-career faculty mentors for those who require it.

Equity and Diversity

Gender parity is achieved in the Division among full-time faculty appointments and leadership roles. For the past two decades, endocrinology as a subspecialty has had no problem recruiting women to the profession; recruitment to academic positions appears to follow the proportion of excellent available candidates. Women in the Division have held leadership positions in the Department and at the University level.

FUTURE DIRECTIONS

The Division plans to continue fundamental research into the pathogenesis and complications of type 2 diabetes and focus on beta-cell function and kidney disease, which have implications for prevention and treatment. Targeted recruitment will ensure succession planning for senior scientists and the ability to build on strengths at sites where this research occurs.

Epidemiologic and health-sciences research into the risks for developing obesity and type 2 diabetes and the provision of optimal care will grow under the leadership of current mid-career scientists. Clinical studies into the prevention and management of diabetes using novel approaches, and improving the management of type 1 diabetes through new technologies and models of care, will also be pursued. Databases that enable these clinical studies are being developed. Patient-oriented research will grow with support from Diabetes Action Canada and national collaborators.

Thyroid oncologic trials and improving the molecular diagnosis of thyroid nodules will be achieved through interdisciplinary collaboration with the Departments of OHNS, General Surgery, Lab Medicine and Radiation, and Medical Oncology. Osteoporosis research, which is largely interdisciplinary in the DoM and supported by the Division, will require targeted recruitment to build on existing strengths. The Division will explore ways of building research in pituitary and endocrine oncology patients.



GASTROENTEROLOGY

A red-tinted photograph of a server rack. The rack is filled with numerous black cables plugged into ports. The cables are organized in a somewhat chaotic but structured manner, with some loops and others hanging straight down. The background is a solid red color, which makes the white text stand out prominently. The overall aesthetic is technical and modern.

OVERVIEW

The Division of Gastroenterology (GI) is one of the largest in Canada. It offers an exceptional breadth of clinical opportunities in all aspects of gastroenterology, hepatology, endoscopy, motility and nutrition. Research in the Division spans basic science, translational research, clinical epidemiology and health-services research.

Division faculty operate at five of the six fully affiliated Faculty of Medicine (FoM) hospital sites as well as numerous community partner sites. The Division works collaboratively with the paediatric program at the Hospital for Sick Children (SickKids), particularly in inflammatory bowel disease, nutrition, hepatology and transplant, as well as the clinical and research aspects of therapeutic endoscopy. There is also a combined GI Research Day (adult and paediatric) every June; faculty, residents, fellows and students present their research.

Over the past five years, the Division has been increasingly successful in securing peer-reviewed research funding. The Division is among the top gastroenterology divisions in Canada in terms of funding, publications and citations, and its impact relative to subject area compares favourably with Canadian and international universities.

The Division has had two major strategic plans (2008–13, 2014–18) under the leadership of Dr. Johane Allard who has been Departmental Division Director (DDD) since June 2006. (See appendix.) Each of these plans has aligned with Department of Medicine (DoM) strategic plans and has undergone periodic review by the Division Executive Committee to ensure that goals were being met. The Division has aligned with DoM guiding principles

- in promoting collaboration across divisions, hospital sites and departments;
- in working to enhance mentorship opportunities for both trainees and faculty; and
- by developing a quality improvement and patient safety (QIPS) curriculum that aims to improve the patient experience through enhanced clinical practices and promotion of new knowledge.

Executive Committee

The Division of Gastroenterology is organized into hospital Gastroenterology Divisions; division heads at each of the five sites are appointed by their respective physicians-in-chief (PICs). The Executive Committee meets nine to 10 times per year and is chaired by the DDD. Dr. Allard finished her term as DDD in June 2018; Dr. Flavio Habal has been appointed the Interim DDD while the search for Dr. Allard's successor is conducted. Members include site-level division heads, the Program Director and the Fellowship Director; additional members representing divisional interests in research, education, QIPS and other priority areas.

The Division has a centralized fund, established by Dr. Allard. Since implementation, the Educational Partnership Fund has received more than \$1 million and, as of January 2017, it held a balance of \$225 thousand. Contributions to the fund come primarily from industry as unrestricted educational grants, which are managed centrally according to FoM guidelines on industry support. The fund is administered by the DDD, and a financial report is presented yearly to the GI Executive Committee.

EDUCATION

Having one of the largest gastroenterology training programs in Canada, the Division offers outstanding training in all aspects of gastroenterology, hepatology, endoscopy, motility and nutrition. The program recorded mean and median teaching effectiveness scores (TES) of 4.6 and 4.5 out of 5.0 (respectively) in the 2015–16 academic year. These results are in line with DoM TES scores. However, the TES and rotation effectiveness scores (RES) went down over the past several years (from 4.24 to 3.99). This drop was attributed to a reduction in the number of residents rotating through Gastroenterology as well as an increase in workload. Both reduced the education-to-service ratio.

Education/Residency Training Program Committee

The Committee is chaired by the Program Director (PD), Dr. Samir Grover, who took over from former PD Dr. Maria Cino (2007–June 2018) in July 2018. The Committee includes a faculty representative from each of the adult teaching hospital sites, one representative

from the community hospitals, two chief residents and a representative for each of hepatology, liver transplant and motility/nutrition. The Committee typically meets six times a year.

Its main task is to oversee the Royal College of Physicians and Surgeons of Canada (RCPSC) two-year training program in gastroenterology. The program is periodically reviewed internally by the University of Toronto (U of T); a Royal College review for accreditation follows.

Endoscopy Subcommittee

The Subcommittee, chaired by Dr. Grover, reports to the Education/Residency Training Program Committee and is responsible for the endoscopy training course held every summer for incoming residents. This four-day course covers the theoretical and practical aspects of endoscopy and uses state-of-the-art virtual endoscopy equipment.

Programs

Undergraduate

Divisional faculty participate in undergraduate teaching. Dr. Louis Liu was the most recent Course Director. Every year faculty deliver lectures, lead seminars and facilitate problem-based learning (PBL) tutorials for gastroenterology, nutrition and metabolism. Dr. Scott Fung and Dr. Peter Rossos were recipients of the Wightman-Berris Academy Teaching Excellence Award for undergraduate education.

Postgraduate

The Division's highest priority is maintaining the quality of the postgraduate education program. Most faculty are involved as research supervisors, mentors (formal and informal) and teachers (formal and informal). The Division has dedicated residents, who ensure that the program remains dynamic by providing regular individual and collective feedback. Trainees are exposed to an enriched environment for clinical education and scholarship. There is a breadth of unique clinical cases in Toronto, given both the size of the city and the site-specific diversity:

- tertiary/quaternary care inflammatory bowel disease [Mount Sinai Hospital (MSH)],
- therapeutic endoscopy [St. Michael's Hospital (SMH), Sunnybrook Health Sciences Centre (SHSC)],
- hepatology/transplant [Toronto General Hospital (TGH)],

- neurogastroenterology [Toronto Western Hospital (TWH)],
- nutrition (TGH, SMH), and
- GI oncology (SHSC, SMH).

Exposure to general gastroenterology occurs at all sites. Finally, there are multiple opportunities for clinical education in ambulatory care and community settings. The clinician teachers have diverse expertise, covering most aspects of luminal gastroenterology and hepatology. The researchers are involved in translational, quality, clinical and basic research.

During their training, residents rotate through different academic sites: SMH, University Health Network (UHN), MSH, SHSC and Women’s College Hospital (WCH). Those rotations have specific CanMEDS objectives that meet the RCPSC requirements. All residents also

pass through specialty clinics such as hepatology, nutrition and motility; each has specific learning objectives. The residents also undertake in-training exams at least twice a year and meet with their PD individually a minimum of three

times a year to get feedback based on their evaluations and exams. GI maintains a division manual for trainees that contains all the pertinent information about the program and hospital sites, a website that conveys all the details about the program with both public and password-protected content and the CanMEDS training portfolio for each resident.

In addition to the core curriculum, trainees have access to many educational opportunities in gastroenterology and hepatology to meet and enhance their learning needs:

- local [Hepatology Update, Inflammatory Bowel Disease (IBD) Mentorship, Advanced Therapeutic Endoscopy Course],
- national (Gastroenterology Residents-in-Training Course, Canadian Digestive Diseases Week), and



- international (American College of Gastroenterology and associated conferences).

Trainees exhibit a high level of scholarship, as evidenced by their record on the RCPSC subspecialty examination, as well as a sustained track record for publishing and presenting at local and national meetings. (See Research below and appendix). These achievements are partly attributable to the excellent support by faculty members, including the Research and QIPS Committees as well as the Quality Improvement Project leads, co-directors of research and faculty supervisors.

With the help of the Research Committee, the Division promotes mandatory research training for all residents in the GI residency training program. Under the mentorship of GI faculty, all residents are required to select a research project to complete by the end of their training, and they

present it at the annual academic GI Research Day. The annual Research Day includes two invited keynote speakers and showcases the completed trainee research as poster or oral presentations. This event provides students with experience in carrying out and

presenting research, and encourages trainees to consider further opportunities in academic medicine.

GI also holds a weekly city-wide video-conferenced journal club rounds led by GI trainees, who present and critically appraise a peer-reviewed journal article (*Journal of the American Medical Association*—series style). Faculty supervisors are assigned to each session. In addition, the program includes monthly pathology rounds, a weekly academic half-day when various topics of gastroenterology are covered and a city-wide Gut Club, which is held approximately six times a year and where national and international speakers present their research. At the hospital site level, additional rounds cover clinical management and pathology/radiology.

At the beginning of the academic year the Division runs an orientation meeting and dinner for new residents. Town hall meetings, where residents and staff meet to discuss issues related to the program and consider solutions to improve the experience, are organized three times a year. The chief resident is responsible for assuring that any deviations from the Professional Association of Residents of Ontario (PARO) agreement are brought to the attention of the PD and Residency Program Committee. The PD and education leaders also have an open-door policy for the trainees to meet and discuss issues. In addition, all trainees are invited to meet with the DDD to discuss career development at any time during their training.

Fellowships

The Division offers several fellowship programs in therapeutic endoscopy, hepatology, motility and nutrition. These programs attract fellows who focus on either clinical or research work and have specific objectives for each.

The Division has created an International Fellowship Program that attracts physicians who have completed their training in other countries but meet the University Postgraduate Medical Education (PGME) entry criteria. These physicians return to their respective countries once they complete their training. They are ineligible for the RCPSC exam but receive a Certificate of Fellowship in Gastroenterology from U of T.

Fellows are evaluated every six months with constructive feedback. Many of these fellows develop successful careers in academic centres in Canada, the United States and other countries. Some also complete master's degrees or PhDs in epidemiology, public health, quality improvement, education or science. Over the past five years, the Division has hosted numerous fellows; the funding comes from their home country, peer-reviewed agencies [Canadian Institutes for Health Research (CIHR), Canadian Association of Gastroenterology (CAG), etc.], foundations or educational grants/fellowships from industry.

The Fellowship Director, Dr. Elaine Yong, works with the DDD and the PD to oversee clinical and research fellowship training programs for the Division. Dr. Yong assists and oversees program development including program objectives, coordination of application intake and orientation for new fellows. Dr. Yong is also responsible for ensuring regular and timely evaluations for programs, fellows and teachers. To that end, she also liaises with the DoM Fellowship Programs Office.

Continuing Education

The Division organizes several annual events for continuing education. Hepatology events include the Sheila Sherlock Hepatology Research Day and the Jenny Heathcote Hepatology Update Day. The Mount Sinai Hospital IBD program, in partnership with other Canadian programs, hosts the IBD Mentoring Meeting (two



days). An internationally acclaimed course in advanced therapeutic endoscopy is organized each year through St. Michael's Hospital's therapeutic endoscopy group.

These courses are open to all gastroenterologists (academic and community) and trainees, as are the city-wide rounds. Faculty also involve themselves in continuing medical education (CME), giving presentations throughout the community at the local, provincial and national levels.

RESEARCH

The Division of Gastroenterology has national and international research leaders who specialize in inflammatory bowel disease, hepatology (viral hepatitis, transplantation and autoimmune liver disease), endoscopy and quality assurance, as well as nutrition (parenteral nutrition, malnutrition and obesity/non-alcoholic fatty liver disease). The productivity of the Division's grants and publications has been excellent for clinical, translational and basic research.

Research Support

Hospital resources are allocated independently from the University, but the University DoM provides stipends for salary support of clinician scientists. When recruiting, the hospital division head and the PIC are responsible for providing financial support, as per the practice plan, as well as office and clinic space. The division head must plan endoscopy space, and discuss it with the endoscopy unit, which is part of the Department of Surgery. The director of the hospital research institute will allocate laboratory resources, or the DDD will negotiate with the FoM for space at the Medical Sciences Building on the University's main campus. The DDD and the division head align all constituencies during recruitment.

Research chairs have been created across hospital sites, including the Jenny Heathcote and Frances Family Chair in Liver Disease (UHN), the McCain Chair in Therapeutic Endoscopy (SMH), the R. Phelan Chair in Translational Liver Research (UHN) and the Lilly and Terry Horner Chair in Autoimmune Liver Disease (UHN). GI clinician investigators and clinician scientists conduct their research at many laboratory locations, including U of T's Medical Sciences Building and respective hospital-affiliated research institutes. A large



network of interdepartmental collaborations has led to high research productivity.

Several GI chair positions are managed by hospital foundations. St. Michael's Hospital manages the McCain Chair in Therapeutic Endoscopy (\$2 million). At UHN, there are three donor-supported chairs established in the Toronto Centre for Liver Disease: the Francis Family/Dr. Jenny Heathcote Chair in Liver Research (\$3 million endowed; Dr. Janssen), the R. Phelan Chair in Translational Liver Research (\$2 million expendable/limited term; Dr. Feld) and the Lily and Terry Horner Chair in Autoimmune Liver Disease Research (\$1 million expendable/limited term; search in progress).

In addition to donor-supported chairs, hospital foundations provide further support for the Liver Transplant Program (UHN; \$5.265 million since January 1, 2012) and the Dr. Gordon Greenberg Special Fund for Gastroenterology (MSH; \$500 thousand).

External Research Funding

The Division's research enterprise is well funded. Collectively, research funding awarded over the reporting period has increased in value, year over year, from \$9.407 million in 2012–13 to \$14.404 million in 2016–17. Typically, funds are secured from peer-reviewed grants from national and international sources, including CIHR, Canadian Liver Foundation, Crohn's and Colitis Canada, and the Canadian Association of Gastroenterology. The Division also succeeded in securing funds from numerous industrial partners.

Publication Output

Over the five year review period, Gastroenterology faculty members published 1,522 publications, which generated 18,072 citations, resulting in a 11.87 citation impact.

Research Committee

The Committee is co-chaired by Drs. Feld and Selzner and includes representation from various hospitals, the DDD and the PD.

This Committee is responsible for managing the resident research program and for providing supervision of their scholarly work, which is now mandated by the Royal College. Every year, the Research Committee presents a list of potential projects and supervisors to the residents, who choose the types of projects they want to complete during their residency program. The residents then write their research proposals in a standard format and prepare a budget. Each resident is allocated seed money for their projects (up to \$3,500/resident) which can be used for supplies, a coordinator, equipment or travel to present abstracts. All proposals and budgets are reviewed by the Research Committee, which provides feedback to improve the proposal, modelling the practice on peer-reviewed agencies to provide valuable experience to trainees. Once proposals are approved, residents present their design and methodology at the GI Research Day during their first year (PGY4) and present the results in the second year (PGY5). Then, frequently, the abstract is accepted to a national or international meeting and leads to the writing of a manuscript.

Affiliations, Collaborations and Partnerships

The Division has a very successful research enterprise that has developed interdivisional, interdepartmental and interinstitutional collaborations. Through

various programs (e.g., IBD, Hepatology, Nutrition, Motility), successful collaborations occur between Toronto's academic centres, other institutions (e.g., HSC, McMaster University, Guelph University), other departments (e.g., Immunology, Surgery, Radiology, Biostatistics, Bioinformatics) and other divisions (e.g., Infectious Diseases). They are presently funded by peer-review grants.

FACULTY

The Division of Gastroenterology consists of 47 full-time, 10 part-time and 21 adjunct faculty members.

Distribution of full-time faculty according to position description includes 13 clinician scientists, 20 clinician teachers, seven clinician investigators, two clinicians in quality and innovation, three clinician educators and two clinician administrators. An additional 10 part-time faculty are classified as clinician teachers.

Lastly, the distribution of faculty varies across sites: UHN (20), SMH (9), SHSC (7), MSH (6) and WCH (5).

Advancement and Education

The Division supports and promotes advancement of its team members. The DDD is aware of each divisional member's progress through meetings with members or divisional heads and when looking at awards, publications, grants and the like while preparing for the GI Newsletter (published every six months). Considerations for promotion are discussed either directly with the DDD or during the yearly activity



Table 8.1: Academic Position Description of Full-Time Gastroenterology Faculty

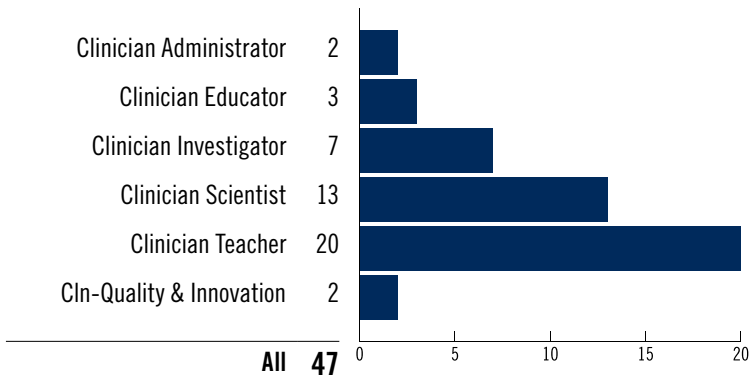


Table 8.2: Affiliation of Full-Time Gastroenterology Faculty

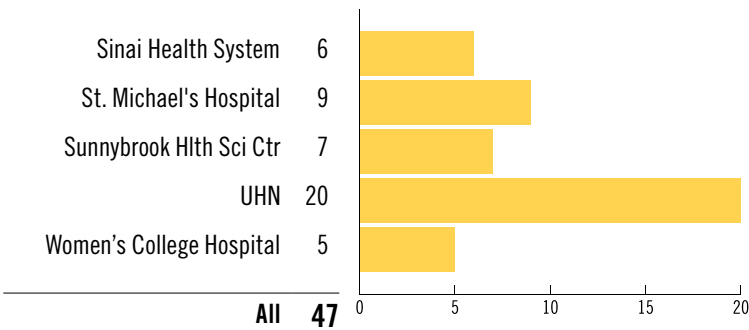
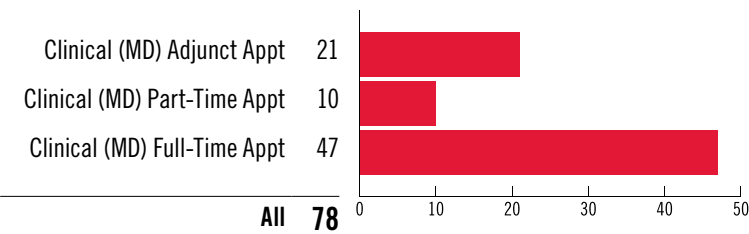


Table 8.3: Primary Appointment of Gastroenterology Faculty



report meetings between divisional members and their division head. CVs are reviewed for eligibility and then forwarded to the hospital Promotion Committee (chaired by the PIC) for consideration. If approved, the candidate will prepare an application for review by the DoM Promotions Committee.

The Award Subcommittee

This subcommittee reports to the Research Committee and administers research and teaching awards: the KN Jeejeebhoy Award for the resident who has demonstrated outstanding qualities in research, clinical and teaching activities; and the Lou Cole Awards for the best teaching by a resident and by faculty. In addition, there are awards for the best oral and poster presentations at the GI Research Day. Most of these awards come with a financial reward that varies from year to year.

Communications

The Division publishes a biannual newsletter that informs faculty, residents and fellows about new recruitments, promotions, publications, awards and any other news about the Division. There are also weekly or monthly city-wide and hospital rounds. Through the divisional structure, committees have report systems that assist communication among sites and programs. The Division avoids overlap or replication of projects and improves coordination of recruitment, strategic planning and event planning, including the planning for Annual GI Research Day, CME events and workshops.

Succession Planning

To ease retirements, the Division has a succession-planning mechanism that reflects other DoM divisions. Individuals who are considering retirement are asked to inform their respective division head two years in advance so that a plan to consider a replacement can be developed. Discussion follows between the division head and the DDD and then at the GI Executive Committee to determine whether potential candidates are in the pipeline (residents, fellows or candidates outside the Division) who have academic credentials in line with the position description. Additional training for candidates may be considered, and a succession plan is put in place to avoid competition between sites. At least one year before the official retirement, a Search Committee is created.



QUALITY AND INNOVATION

Quality Improvement and Patient Safety Committee

The Committee is chaired by Dr. Geoffrey Nguyen. Most members have received formal training in QIPS and different sites are represented. They include Dr. Michael Bernstein (SHSC), Dr. Natasha Bollegala (WCH), Dr. Adam Weizman (MSH), Dr. Florence Wong (UHN), as well as the DDD and PD. The Committee is responsible for spearheading QIPS initiatives city wide and developing QIPS projects with the residents.

The Committee has been very successful and, in 2016, published a series of three articles in *Clinical Gastroenterology and Hepatology* to explain the methodology behind developing a QIPS project. This Committee is also the national lead for the Choosing Wisely campaign on IBD and hepatology. The QIPS Committee has been well represented in international and national initiatives in quality improvement:

- chairing the development of four international guidelines in IBD;
- co-chairing development of quality indicators for IBD and the IBD-GRS (Genetic Risk Score)

in Canada in collaboration with Crohn's and Colitis Canada and the Canadian Association of Gastroenterology;

- leading the development of Choosing Wisely Canada lists for IBD and hepatology; and
- chairing the Canadian IBD Network for Research and Growth in Quality Improvement (CINERGI).

In addition, U of T is the leading site of the five largest IBD Centres of Excellence in Canada that are part of the Promoting Access and Care through Centres of Excellence (PACE) initiative.

In the Committee's brief existence, a remarkable number of accomplishments have been made, including the development of a quality improvement (QI) curriculum tailored to GI residents and provision of mentorship in the implementation of resident QI projects among PGY5 GI residents. These QI projects include improving the frequency of paracentesis for inpatient liver patients hospitalized for ascites, assessing follow-up of adenoma polyp detection during inpatient colonoscopy, and piloting an interactive mobile app to guide the inpatient management of acute severe ulcerative colitis. This project led to the development of a mobile app for iOS and Android, Hospital Algorithms for Treatment of Ulcerative Colitis (HALT-UC).

MENTORSHIP, EQUITY & DIVERSITY

During faculty recruitment, an academic plan is created based on the position description of the individual. It includes short- and long-term goals, and the plan helps the Division organize resources and support. The plan includes objectives for teaching and education, research, creative professional activities, etc. Mentors for each area are assigned after discussions occur with the various stakeholders (i.e., the recruit, DDD, division head and PIC).

The DDD schedules meetings with new faculty to prepare for the Continuing Faculty Appointment Review (CFAR). The meetings ensure that the new recruit meets requirements and objectives, has adequate protected time, sufficient resources and support, and has a chance to discuss opportunities or new directions. In the Division of Gastroenterology, all new recruits follow this effective process.

However, mentorship for mid-career and senior faculty is not formal; at that level, mentorship is generally sought by the divisional member as needed. The DoM Faculty Development Committee also organizes events that target issues for mid-career and senior members. All of these activities are organized by the DoM, which attracts more of a critical mass than if they were organized at the Division level.



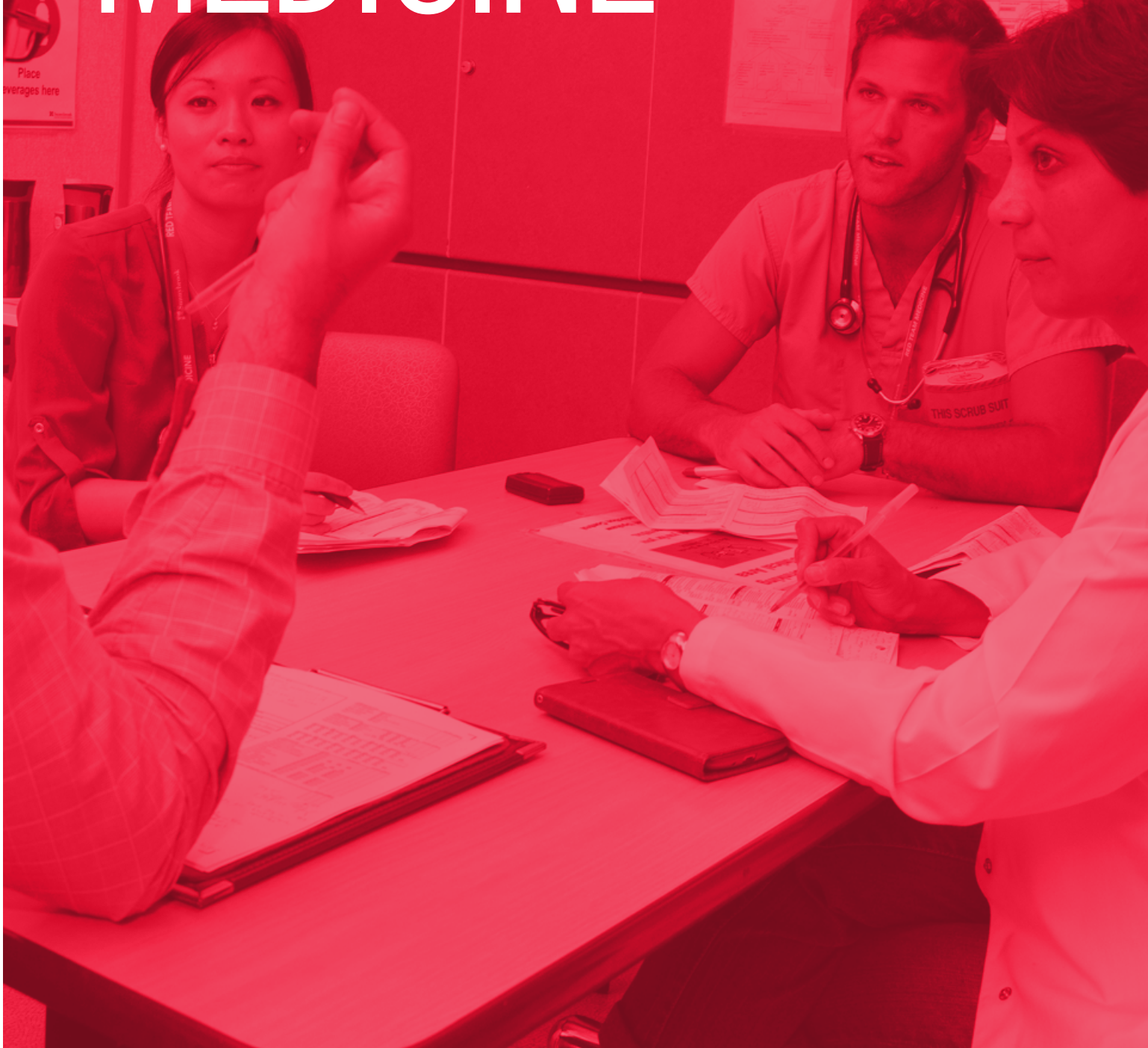
GENERAL INTERNAL MEDICINE

Smoking or Drinking
in this Area

Place
beverages here



D4 23



OVERVIEW

The Division of General Internal Medicine (GIM) in the Department of Medicine (DoM) is central to the clinical care of complex patients at all of the teaching hospitals affiliated with the University of Toronto (U of T). GIM faculty members provide clinical care and education in various settings: clinical teaching units (CTUs), inpatient hospitalist services, medical consults, short stay units, and ambulatory clinics. Initiatives in these settings emulate the DoM's strategic priorities, particularly in education, research and quality improvement (QI) initiatives. GIM works to enhance social accountability, resource stewardship, patient-centred care and the promotion of equity and diversity.

Divisional strategic priorities were revisited in 2017 and include:

- building on city-wide research activity to answer important questions in GIM;
- advancing innovative models of care and patient engagement; and
- enhancing GIM ability to practise, collaborate, teach, learn and pursue scholarly activities.

The GIM Executive Committee consists of the Departmental Division Director (DDD), Dr. Moira Kapral, division heads from each fully affiliated hospital site and the GIM Subspecialty Program Director (PD), Dr. Tara O'Brien. Executive Committee agenda standing items include divisional recruitment, the GIM subspecialty program, ambulatory medicine initiatives, clinical care, city-wide research initiatives, award nominations and continuing education (CE). Further, the Division has subcommittees that focus on research (led by Dr. Peter Cram), ambulatory medicine (led by Dr. Graham Slaughter), GIM clinical care redesign (led by Dr. Ophyr Mourad), CE and awards. Dr. Edward Etchells is the divisional mentorship facilitator.

The GIM Residency Program Committee is chaired by Dr. Tara O'Brien and includes the DDD, the program leads from each of the fully-affiliated academic hospitals and a resident representative. The committee meets at least six times per year and oversees the two-year subspecialty training program as per the requirements of the Royal College of Physicians and Surgeons of Canada.

EDUCATION

The Division of GIM plays a substantial role in undergraduate, postgraduate and graduate training. Many divisional members hold major educational leadership roles, receive teaching awards and engage in educational research. The GIM education services consistently receive very high rotation effectiveness scores and teaching evaluation scores.

Undergraduate Medical Education

Divisional faculty provide teaching in the following undergraduate medicine courses:

- Health Sciences Research,
- Art and Science of Clinical Medicine (ASCM)/ Integrated Clinical Experience (ICE),
- Toronto Patient Centred Integrated Curriculum (TOPIC) Case-Based Learning,
- Portfolio self-assessment course,
- Transition to Clerkship,
- Transition to Residency,
- Integration Oral Structured Clinical Examination (OSCE), and
- elective rotations on the GIM services (CTU, hospitalist, medical consults, ambulatory).

GIM faculty are also responsible for training all third-year clinical clerks during their eight-week Internal Medicine rotation on the GIM CTUs. Undergraduate education is highly valued and has a high priority within the Division.

GIM Postgraduate Subspecialty Training Program

In 2013, following RCPSC recognition of GIM as a subspecialty, a new two-year subspecialty training program in GIM was launched. This program is designed to provide enhanced training for residents interested in careers in GIM in both academic and community settings and reflects the learning objectives of the Royal College of Physicians and Surgeons of Canada. Academic half days include didactic lectures, high-fidelity simulation-based training and interactive project work. Toronto's large patient population provides exposure to unique and complex patients as well as opportunities to work in new and innovative models of care. This training environment has contributed to shaping clinicians who excel in the management of complex patients with undifferentiated conditions.



Dr. Moira Kapral, General Internal Medicine
Department Division Director

Core Internal Medicine Postgraduate Training Program

Divisional members commit a substantial amount of training support to core internal medicine residents, who, during their first three years of training, must spend at least 14 months training in GIM. The GIM CTUs have more than 350 beds across five downtown hospital sites, as well as an additional training site at the U of T Mississauga campus. GIM also provides training in ambulatory medicine through rapid referral and post-discharge clinics at all sites and additional innovative ambulatory experiences [Acute Ambulatory Care Unit (AACU), Seamless Care Optimizing the Patient Experience (SCOPE), Virtual Ward] at several sites. Finally, the core internal medicine training program offers a fourth year to trainees who choose not to pursue subspecialty training to allow them to fulfill the training requirements for specialty certification in internal medicine. This core internal medicine PGY4 training year is led by a GIM faculty member and provides an outstanding educational experience at both academic and community sites.

Graduate Education

Division members (primarily clinician scientists) are very active in all aspects of graduate education, including course instruction and graduate supervision at the Institute of Health Policy, Management and Evaluation

(IHPME), the Dalla Lana School of Public Health, the Institute of Medical Sciences and the Ontario Institute for Studies in Education.

Fellowships

The Division of GIM offers fellowships in hospital medicine, ambulatory medicine, and obstetrical medicine. These fellowships are designed to provide training in the management of patients with acute and chronic multisystem medical conditions.

GIM currently offers the following fellowships:

- **Hospital Medicine.** This program is offered at UHN/MSH and at SHSC. Fellows gain competencies in the management of common acute medical conditions, bedside procedural skills, health-system navigation, QI and patient safety, communication skills and teamwork. In addition to a focus on complex medical inpatients, the program offers the unique opportunity to work with specialized patient populations such as cancer, perioperative and psychiatry inpatients.
- **Hospital Medicine Fellowship for Family Medicine.** This is an intensive six-month fellowship program offered exclusively for family medicine-trained graduates. It provides opportunities to develop competencies in emergency department consultations, inpatient management of common acute medical conditions, perioperative management, discharge and transitions planning, teamwork, QI and bedside procedural skills.
- **Ambulatory Medicine.** The program is offered at WCH. It provides individuals trained in the



fields of internal medicine with an opportunity to acquire advanced skills and expertise in the field of ambulatory medicine. The training may focus on any one or more of the following areas: women's health, complex chronic disease management and health-system solutions.

- **Obstetric Medicine.** This program offers advanced training in obstetric medicine and/or medical subspecialty outpatient clinics, inpatient consult service, maternal-fetal medicine outpatient clinics and clinical pharmacology clinics and/or rounds.

Multilevel Education in Quality Improvement

The Division of GIM is a leader in education in QI. Division members have developed hospital-based QI programs and provide leadership to the QI Co-Learning Curriculum for residents and faculty, the Centre for Quality Improvement and Patient Safety (C-QuIPS) and the Master of Science Concentration in Quality and Patient Safety at the IHPME.

Continuing Education

Divisional members have held leadership roles in the coordination of national GIM CE events, including the annual meeting of the Canadian Society of Internal Medicine. The Division also hosts local CE events (U of T GIM Continuing Education Series) every three months. Dr. Andreas Laupacis leads Healthy Debate (<http://healthydebate.ca/about-us>), which provides articles and information on health-care issues to the public, practitioners and policy makers. It includes a weekly podcast (The Rounds Table at <http://healthydebate.ca/about-us/the-rounds-table>) on new research from major medical journals. Healthy Debate also offers a forum for sharing the stories of patients and providers (Faces of Health Care at <http://healthydebate.ca/about-us/faces-of-health-care>).

RESEARCH

Research within the Division of GIM focuses on health-services research, clinical epidemiology and decision science, quality improvement; clinical trials, and population and public health. Particular areas of interest include, but are not limited to, the following: patient safety and QI; transitions in care; heart disease and stroke; osteoporosis; women's health; obstetrical medicine; HIV/AIDS; substance use; critical care; thromboembolic disease; health equity; homelessness/inner-city health; health-technology assessment and economic evaluation; drug safety; traumatic injuries; medical education; and global health.

Since 2012, divisional members have held more than \$39.264 million in funding support, published 1,782 peer-reviewed manuscripts, yielding 14,719 citations, and achieved a collective citation impact score of 8.62. Publications have been in high-impact journals such as the *New England Journal of Medicine*, *Journal of the American Medical Association*, *Lancet*, *BMJ*, *Canadian Medical Association Journal*, *Annals of Internal Medicine* and *PLOS Medicine*.

GIM research has had an impact on public policy, including the allocation of federal funding to housing-first initiatives, legislation on the use of cellular phones

while driving, decisions by the Ontario Ministry of Health on the funding of interventions, and national policies on the opioid epidemic. Divisional members have provided leadership to Choosing Wisely Canada and have led or contributed to national and international clinical-practice guidelines on a wide range of topics including osteoporosis, heart disease, stroke, health-technology assessment and maternal medicine.

Members of the Division have also developed the General Medicine Inpatient Initiative (GEMINI <https://www.geminimedicine.org/>), an innovative big-data network in seven Toronto-area hospitals. GEMINI extracts clinical data generated as part of routine medical care and uses it for research and QI. GEMINI has now received provincial backing to expand to 30 hospitals, creating one of the first large-scale data networks of its kind in the world. The data set from GEMINI is anticipated to be a major catalyst for research in GIM. Current projects involve 30 co-investigators and more than 30 trainee research projects; collaborative projects span subspecialties and disciplines.

A wide range of research opportunities are available for residents, fellows and graduate students under the mentorship and supervision of GIM faculty members. The Division holds an annual GIM Research Day at which trainees may present posters and abstracts.



FACULTY

Over the past five years, GIM has recruited 23 faculty to the Division. GIM faculty are collegial and collaborative, work well across disciplines and specialties, and have educational and research relationships with many other divisions and departments.

As for many divisions, a major challenge for GIM has been the need to care for increasing numbers of patients in the face of diminishing resident availability. To address this challenge, GIM has implemented solutions over the past three years, including the development of new rapid referral and post-discharge GIM clinics at all sites to provide patient-centred ambulatory care and to reduce admissions and shorten length of stay. GIM has also created standardized roles and responsibilities for residents and attending staff. These interventions have been helpful, but faculty workload remains high. A city-wide working group (GIM Redesign Committee) is now developing new proposals to optimize the delivery of clinical care and educational services and support faculty well-being.

Supporting Faculty

Every new faculty member has an identified mentor, and the divisional mentorship facilitator reviews mentorship assignments and provides additional support to both mentors and mentees. Faculty members meet annually with their site division director and/or physician-in-chief. They also undergo a Continuing Faculty Appointment Review by the DoM three years after appointment; the process ensures that they are on track academically and are receiving

Table 9.1: Academic Position Description of Full-Time GIM Faculty

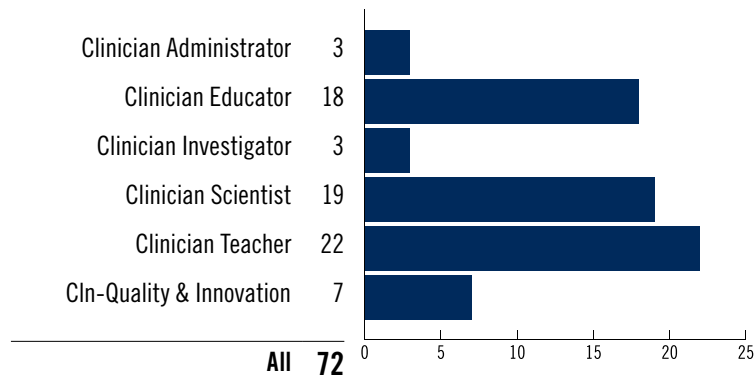


Table 9.2: Affiliation of Full-Time GIM Faculty

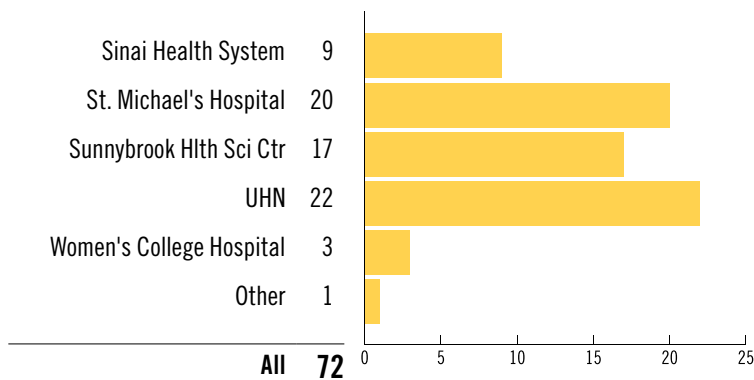
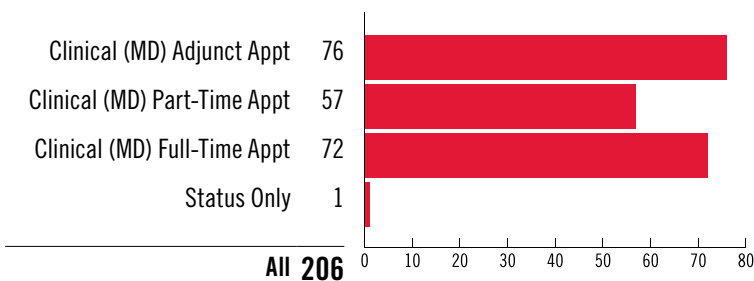


Table 9.3: Primary Appointment of GIM Faculty



appropriate mentoring and resources. In the past five years, the Division has had 12 faculty promoted to full professor and 16 faculty promoted to associate professor. The success rate has been 100 per cent at the time of review by the Decanal Promotions Committee.

The Division of GIM holds an endowed chair from the Mak family, and funds from the chair are used to support faculty activities, including the Mak Chair Research Award in GIM. This is awarded through an annual competition and provides \$40 thousand per year for three years in salary support to a mid-career faculty member engaged in research. The Mak Chair funds also support a city-wide divisional faculty CE series, an annual faculty retreat that is used for strategic planning and the GIM Research Day. The Mak Chair provides funds for trainees supervised by GIM faculty to present abstracts at conferences.

To ensure that divisional members have opportunities to be nominated for awards and other recognition, the divisional executive keeps a running list of deadlines for major awards, and the DDD coordinates nominations of divisional members where appropriate. The Division also recognizes teaching excellence with an annual city-wide award for teaching excellence in GIM. The award was established in 2018. (See <http://www.deptmedicine.utoronto.ca/university-toronto-award-teaching-gim>.)

Divisional accomplishments and events are celebrated and communicated through a monthly newsletter that is distributed electronically to all full-time, part-time and adjunct



faculty members as well as to trainees and graduates of the U of T internal medicine training program. (See a sample at <https://us14.campaign-archive.com/?u=d5ba292ad041fe9c4bcf52bf7&id=c94d73bba4>.)

Divisional members meet regularly at city-wide GIM CE events and faculty retreats.

QUALITY & INNOVATION

Divisional members are actively engaged in QI at many levels. Drs. Brian Wong and Kaveh Shojania lead the QI Co-Learning Curriculum for residents and faculty, and the Centre for Quality Improvement and Patient Safety (C-QuIPS) at U of T. Dr. Shojania is editor-in-chief of *BMJ Quality and Safety*, and Dr. Christine Soong spearheaded the development of Choosing Wisely Canada recommendations. Many divisional members are engaged in QI research in areas including patient safety, medication prescribing, follow-up of test results, language proficiency, clinical informatics, patient-oriented discharge summaries and transitions in care. Residents in the GIM subspecialty residency training program complete a



Dr. Nabiha Islam delivers the valedictory address at the 2018 graduation ceremony for postgraduates.

mandatory research project in QI, ensuring that trainees gain expertise in this area. Finally, the GEMINI patient database serves as a platform for QI activities, including audit and feedback of physician performance, and a variety of specific QI research projects.

MENTORSHIP, EQUITY & DIVERSITY

The administrative process within the Division of GIM promotes equity and diversity. The Division follows the recruitment criteria and search processes articulated by the DoM and search committee members must complete training in implicit bias. Of the 23 new recruits over the past five years, 10 have been women. Members of the Division make up seven of the 26 members of the DoM Mentorship, Equity and Diversity Committee, and Drs. Lisa Richardson and Ayelet Kuper are leading workshops to provide faculty training in “allyship”. The divisional mentorship facilitator meets regularly with divisional

members to ensure that they are satisfied with their mentors and the mentoring experience, and provides faculty training in mentoring through an educational session held as part of the divisional CE series.

Dr. Lisa Richardson from the division of GIM has assumed a distinctive leadership role in Indigenous medical education. This educational initiative has been facilitated through the establishment and co-leadership of the Office of Indigenous Medical Education, the Indigenous Student Application Pathway, the Summer Mentorship Program, and pre-clerkship curriculum and rotations in Indigenous health. This curriculum focuses on Indigenous concepts of health and healing. For more information on these programs, visit <http://www.md.utoronto.ca/office-indigenous-medical-education>.

GERIATRIC MEDICINE



OVERVIEW

The Division of Geriatric Medicine at the University of Toronto (U of T) is the largest division of geriatrics and the largest geriatrics training program in Canada. The Division focuses on excellent patient care and draws from the expertise of its faculty members in education and clinical epidemiology across a network of community and University-affiliated hospitals and private practices. Faculty researchers also hold prestigious national and international grants that support investigations in older women’s health, geriatric oncology, optimization of drug prescribing in the elderly, program development and evaluation, as well as the quality of life in chronically ill or frail elderly.

In alignment with Department of Medicine’s (DoM) guiding principles, the Division has endeavoured to focus on collaboration across the academic sites and has a commitment to promoting a high-quality educational experience in a collegial and supportive environment. Division members are contributing substantively to scholarship in a variety of areas that affect clinical care, education, research and policy.

The Division is led by Dr. Sharon Straus, a Tier 1 Canada Research Chair in Knowledge Translation and Quality of Care and the Mary Trimmer Chair in Geriatric Medicine.

Executive Committee

The Executive Committee (EC) is composed of the Departmental Division Director (DDD), Program Director (PD), and the division heads of each hospital that have two or more full-time faculty members. The EC meets at least six times per year and discusses issues arising at each site and across the Division regarding clinical care, education, mentorship, faculty development, research (i.e., to identify collaborative projects) and recruitment.

Residency Program Committee

The Residency Program Committee (RPC) is chaired by Dr. Barbara Liu, the subspecialty PD. It includes the DDD, the relevant education coordinators from affiliated academic hospitals, the Fellowship Coordinator, the Undergraduate Education Coordinator, the Research and Scientific



Dr. Paula Rochon

Committee Chair, a community geriatrician and a geriatric psychiatrist. There is also one appointed and one elected resident representative, typically a first- and a second-year trainee. The RPC meets at least six times per year, and its main task is to oversee the two-year subspecialty training program as per the requirements of the Royal College of Physicians and Surgeons of Canada (RCPSC). There are also subcommittees on resident safety, wellness, research and on-call requirements. The Division also has a Social and Networking Committee.

EDUCATION

The education initiatives of the Division emphasize community engagement at local, national and international levels to better align physician training to meet growing population needs. Further, the Division has developed meaningful new collaborations with other groups both internal and external to U of T, including at the site level (oncology, trauma, burns), specialties and subspecialties (behavioural neurology, psychiatry) and community partners (McMaster University, Western University, U of T, University of Waterloo). Over the past five years, interest in the program has resulted in an average of 13 applicants per year, and a notable increase in interest occurs every year. Currently, four trainees and up to two fellows and one additional trainee who arrive through non-Canadian Resident Matching Service (CaRMS) routes are accepted each year. A generous

donation from a donor linked to Sunnybrook Health Sciences Centre has allowed the program to accept a fifth postgraduate trainee into the training program for the past two intakes.

For the past two years, Toronto has led a new multi-site collaboration between U of T, McMaster University, Western University and University of Ottawa to administer a joint practice written examination for geriatric medicine trainees. An interuniversity program agreement was struck with the University of Manitoba and, in 2018–19, the Division will host its first resident from that program. Geriatric Medicine has developed a strong collaboration with Behavioural Neurology, establishing a two-block elective, which is routine for all learners. This collaboration includes a dedicated one-day boot camp that in 2018–19 is expanding to include additional learners from other programs and potentially other universities. Care of the Elderly residents from the Department of Family and Community Medicine participate in the academic half-day program.

Considering the needs of the Canadian population and the growing interest in geriatrics, we note a pressing need to increase the spots in the training program. Working with the DoM to identify donor support will be a continual priority. One donor to support funding toward a trainee has been identified.

Because of the move to adopt Competence by Design (CBD), the training program will require restructuring,

including training for faculty on resident assessment in this new approach. Geriatrics is scheduled to be in the next wave of implementation. To prepare, the Division has hosted three divisional retreats/workshops on CBD in the past two years; one focused on the assessment of trainees. Considering the move to CBD, Division recruitment will emphasize targeting clinician educators in the coming years.

Undergraduate Education

Dr. Thiru Yogaparan is responsible for undergraduate education for the Division and chairs the Undergraduate Education Working Group. She provided leadership in developing the geriatric component for the new medical-school curriculum, launched in September 2016, which has proven extremely successful. The initiative increased exposure of undergraduate students to geriatric content and is now integrated throughout the undergraduate pre-clerkship curriculum. Of the 28 geriatric competencies identified, 27 are now addressed in pre-clerkship. An undergraduate Geriatric Interest Group is co-chaired by Drs. Camilla Wong and Samir Sinha and supports social activities and capacity-building events geared toward encouraging new interest in geriatric medicine.

Division faculty also teach at the undergraduate level. They teach, in particular, the Year 2 Art and Science of Clinical Medicine (previously ASCM, now called the Integrated Clinical Experience course), which includes many hours on clinical examinations for the geriatric patient. Some faculty also deliver lectures and seminars and supervise undergraduate students who work to complete scholarly projects.

Residents

The subspecialty training program consists of four PGY4 and four PGY5 trainees each year. The Division has noted increasing applications for the program and has applied to the University's postgraduate program for additional training spots each year.

The applications to the training program are reviewed by the PD, Dr. Barbara Liu, as well as the DDD and the Chief Resident. This group also interviews appropriate candidates and ranks applications. As part of the Division's commitment to promote equity, the interview panel is gender balanced and aligned with Postgraduate Medical Education (PGME) Best Practices in Application and Selection.

The curriculum for the subspecialty training program includes a longitudinal ambulatory clinic over the two years of training. The faculty supervisor for the longitudinal clinic serves as the primary mentor for the trainee, although the DDD and PD meet with the trainees to identify additional mentors as needed.

Fellows

Geriatric clinical fellowships provide an opportunity for a physician to obtain advanced training and/or to acquire more specialized expertise that complements residency training. Clinical fellows must be recognized specialists. Training may involve both clinical and research activities.

Research fellows are engaged solely in research and have no patient contact whatsoever. Because research



fellows do not have patient contact, licensure by the College of Physicians and Surgeons of Ontario (CPSO) is not required. The minimum qualification for research fellowship training is a medical degree; however, requirements for admission may vary from one research fellowship program to another.

Continuing Education

The Division hosts a monthly journal club and faculty occasionally present at these sessions, although they are largely resident-led sessions; one presents a short critical appraisal of a research article and another a longer appraisal. Dr. Shabbir Alibhai provides faculty oversight of the article selection and appraisal. Faculty from all academic sites regularly attend these CPD-accredited educational events. The journal club is available online and regularly includes local, national and international participants. This club includes affiliated community sites (e.g., North York General, St. Joseph's Hospital) and academic colleagues from other institutes (McMaster, University of Waterloo).

Under the leadership of Dr. Camilla Wong, the journal club has started incorporating social media to assist interaction with national and international colleagues. For example, authors of articles or external subject matter experts are invited to engage in the Twitter discussion. The results of an evaluation of this initiative were recently published. Journal Club is also recorded and available on YouTube.

The Division also hosts an annual retreat/education half day that is CPD-accredited. The EC identifies the topic based on discussions with the Division members; the topic focuses on issues relevant to collaborative, divisional activities. A visiting speaker is usually invited to present. In the past two years, Geriatric Medicine has added a second event, which focuses on education such as CBD implementation and workshops on developing multiple-choice questions for the undergraduate curriculum. The topics for all of these events are based on needs identified by faculty members.

Some of these sessions have led to Division projects. For example, the planning retreat on core competencies in ambulatory care led to an educational project that developed core competencies in ambulatory geriatric medicine. Dr. Camille Tessier-Bussières (who started her geriatric medicine training at Laval in July 2016) led the project. She began it as a PGY1 and successfully presented

at the 2016 annual meeting of the Canadian Geriatrics Society (CGS).

The Division also holds ad hoc education sessions on topics as the need arises. For example, a symposium on Geriatric Models of Care was hosted, and Dr. Roger Wong was invited as a speaker. The Division also uses opportunities to expose trainees to international/national speakers through medical grand rounds at the various sites and through the Regional Geriatric Program of U of T's educational events. Division members also participate in other local, regional and national CPD events such as

- the geriatric education event held annually by the Sinai Health System (under the leadership of Dr. Samir Sinha and Dr. Karen Ng),
- regular geriatric education rounds hosted at Baycrest, and
- the work to promote and implement the Senior-Friendly Hospital across Ontario under the leadership of Dr. Barbara Liu.

Electives

The Division offers elective opportunities for family medicine and internal medicine residents. There has been a substantial increase in demand for these experiences. Most of the elective residents come from across Canada.

RESEARCH

Researchers in the Division focus on clinical epidemiology and health-services research. Particular areas of interest include geriatric oncology, quality of life and driving issues in persons with mild cognitive impairment and dementia, medication use in older people, women's health, models of care for older patients, and knowledge translation. Geriatric





Medicine has considerable methodological expertise in quantitative methods such as randomized controlled trials, observational studies and knowledge syntheses, among others.

The Division has three endowed research chairs (Mary Trimmer Chair, Gordon Hunt Chair and the Retired Teachers of Ontario/ERO Chair). Four faculty members are clinician scientists, but many additional faculty also participate in various research initiatives. The focus is on clinical and health-services research.

Over the past five years, the Division has published more than 600 articles in journals including the *Lancet*, *Journal of the American Medical Association* and the *BMJ*, among others. These articles are also highly cited: 472 articles are in Web of Science and have received more than three thousand citations. The citation impact factor is 6.39.

Division research funding over the reporting period totalled \$35.204 million. These funds were secured from a large variety of public and privately supported sources, including granting agencies, foundations and other government agencies.

Geriatric Medicine’s clinician scientists hold leadership roles in national and international research initiatives. For example, Dr. Naglie is involved with a national study to

optimize driving safety for seniors. Dr. Rochon is leading work on optimizing safe use of antipsychotic therapy in seniors. Dr. Straus is the principal investigator for a number of projects, including a nationally funded team grant in network meta-analysis, a pan-Canadian initiative entitled the SPOR Evidence Alliance, and a World Health Organization partnership to implement guidelines in low- and middle-income countries. Dr. Alibhai is leading the Canadian Network on Aging and Cancer; this is a unique initiative that has also led to a geriatric oncology fellowship currently in development.

A focus over the past five years has been divisional research projects that involved two or more academic sites. Seven funded projects have been completed or are underway, representing tremendous collegiality across the group. Dr. Wong has led many of these and for her efforts received the 2016 CGS Peter McCracken Physician Innovator Award, honouring her tremendous achievements. A recent example is an initiative (which receives funding from the Postgraduate Innovation Fund) to optimize consultation letters provided by trainees. Dr. Wong is also leading an initiative that focuses on optimizing selection of oncology patients for comprehensive geriatric assessment.

The research conducted by our Division has had an impact on clinical care, education and policy. For example, Dr. Liu and Dr. Straus have led the Mobilization of Vulnerable Elders (MOVE) project, a mobilization program that started in the academic hospitals in Toronto and has now spread to 63 hospitals in Ontario and other provinces and countries. The MOVE portal (www.movescanada.ca) has been accessed by thousands globally and was recently selected by the Canadian Frailty Network as the top innovation in optimizing care for frail older adults. Dr. Wong’s project to evaluate a proactive geriatric trauma consultation service has influenced U.S. guidelines and led to implementation at other hospitals in Canada. Dr. Rochon’s work on adverse medication events in long-term care has influenced current policy on enhancing safety in these institutions. Dr. Naglie is involved with a national consortium of researchers who seek to optimize driving safety for seniors; the consortium’s work informs policy in Ontario and elsewhere in Canada. Dr. Straus leads a national research and training knowledge translation initiative and has completed systematic reviews for policy-makers in Canada and internationally to inform decision making.

FACULTY

The Division of Geriatric Medicine consists of 24 full-time, 12 part-time and 13 adjunct faculty members.

To be eligible for full-time faculty positions, candidates must have completed advanced training. The specific training requirements are unique to each of the six current position descriptions that the DoM appoints its faculty (<http://www.deptmedicine.utoronto.ca/academic-position-descriptions>).

Distribution of full-time faculty according to job description includes four clinician scientists, 14 clinician teachers, two clinicians in quality and innovation, one clinician educator and three clinician administrators. Lastly, the distribution of full-time faculty is spread across sites: Baycrest (5), Sinai Health System (5), St. Michael's Hospital (SMH) (5), Sunnybrook Hlth Sci Ctr (4), University Health Network (UHN) (4) and Women's College Hospital (1).

The Division has relatively good age distribution across its faculty and has recruited several junior faculty in the past five years. However, there are relatively few mid-career faculty who are able to take on leadership positions; as a result, recruiting leaders within the Division is a challenge. Despite advertising for research chairs and clinical/education positions, the Division has been unsuccessful in its attempts to recruit faculty outside Canada. This challenge reflects the ongoing shortage of geriatricians worldwide.

Table 10.1: Academic Position Description of Full-Time Geriatric Medicine Faculty

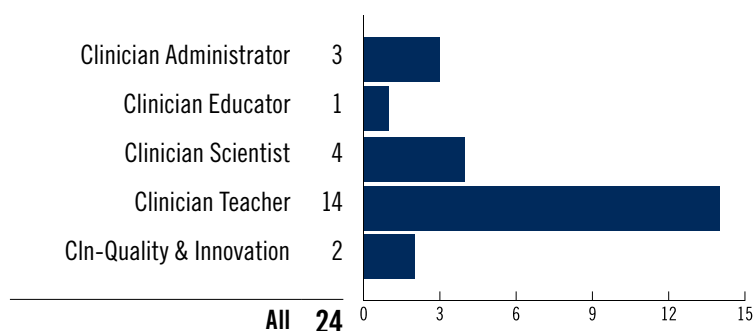


Table 10.2: Affiliation of Full-Time Geriatric Medicine Faculty

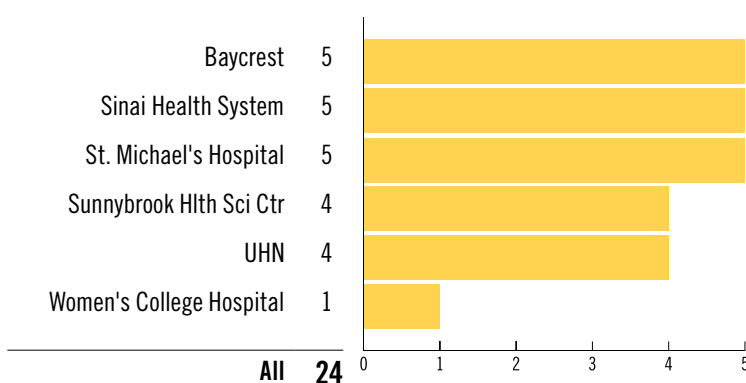
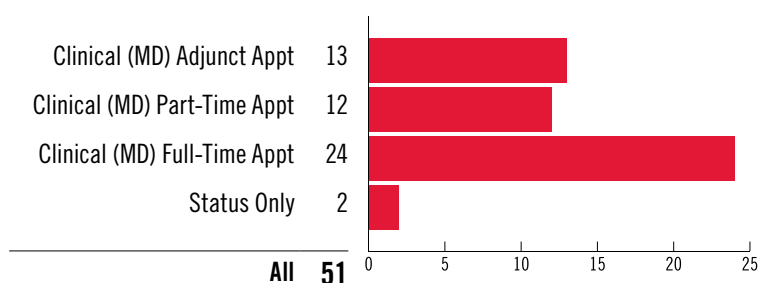


Table 10.3: Primary Appointment of Geriatric Medicine Faculty



Succession planning for the PD and Division Director is needed. This need can provide an opportunity to recruit outside the University. Ideally, both positions would be filled before the next RCPSC review in 2020.

Partnerships

A key partner is the Regional Geriatric Program of Toronto; Dr. Barbara Liu leads as its Executive Director. The program is the clinical arm for specialized geriatric services and supports the interprofessional teams upon which the Division's clinical and teaching environments are based.

The Division also partners with colleagues in the Department of Family and Community Medicine; many Geriatric Medicine faculty members conduct clinics within family health teams and provide opportunities for discussion about complex clinical issues. Additionally, family medicine residents participating in the Care of the Elderly training program attend the academic half days with the geriatric medicine residents. Many faculty are also cross-appointed to General Internal Medicine and contribute to clinical and teaching activities in that division. For example, Dr. Rajin Mehta, Dr. Mireille Norris and Dr. Dan Liberman all attend as staff physicians on the medicine clinical teaching units at their respective hospitals.

Geriatric Medicine is very collaborative and undertakes a cross-hospital initiative each year. Some of these initiatives involve colleagues from other clinical departments such as Oncology, General Surgery/Trauma, Orthopedics and others. The Division also provides regular teaching sessions for residents from other training programs including General Internal Medicine, General Surgery and Orthopedic Surgery.

Nationally, Division members play many roles. For example, Dr. Liu has been on the executive for the CGS for years. Drs. Wong, Gandell and Mehta are on the examination board for the RCPSC for geriatric medicine and Dr. Straus is on the examination board for the RCPSC for internal medicine. Dr. Sinha was named to the national committee working on the dementia strategy and was also involved with the provincial initiative.

There are tremendous opportunities to grow clinical programs at each of the academic-hospital sites, but the availability of geriatricians is rate limiting. There has been substantial interest for geriatricians to engage in shared care with primary care, oncology, trauma, general surgery, hematology, rehabilitation, palliative care and other areas. Additional clinical opportunities can arise in ambulatory, inpatient and telehealth settings. But geriatricians must weigh these opportunities while considering the strain on faculty members and their clinical service.

Advancement and Education

Dr. Straus and Dr. Liu host dinners with recruited junior faculty to support them. We are committed to supporting our trainees as they move onto various career paths; these dinners, which have two or three people, including those working in the community, target that goal. Dr. Straus also meets regularly with new full-time academic faculty members to ensure they are meeting their career goals. She also uses these meetings as opportunities to identify those interested in leadership roles and leadership training.

The Division celebrates faculty members' contributions to teaching and compassionate patient care in geriatric medicine with two annual awards: the Barry J. Goldlist Teacher of the Year Award (which is University-based) and the Esther and Saul Baker Award (which is based at the Sinai Health System/UHN).

The Barry J. Goldlist Teacher of the Year Award is presented to a Division member who has demonstrated excellence in teaching in the postgraduate program by the current year's resident cohort. Recipients for the requested reporting period have included Barry Goldlist, Dov Gandell (twice) and Karen Ng.

The Esther and Saul Baker Award is presented to clinicians and medical trainees. It recognizes their excellent and outstanding contributions to the care of older patients across the Sinai Health System and the UHN hospitals. Up to five recipients are recognized and celebrated at an annual event that is also attended by members of the Baker family.

Geriatric Medicine also launched an award to recognize citizenship among its faculty. The Divisional Citizenship Award recognizes a faculty member (who is not serving a major administrative role such as DDD and PD) who promotes and supports the Division. The award is given to a faculty member who has a sustained record (greater than five years) in serving the Division through varied administrative roles, the supervision of trainees, quality improvement or research at the divisional level that promotes collaboration among the geriatric medicine faculty and trainees across the University-affiliated hospitals and external organizations. The first recipient was Dr. Marisa Zorzitto who was recognized for her impact and terrific legacy on trainees and faculty across the Division.



QUALITY AND INNOVATION

Quality improvement is a growing priority for the Division. Subspecialty trainees have participated in the quality improvement (QI) curriculum for the past five years, and several faculty members have completed certificate training in quality improvement. Trainees have been involved with QI initiatives such as decreasing use of proton-pump inhibitors (PPIs), reducing clinic no-show rates, enhancing medication reconciliation for clinic patients and improving vaccines among patients admitted to the SMH Acute Care of the Elderly (ACE) unit.

Among the Division's QI initiatives are

- MOVE ON, a program for mobilizing older adults now in effect in 63 Ontario hospitals as well as hospitals across Canada and the world;
- the "Senior-Friendly Hospital Project," which has been put into effect in more than 90 hospitals in Ontario;
- a trauma consultation initiative, which has been implemented in the two trauma hospitals in Toronto and two other hospitals in Canada and is part of U.S. guidelines;

- improving consultation letter writing by geriatric medicine residents; and
- optimizing Standardization Assessment of a Clinical Encounter Report (STACER) assessments for residents.

The goals of the Division are to promote a safe learning culture for trainees and continue to create highly qualified geriatricians. Geriatric Medicine is committed to identifying further sources of funding for additional residency training spots as well as for graduate training for those interested in academic careers. There is a particular need to create capacity in education to help meet needs associated with undergraduate and postgraduate curriculums. In particular, U of T has opportunities to lead in the advancement of CBD scholarship. Divisional goals also include advancing research to optimize quality of care for older adults and having an impact both nationally and internationally in this area.

MENTORSHIP, EQUITY & DIVERSITY

Dr. Paula Rochon is the divisional mentorship facilitator; she attends the DoM retreats to provide updates and provides mentorship support to faculty. The Division has hosted one mentorship workshop for faculty over the past five years and provides mentorship updates during



an annual December retreat. Dr. Rochon liaises with Dr. Straus on any issues of concern. Dr. Straus is also available to support faculty members and trainees who have questions about mentorship. Each year she also hosts two sessions for trainees about career development. Geriatric medicine prioritizes the provision of mentorship to faculty in the early- to mid-career stages. This focus is designed to help individuals develop their academic interests.

All committees (Executive, RPC, search committees) are diverse and equitable and adhere to DoM's search committee policies. As Vice Chair, Mentorship, Equity and Diversity, Dr. Straus developed the DoM's search guides and implemented them in the Division. Trainees also represent a diverse pool.

Funding and Resources

Divisional funding includes support from the Mary Trimmer Chair (\$100 thousand per year) and the University Divisional Academic Fund (\$17,088). The

Division has decided against receiving funds from industry to avoid competing interests. In 2013, a fund for trainee activities was established, to which Division members contribute. In 2016, a donation was received to establish funding for geriatric medicine trainees who are interested in graduate training. This money will pay for their tuition and part of their salaries and became available in 2017. The Trimmer Chair provides funding for subspecialty residents who are completing graduate training, divisional research projects and stipends for

Division members, including the undergraduate education lead.

The DoM provides salary support for the Program Coordinator. Geriatric Medicine has pooled the support for both the program and Division salary support to optimize this position. The Program Coordinator spends 40 per cent of the time coordinating activities such as Journal Club, boot camp and trainee interviews. She is the first contact for potential trainees, and she coordinates all the administrative components for both the program and the Division, as well as the RPC, EC and Resident Call Subcommittee meetings and the divisional newsletter and website.

PLANNING AHEAD

While there has been substantial growth in the Division over the past five years, a tremendous need remains for geriatricians to meet clinical and educational demands. Enhanced collaboration across the Division has been achieved over the past five years on multi-site education and research projects.

Each year, the Division undertakes at least one scholarly project that encompasses two or more of the academic sites. These projects have been successfully funded and published. Indeed, the model for building on a local project (e.g., the early mobilization of older adults) that is used to obtain funding for a provincial and then national project has been promoted and presented at symposia hosted at the DoM, Health Quality Ontario and the Council of Academic Hospitals of Ontario, among others.

HEMATOLOGY



OVERVIEW

The creation of a combined Division of Adult and Pediatric Hematology is a bold and innovative concept that both recognizes and responds to the fast-changing needs and advancements in the care of patients with inherited and chronic hematological disorders—malignant and benign. The Division brings together a rich and talented pool of clinician teachers, clinician educators and clinician scientists. It creates exciting opportunities to build the academic enterprise, stimulating interest in the Division’s training programs, creating new partnerships, increasing collaborations and investing in quality improvement and patient safety (QIPS) to tackle new and emerging challenges facing patients with hematological disorders across the entire age spectrum.

The extraordinary breadth of talent in Toronto and the formidable size of clinical programs, unique in Canada, demonstrate tremendous capacity in the Division across virtually all aspects of hematology. For example, its members manage among the largest programs in leukemia and hematopoietic cell transplantation in North America. The Division operates one of the largest programs in hemoglobinopathies in North America, making notable academic contributions. Practitioners of hemostasis-thrombosis continue to make an impact internationally in clinical trials. The training program, under the direction of Dr. Martina Trinkaus (and past directors Drs. Chris Chen and Eugenia Piliotis), is flourishing and continues to attract the best residents in the country. Toronto trainees have had a remarkable impact at the American Society of Hematology (ASH), especially in leadership roles on the ASH Trainee Council and as participants in the ASH Clinical Research Training Institute.

In alignment with the strategic direction of the Department of Medicine, the Division seeks to reinforce commitment and contribution to cutting-edge research in hematology at the basic, translational and clinical levels. The Division works to develop its strong training program to meet changing needs and align with innovations in the practice of hematology. The Division continues to develop a focus on quality improvement and advance new models of patient-centred care for patients with hematological disorders. This goal is achieved by supporting, sustaining and valuing Hematology faculty and ensuring that they receive appropriate ongoing mentorship and advice about career development.



The combined Division of Adult and Pediatric Hematology has extraordinary opportunities to discover, apply and communicate new knowledge in the field of hematology internationally, while actively training the next generation of leaders in academic hematology. Specifically, the Division is now better able to look at hematological disorders from birth to end of life; this ability enables Hematology faculty to break the barriers of contrition and create new models of care that deliver quality care to our patients.

Organizational Structure

A strong executive team leads this exciting transformation. Their dedication and commitment have generated new energy that is swiftly integrating adult hematology with pediatric hematology.

Executive Committee

Chaired by the Division Director, Dr. Isaac Odame, the Executive Committee consists of the chairs of the committees on Research, Quality, Residency and Fellowship programs. It includes the heads of Hematology at the Toronto teaching hospitals—University Health Network (UHN), St. Michael's Hospital (SMH), Sunnybrook and the Hospital for Sick Children—and two chief residents.

Residency Program Committee

The Residency Program Committee, led by the Division Director, consists of key faculty members who focus on education and a broad representation of PGY4 and PGY5 hematology residents. All the major training sites are represented on the Committee to help foster an engaging learning environment at all sites.

EDUCATION

The Division is training the next generation of academic hematologists who will be world leaders in research, education and teaching. Hematology residents are encouraged and expected to conduct scholarly activity during their training and to present this work in international forums. The mandate of the program is to provide trainees with outstanding clinical and laboratory exposure and present them with cutting-edge research opportunities in hematology. The Division provides exposure to world-class ambulatory and inpatient clinical care and state-of-the-art laboratory and diagnostic techniques, but more can be done to expose residents to translational research.

The program offers a one-month research methodology course and actively encourages residents to engage in research. The Division of Hematology tailors training according to resident needs and future patient needs. It is the only school in Canada to offer an international rotation in Ethiopia.

Residents

The Department of Medicine (DoM) Hematology Residency Training Program is the largest in Canada with five PGY5, three PGY4 and one PGY4.5 (incoming are three PGY3; one PGY4) residents. It has a robust teaching faculty (83 members) spread across six fully affiliated teaching hospital sites and 11 community centres. With the largest malignant-hematology site in Canada, the largest red blood cell-disorders site in Canada and the largest hemophiliac population in Canada, the program has tremendous strength and provides excellent opportunity for resident training.

A new quality improvement (QI) curriculum was added in 2013, and the academic half day has continued to grow. Workshops in ethics and communications

commenced in 2014, and the program now offers journal clubs, laboratory-based teaching and generous academic financial support including access to ASH conferences and educational resources. Specific improvements in mentorship and career planning for residents have focused on greater coordination and flexibility of resident elective experiences.

Training programs run three years: the third year is dedicated to laboratory or clinical research or to more training in education. The residency program has increased exposure to research and encourages residents to explore formal research training. However, a dominating theme for residents is the lack of employment opportunities in Toronto. The issue both intimidates them and influences their career choices. The residency program continues to explore solutions to try to help them in meaningful ways.

Among the Division's priorities is mentorship. Residents would benefit from mentorship at the PGY1, 2 and 3 levels. Providing it would, in turn, help the Division identify and influence those truly interested in research and academic careers.

Competency-Based Education

A key focus of the hematology training program over the next 18 to 24 months will be exploring the development of milestones and competencies in keeping with the Royal College of Physicians and Surgeons of Canada's thrust toward competency-based medicine. The Division is actively engaged in preparatory discussions with the Faculty of Medicine Office of Postgraduate Medical Education (PGME). A key goal is to determine how the program can improve the competency of trainees and enable them to function autonomously at the end of the 24-month training period. Changes to the longitudinal clinic structure are being implemented; they will affect some rotations and increase resident exposure to ward attending. Revisions to the goals and objectives of the training program were implemented in July 2014. Program evaluations were also revised to reflect the new objectives of the training program and facilitate constructive feedback provided to

residents to improve their performance and fulfill their academic potential.

Rotation Evaluation and Virtual Support Tool

Historically, end-of-rotation evaluations have informed performance, but no systematic assessment existed. A brief survey with questions on program structure, resources, and identifiable strengths and weaknesses was recently released and followed up with one-on-one meetings with rotation coordinators. A surprising key theme was inconsistent levels of resources. In many instances, it was not clear where the residents would go on day one of a rotation or whether anyone would review the learning objectives with them. This process is now being adopted as an annual assessment tool. Key objectives have been developed and a "traffic light" measurement system has been implemented to determine whether they are being met, do not start or have been successfully completed.

Following the lead of Undergraduate Medical Education (UGME) and Core Internal Medicine, we have created a virtual learning environment to support hematology programs via the U of T-supported student portal, Blackboard/Quercus. A repository is now available, and each rotation has its own section where residents and teachers can refer to learning objectives, timetable information (including where to go on the first day and whom to report to) and recommended reading lists (with library links and learning videos). The portal is used to promote journal clubs, fellowship opportunities and other information relevant to the program.



Fellows

The DoM offers more than 100 fellowships across our affiliated hospital sites. Fourteen of those fellowships are offered through the Division of Hematology (see appendix).

The Division has made meaningful attempts to integrate Hematology fellows into the Division and include them in all events. Opportunities are being explored to enrich fellowship training through city-wide disease-specific opportunities, but funding remains a key issue. Over the last four years, Hematology has made strides in developing the Alexandria Yeo Fellowship in Hemostasis-Thrombosis through funds accruing from the endowed chair held by the Division Director. With support from the DoM Development Office, Hematology has secured funding to create fellowships in hemoglobinopathies and maternal-fetal hematology. The Division will soon launch a fellowship program in cell therapy and regenerative medicine. Through these steps, Hematology aims to create opportunities to train the next generation of leaders in academic hematology.

RESEARCH

Research programs in Hematology include fundamental discovery, translational research, and clinical trials run by world-class research teams in both benign and malignant hematology. Landmark lab-based discoveries have been made at U of T relating to mechanisms of hematopoiesis, the biology of malignant and normal stem cells, platelet function, and mechanisms of drug sensitivity and resistance. In addition, practice-changing clinical trials have been led by Hematology clinician investigators.

Hospital research institutes have historically held resources and driven the research agenda within our environment. The Division has addressed this challenge by aligning hematology research questions within the framework of the sites' specific areas of priority. This approach has helped to distinguish the Division and increase its funding success.

The Division has a prodigious and impactful track record of publications; they have a significant transformational effect on the field. The Armand Keating Award, named in honour of the previous Division Director, was created to recognize a Hematology faculty member's publication



adjudged to have had the most impact every year. (See appendix for the four most recent recipients.) In addition, top abstracts from Hematology faculty and trainees in the fields of basic science, clinical, quality improvement and education are recognized. A web-based tool has been introduced to provide a weekly email of peer-reviewed publications by Hematology faculty. It helps increase the awareness of ongoing research in the Division and promotes collaboration across the hospital sites.

The breadth of this research excellence is reflected in the Division's publication outputs and funding success. The Division of Hematology (not including publications from Department of Pediatrics faculty) published 1,442 publications, generating 13,643 citations and resulting in a 9.46 citation impact. The Division reported research funding for the reporting period totaling \$78.018 million, with a steady increase year over year in the total number and value of grants (\$20.2 million in 2016-17). Funds were secured from a wide variety of sources including peer-reviewed granting agencies, industrial partners and hospital foundations.

To encourage and support research initiatives in benign hematology, the Alexandria Yeo Chair Grants Competition was established four years ago. This grant provides seed funds every year to pilot two to three ideas related to benign hematology. An internal grant-review club led by Dr. Aaron Schimmer provides feedback on the grant applications using an internal peer-reviewed system.

The future of hematology research at U of T is continuously evolving; collegiality and collaboration are emphasized across various hospital sites as well as adult and pediatric hematology. In the future,

increased emphasis must be placed on the meaningful integration of discoveries of basic science in routine clinical care to improve outcomes. Dedicated focus and research efforts will be needed on the applications and use of big data. Several investigators from within Hematology are using rich, administrative datasets from the Institute for Clinical Evaluative Sciences (ICES), which has the potential to reveal new insights to further new models of care and affect health-policy decisions.

Through the establishment of fellowship programs in thrombosis, maternal-fetal hematology, cell therapy and regenerative medicine, the Division is nurturing collaborations and partnerships with other divisions in the Departments of Medicine and Surgery and the Faculty of Applied Science and Engineering.

FACULTY

The Division of Hematology consists of 52 full-time, seven part-time and 15 adjunct faculty members. An additional nine members have status-only or emeritus appointments with the Division.



Table 11.1: Academic Position Description of Full-Time Hematology Faculty

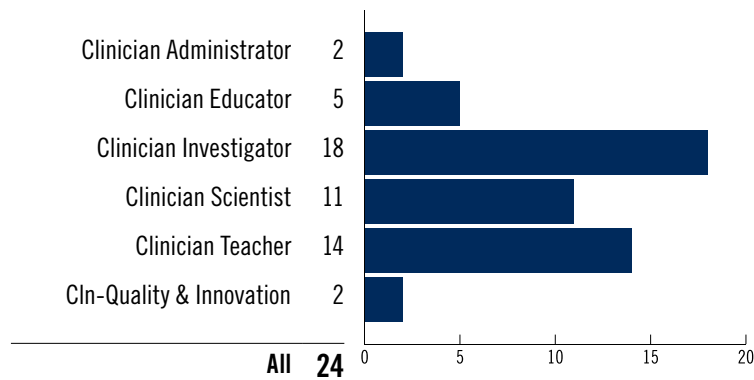


Table 11.2: Affiliation of Full-Time Hematology Faculty

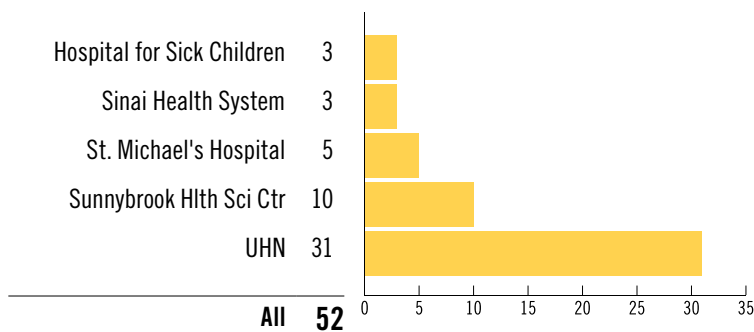
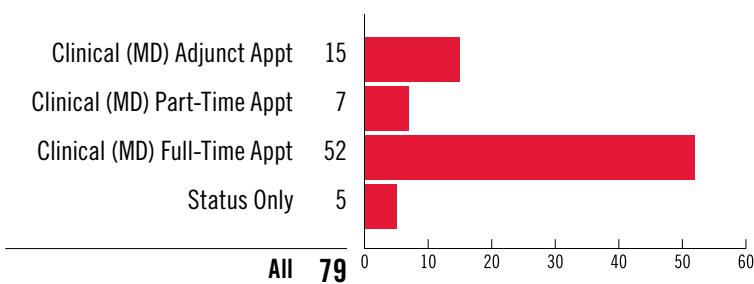


Table 11.3: Primary Appointment of Hematology Faculty



Distribution of full-time Division of Hematology faculty according to job description includes 11 clinician scientists, 14 clinician teachers, 18 clinician investigators, five clinician educators, two clinicians in quality and innovation, and two clinician administrators.

Lastly, the distribution of faculty varies across sites with the highest distributions at UHN (31), Sunnybrook Health Sciences Centre (9) and SMH (5).

For faculty members, the Division offers support, guidance and mentorship in establishing and



maintaining an active research program. Hematology aims to foster multidisciplinary research that will advance the field of hematology.

In the 2017 Faculty Survey, 84.6 per cent of Hematology respondents stated they were satisfied with their careers. The DoM average was 86.3 per cent. In response to questions addressing satisfaction with work in their hospitals and research institutes, 76.9 per cent of Hematology faculty were satisfied. The DoM average was 60.8 per cent.

While 69.2 per cent of Hematology faculty had a formal mentor (DoM average: 45.9 per cent), only 58.3 per cent of Hematology faculty were satisfied with their mentors (DoM average: 67.1 per cent). In the survey, 46.2 per cent of Hematology respondents reported a feeling of burnout. The DoM average was 25.6 per cent. The Division plans to address burnout and faculty wellness by expanding its mentorship program to both faculty and trainees, under the direction of Dr. Ian Quirt as mentorship facilitator. To meet teaching demands while awaiting the launch of competency-based education, the Division will also need to recruit more clinician teachers while strengthening capacity and resources to support clinician scientists.

Strategic Planning and Division Retreats

The Division has held two strategic-planning retreats focused on defining strategy for aligning divisional goals with those of the DoM. The first, held in 2014, laid out a three-year plan that was revisited in 2017 in accordance with the revised DoM strategic plan. Invitations were sent to all Hematology faculty, both full- and part-time, as well as the Chair, Vice Chairs and leading administrative staff in the DoM.

Annual Academic Day

Formerly named Research Day, the annual Academic Day showcases academic and scholarly work across the Division. Participants include adult hematology, pediatric hematology and hemato-pathology faculty, residents and fellows, as well as medical students who have undertaken hematology-related research through the Comprehensive Research Experience for Medical Students program.

ADVANCEMENT & EDUCATION

Awards

In addition to the Armand Keating Award, the Division recognizes faculty with awards for the best and runner-up abstracts in education, quality and research:

- The Jerry Scott Award recognizes the most outstanding teacher in the academic year (nominated by trainees).
- The DoM Pantalony Award recognizes an adult, pediatric or hematopathology subspecialty trainee who has exemplified excellence in the realms of clinical care, research, education and support of fellow trainees.

Newsletter

A quarterly newsletter shares Hematology Division news with faculty across Toronto teaching hospitals and community hospitals. Messages from the Division Director and Program Director as well as news of awards

and recognition of faculty and trainees are shared. The goal is to keep all faculty and trainees engaged in advancing the mission of the Division.

City Wide Grand Rounds

Each hospital site has regular hematology rounds. The goal of City Wide Grand Rounds is not to replicate what happens in each site, but to stimulate cross-hospital participation in Division-wide academic discourse. These are held quarterly and feature international and local speakers at the frontiers of their fields. The visiting professors from across Canada, the United States and Europe interact with our trainees during Academic Half Days, deliver rounds on engaging topics and allow time for cross-divisional social interaction in attractive external venues.

Other Activities

Other divisional activities include the following:

- community-wide journal club;
- workshops covering topics such as diagnostic tools and/or techniques and community engagement;
- fireside chats with residents and practising hematologists, including those who address burnout rates, career choices, anxieties about jobs (such as high demand for non-malignant hematology); and
- hematology retreat. This accredited training weekend provides sought-after continuing medical education for hematology trainees across Canada.

QUALITY & INNOVATION/ ADVOCACY

Hematology is deeply invested in QI and patient care. To support the University of Toronto Centre for Patient Safety, formal training programs have been introduced for faculty and trainees. Importantly, a new faculty job description was created in 2014 to recognize and align academic contributions to this new field with the University promotions process. While QIPS is a fairly new focus for Hematology, encouraging advances are being made, especially in education through the Co-Learning Curriculum.

Through a working group, the Division has created informal networks with strategic investment to connect with members of the Division and trainees known to have interest in this area. Work being done in the community faces a lack of exposure in the Division and, therefore, is often unrecognized. Promoting the scholarship of these contributors has recognized their work and encouraged interest and participation in broader city-wide projects.

Some quality initiatives include addressing consult wait times for hematologists, aligning pediatric and adult care/transition of care, and addressing the social needs of residents and trainees.

MENTORSHIP, EQUITY & DIVERSITY

The Division is working to strengthen and formalize its mentorship program. In 2017, Dr. Ian Quirt, Professor Emeritus and an accomplished mentor, was appointed the Mentorship Facilitator for the Division to oversee and ensure the mentorship of faculty and trainees. Specifically, the goal is to better support prospective promotions, career development and overall career satisfaction.

The Division is also conscious of gender and diversity balance within the Division. Beginning with entry into the UGME program, the Division hopes to recruit more people from diverse backgrounds into medical school.



INFECTIOUS DISEASES





OVERVIEW

The Division of Infectious Diseases (ID) in the Department of Medicine (DoM) comprises 32 full-time and 26 part-time faculty members, many of whom are internationally renowned researchers and educators, all of whom serve a population of more than six million people in the Greater Toronto Area. As our central mission, we seek, identify and respond to infectious disease issues of local, national and international relevance through a thriving academic enterprise of teaching, scholarship, health research and clinical-care provision.

The mandates carried forward by ID faculty are broader than those of many other DoM divisions, and our work can be summarized as follows:

- We provide clinical infectious disease consultation services for both inpatients and outpatients, under the care of our colleagues in Internal Medicine, Surgery, Obstetrics and Gynaecology (OB/GYN) and many other medical specialities.
- We offer specialized consultation services
 - » for post-travel and tropical medicine patients, through the tropical disease unit,
 - » for immunocompromised and transplant infectious disease inpatients and outpatients through dedicated clinical teams, and
 - » for people living with or at risk for HIV, through specialized HIV outpatient care and prevention clinics at each of the three downtown academic hospitals, as well as a specialized inpatient HIV unit at St. Michael's Hospital (SMH).
- Our clinical division fills key local and provincial medical microbiology roles, including Director of the Parasitology Laboratory at Public Health Ontario (Dr. Andrea Boggild) and Chief Medical Microbiologist at Public Health Ontario (Dr. Vanessa Allen).
- World-leading translational and basic research is performed in several areas, including transplant and immunocompromised infectious diseases, global health and emerging infectious threats, and HIV; this research involves a network of collaborative sites across Canada and in Africa, Asia, South America and Europe.
- Our Division proudly includes locally and nationally recognized leaders in medical education and quality, at both the undergraduate and graduate level.

- Infection Prevention and Control (IPAC) teams at each of the downtown academic sites enhance the safety and clinical outcomes of patients across the spectrum of clinical services, including outbreak planning and management, and perform both active and passive infectious disease surveillance.
- Antimicrobial stewardship teams at each of the University academic sites provide guidelines and monitoring for appropriate use of antibiotics to enhance patient outcomes, reduce the spread of antibiotic-resistant organisms and rationalize health-care costs.

Both our research and our training programs have a true global reach: more than 300 publications are published in high-impact peer-reviewed journals each year, and six subspecialty residents and four fellows are enrolled in our programs at any given time. The Division is positioned to take full advantage of our changing environment and to be nimble when opportunities arise. Increasing faculty ties to the Dalla Lana School of Public Health offer great promise, particularly for our trainees. The relocation of the Public Health Ontario (PHO) laboratory adjacent to the Toronto General Hospital site, under the leadership of one of our former trainees, also provides unique opportunities for research and for public health.

Divisional Structure and Planning

The Division of Infectious Diseases met between 2014 and 2015 as part of an in-depth strategic-planning process to inform our next steps. (See appendix.) This strategic plan has informed recruitment and fundraising strategies, enhanced city-wide interactions and clarified opportunities that align with individual hospital priorities. Our specific goals were mapped into five core strategic priorities of the Infectious Diseases Division:

- education and scholarship—we value teaching and learning, teachers and learners;
- integration and translation of innovative research—we value a culture of discovery, including the development and sharing of new knowledge;
- improved patient outcomes and best practices in patient care and delivery—we value excellence and quality in the care and services we provide and advocate for partnership and collaboration;
- partnership and collaboration—we value working within and beyond our own community to achieve our mission and vision; and

- social responsibility and global accountability as academic responsibilities—we value integrity, commitment and the just use of our resources.

Executive Committee

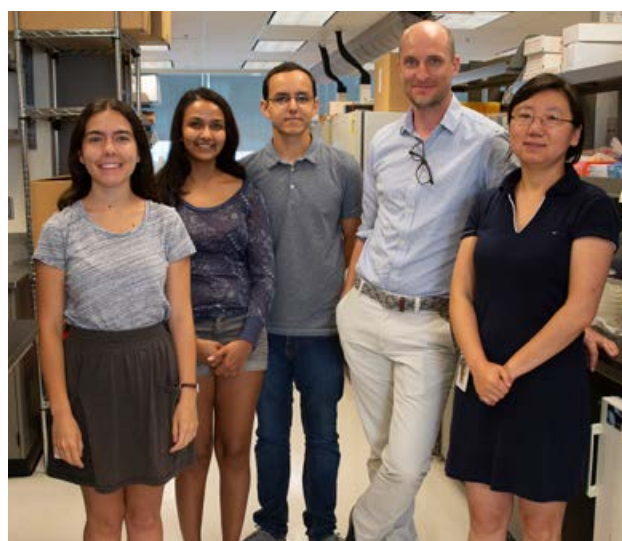
The ID Executive Committee comprises the hospital division heads Dr. Rupert Kaul [Departmental Division Director (DDD) and division head, University Health Network (UHN/Sinai)], Dr. Kevin Gough (SMH), Dr. Nick Daneman [Sunnybrook Health Sciences Centre (SHSC)], Dr. Mona Loutfy (Women's College Hospital), as well as Dr. Wayne Gold, our residency training Program Director. This Committee guides almost 40 full-time faculty in the vibrant and fast-moving subspecialty of infectious diseases.

Residency Training Program Committee

Training the next generation of infectious disease specialists is a priority for all faculty members. Our ID Residency Training Program Committee (RTPC) is headed by educator Dr. Wayne Gold and has representatives from the fields of ID education, research, community medicine, infection control and antibiotic stewardship.

Mentorship Facilitator

Dr. Sharon Walmsley, recent recipient of both the Order of Canada and a mentorship award from the Association of Medical Microbiology and Infectious Disease Canada, serves as our faculty divisional mentorship facilitator. This key new role ensures meaningful mentorship for our faculty, particularly those who are newly appointed and most in need of advice and guidance.





EDUCATION

Undergraduate Education

Several members of the ID Division faculty, particularly Dr. Susan Poutanen, ensure that excellent teaching in medical microbiology and antibiotic use are delivered through the undergraduate medical curriculum. Dr. Poutanen oversaw the development and continues to lead the delivery of the two-week curriculum on microbiology and infectious diseases that is taught to first-year medical students during weeks 12/13 of the Foundations Curriculum. Content includes an introduction to microbiology, common infectious diseases syndromes, antimicrobial stewardship, infection control and public health.

Subspecialty Graduate Trainees (Infectious Diseases)

The Division has proactively ensured a balanced clinical and educational experience among our three primary academic sites (UHN/Sinai, SMH and SHSC) as well as access to community-based hospital and office-based sites and programs through our part-time faculty.

Under the leadership of Dr. Wayne Gold, the RTPC continuously assesses community and academic ID job opportunities to determine the optimal subspecialty ID trainee allotment, and the ID residency training program was accredited in 2016. Having successfully implemented a formal combined curriculum for IPAC and antibiotic stewardship over the past year, the RTPC over the next 12 to 18 months will focus on the development of

milestones and competencies in keeping with the Royal College of Physicians and Surgeons of Canada (RCPC) thrust toward competency-based medicine.

The great esteem in which Dr. Gold is held by our specialty trainees is attested to by his receipt of the 2018 Canadian Foundation for Infectious Diseases Dr. John M. Embil Mentorship Award in Infectious Diseases and his recent nomination to the RCPC for Program Director of the Year (2018).

However, while tremendous advances have been made in postgraduate education, sustainable funding platforms for our ID subspecialty trainees to complete further training in education and/or research have not yet been established. Given their growing interest in postgraduate training (see below), this must be a key priority going forward.

National Infectious Disease Residents Retreat

A highlight of the year is the Canada-wide Infectious Disease Residents Retreat, organized every summer by the current cadre of subspecialty ID trainees. The retreat agenda is set independently by the trainees based on current ID clinical trends, and clinical speakers are invited from all over the country. This has been tremendously successful: the average attendance is around 60 trainees (including approximately 80 per cent of all ID/microbiology trainees across Canada).

Subspecialty Graduate Trainees (General Internal Medicine and Others)

Hospital-based rotations in clinical Infectious Disease are consistently some of the highest rated rotations for internal medicine residents around the city. We are proud of our excellent educational opportunities and teachers, who frequently win the top University of Toronto teaching awards: these include the 2018 Wightman Berris Academy John W. Bradley Award for Educational Administration (Dr. Andrea Page), the 2016 Allan Knight Lifetime Achievement in Teaching Award (Dr. Anita Rachlis), and many others. Balancing the increasing demands of patient care with didactic sessions and ward rounds is an ongoing challenge, particularly given the reduced number of rotating trainees and the time requirements of the competency-based curriculum, but to date our Division has successfully maintained excellence in both spheres of patient care and teaching.



RESEARCH

Infectious Diseases is a very research-intensive division: 21 of 32 full-time faculty (66 per cent) are appointed as clinician scientists or clinician investigators. Division members collaborate with a broad range of stakeholders and have a strong focus on translational research. Interests span the spectrum from population-based infectious disease epidemiology studies, which assess the impact of antibiotic use and antimicrobial resistance through clinical research, developing novel therapies and diagnostics, to fundamental research that understands pathogenesis at a molecular level.

Global health is an important aspect of research for many of our faculty who run internationally recognized programs around the world. They study emerging and neglected pathogens such as malaria, leishmaniasis, HIV, Ebola, MERS and the Zika virus. Research programs include the following:

- translational studies of the impact of maternal infections on neonatal brain development and childhood neurocognitive function (Kain);
- a cohort of Ebola infection survivors in Sierra Leone to assess long-term complications of this devastating infection (Chan, Mishra);
- clinical trials of novel treatments for malaria in Uganda and Malawi (Kain);

- clinical trials of novel HIV prevention methodologies in Uganda and Kenya (Kaul);
- modelling the epidemic spread of emerging infections such as highly antibiotic-resistant bacteria, Ebola, Zika and plague (Bogoch, Khan);
- programmatic interventions to reduce HIV risk among vulnerable communities in Ontario, Kenya, India and Ukraine (Tan, Mishra);
- Canada-wide cohorts of women living with HIV (Loutfy) and people aging with HIV (Walmsley);
- an international, multicentre trial to assess optimal duration of antimicrobial therapy for severe bloodstream infections (Daneman);
- novel diagnostics and interventions for leishmaniasis in Peru (Boggild); and
- big data platforms to monitor the emergence of antibiotic resistance (Fisman, Daneman, MacFadden).

The Division averaged approximately 120 grants each year of the review period with a total value of \$52.112 million. These grants were secured primarily through peer-reviewed granting and hospital foundations, with some additional support through industry partnerships.

Over the five-year review period, the Division produced more than 1,200 papers with more than 42 thousand citations. Three of the DoM-supported research networks have an infectious-disease focus, including the HIV Research Network, the Toronto Antimicrobial

Resistance Research Network (TARRN) and the Emerging Infectious Disease Research Network. In addition, we have initiated a vitally important seed-grant program for faculty within their first five years of appointment; these Early ID Researcher Awards are adjudicated by our ID Executive and awarded annually in amounts between \$10 thousand and \$20 thousand.

Hands-on exposure to research is part of the training experience for all infectious diseases subspecialty trainees, and the tremendous range of faculty expertise, resources and topics around the city provide excellent opportunities for virtually all our trainees. Over the past few years, our trainees have completed research projects in Canada, Kenya, India and Peru. These experiences have led several to consider research careers; five ID trainees are enrolled in postgraduate studies at U of T, Oxford, Harvard and the University of California, San Francisco. Four of them are formally supported through the U of T DoM Clinician Scientist Training Program.

This research and creative professional activity has had substantial impact at the national and international level. For instance, the antimicrobial stewardship resources established by Dr. Andrew Morris—including YouTube videos, webinars for Accreditation Canada and the stewardship website www.antimicrobialstewardship.com—are among the highest accessed stewardship resources internationally. Dr. Kamran Khan established



BlueDot, a Certified B Corporation for social benefit, to translate and implement his research platform, which tracks emerging infectious disease epidemics using big data and web and mobile technology. Using seed investment from Medical and Related Sciences (MaRS) Innovation and Sir Li Ka-Shing in Hong Kong, BlueDot has grown to more than 60 employees and has national and international clients such as the Public Health Agency of Canada, the U.S. Centers for Disease Control and Prevention and the White House. In early 2018, BlueDot received the Canadian Innovation Award for best company in the category of health. Drs. Khan and Bogoch have used these tools to generate high-impact work on Ebola, Zika, plague and other emerging infections, with several of these publications recently appearing in the *Lancet*.

Recent collaborations have accelerated research within the ID Division, particularly the relocation of the PHO laboratory to the MaRS building and the appointment of faculty member Dr. Vanessa Allen as laboratory director. The potential for U of T/PHO collaborations as a framework for research and policy is tremendous, and our most recent faculty recruit, Dr. Jennie Johnstone at Mount Sinai Hospital, is appointed 50 per cent within PHO and will carry forward a combined research agenda. Further faculty recruitment to push forward U of T/PHO collaborative work is a divisional priority in the short term. A key focus is the testing of more than five million samples per year at PHO, and we are working with the Ontario Laboratory Information System to garner access.

FACULTY

Recognizing our faculty achievements is very important. At present, the DDD sends a quasi-monthly email blast to ID faculty around the city, updating them on recent accomplishments and upcoming events. In addition, we have just initiated annual Division of Infectious Diseases awards for teaching, research and mentorship; they are independent of existing awards at the hospital and University level.

Division-wide events that bring people together include weekly city-wide infectious disease rounds, a summer “meet and greet” when faculty are introduced to new trainees and have three-minute opportunities to showcase their research interests, and annual summer

Table 12.1: Academic Position Description of Full-Time Infectious Diseases Faculty

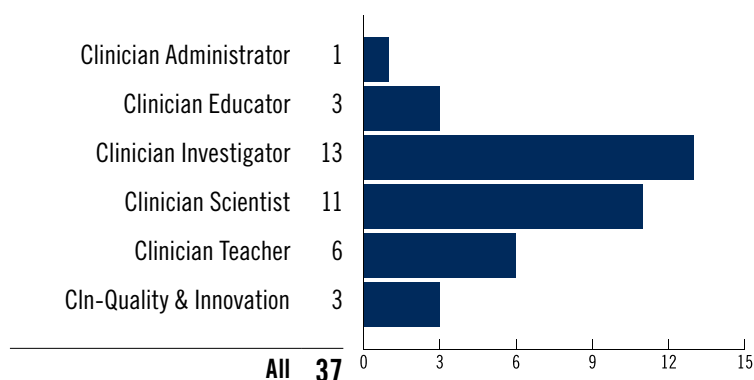


Table 12.2: Affiliation of Full-Time Infectious Diseases Faculty

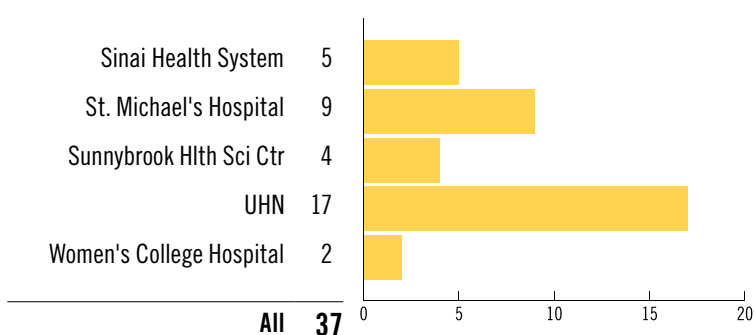
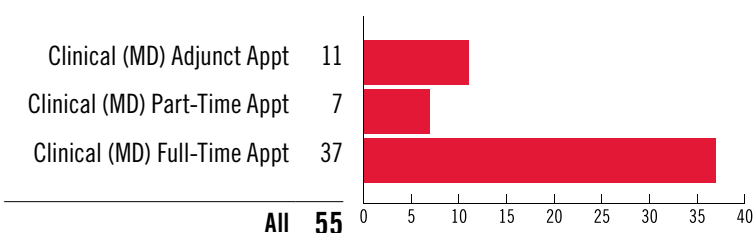


Table 12.3: Primary Appointment of Infectious Diseases Faculty



and winter social get-togethers. In addition, the new DoM research networks have spun off three ID collaborative groups—in the fields of HIV, antimicrobial resistance and emerging infections—that have really helped to catalyze city-wide interaction both within our Division and with other departments and institutions.

A high point of the year is the annual Infectious Disease and Microbiology Research Day, which is co-organized by Dr. Kaul (ID Division Director) and Professor Scott Gray-Owen from the Division of Molecular Genetics. This two-day event showcases

- newly recruited infectious disease investigators from around the city,
- one or two external keynote speakers, and
- poster presentations from primary investigators (PIs) and trainees across many University departments, including Medicine, Pharmacy, Public Health, Molecular Genetics, Laboratory Medicine and Pathobiology, Biochemistry, Structural Biology and other organizations including PHO.

The first day is a “trainee day” that features oral presentations from more than 20 trainees and spins off many collaborations.

This year our Research Day was attended by more than 100 trainees and faculty. This event is particularly important for us because it serves as one of the few truly city-wide opportunities for infectious disease researchers to network since the dissolution almost 20 years ago of the U of T Department of Microbiology.





MENTORSHIP

Faculty collegiality, wellness and quality of life are major focuses for the ID Division. Supporting our early faculty is particularly important, and it is critical that they be well prepared for continuing academic appointment. Both formal and informal efforts have been made to support and nurture faculty and to recognize the important role of mentorship—both to support new faculty and ensure that the experience of more senior faculty can be most efficiently shared with the rest of the Division.

We already have a formal system of assigning appropriate mentors to all new faculty; Dr. Sharon Walmsley, who was appointed the Divisional Mentorship Lead in June 2018, will assess the success of this program and ensure that roles and responsibilities are articulated. In addition, she will formally assess the mentorship needs and wants of more senior faculty members. The great success of our Division mentorship is highlighted by the national mentorship awards that have been received by Drs. McGeer, Walmsley and Gold.

LOOKING FORWARD

A key opportunity that we are just beginning to leverage is our new-found proximity to the PHO laboratory in the MaRS building. Because of the recent recruitment (August 2018 start date) of Dr. Jennie Johnstone to the infection prevention team at Mt. Sinai Hospital and her 50 per cent co-commitment to PHO, we will be able to maximize the Ontario-wide research opportunities afforded by this organization. Furthermore, we aim to recruit future clinician scientists who can make the most of the big data opportunities afforded by PHO, produce extremely powerful academic outputs and provide important policy and public-health benefits to PHO.

Another important opportunity is the UHN Tropical Disease Unit, which is led by clinician scientist Dr. Andrea Boggild. Its infrastructure is ideal to expand our research (particularly into emerging infectious threats) and reach. Furthermore, the new TARRN, headed by Dr. Nick Daneman and ID fellow Dr. Derek MacFadden, affords the opportunity to lead at both national and international levels in this field.



Infectious disease is a vibrant and important clinical field, and each one of our faculty wakes up every day excited to work in the best of all possible fields. However, our Division faces challenges in both the short and medium term; some of these are unique, while others are shared with our colleagues in other divisions.

Our first, and perhaps foremost, shared challenge is the threat to faculty well-being and satisfaction; we've seen reductions in house-staff support and increased demands on faculty time for service and teaching. This situation will be exacerbated by the new RCPSC-mandated competency-based curriculum, increased patient-care demands and a reduced ability to recruit additional ID clinical staff. All our staff face spending more time on clinical activities and less time on the other career goals of the clinician investigator, clinician scientist, clinician educator, and clinician in quality and innovation.

Two challenges are perhaps unique to the field of infectious diseases. Clinical divisions are increasingly expected to fund their activities with money raised from outside sources. However, this challenge is greater for the ID Division because of the short-term nature of many infections, the fact that ID clinicians serve more as consultants than most responsible physicians and the disparate nature of our activities. We work with the fundraising teams at both the University and hospital level, but successes have been few, and novel approaches are needed. Furthermore, reduced staffing levels and increased workloads for our medical microbiology colleagues have reduced their clinical and research interactions with our Division; the consequences are clearly negative for research outputs and potentially for patient outcomes. Reversing this trend will require careful planning with our colleagues as well as advocacy at several levels.

MEDICAL ONCOLOGY





OVERVIEW

Medical Oncology is a dynamic and rapidly evolving specialty that provides a wide range of opportunities in research, teaching and creative professional activity. While one of the newest subspecialties within the Department of Medicine (DoM), the Division of Medical Oncology has quickly expanded. With 60 members (up from 49 in 2011), it is now one of the larger divisions in the Department. Faculty are based at Mount Sinai Hospital (MSH), St. Michael's Hospital (SMH), Sunnybrook Health Sciences Centre (SHSC) and Princess Margaret Cancer Centre (PMCC)/University Health Network (UHN). In addition, there are 38 part-time or adjunct faculty members located at affiliated hospitals (Women's College Hospital, Trillium Health Partners, Toronto East General Hospital, North York General Hospital, St. Joseph's Health Centre) and community affiliates (Royal Victoria Hospital, Markham Stouffville Hospital, Southlake Regional Health Centre, Lakeridge Health Network, Scarborough Hospital, Rouge Valley Health System). Clinical research plays a large role within the Division; more than 50 per cent of members hold the role of clinician investigator.

Key features of the Division are the Medical Oncology Training Program (MOTP) and the fellowship opportunities. The University of Toronto (U of T) is the largest of the 13 accredited training programs in medical oncology in Canada and, under the leadership of Dr. Scott Berry, has been growing in popularity in recent years. There are more than 50 accredited postgraduate fellows working at PMCC, the Odette Cancer Centre (at SHSC), SMH and MSH. The program is dedicated to developing trainees for academic research positions as clinician scientists and clinician investigators, and this work is now being recognized through their contributions at international meetings.

The Division aligns with DoM strategic priorities and takes pride in having a nearly 50 per cent gender balance across all levels. Medical Oncology faculty members are also working to be responsible stewards of healthcare resources and to align training to meet future population needs through their leadership roles in Cancer Care Ontario. The Division supports the translation of new knowledge by contributing to the development of health-care guidelines, both within Ontario and with the American Society for Clinical Oncology (ASCO).

Division Leadership

Acting Departmental Division Directors (DDD) the past five years have included Dr. Kathleen Pritchard (2011–16) and Interim DDD Dr. Scott Berry (2016–present). Dr. Monika Krzyzanowska will begin a five-year term in September 2018. The Division underwent an external review in 2016, which resulted in positive feedback and support for education, research and faculty initiatives.

Medical Oncology has a robust divisional executive who meet in person at least four times per year and have teleconferences in between. Medical Oncology faculty have been extremely involved in administration, participating in the divisional Executive Committee and its subcommittees. In addition, two divisional strategic retreats were held (in 2013 and 2016); they focused on how to elevate programming in education, research, quality improvement and faculty development. They also emphasized collaboration and new partnerships.

EDUCATION

Undergraduate Education

The Division of Medical Oncology has 34 faculty members identified as clinician teachers, clinician educators or lecturers located across multiple hospital sites. The Division now plays a significant role in the pre-clerkship portion of the Undergraduate Medical Education (UGME) curriculum, delivering lectures and seminars; facilitating problem-based learning tutorials, portfolio programs and Determinants of Community Health projects; as well as participating in Art and Science of Clinical Medicine (ASCM) 1 and 2. In the clerkship portion, the Division is active in the preceptorship program, ambulatory clinic component, integrated objective structured clinical examination (OSCE) as well as the new Longitudinal Integrated Clerkship program.

Dr. Susanna Cheng is the new divisional lead for undergraduate medical oncology. She has won numerous teaching awards and has been site supervisor for the undergraduate medical oncology program at the Sunnybrook Odette Cancer Centre for the past 15 years. She has been actively involved in the development of national medical oncology objectives for medical students. She has collaborated with Dr. Meredith Giuliani (a radiation oncologist) and Dr. Marcus Law (a

Foundations director) in the creation of the oncology learning module for first-year medical students in the new Foundations Curriculum at U of T. She also chairs the Medical Oncology Undergraduate Education Subcommittee; its mission is to “inspire and foster interest in medical oncology through role models and mentors; observerships and electives; and research opportunities.”

Dr. Geoff Liu, one of the Medical Oncology co-leads in research, oversees the divisional support of the Comprehensive Research Experience for Medical Students (CREMS) program. The program provides medical students in Years 1 and 2 an opportunity to do research within a 20-month program and summer program.

The Division receives both national and international Year 3 and 4 clerks to participate in electives and selectives in medical oncology. Observerships are offered for Year 1 and 2 medical students at U of T. Many of these students go on to careers in medical oncology or associated fields.

The Division is in a unique position to shape the education and foster the interest of medical students in medical oncology by taking an active role from Year 1 to Year 4. A high level of importance is placed on this strategic priority.

Postgraduate Education

The MOTP trains residents in the clinical and scientific aspects of the diagnosis and comprehensive management of patients with neoplastic diseases. The primary purpose of the program is to produce well-trained medical oncologists who are knowledgeable in all aspects of cancer care but with specific skills in the use of systemic therapies for treating patients with cancer. The guiding philosophy of the training program is to recruit the best possible candidates and train them to be the future leaders in oncology in Canada and the world.

The two-year training program offers a comprehensive experience with a core that consists of four medical oncology rotations (each three to four blocks) at MSH, PMCC, Odette Cancer Centre (at SHSC) and the Trillium Health Partners [previously Credit Valley Hospital (CVH)]. The program offers a wide variety of clinical experiences at major academic comprehensive cancer centres, a general hospital and a community comprehensive cancer centre. The experience at Trillium



Health Partners is unique and the only mandatory community medical oncology experience in any MOTP in Canada.

In addition to these core medical oncology rotations, there is a mandatory three- to four-block rotation in hematology, a mandatory two-block rotation in radiation oncology, a mandatory one-block rotation in palliative care, a one-block research month and a five-block elective period.

The Division trained six residents per year over the review period, but beginning July 2017 will train five residents because of a perhaps temporary decrease in funded positions in all medical subspecialty programs at U of T.

The MOTP is overseen by the Resident Program Committee (RPC), chaired by the Program Director (PD) Dr. Raymond Jang and includes the program coordinator from each core site (each of the four medical oncology sites, hematology, radiation oncology and palliative care), the DDD and a resident representative from each of the two years of the program. The Committee meets at least four times per year. It is responsible for the training program's administrative aspects, which include ongoing review of program content and structure, resident selection, examinations and academic activities, resident evaluation and promotion (including appeals when necessary), and career counselling.

Program highlights include the following:

- **Academic Half-Day Curriculum.** A robust academic half-day curriculum provides instruction across all CanMEDS roles. Each major component is supervised by a faculty advisor who has content expertise in those areas to review and revise curricular content annually.
- **Research Training.** All residents must complete a research project during training. One block of training in the fall of PGY4 is devoted to research. This consists of attending didactic lectures on research methodology. In addition, residents work with a team of three faculty preceptors who are specialists in research design (Drs. Geoffrey Liu, Kelvin Chan and Eitan Amir) to design a research project.
- **Orientation Week.** An orientation week consists of a series of introductory lectures across a broad spectrum of clinical and non-clinical topics. It ensures that residents are prepared to start their clinical work.
- **Longitudinal Clinic.** Trainees attend a longitudinal clinic of their choice, starting in the fall of the first year of training. The goal of these clinics is to assess new patients and follow them over a one- to two-year period. They allow residents to form stronger bonds with patients and get a better understanding of the natural history of cancers beyond the experience in the three-month core rotations. These clinics also foster strong links between trainee and supervisor and opportunities for mentorship and career guidance.

Competence by Design

Medical Oncology specialty is one of the first two specialties in the country that will implement competency-based medical education that aims to enhance postgraduate training in Canada. Dr. Scott Berry has led the development of Competence by Design (CBD) nationally as Royal College Specialty Committee Chair and also works with the Postgraduate Medical Education (PGME) Office to implement this new framework at U of T. The initial phase of implementation launched in July 2016 with field testing of new evaluation methods and tools. Feedback garnered from these and subsequent field tests will ensure that the new framework is implemented in a responsible, graduated fashion to maintain the outstanding educational experience for residents as the transformation to the new system evolves.

Fellowships

SHSC and PMCC both have vibrant fellowship programs. In addition, there are currently fellows at MSH (1) and SMH (1). Traditionally, these fellowship programs have never been coordinated centrally through the U of T Division of Medical Oncology.

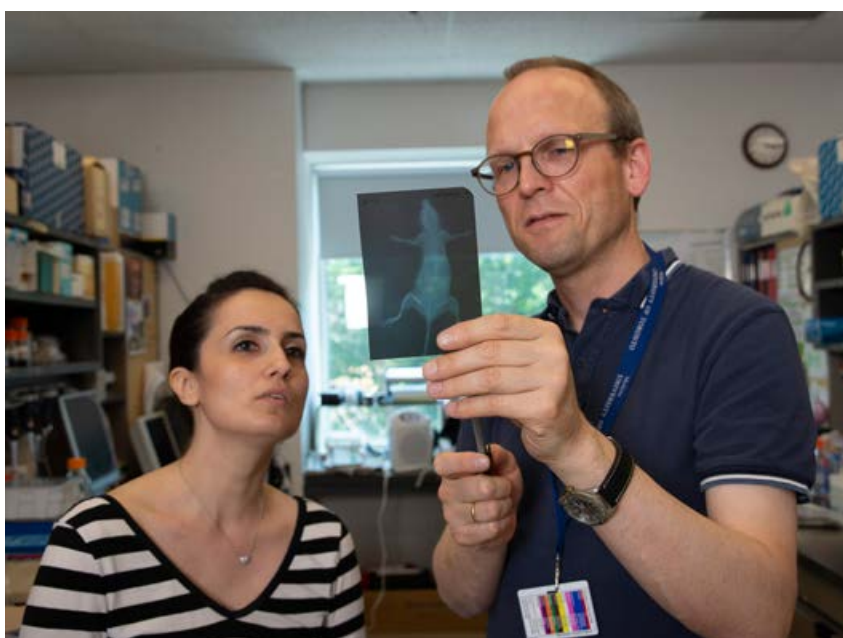
The strong fellowship program at SHSC has been running for more than 15 years. Fellows are accepted each year from all over the world and are encouraged to stay for at least a two-year period and undertake a master's program in one of clinical epidemiology, medical education or basic science. There are fellows in a variety of sites, including breast cancer (6), hematology (2), melanoma (1), lung (1) and general internal medicine (GI) (1). A Fellows Committee, consisting of Dr. Yooj Ko (Chair), Dr. Kathy Pritchard, Dr. Urban Emmenegger, Dr. Matthew Cheung and Dr. Georg Bjarnason, selects and supervises these fellows. With Dr. Pritchard's recent retirement the committee will soon undergo renewal.

PMCC runs a large and very strong fellowship program that until recently was organized entirely within PMCC. The aim of the fellowship program is to align training to the cancer-related clinical and research needs of the population.

Fellows are supervised by one or more full-time staff medical oncologists or hematologists and are exposed to multiple unique areas of clinical and research expertise. Dr. Pritchard was attending all Fellowship Selection Committee meetings. Dr. Kathy Pisters, recently recruited from MD Anderson Cancer Centre, was the inaugural Fellowship Director for PMCC but with her departure back to MD Anderson, Dr. Eitan Amir has taken over the Director role. Meetings with Dr. Kathy Pritchard, Dr. Yooj Ko, Dr. Kathy Pisters and the U of T individuals involved in fellowship programs are ongoing.

Continuing Education

- **Molecular Oncology Weekend.** Given the rapid emergence of molecularly targeted therapies in oncology and the need for a systematic and comprehensive review of molecular oncology and basic science for Medical Oncology residents, Drs. Ian Tannock, Sunil Verma, Scott Berry and Neesha Dhani led the curriculum development and planning for the inaugural Molecular Oncology Weekend for Ontario medical oncology residents in 2008. Originally designed to serve the needs of residents at U of T and other Ontario universities, this biannual meeting (with 50 attendees in 2016) now includes medical oncology residents from across Canada as well as hematology, radiation oncology and pathology trainees from Toronto. The Organizing Committee now includes Dr. David Cescon, and the faculty for the weekend is predominantly from the U of T Division of Medical Oncology.



- **OncologyEducation.com.** This educational enterprise functions as a not-for-profit agency and includes a website and multiple live continuing medical education (CME) events. It is one of the leading resources for CME for oncology trainees in Canada. OncologyEducation.com was founded by two divisional members: Drs. Scott Berry and Sunil Verma (now at the University of Calgary). The website now has more than eight thousand registered users. Since its inception in 2007, there have been 230 thousand visits (75 thousand in the last 12 months), 848 thousand page views (292 thousand in the last 12 months) and 124 thousand unique visitors to the site (41 thousand in the last 12 months).

RESEARCH

The Division of Medical Oncology is a driving force in cancer research in Canada. Seventy-two per cent of the divisional faculty belong to clinician investigator or clinician scientist streams. In addition, some of the faculty in the quality improvement stream also perform research. The faculty have diverse research expertise, which ranges from molecular biological laboratory research to clinical trials and health-services research. Many individuals have key roles provincially (Cancer Care Ontario), nationally (Canadian Cancer Trials Group) and internationally (ASCO).

Division faculty held approximately 315 grants per year over the review period, totalling more than \$167 million. Over the same period, the Division produced 2,902 publications, generating more than 37,627 citations and a citation impact factor of 12.97.

Internationally, the Division is also known for its specialty clinics and programs. They range across all disease sites and are a source of a robust patient base that supports clinical and translational research.

Two of the missions of the Division and its Executive Committee are to foster city-wide research collaboration and to strengthen research capacity in the Division by enhancing networking, sharing and collaboration across Division researchers and trainees. Within the Executive Committee is the Research Subcommittee, which includes members representing various sites and research focuses. The Executive Committee developed two

retreats dedicated to specific research aspects in 2014 and 2015; research was a major focus of two planning retreats in 2013 and 2016.

A major strength of the Division is its collaborations and partnerships with external groups locally, nationally and internationally. Locally, this includes the Cardio-Oncology Research Network aimed at improving the prevention, early recognition and management of cardiovascular toxicity from cancer treatment, with a special emphasis on breast cancer. The Lusi Wong Early Detection of Lung Cancer Program has formed the cornerstone of national and international lung cancer screening tools. Internationally, Dr. Geoffrey Liu has worked with multiple consortia to house clinical outcome and survival data in his laboratory. Dr. Liu's collaborations have led to over 60 publications in journals such as *Nature*, *Nature Genetics*, *Lancet* and *Lancet Oncology*.

Areas of Research Focus

Clinical research, and in particular clinical trials, are found in all affiliated U of T hospitals where Medical Oncology members work. The Division is home to many national and international clinical trial leaders, particularly within the Canadian Cancer Trials Group. In addition to local leadership, these national and international clinical trials leaders in drug development and clinical trials groups have put their hospitals and U of T on the world stage.

Translational research has been recognized as a major strength of the Division. This research area has been particularly strong at PMCC, where there are world-leading basic scientists in genomics, epigenomics, metabolomics, proteomics, immunology and stem cell research. In addition, there have been ongoing local collaborations between MSH and UHN in sharing data and samples for translational research.

Quality improvement research is a new and growing area. Dr. Monika Krzyzanowska is a leader in this field, which has been an area of substantial development and growth in the Division in the past five years. At the Odette Cancer Centre, Dr. Sonal Gandhi is an emerging leader with multidisciplinary quality improvement initiatives, including the delivery of oral anti-cancer agents. This research area is also growing within the community hospitals, such as with Dr. Katherine Enright



at Trillium Health Partners. Within the Division are several Cancer Care Ontario (CCO) Leads, including Drs. Andrea Eisen (breast cancer), Teresa Petrella (melanoma) and Simron Singh (patient-centred care). Additionally, Dr. Maureen Trudeau chairs the Canadian Agency for Drugs and Technologies in Health (CADTH) pan-Canadian Oncology Drug Review. These individuals influence quality standards in the province and beyond.

Health Services and Outcomes research is also a strength of the Division, particularly in the use of large administrative provincial databases and cross-appointments at the Institute for Clinical and Evaluative Sciences (ICES). This form of research has been encouraged by CCO, which has required evidence-based practice management, outcome assessments and assessments of effectiveness of change in patient therapy and management.

Integration of Research and Education

Key priorities identified at these retreats were embedding improved oncology research into the pre-medical oncology residency programs and increasing the research methodological training in the residency and fellowship programs.

- **Comprehensive Research Experience for Medical Students.** The Division encourages medical undergraduates to participate in the competitive CREMS program. The Division has supported CREMS by paying the 50 per cent stipend cost typically covered by the supervisor, allowing more supervisors (particularly early-stage clinician investigators and clinician scientists) to access trainees

and increasing the exposure of students to medical oncology and medical oncology research early in the training. In 2015–16 alone, six CREMS students participated in the program under the supervision of Medical Oncology members. Former CREMS students have received numerous awards for their work including at least five ASCO Merit Awards; two Novartis Oncology Young Canadian Investigator Awards, an award given to 10 trainees per year across Canada for research; and the ICR-CIHR Publication Prize in 2013, a prize given to six individuals Canada-wide each year for excellence in publication by trainees.

- **Oncology Interest Group.** Members of the Medical Oncology research executive have participated annually in the student-led medical undergraduate Oncology Interest Group, a student club dedicated to promoting oncology careers.
- **Mentorship.** Mentorship of individuals from the internship (R1) through residency (R2–R3) years has been coordinated by Drs. Berry and Liu. All interns and residents seeking advice from the Medical Oncology Program Director, Dr. Jang (previously Dr. Berry), who have expressed an interest in a possible research-focused career (clinician investigator or clinician scientist) have been introduced to Dr. Liu. Dr. Liu then refers them to relevant scientists. One-on-one meetings are held to provide interns

and residents with career advice and mentorship about their applications to Medical Oncology. The goal of this mentorship is to ensure that Medical Oncology increases its ability to attract research-focused individuals into its residency program, increase the exposure of faculty to interested trainees and improve our selection procedures for research-focused individuals.

- **Clinical/Research Fellowship Programs.** These programs have generally been funded and supported through the individual hospital institutions. However, where possible, the existing research infrastructure of the University-wide Medical Oncology research programs seeks to help fellows with their research projects. As an example, a recently funded Medical Oncology Strategic Innovation Grant (Liu et al., 2016) will help build the infrastructure needed to expand a fellow's PhD (clinical epidemiology) project that involves clinical utility measurements in breast cancer patients. The project will expand recruitment from one site at the Odette Cancer Centre to three sites (Odette, PMCC and SMH). This expansion will be made partly possible by 2017 CREMS students at all three sites. In another example, fellows from PMCC used data from the COMPACT trial of molecular testing [principal investigator (PI): Bedard] to analyze some of the feasibility parameters, and the work on the development of FACT-ICI (PI: Hanson) was performed and reported by clinical and research fellows.



Former DDD Dr. Kathy Pritchard and former Acting DDD Dr. Scott Berry

Many of the CQI faculty in Medical Oncology hold leadership roles in quality with CCO or with the American Society of Clinical Oncology. QI research is a growing area of research interest in the Division, as described above.

QUALITY & INNOVATION

Quality improvement (QI) and innovation has been established as a track at the DoM and Division of Medical Oncology over the last five years. While the clinical aspect of QI is still evolving, the Division regards it as an important initiative and has created a Quality Improvement Subcommittee. The 2015 Medical Oncology retreat included a focus on QI and Patient Safety, looking at its intersection with both research and education. The Division was one of the first within the DOM to participate in the Co-Learning Curriculum in Quality Improvement program.

FACULTY

Strategic recruiting already occurs in the hospitals associated with the Division of Medical Oncology; however, only recently did strategic recruiting begin to be University-wide. The Division attracts outstanding candidates to faculty positions, but making this process more University-wide would improve and strengthen the Division. Some structures have been developed to support this recruitment approach, but they should be enhanced. The Division should find better ways to identify promising young trainees via CREMS, through faculty involvement in oncology interest groups and through the increased engagement of faculty role models in the undergraduate curriculum.

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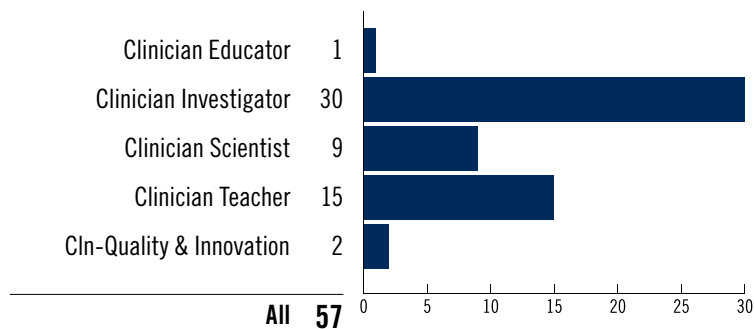


Table 13.2: Affiliation of Full-Time Medical Oncology Faculty

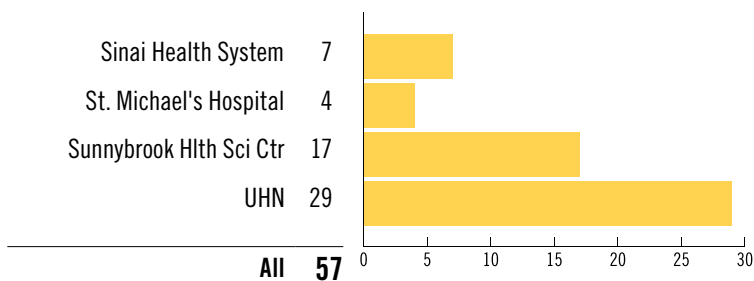
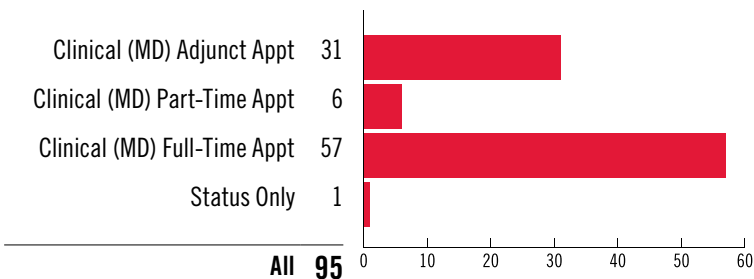


Table 13.3: Primary Appointment of Medical Oncology Faculty



The Division also works to identify promising students early and introduce them to divisional leaders such as the DDD, the Executive Committee and the Program Director. The divisional leaders can then introduce interested and talented undergraduate and medical students to the appropriate mentors and role models. The Division has had much success in these efforts.

MENTORSHIP, EQUITY & DIVERSITY

The PD meets individually with residents formally twice a year and at any other time the PD or a resident feels a meeting is appropriate. Each resident also meets with the DDD at least once a year to discuss academic career planning.

The purpose of these meetings is to guide career selection and goal setting for the time in the training program, to ensure that residents are on track to achieve their goals and to assist their involvement with the appropriate faculty in the Division who will help them achieve their goals (i.e., provide detailed advice about certain career paths or supervise research or other projects).

There are two annual dinner meetings with residents and recent graduates of the program to address career planning. The first is with a group of academic oncologists to provide guidance on what a career in academic oncology entails. The second is with a community practice oncologists to provide specific counseling on careers in the community.



Dr. Monika Krzyzanowska, Medical Oncology's incoming Department Division Director

PLANNING AHEAD

In September, 2018, Dr. Monika Krzyzanowska will commence her five-year term as DDD. This change in the leadership of the Division will present a good opportunity to review recent progress and identify key strategic priorities for the Division for the next five years in alignment with the greater vision of the DoM. Some key priorities include further enhancements to the fellowship experience, ensuring ongoing funding for seed grants and support for interinstitutional research collaborations/networks in areas such as cardio oncology and geriatric oncology. The Division will also consider opportunities to improve faculty wellness and prevent burnout.

NEPHROLOGY





OVERVIEW

The Division of Nephrology at the University of Toronto (U of T) is home to world-class scientists, clinicians and teachers who work together to steadily improve patient care and deliver outstanding education. The Division offers training in many renal replacement therapy modalities, including home and in-centre hemodialysis, peritoneal dialysis and transplantation, as well as consultative and follow-up care for patients with many types of kidney disease.

The Division has significantly influenced the evolution of nephrology in both Canada and abroad. Knowledge translation includes the formation of innovative clinical programs (e.g., peritoneal dialysis, home dialysis, glomerulonephritis, fluid/electrolyte disturbances), internationally respected research and the development of formalized academic training programs.

The Division provides general nephrology services at three affiliated teaching hospitals and transplantation at two of these locations. The Division has a strong relationship with its community nephrology colleagues and has many adjunct and part-time faculty located across community partner sites. Strong ties also exist between the Adult Nephrology program and the Pediatric Nephrology program at the Hospital for Sick Children.

Over the past five years, the Division has supported many quality improvement initiatives that align with Department of Medicine (DoM) guiding principles. These initiatives have profoundly influenced the local and national delivery of health care for chronic kidney disease. (See appendix.) As for the mentorship and professional development of its members, the Division has made significant investment in initiatives that seek to supplement resident education with improved training to better meet population needs. This includes daily question-and-answer sessions with teaching staff. The initiative has been so successful that the Division has extended the model to other subspecialties. (See appendix.)

ADMINISTRATION

Executive Committee

The Executive Committee is responsible for the overall academic mission of the Division and meets approximately four to six times per year. Chaired by the Departmental Division Director (DDD), Dr. Philip Marsden, the Committee has responsibility for faculty, setting and implementing overall academic policy, and fundraising to support the Division's academic activities. The executive is broadly representative of geographical locations and both academic and clinical interests of the Division's membership.

Educational Executive Committee

This Committee meets two to three times per year, and it consists of the DDD, the Program Director (PD) and additional student and program representatives. The Committee identifies issues relevant to career choices in nephrology and future Nephrology trainees.

EDUCATION

The Division of Nephrology supports education of undergraduate and postgraduate trainees and fellows, as well as the continuing education of its faculty. The Division is particularly recognized for its various subspecialty programs and enthusiastic educators; they attract nephrology trainees from other programs (Year 2) to join rotations in transplant, glomerulonephritis and hereditary nephritis. The Division Fellowship Director provides leadership and direction for program development, including

- setting program objectives,
- coordinating the application intake process and orientation for new fellows, and
- ensuring regular and timely evaluations for fellows, programs and teachers.

The Fellowship Director works in partnership with the DoM Fellowship Programs Office to oversee the educational experience for our domestic and international communities.



Residency Program

The residency training program in Nephrology is two years and is managed by the Residency Program Committee (RPC). The Division typically recruits three or four trainees per year, all of whom undergo a robust and competitive review.

The majority of Nephrology residents in Toronto go on to additional training after they complete their two-year program. This may be a clinical fellowship or specific clinician educator (CE), clinician investigator (CI) or clinician scientist (CS) training, or a combination of both. The Division typically sees 12 to 18 applicants for three or four PGY4 spots per year.

The Clinician Scientist and Clinician Educator Training Programs through the DoM are considered to be leading programs in Canada. The Clinician Scientist Training Program (CSTP) provides funding for selected clinical trainees to pursue research training that leading to an MSc or PhD at U of T. Typically, trainees stay for two years, and the group averages 16 to 20 fellows per year. Fellows receive a competitive yearly stipend of \$80 thousand per fellow per year. However, maintaining enrolment and salary support will be a future challenge for the Division, as overall fellowships cost the Division approximately \$1.3 million to \$1.5 million per year.

For advanced training, CSTP provides funding for selected clinical trainees to pursue research training leading to an MSc or PhD at U of T. (There are now



approximately 14 positions.) Thanks to mentorship advocacy from the DDD and past PDs, Drs. Kamel and Parekh, the Division of Nephrology is a leading division within the DoM in getting its trainees to participate in this program.

Advanced training is particularly popular because of career stability anxiety. A recent report from the Ontario Medical Students Association describes job prospects in nephrology as “difficult/very difficult.” This news may deter fellowship and residency candidates from applying. However, as a precaution the Division will increase mentorship to alleviate anxiety.

Fellowships

A major strength of the Division’s fellowship program is the number of clinical and research fellowship opportunities. These include

- clinical fellowships in geriatric nephrology,
- glomerulonephritis,
- hereditary nephritis,
- onconeurology,
- home dialysis, and
- kidney and kidney-pancreas transplantation.

The Division values resident and fellow well-being and recognition. The Marc Goldstein Clinician Award is awarded annually to recognize one of the Division’s trainees for excellence as a clinician. Each year a PGY4 or PGY5 trainee is given the award as a clinical international fellow. A series of informal social functions serve to welcome trainees and their families. For instance, the DDD, PD and Fellowship Director host functions in their homes to engage new trainees and their families in



supportive social networks. Nephrology has a well-organized mentor program for its PGY4 and PGY5 trainees.

Clinical International Fellowship Program

The clinical fellowship program provides an opportunity for a physician to obtain advanced training and/or to acquire more specialized expertise that complements nephrology residency training. The general program encompasses extensive exposure to all aspects of clinical nephrology, dialysis, transplantation and home dialysis throughout the teaching hospitals in Toronto. There are also specialized clinical fellowships in home dialysis, transplantation (including pancreas transplantation), hereditary renal disease, onconeurology, glomerular disease and palliative nephrology.

Continuing Medical Education

The Division takes pride in its weekly city-wide rounds, which serve as both continuing medical education (CME) for academic and community nephrology faculty and as formal teaching sessions for trainees. (See appendix.) The principal focus of city-wide rounds is to expose trainees to the expertise of world-renowned speakers within the field. On average, 12–16 visiting professors are invited each year. At the event, 40 full-time faculty members and trainees within the Division, as well as community nephrologists and corporate sponsors, participate. Important professionals associated with the care of patients with kidney disease are also present (e.g., dietitians, pharmacists, social workers, transplant and organ donation teams); where interests align, subspecialty staff and trainees, pathologists, paediatricians and surgeons are also invited.

The Division continues to expand its presence using virtual communication tools, and it has received positive feedback from interacting sites (both internal and external). The electronic format allows the dissemination of content from educational rounds to community hospitals in the Greater Toronto Area, northern Ontario’s community hospitals and U of T-affiliated hospitals. Faculty, trainees and Executive Committee members receive feedback about suggested speakers, and care is taken to ensure that the content addresses both general nephrology and transplantation. A future challenge is fundraising to support this speaker program. Five to ten years ago, the DDD office raised \$50 thousand to \$75

thousand per year in unrestricted educational grants from 12 to 15 strategic corporate sponsors. In the past three years, the office has raised \$25 thousand to \$40 thousand per year from five to eight strategic corporate sponsors.

The Division also holds an annual outreach educational event that engages community and academic nephrology faculty. The Uldall Lecture and Educational Day is a key event in the Toronto nephrology community. It brings together the U of T academic program with community nephrologists for a fantastic high-quality educational event.

Some faculty have internationally recognized web-based teaching tools in the CME arena.

Dr. Jordan Weinstein's UKidney.com site is especially noteworthy as a leading resource in nephrology education. UKidney provides educational tools for the study and practice of nephrology, hypertension management and kidney transplantation. The site highlights essential educational contributions from major opinion leaders in nephrology. UKidney uses novel web technology to deliver outstanding content in the field of renal education. UKidney gathers content from multiple experts in nephrology for general educational purposes.



Nephrology CS and CI faculty have leadership roles in national and international research cohorts. These include Dialysis Outcomes and Practice Patterns Study (DOPPS), NEPTUNE (National Institutes of Health), and SPOR in Nephrology [Canadian Institutes of Health Research (CIHR)/Kidney Foundation of Canada (KFC)] among others. These have led to important publications in their field. Many collaborate with basic scientists to collect genetic and biomarker material.

The Division's research enterprise is well funded. Collectively, some 115–130 annual grant awards brought in \$5.9 million–\$7.5 million per year over the past five years (2012–17). Typically, 27–48 per cent represents

peer-reviewed grants from national and international sources: CIHR, KFC, NIH, Heart and Stroke Foundation (HSF) and Diabetes Canada (CDA).

The Division has committed resources to support its faculty. For instance, small seed grants of \$20 thousand offer support for innovative research projects that lead to new knowledge in the cause, prevention and treatment of kidney disease. The goal of this peer-reviewed competition

is timely generation of preliminary data that can be used to develop a mature research project that can be later submitted to a larger peer-reviewed competition, such as one sponsored by CIHR or KFC. All areas of research are eligible (e.g., home dialysis, transplantation, educational research and quality initiatives).

These small but critical funding initiatives have had incredible impact. For example, Dr. Joseph Kim received a \$20 thousand grant to support his research (“Access to and Outcome of Kidney Transplantation in Ontario: Is There Socioeconomic Gradient?”). Dr. Kim successfully leveraged his Oreopoulos/Baxter Chair seed grant into a CIHR operating grant. His grant was ranked first in his peer-reviewed panel.

RESEARCH

The Division of Nephrology is recognized as a national and international leader in many research arenas. An analysis of the number of papers and citations per paper compares favourably with other top nephrology divisions. The Division has a comparative advantage in its faculty's diverse research expertise, unique prospective patient cohorts and administrative links between clinical cohorts and the Institute for Clinical and Evaluative Sciences.

FACULTY

The Division consists of 40 full-time, nine part-time and 15 adjunct faculty members. Distribution of faculty according to job description includes 12 CS, seven clinician teachers (CT), 16 CI, one clinician educator (CE), two clinicians in quality and innovation (CQI) and two clinician administrators (CA). Lastly, the distribution of faculty varies across sites. The highest distributions occur at

- University Health Network (UHN): 21,
- St. Michael's Hospital: 11, and
- Sunnybrook Health Sciences Centre: 6.

Considering past strategic planning exercises, the Division over the past 10 years has focused much of its recruitment in research. As a result, 70 per cent of Nephrology faculty have a major research focus (CS or CI). Among full-time faculty DoM-wide, the comparable figure is 47 per cent (25 per cent CS and 22 per cent CI). Few recruits are CTs: 17.5 per cent in the Division and 35 per cent in the Department. The increasing prevalence of chronic kidney disease (CKD) and size of the transplant population puts increasing pressure on sites to meet clinical mandates and places increasing demands on research-centric individuals to expand clinical activities. The Division will continue to work on balancing these challenges in the coming year.

Overall, Nephrology faculty are balanced throughout the ranks. The Division is proud of the balance. The size of full-time faculty is slowly growing: six have been appointed

Table 14.1: Academic Position Description of Full-Time Nephrology Faculty

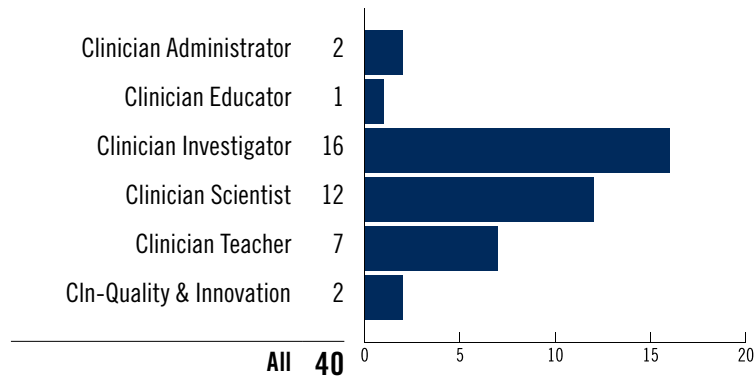


Table 14.2: Affiliation of Full-Time Nephrology Faculty

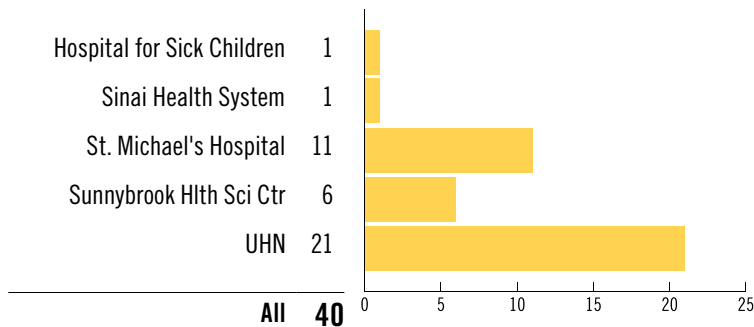
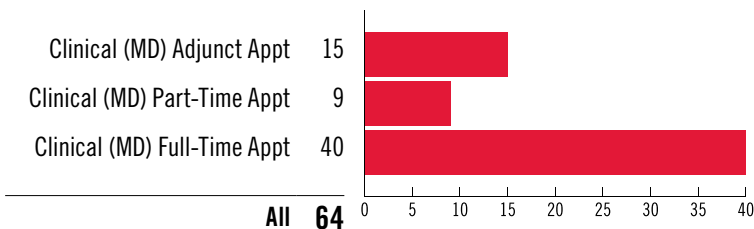


Table 14.3: Primary Appointment of Nephrology Faculty



in the last five years. Part-time and adjunct numbers are growing significantly faster. This trend reflects, in large part, an expansion of the U of T Undergraduate Medical School class size and the Mississauga Campus expansion. Recruitment of part-time and adjunct faculty, led by the Faculty of Medicine, enables undergraduate teaching expansion at this site expansion at this site.

Over the past 10 years, the Division has recruited female full-time faculty at a rate of 35–40 per cent; however, female faculty represent just 22 per cent of current full-time faculty. As of 2015, the national average of female nephrologists was 38 per cent.

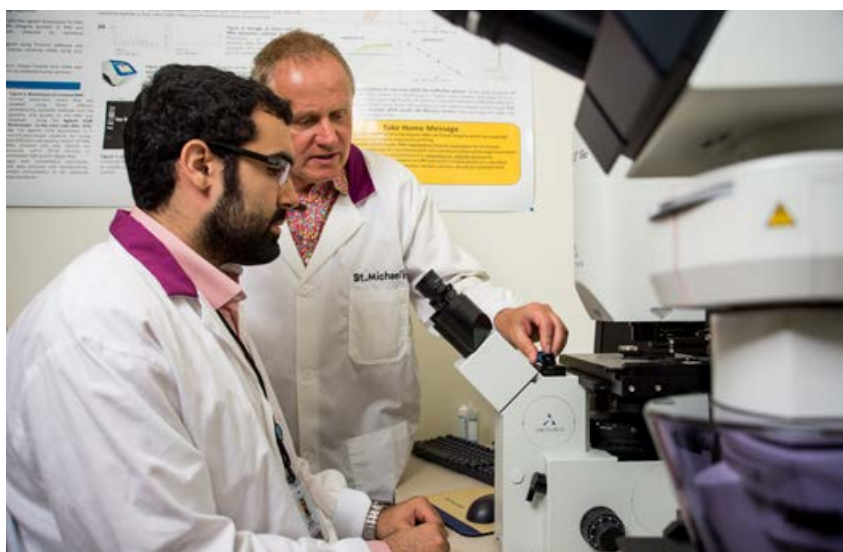
Recruitment and Retention

Quality Improvement (QI) and System Leadership and Innovation are changing the Division's access to nephrology candidates. Specifically, trends show fellows focusing training and planning for careers in community-based practices. Preliminary discussions about potential new priority areas have focused on onconeurology and patient safety. The Division grew priority programs through planned hiring and resource allocation.

However, U of T Nephrology is a large entity with room to grow in other areas. Financial constraints and more clarity about potential appointments may make the CI and CS pathways more appealing to fellows who are considering advanced training.

The “big hitter” clinicians are aging, and a plan needs to be developed to nurture the next generation of full-time clinicians. Clinician teachers are under-represented in the Division: 17.5 per cent are in the Division and 35 per cent are in the Department. However, an advantage that Canadian nephrology programs have is the income differential between American and Canadian academic nephrologists. This income differential suggests increased opportunities for recruitment from the United States.

The Division has a number of hospital- and University-based endowed chairs. The Oreopoulos/Baxter Chair is held by the DDD and generates funds that can be used to support University divisional research initiatives. Other research chairs include the Fraser Elliot Chair in Home Dialysis (UHN Foundation Chair held by Dr. Chris Chan) and the Gabor Zellerman Chair (University Chair held by Dr. Heather Reich).



Other faculty also hold chairs: the Heart and Stroke Foundation/ Northern Ontario School of Medicine (NOSM) Chair of Aboriginal and Rural Health Research (U of T and NOSM held by Dr. Sheldon Tobe) and the Lisa Hofmann Chair in Translational Research (University Chair held by Dr. Philip Marsden). There are no hospital- or University-based Canada Research Chairs (CRC) held by the Division, but the Division is optimistic. It has a rich pool of candidates for these prestigious CRC appointments and recently submitted a nomination for an American Society for Clinical Investigation (ASCI) membership in 2018.

Research Priorities

While much has been achieved over the last 10 years, the Division faces an ongoing challenge: developing a collaborative academic strategy that engages research institutes, hospitals, the community, industry and other divisions, departments and programs. The Division is uniquely positioned to play a role as a catalyst between basic sciences and clinical sciences, and between the University, hospitals and research institutes. Existing relationships with the Departments of Surgery, Family Medicine, Immunology, and Laboratory Medicine and Pathobiology should be supported and expanded. Synergies between the Divisions of Cardiology, Critical Care, Rheumatology, Hematology and Endocrinology revolve predominantly around shared chronic-patient care initiatives and offer fruitful opportunities for expanded research interactions.

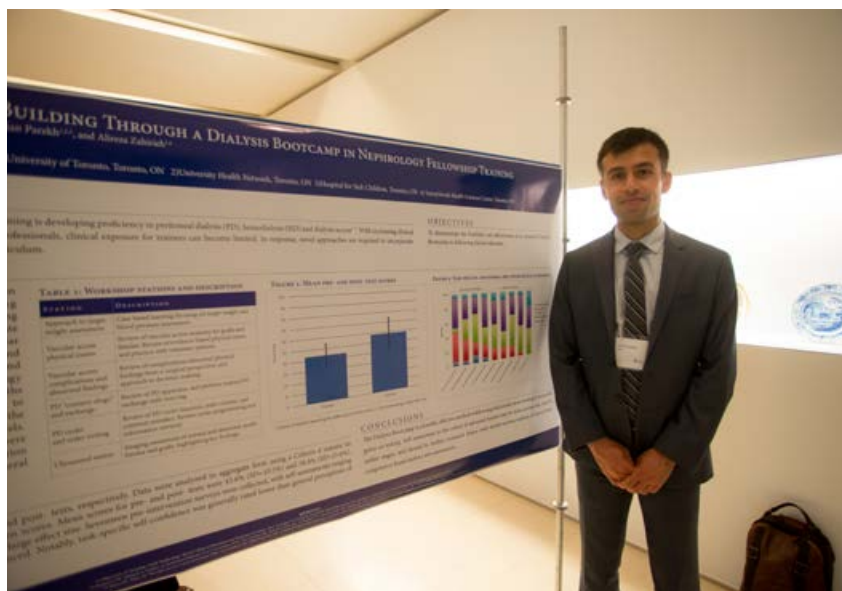
Transplantation

The Division has a strong interface between general nephrology and transplantation in Toronto. The two disciplines do not exist as isolated silos; other sites for academic nephrology in North America face this risk. The Division recognizes recruitment in transplant nephrology and, in general, it is needed. In the last five years, two CS faculty members (Drs. Yuen and Konvalinka) were hired into the transplantation program at St. Michael's Hospital and UHN/ Mount Sinai Hospital (MSH). Dr. Mucsi was recently recruited from McGill University as a CI into the transplantation program at UHN/MSH as associate professor.

Notably, the Ontario Renal Network (ORN) and individual community sites are expanding their care of stable outpatient transplant patients. This expansion supports current Division faculty. UHN/MSH, for example, has multi-organ transplantation as a strategic priority. The Division will work toward the development of such a plan to expand its city-wide training and research program in transplantation.

MENTORSHIP, EQUITY & DIVERSITY

The Division is working toward strengthening mentorship and leadership training for future program directors of the Clinical International Fellows Program. While formal steps have yet to be taken, the next DDD will



devise a strategy to best accomplish this task. Presently, faculty and trainees have been informally mentored and report overall satisfaction with the present process. The Division, however, will use resources from the Department and hire a mentorship facilitator when the DDD position is filled.

Gender Equity

A diverse faculty benefits the Division, as it benefits the Department, the University, learners and patients. A DoM objective is to achieve 50 per cent female faculty in the next five years. The DDD supports the recruitment of both diverse trainees and faculty. However, further evaluation of why the Division has a gender imbalance, especially in a site-specific fashion, is required. The next DDD will need to address this challenge. The current DDD, Dr. Phil Marsden, firmly believes that equity efforts will benefit recruitment and retention and that, while individuals may have unconscious bias, the Division, with the support of the Department, will continue to guard against the propagation of such bias.

FUTURE CONSIDERATIONS

Strategic Planning

The Executive Committee recognizes the need for strategic planning. As Dr. Marsden's term as DDD closes, the appointment of a new DDD offers a unique

opportunity to engage with faculty members to identify the future needs of their Division.

Division Identity

In the past five years, a challenge has been conflicting faculty identification between hospitals and the DoM. This issue especially concerns community nephrologists who have adjunct or part-time appointments. However, updates to Division of Nephrology training programs (e.g., renal residency and the Clinical International Fellows Program) have acted as an extremely effective catalyst in framing the Division alongside a collective academic vision. An opportunity exists to leverage the raising of unrestricted education funds for the Department.

Academic Versus Community Careers

We have excellent relationships between academic and community colleagues. The reasons include convenient geographic distributions of patient catchment areas, joint educational CME initiatives and trainee placement for community electives. The Division is especially proud that adjunct and part-time faculty are progressing through the ranks. Drs. David Mendelssohn and Andreas Pierratos were promoted to full professors as community nephrologists. Dr. Janet Roscoe is internationally recognized for her international nephrology programs in Mongolia. Dr. Gihad Nesrallah is an up-and-coming star in health-services research.

Yet, there are challenges. The income differential between community and academic nephrology is expanding;



community nephrologists earn two to three times more than their academic counterparts. Moreover, many residents are no longer willing to make a major time commitment for advanced training if they are not certain it will lead to a position in an academic health centre. This income differential has been described as “suffocating” by some faculty. Over the past 10 years, three faculty members have left for community positions.

The Division is excited that research opportunities are expanding in the community but expresses concern that the merits of a full-time position are being eroded. For instance, there are difficulties in recruiting for academic positions that focus on renal replacement research. Faculty are choosing positions in the community because they can do research, feel less pressure for advanced training, be promoted and enjoy significantly higher incomes.

Strengths and Weaknesses of Advanced Training Programs

The strengths of the overall teaching program include the breadth of clinical activity across the main teaching sites for nephrology in Toronto. Residents and fellows can see a wide variety and volume of nephrology issues—including acute kidney injury, CKD and end-stage renal disease—in both the outpatient and inpatient settings. Two of the three academic sites are transplant centres, so residents have an opportunity to see how different faculty members and sites approach the same issues. We have been able to create focused rotations that may not be available in all programs;

examples include outpatient glomerulonephritis, geriatric nephrology and vascular access.

The Division also benefits from the size of the faculty, which features clinical expertise across all areas of nephrology and highly regarded experts (nationally and internationally) in areas such as

- fluids and electrolytes,
- glomerulonephritis,
- polycystic kidney disease,
- pregnancy and kidney disease,
- home dialysis, and
- transplantation.

The benefit is seen in both our academic half days and the research opportunities available to residents interested in an academic career. Members of the faculty are also excellent teachers, and several have received awards for their efforts.

The Division can also draw on faculty in other areas within U of T. For example, Nephrology has partnered with Critical Care and Hematology to create seminars of mutual interest. The Division has a robust and well-organized curriculum. We offer

- frequent orientations,
- journal clubs,
- reviews of assigned mentors,
- progress meetings,
- teaching workshops (critical care, line insertion, USS usage, setting up a dialysis machine),
- career development,
- “billing 101” teaching,
- QI projects, and
- in-training objective structured clinical examinations and written exams.

The Division takes pride in noting that its PGY4s and PGY5s typically score in the top 10 per cent of training programs when sitting the American Society of Nephrology training exams.

Faculty members see teaching as an important part of their role, and faculty participation has been impressive. Most members of the faculty participate in the academic half day held with weekly city-wide nephrology rounds. Many of them also teach at the site level or participate in other residency program activities, such as reviewing applications or interviewing candidates during the Canadian Residency Matching Service process.

The biggest concern for the program is the increasing clinical workload and finding a balance between clinical responsibilities and education. All sites and rotations have seen significant growth over the last five to ten years because of growing population needs. This trend puts increasing pressure on faculty and residents to continue providing excellent clinical care while allocating enough time for the formal curriculum, informal teaching sessions and self-directed learning. This trend is occurring concurrently with a significant reduction in the number of general internal medicine residents who are allocated to nephrology services. PGY1 residents used to spend two blocks on nephrology, but now they spend one. Because fewer residents are available to see patients, the burden falls on nephrology trainees. The recruitment of international clinical fellows in nephrology partly addresses the situation. The residents note that the clinical workload is high.

Another ongoing concern for the program is ensuring competency in central-line placement for dialysis. While there is a simulation session in which residents are observed and given feedback on line placement, the opportunities in clinical practice remain limited. Most lines are inserted in the intensive care unit, but there is competition from General Internal Medicine and Critical Care. For patients on other wards, lines are often inserted by interventional radiology. During interviews, some candidates have compared our program to others, perhaps ranking them higher because the candidates perceive greater opportunities.

NEUROLOGY





OVERVIEW

The Division of Neurology is committed to the priorities of preparing future physician leaders and improving the neurological health of individuals and populations locally and globally through the discovery, application and communication of knowledge of diseases of the nervous system. The Division has one of the largest neurology residency training programs in Canada and serves a complex population within the city and at tertiary referral centres throughout the province of Ontario.

The Division consists of a vibrant community of neurologists under the leadership of a new Division Director, Dr. Xavier Montalban, and is present at five primary teaching hospitals. The Division has 10 subspecialty programs (Behavioural Neurology, Headache/Pain, Epilepsy, Movement Disorders, Multiple Sclerosis, Neuromuscular, Neuro-oncology, Neuro-ophthalmology, Sleep, Stroke), and each has its own subspecialty coordinator. Having such range of expertise, the Division aligns with departmental strategic priorities, including advancing education and research programming in quality improvement of patient care, city-wide training opportunities in subspecialty fields and meaningful knowledge translation in education and research.

In 2012, the Division Executive Committee conducted a strategic planning exercise over a three-month period, and they reviewed the Division's accomplishments and goals of the earlier strategic plan. Items were reprioritized for future attention and were subsequently monitored at later committee meetings. In December 2014, the Division coordinated a large-scale strategic planning exercise, including a day-long retreat. Focuses included a review and update of subspecialties, recruitment needs for new academic/research directions, academic/research directions and infrastructural needs, a city-wide initiative to link the adult subspecialty program to its paediatric neurology subspecialty counterpart (to ease patient transition from paediatric to adult care), and the Division in general. Plans to update and refresh the Division's strategic plan are underway, and a planning meeting is being coordinated for winter 2018–19.



EDUCATION

The educational initiatives of the Division focus on point-of-care and team-based care learning in both the inpatient and ambulatory settings. Learning opportunities within Neurology are unique and, as a result, the Division boasts one of the largest residency training programs in the country.

Because of the residency program's size, the Division's size and distribution can be a challenge; however, there is strength in numbers. The Division addresses these challenges by maintaining trainee engagement through city-wide rounds, collaborative city-wide subspecialty programs and management by PDs and neurology heads across sites. Clinical training within Neurology includes general and specialized research training opportunities. Specifically, residents train in many neurodegenerative disorders, and many collaborate and interact with other DoM divisions (e.g., the Division of Palliative Medicine) and faculty departments (e.g., Surgery). Educating at a city-wide, cross-divisional and departmental level also helps external community and resident collaboration. Biannual update meetings provide education to general practitioners, including internists, physiatrists, emergency physicians, psychiatrists, community neurologists, residents and fellows.

Undergraduates

The Division plays a significant role in the pre-clerkship portion of the Undergraduate Medical Education curriculum, overseeing clinical neuroscience teaching for more than 500 medical students at both the St. George and Mississauga campuses. Divisional faculty members participate widely in these courses, delivering lectures, leading seminars and assisting problem-based learning (PBL) tutorials. Teaching effectiveness scores (TES) have been consistently excellent.

In 2016–17, the pre-clerkship program underwent major changes and was renamed the Foundations Curriculum for Unit 2(b). This 16-week block in Year 2 encompasses neurology, neurosurgery, psychiatry, musculoskeletal (orthopaedics and rheumatology), ophthalmology and otolaryngology—head and neck surgery—and places a large emphasis on small-group and online learning. Faculty members and residents participate in the development of learning modules and cases, teaching in small groups and using other novel methods of evaluation (e.g., portfolio).

ADMINISTRATION

Senior Executive Committee

The Executive Committee meets approximately 10 times per year. The Committee, which receives advice from the subspecialty subcommittees (the Research Committee and the Education Committee), meets to discuss strategy, planning, recruitment, research, quality improvement, major academic events and educational programs of the Division.

Research Committee

The Committee meets twice per year to discuss research-related matters relevant to the Division: funding, efficiencies and/or potential collaborations. The Committee also supports the annual Neurology Research Day, which occurs every fall.

Education Committee

The Neurology Education Committee (NEC) meets formally five times a year and focuses on both residency and fellowship educational issues. The Committee reports to the Executive Committee of the Division through the Program Director (PD). Its main task is to oversee the Royal College of Physicians and Surgeons of Canada's five-year training program in neurology and to oversee the individual subspecialty fellowship programs in neurology.

There is an annual retreat. All residents, NEC members and the Departmental Division Director (DDD) review resident concerns, review the residency program and provide education about a topic that applies to all (e.g., how to teach, conflict resolution).

Further, in clerkship, divisional faculty members participate in teaching activities during the rotation, including the preceptorship program, seminars, bedside physical examination sessions, the ambulatory clinic component and the integrated objective structured clinical examination.

Residents

Neurology is a five-year entry-level accredited residency program and receives five Canadian Medical Graduate (CMG) and two International Medical Graduate (IMG) candidates annually via the Canadian Residency Matching Service (CaRMS). Applicant files are reviewed and interviews of candidates are conducted via a formal process involving members of the NEC, chief residents and the PD.

The residency program is a mixture of inpatient and outpatient services. The first two years of the program (PGY1 and PGY2) concentrate on teaching internal medicine and related disciplines (e.g., neurosurgery, critical care medicine). Although there are some neurology-specific months during these years, the bulk of the neurology training occurs in Years 3 to 5. Residents spend time on inpatient general neurology services, inpatient stroke services and hospital consultation services at all our teaching hospitals. All PGY2 and PGY3 residents attend a longitudinal ambulatory clinic with one of the neurology faculty; they see a wide range of general neurology patients and acquire solid clinical skills.

During PGY4 and PGY5, the ambulatory experience across the teaching hospitals exposes residents to different subspecialties (i.e., cognitive/behavioural neurology, movement disorders, epilepsy, stroke/cerebrovascular disease, headache/pain, neuromuscular disease, multiple sclerosis, neuro-ophthalmology/neuro-otology, neuro-oncology, sleep neurology and general). Residents choose these as electives. In 2016–17, Neurology implemented a new mandatory two-month rotation in outpatient subspecialty neurology clinics in PGY3, PGY4 and PGY5. Residents spend time in different subspecialty clinics every half day during this rotation; they obtain experience that starts as exposure (PGY3), leads to competence (PGY4) and ends in mastery (PGY5). A new elective, titled Women in Neurology, is underway and is the only one of its kind in Canada. The elective addresses issues specific to managing women (especially young women of childbearing age) with various neurological conditions (e.g., stroke, epilepsy, multiple sclerosis).

PGY4 residents also attend a well-received, one-week neuromuscular disease course at SMH. The teaching is highly interactive: the major highlight is exposure to patients with less common neuromuscular conditions (e.g., genetically determined conditions), which the residents might otherwise not encounter during their residency training. The Division is adapting this course as a model for a similar one-week course in electroencephalogram (EEG)/epilepsy.

A half-day research symposium aims to stimulate the residents' interest in research. The symposium introduces them to syntax, the design of research projects, research administration and presentation, and manuscript tools. Topics include generation of a research question, research protocol, basic statistics, submission to the Research Ethics Board, writing a research paper and a how-to on presenting results. This learning experience becomes especially relevant in PGY4 when all residents must engage in a research project.

The research project is supervised by faculty, and the genesis of the question occurs in PGY3. A one-page research submission, similar to a letter of intent, follows; it is submitted to the symposium PD for review and comment. The residents report the final results of their research projects at the Division's annual Silversides/Residents' and Fellows' Day in June, and many subsequently publish the results of their projects.





Overall, residents have numerous educational opportunities within the Division of Neurology. They attend subspecialty educational meetings, including the Behavioural Neurology Academic Day, the Movement Disorders Video Rounds, Neuromuscular Day, Prichard Day (paediatric neurology), the Multiple Sclerosis Symposium and the Toronto Neurology Update (CME course). Many residents attend the American Academy of Neurology Annual Meeting and subscribe to the teaching courses to gain additional knowledge.

The PD and hospital site directors maintain an open-door policy should any resident wish to meet, regardless of the circumstances. All residents are aware of it. In addition, the PD meets with all residents and reviews their performance at least twice a year. During these meetings, they also discuss the residents' research projects, career/fellowship goals, career counselling and resident well-being. The DDD frequently meets with PGY5s to assist their career planning.

While preparing for Competence by Design (CBD), the Division initiated a PGY1 ambulatory half-day in a general neurology clinic to establish and refine residents' neurological examination skills before the residents enter PGY2. The emphasis is on direct observation of the performance of these skills. Feedback is given in real time. PGY1 and PGY2 focus on competencies in medicine, neurological examination, neuroanatomy and some general neurology. PGY3 focuses on learning adult general and vascular neurology. PGY4 focuses on pediatric neurology and various subspecialties. PGY5 focuses on

maintaining competency in neurology, preparing for the Royal College Examination and transitioning to become an independent junior consultant.

Fellowships

The Division currently has 17 active fellowships; 20–35 members are enrolled in either clinical or research fellowships, which are distributed across our affiliated-hospital sites per year. Fellows trained in the Division have successfully taken up academic faculty positions around the world as well as in industry. Clinical and research fellowships are offered in behavioural neurology, concussion neurology, neuromuscular medicine, movement disorders, epilepsy, multiple sclerosis, neuro-oncology, pain, neurophysiology and stroke.

The priority for each fellowship program within Neurology is to provide world-class clinical expertise in a subspecialty. While this education occurs primarily in the outpatient setting, all fellowships take place at tertiary referral centres or hospitals where there is access to inpatient neurology services, including neurocritical care. Significantly, clinical trial groups in all subspecialty programs are active at all teaching sites, and fellows gain experience in all aspects of performing clinical research. Fellowships are usually one-to-two years long, but fellows have stayed in training programs for up to five years to complete a doctoral thesis. Formal training in master's programs is often pursued concurrently with fellowship programs, most commonly through the Institute of Health Policy, Management and Evaluation at the University of Toronto.

Continuing Education

There are major academic events that integrate divisional, cross-divisional and community partners to promote innovations and knowledge translation (locally and internationally) and, significantly, to connect knowledge users.

Local: Faculty Research Day highlights faculty research work and is held along with the McEwan-Jones Lecture. This event is organized by the Research Committee.

Toronto Neurology Update (TNU) is typically a one-to-two-day educational event for general practitioners, internists, neurologists, psychiatrists, as well as residents. When TNU is held over two days, two separate subspecialties (including behavioural neurology) are usually highlighted. Recently, the Behavioural Neurology Clinic Day has been combined with the TNU.

International: The Neurology International Residents Videoconference Exchange (NIRVE) was developed in 2014. It is a customized Apple iPod application that disseminates curriculum material and provides seamless communication with learners. Its counterpart, the CanMEDS iPod project, was developed to evaluate the non-Medical Expert CanMEDS roles during the day-to-day performance of residents in the postgraduate training program. The Peter A. Silverman Global e-Health Program, the Canada International Scientific Exchange Program (CISEPO) and the Baycrest Centre for Geriatric Care fund these rounds. Notably, this process has been modelled and adopted by other Canadian training programs.



Behavioural Neurology Rounds is a monthly international videoconference program. Founded in 2005, these rounds link countries across the world under the auspices of the Peter A. Silverman Global e-Health Program, CISEPO and the Canadian Neurological Sciences Federation. Other centres around the world participate: the United States, Argentina, Brazil, Chile, Cuba, Israel, Jordan, Palestine, Russia, South Africa, Spain and Switzerland.

RESEARCH

Neurology faculty members conduct a wide range of research from basic molecular and genetic studies, animal models of diseases, drug discovery, human physiological and imaging studies, and clinical trials (all phases) to clinical epidemiology and health-services research. This research covers all major subspecialties in neurology, including dementia, movement disorders, stroke, multiple sclerosis, epilepsy, sleep, pain and neuromuscular diseases. Historically, Neurology produces knowledge translation that improves patient care, policy, training and innovation on a global scale.

The Division's research enterprise is well-funded. Collectively, the value of grants grew over the five-year review period, from \$16.957 million in 2012-13 to \$24.489 million in 2016-17. The total value over the five-year period was \$95.417 million. Typically, funds are secured from peer-reviewed grants from national and international sources: Canadian Institutes for Health Research (CIHR), the Kidney Foundation of Canada (KFC), the National Institutes of Health (NIH), the Heart and Stroke Foundation (HSF) and Diabetes Canada (CDA).

Significantly, the Division supports its junior investigators through its New Initiatives Program. This program's goal is to provide seed funding for pilot projects to promote research in priority areas, such as collaboration between researchers in different hospitals. These members published 2,064 publications, which generated 21,613 citations and resulted in a 10.47 citation impact.

In the past two years, Neurology has worked to identify new research priorities. While productive, the Division does recognize recent funding and space challenges. Specifically, the Division does not control research space, which is coordinated at the site or Department level. Because of the growing population and inpatient care needs (i.e., increasing beds and clinic space), Neurology’s research growth could be further challenged. Compounded by low (and dropping) overall success rates at CIHR and recent cuts to clinician salary support, programs like the New Initiatives Program may not be enough to supplement research costs. Neurology will explore new funding opportunities in the coming years.

FACULTY

The Division of Neurology consists of a total of 121 faculty members: 64 full-time, 12 part-time, 31 adjunct and 14 others (status only, emeritus).

To be eligible for full-time faculty positions, candidates must have completed advanced training. The required type of training depends on the position description. DoM currently has six job descriptions. See <http://www.deptmedicine.utoronto.ca/academic-position-descriptions>.

Distribution of Neurology faculty according to job description includes 19 CSs, 33 CTs, 17 CIs, three CEs and 45 others (CQIs, CAs, adjuncts).

The distribution of faculty varies across sites. The highest distribution

Table 15.1: Academic Position Description of Full-Time Neurology Faculty

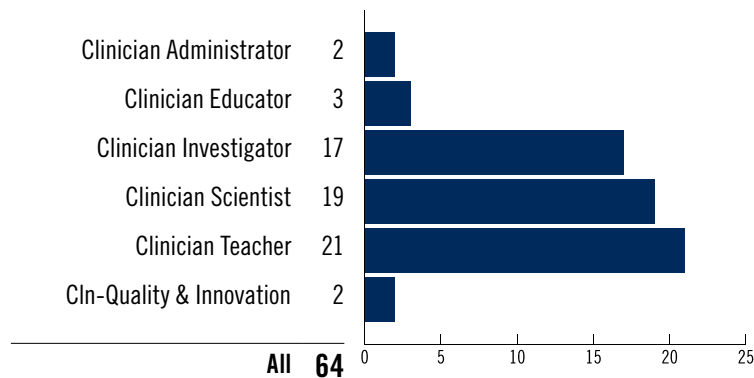


Table 15.2: Affiliation of Full-Time Neurology Faculty

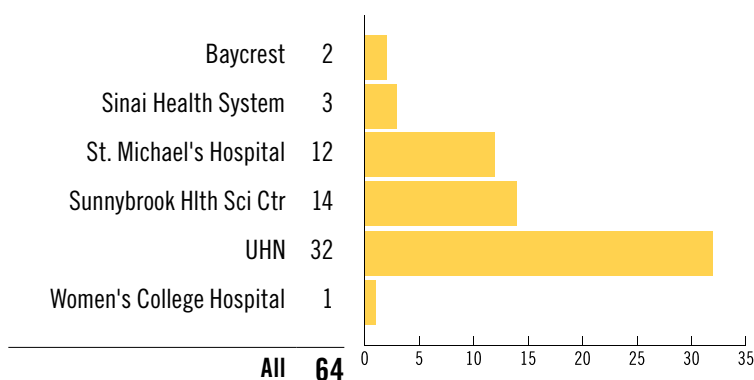
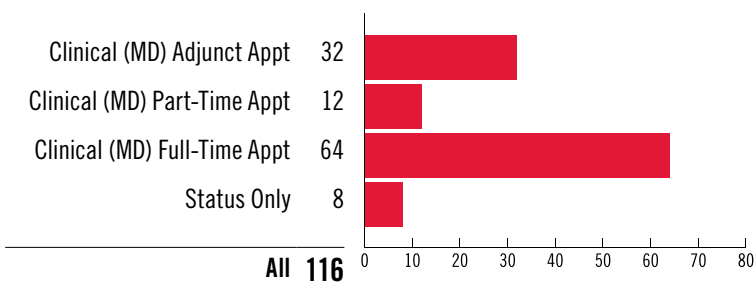


Table 15.3: Primary Appointment of Neurology Faculty



of full-time faculty is at University Health Network (32), Sunnybrook Health Sciences Centre (12) and St. Michael’s Hospital (14).

Faculty are also recognized by numerous awards. To ensure that divisional members have opportunities to be nominated for awards, the Division’s executive keeps

a running list of deadlines for major awards. These deadlines are communicated to faculty by newsletter and on the website. Nominations are coordinated by the DDD and PD where appropriate.

Lastly, the Division recognizes that geography can be a challenge to divisional cohesion. However, because of significant improvements to communications, such as web and digital media (e.g., website, newsletter and videoconference improvements), faculty are better connected to divisional and subspecialty information. This improved communication is demonstrated by strong event attendance and by growing interest, both within and outside the Division, in attending the Division's events.

Recruitment

Neurology has recruited 38 new faculty hires across all ranks. Overall, retention of faculty has not been a major challenge, although some unavoidable moves and losses have occurred. The Division recognizes the need for general neurologists, clinical scientists and teachers, but is working to identify new avenues of funding support to meet these needs. Finding these solutions will be a major focus of 2018–19. The Division's efforts will include examining cross-divisional opportunities more closely to enhance stewardship of resources, facilitate knowledge translation and improve training opportunities that could better prepare trainees for meeting population needs.

MENTORSHIP, EQUITY & DIVERSITY

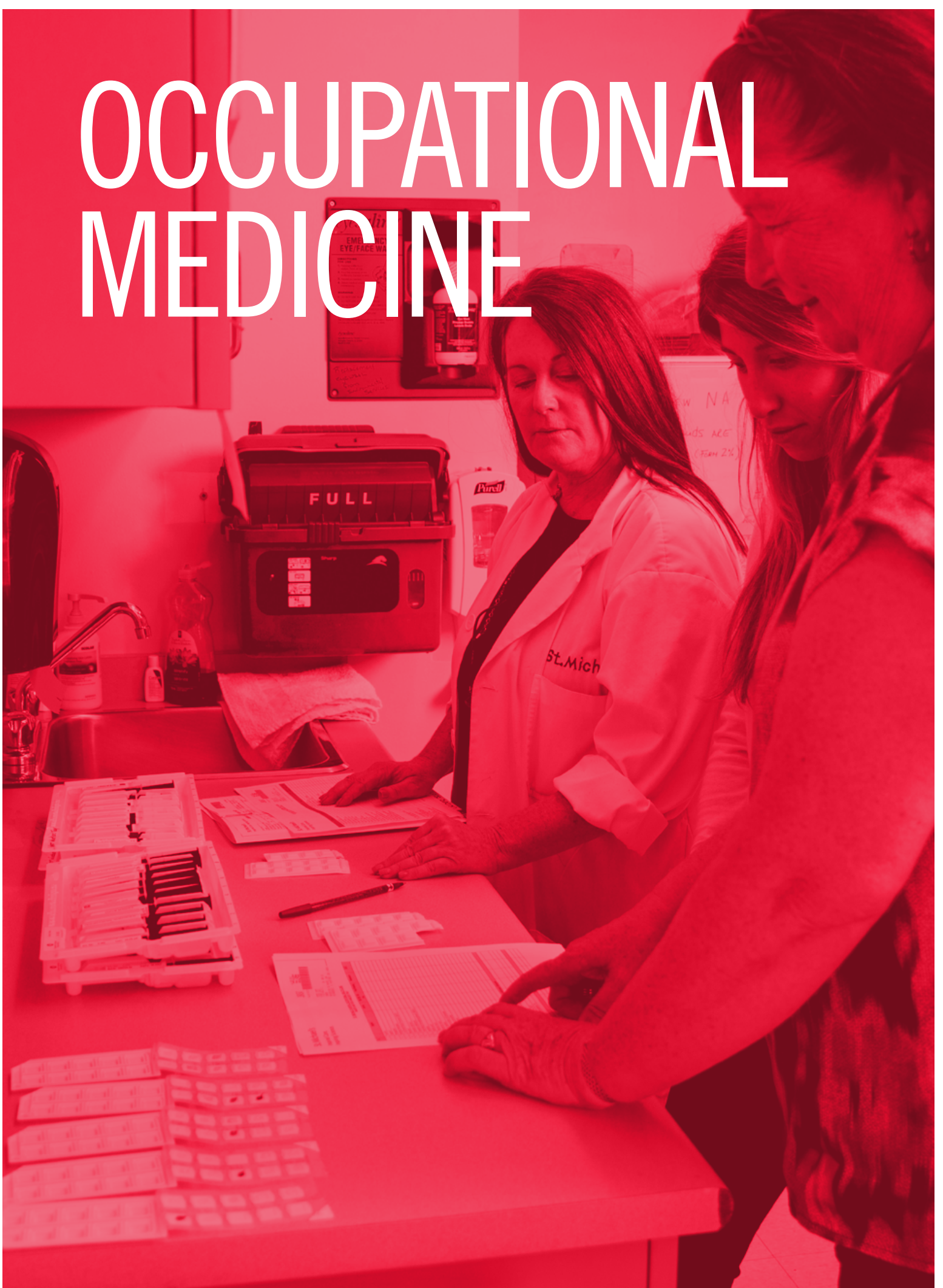
Neurology announced Dr. Antonio Strafella as its first Mentorship Facilitator, aligning with the DoM initiative to appoint these positions across all departmental divisions. As Mentorship Facilitator, Dr. Strafella sits on Neurology's Executive Committee to ensure that divisional planning considers faculty mentorship. Dr. Strafella meets regularly with Dr. Montalban, and has endeavoured to meet all Neurology faculty individually to discuss their mentoring relationships. To this end, he has surveyed division faculty to determine their mentorship expectations and needs. This survey identified geographical distribution as one of the biggest challenges. Dr. Strafella has actively worked with newly recruited and existing faculty to help secure a faculty mentor.

PLANNING AHEAD

Under the direction of Dr. Xavier Montalban the division will undertake a full review of all initiatives in research, education, QI, and mentorship. Planning has commenced through the Executive Committee for a division-wide strategic planning retreat, with an external facilitator expected to occur in early 2019.



OCCUPATIONAL MEDICINE





OVERVIEW

The mission of the Division of Occupational Medicine is to meet the work and health needs of individuals and populations and to meet the future challenges of a changing world of work by training leaders in the field and conducting research and knowledge dissemination.

This Division is active in teaching, research and service. The University of Toronto (U of T) has one of the most robust undergraduate medicine offerings in occupational medicine in the province. The Occupational Medicine Residency Training Program is one of three accredited programs in Canada. It is a two-year subspecialty program. People enter through either General Internal Medicine or Public Health and Preventive Medicine training programs. The program combines clinical rotations with rotations in government, industry and didactic training. The Division is active in research, particularly through the Centre of Research Expertise in Occupational Disease (CREOD).

Occupational Medicine has seven primary-appointment faculty members who work in various settings including academia, specialized clinics, government and industry. Three other division members have their primary appointments in the Dalla Lana School of Public Health. The Division collaborates with other subspecialty divisions, particularly Dermatology, Respiriology, Allergy and Clinical Immunology, Clinical Pharmacology and Toxicology, and Physical Medicine and Rehabilitation in clinical teaching and research activities. The Division aims to disseminate knowledge of occupational medicine within other specialties and subspecialties and is committed to creating opportunities for trainees to understand the role of work in relation to their particular disciplines.

The core clinical site for Occupational Medicine is at St. Michael's Hospital. The Division also has strong links to the Dalla Lana School of Public Health through its Division of Occupational and Environmental Health: the Master of Public Health (MPH) programs and Master of Science in Community Health (MScCH), Occupational Health Care stream.

ORGANIZATIONAL STRUCTURE

Executive Committee

The Executive Committee includes Drs. Ron House, Aaron Thompson and Linn Holness, who meet quarterly.

To prepare for a departmental division director (DDD) leadership transition, the Division held a strategic-planning retreat in January 2016 to inform the Division's next steps. Invitees included Division faculty and key collaborators. Before the retreat, interviews were held with key informants across the health and safety system. An analysis of strengths, weaknesses, opportunities and threats was prepared. Themes were compiled. Discussions focused on core strengths, areas for growth and opportunity, and the risks caused by capacity and/or funding restraints on research, education and clinical areas. These were then mapped to the seven strategic priorities of the Department. Working groups have been formed to address these priorities.

EDUCATION

Undergraduate Medical Education

Occupational medicine content in the undergraduate medical curriculum includes lectures and seminars. Occupational medicine content is also woven into sections of other courses, including a course that teaches history taking and physical examination.

Among the advocacy projects for occupational medicine is a video of history taking created by Division faculty. The video is in use at U of T and other medical schools in the province. This work is supported by the Workplace Health Champion program, developed in 1997 by the Workplace Safety and Insurance Board (WSIB). The Workplace Health Champion advocates for the inclusion of occupational medicine content in the curriculum and delivers some of the occupational medicine sessions. Dr. Gary Liss is the Workplace Health Champion for U of T.

Postgraduate Medicine

Initially, Occupational Medicine was a five-year direct-entry program. The Royal College of Physicians and



Surgeons of Canada (RCPSC) changed the Occupational Medicine program to a two-year subspecialty program. Initially, students could enter from Internal Medicine; later, they could enter from Public Health and Preventive Medicine too. Only candidates certified by the RCPSC in internal medicine or public health and preventive medicine may be eligible for certification in occupational medicine.

Since 2014, Occupational Medicine has had two residents from Public Health and Preventive Medicine and one resident from General Internal Medicine complete the program. Two residents are enrolled in the program: one from Public Health and Preventive Medicine in second year, and one from Internal Medicine in first year. One international medical graduate is also completing a two-year fellowship.

The program has always had successful internal and external reviews by the RCPSC. The last external RCPSC review occurred when the program did not have residents. When this circumstance happens, a mandated internal review occurs once the program is active again.

Given the small number of postgraduate training programs in occupational medicine and limited faculty resources across the three universities that provide them (U of T, University of Alberta and University of Montreal), partnerships are key to enhancing program content. These include internal partnering, such as sharing academic sessions with Physical Medicine and

Rehabilitation, as well as sharing academic sessions with the other two programs in Canada. A key activity for the postgraduate program over the next two years is development and implementation of the Competence by Design (CBD) education program.

Other Postgraduate Training Program Activities

The St. Michael's clinic is an important training site for other programs. The program with the longest and most significant use of the clinic rotation is Dermatology. Each year, six to eight second-year Dermatology residents spend one month in the clinic learning occupational dermatology.

In addition, trainees from Allergy and Clinical Immunology spend varying amounts of time in the clinic. More recently, residents in Physical Medicine and Rehabilitation and General Internal Medicine have been doing occupational medicine rotations. Most trainees are from U of T programs; however, some come from other training programs across the country (e.g., Western University and University of Manitoba). Some Family and Community Medicine residents also spend varying amounts of time in the program (two- to four-week rotations).

Graduate Medicine—Research Graduate Programs

The main vehicle for traditional MSc/PhD programs is the Institute of Medical Sciences at U of T. Division members have supervised both MSc and PhD students. A research-focused program in the MPH program in Public Health Sciences is also an option through Dalla Lana School of Public Health.

Graduate Medicine—Professional Graduate Programs

Professional graduate training in occupational medicine includes the MScCH in Occupational Health Care and the Diploma in Industrial Health. Dalla Lana offers both. The MScCH is open to regulated health professionals and focuses on occupational health.

Continuing Education

The Division's continuing education is delivered in biweekly rounds at St. Michael's Hospital. These rounds are accredited and delivered both in-house and over video conferencing to colleagues throughout Ontario.

Key Educational Activities

Continued development of the undergraduate program, development of the CBD program, expansion of clinical rotations for other specialty and subspecialty trainees and continuing education are the key plans for the next five years.

RESEARCH

Clinical and applied research is a hallmark of activity of the Division of Occupational Medicine. Division faculty generated 104 Web of Science documents over the review period, receiving more than five thousand citations and a Citation Impact factor of 50.55

A major research initiative of the Division is the Centre for Research Expertise in Occupational Disease (CREOD), a collaborative program of U of T and St. Michael's Hospital.

CREOD was founded in 2004. Initially, a stakeholder consultation occurred to develop its research agenda. This process led to the identification of four research programs: three map directly to clinical activity at St. Michael's Hospital (skin disease, respiratory disease, hand-arm vibration syndrome) and a fourth focuses on



biological exposures in the workplace. A fifth program was established five years ago to capture cross-cutting and emerging themes of relevance to occupational disease, including effective Joint Health and Safety Committees, the role of health-care providers in early diagnosis and issues of early recognition and reporting.

CREOD has facilitated important developments in our research programming. These include

- development of programmatic areas of research;
- development of appropriate infrastructure to support research and researchers;
- better integration of students into the research programs;
- enhanced collaborations; and
- a focus on knowledge translation.

Over the years, CREOD has participated in discussions of provincial strategy to address occupational disease prevention in Ontario. Most recently, the DDD has been participating in a provincial Occupational Disease Action Plan implementation team, and is leading a sub-strategy that focuses on lung and skin irritants and allergens.

The CREOD research programs align with the core hospital clinic streams and are well integrated into the clinic. They include clinical databases for use in research, student activity, and pilot research and knowledge-translation projects.

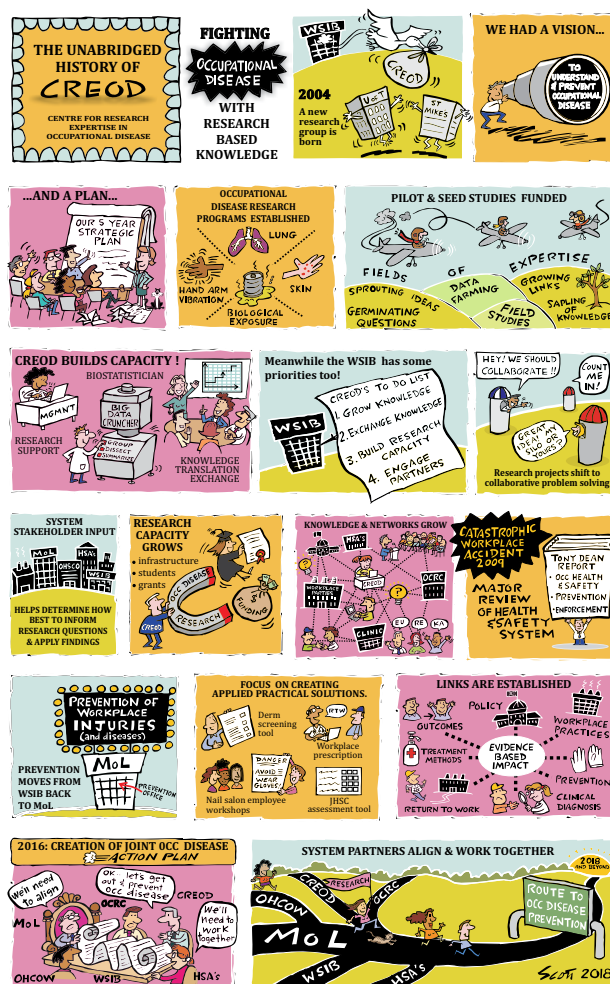
An important resource that CREOD has provided is funding for students, including fellows, master's, and PhD students. It also funds summer studentships for medicine and undergraduate students. Most of these have been situated in the clinic and have assisted clinical research in our program areas.

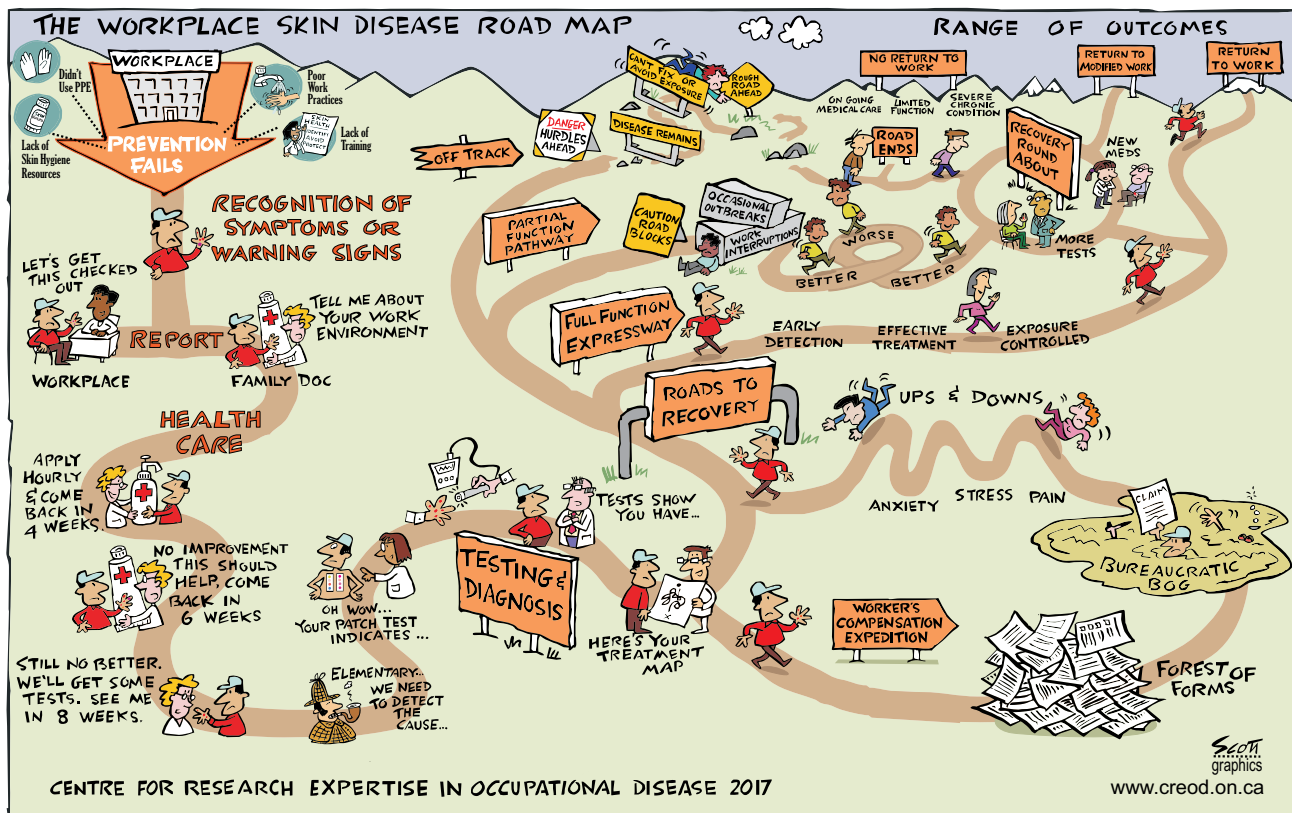
Another key feature of the Division's research is the strong collaboration with other research centres. Cancer Care Ontario's Occupational Cancer Research Centre (OCRC) is a sister research centre that focuses on malignant occupational disease. The DDD was a founding member of OCRC and has served on its advisory council since its inception. Active research collaboration with scientists at the OCRC continues. In addition, the Division has collaborated on research projects with Institute for Work and Health scientists. The Centre for Research Expertise in Musculoskeletal Disease at the University of Waterloo is the other system-funded research centre. The Division has partnered with

the centre on knowledge-translation activities such as a hand-arm vibration syndrome workshop.

Other key collaborations occur with our provincial partners. They have included the Ontario Ministry of Labour (which is responsible for occupational health and safety legislation and enforcement) and WSIB. The Division is well connected within the occupational health and safety system in Ontario and works directly with many of the other partner organizations, teams and working groups.

In addition to CREOD, the Division has started to form links with the Centre for Urban Health Solutions (C-UHS) at St. Michael's Hospital. C-UHS has a focus on social determinants of health and innovative upstream interventions to improve health outcomes for marginalized and vulnerable populations in Ontario and Canada. The Division is working with C-UHS to develop a stream related to work and employment.





Knowledge Translation

The Division has developed tools to enhance clinical practice, including a patch-test checklist and a workplace prescription. The development of an audit tool for occupational medicine consultation notes is being developed. Seeing patients/workers with occupational disease symptoms daily provides a rich perspective and resource for both the research and development of workplace innovations. This unique part of the Division's model greatly enhances its work and strengthens its impact.

The Division spent decades on advocacy and translating knowledge. In 2016, the Ontario Ministry of Labour recognized occupational diseases as a priority.

CLINICAL PROGRAM

The site of the Division's clinical activities is the Occupational Health Clinic at St Michael's Hospital. The clinic hosts the Occupational Disease Specialty Program (ODSP), which is funded by the WSIB. The multidisciplinary and multispecialty model

provides a rich practice environment for all involved.

This clinic is the only occupational disease centre of expertise in Ontario. The diverse and sustained level of funding bought in through CREOD and the ODSP is a key accomplishment.

Several of the faculty work in occupational health services in hospitals across the Toronto area, providing occupational medicine expertise to the hospitals' occupational health programs.

FACULTY

The Division has been working to recognize faculty development and mentorship. Given that most of its faculty are part-time or adjunct, the Division has a strategic priority to examine faculty development and mentoring within this context.

The Division collaborates with faculty from other divisions. Most notably, members from Dermatology, Respiriology, and Allergy and Clinical Immunology work in occupational medicine clinics. This diverse group

Table 16.1: Academic Position Description of Full-Time Occupational Medicine Faculty

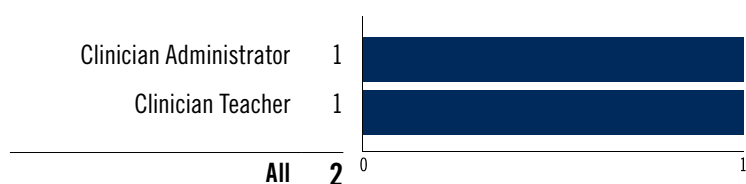


Table 16.2: Primary Appointment of Occupational Medicine Faculty



contributes to the success of the Division and allows rich and varied rotation options for trainees.

There are divisions that already have educational and research relationships with the Division of Occupational Medicine. The most developed relationship is with Dermatology; its residents rotate through the St. Michael’s clinic. In addition, an active research program involves two members of the Division of Dermatology who work in the ODSP. Dr. Susan Tarlo is well known for her work on occupational asthma; she is the CREOD lead for occupational lung disease and an ODSP physician. In Allergy and Clinical Immunology, Dr. Stephen Betschel works in the ODSP where residents have had significant interactions.

The Division has a key relationship with the Division of Physical Medicine and Rehabilitation (PM&R). Occupational Medicine has explored opportunities for educational collaboration: Occupational Medicine residents have attended PM&R academic half days, and Occupational Medicine has provided educational sessions on workers’ compensation, insurance medicine and conflict of interest.

Succession Planning

A key transition over the next year is the arrival of the new DDD and hospital Division Head. The current DDD/Division Head has held the positions for more than 20 years. Plans are in place to provide mentorship for the new DDD to ease the transition into the DoM. Plans are in place to involve the new DDD in clinical and research activities over time to allow for staged transition and integration.

Promotion

Division members have varied position descriptions, so developing clear expectations for promotion is important. One Division member is in the promotion cycle. Geographic full-time (GFT) members will undergo a three-year review. (The first Division member to have such a review will be Dr. Thompson, and it will occur in 2019.)

As a small division, Occupational Medicine does not have awards. However, once the new DDD has started work, awards will be considered.

The Division has appointed a former trainee to consider activities for alumni of the program. They include an alumni newsletter.

QUALITY AND INNOVATION/ADVOCACY

Developing innovations that improve the patient experience is a core activity in the clinic setting. Much of the work is routed in initial studies of patient needs and issues that lead to the development of tools. An example is the workplace prescription. In addition to traditional medical management, workers often need management of their workplace and its exposures. Following input from workers and employers about the type of information needed and the desirable format, a workplace prescription was developed to assist the transfer of workplace prevention recommendations in a clear, written format for all parties involved.

Another important activity relates to vulnerable workers. This work is well aligned with the Centre for Urban Health Solutions, which focuses on health inequalities and social determinants of health.

MENTORSHIP, EQUITY & DIVERSITY

Occupational Medicine does not have a formal mentorship program, though new GFT faculty are paired with a mentor for the first three years. Equity and diversity are considered in all searches, according to departmental and hospital policy.

PLANNING AHEAD

The Division welcomes an external recruit, Dr. Anil Adisesh, as its new DDD in December, 2018. Dr. Adisesh will build on the considerable legacy of the outgoing DDD, Dr. Holness, and the previous strategic directions she has outlined with her executive.

Fundraising

Several fundraising activities are in the early stages. Funds will be raised to support a Chair in Occupational Medicine to satisfy interest expressed in the broader health and safety community. Early discussions are underway to establish a fundraising campaign for a Centre for Worker Health with the Division of PM&R within the DoM. Specifically, the plan will develop a research and education centre focused on keeping those with chronic disease at work. At its core would be Occupational Medicine and PM&R, which would have links to the subspecialties for clinical expertise related to specific diseases and for other researchers involved in this area.

The Division is also exploring funding opportunities through the Centre for Urban Health Solutions at St. Michael's Hospital. The current Ministry of Labour's priority focus is on occupational disease and related exposures, so the opportunity may exist to further expand the program. The Division is well positioned now to significantly affect changes in policy and practice in Ontario.



PALLIATIVE MEDICINE





OVERVIEW

In July 2017, the Division of Palliative Medicine became a new division within the Department of Medicine (DoM), following palliative medicine's approval as a subspecialty by the Royal College of Physicians and Surgeons of Canada (RCPSC). The aims of the new Division are stewardship of the Royal College training program and enhancement of scholarship in palliative medicine. The Division will function in collaboration with the existing Division of Palliative Care in the Department of Family and Community Medicine (DFCM).

A survey sent to all DoM members will assess current activities in palliative medicine and interest in contributing to this new Division. Information from this survey will be used to inform the direction of the new Division. After the survey results have been analyzed, a retreat will be planned; interested members will discuss the direction of the Division and fully articulate a mission and vision.

The intended vision will be one of international leadership in academic palliative medicine. The mission (in the preliminary draft) will be to contribute to the discovery, application, translation and communication of knowledge related to improving the quality of life and the quality of death for patients and their families who face life-threatening illness in inpatient, outpatient and community settings.

A generous donation from the Rose family has provided strong base funding for the Division.

EDUCATION

Royal College Subspecialty Residency Training Program in Palliative Medicine

The mission of the Palliative Medicine Subspecialty Residency Program is to train outstanding palliative care subspecialists who will use clinical, academic and scholarly skills throughout their careers to improve the quality of life and the quality of death and dying for patients with life-threatening illnesses and for their family members.

Training may begin in the final year of residency (Internal Medicine, Neurology or Anesthesiology) or after the completion of specialty training. Lasting two years, training includes successful completion of a scholarly project and successful completion of the certification examination. Two residents began their training in 2017, and two more residents will begin in 2018.

The program meets the specific training requirements set out by the Royal College. In the first year, trainees acquire core palliative care knowledge and skills by rotating through palliative care services in a variety of inpatient, outpatient and community settings. In the second year, trainees learn about the management of end-stage non-cancer illness through a series of focused off-service rotations. At the end of the second year, trainees complete another four blocks of core palliative care rotations; during this time, the trainee will act as a “junior attending” while preparing for transition to practice.

Residents will have two blocks of research and two electives during their two years of training. Each resident is also required to complete a scholarly or academic

project during the course of training. Projects are reviewed and evaluated in a peer-review format at the conclusion of the training program and presented at the national meeting of the Canadian Society of Palliative Care Physicians at the end of the second year.

Graduate Education

A graduate program in palliative and supportive care has existed in the School of Graduate Studies at the University of Toronto (U of T) since 2006. This program is housed in the Collaborative Program in Aging, Palliative and Supportive Care across the Life Course.

Participating graduate units include

- Health Policy, Management and Evaluation;
- Health Administration;
- Public Sciences;
- the Institute of Medical Science; and
- 16 others.

Fellowship Program

The Division of Palliative Medicine offers three fellowship streams for Canadian and international applicants:

- one-year Clinical Fellowship with a focus on cancer;
- one-year Clinical Fellowship with a focus on non-malignant illnesses; and a
- two-year Clinical Research Fellowship.

The purpose of the clinical fellowships is to train physicians to practise palliative care competently at a consultant level. Fellows develop clinical skills by providing palliative care for a wide spectrum of patients in different palliative care practice settings such as community and tertiary palliative care units, inpatient consultation services, residential hospices and outpatient clinics.

Fellows in the research stream have 60 per cent

protected time for research and the opportunity to develop research proposals, prepare presentations for local, national and international meetings, and write papers suitable for peer-reviewed journals. Fellows applying for the research fellowship must have completed clinical training in palliative care, as the training emphasis is on developing research skills.

All fellows participate in an interdisciplinary academic



environment. They have ample opportunity for feedback and presentation at local rounds, including the Manuscript Review Seminar, Pain and Symptom Management Rounds and the Journal Club.

Fellowships thus far have been based mainly at the University Health Network (UHN), specifically at the Princess Margaret Cancer Centre and Toronto General Hospital. There is annual funding for approximately six clinical fellows and two research fellows, who have come from Canada and countries such as the United Kingdom, Ireland, France, Israel, Australia, India, Saudi Arabia, Jordan, Egypt, Thailand, Brazil, Chile, Mexico and the Philippines. An overt aim of the Division will be to extend these fellowships across the other University-affiliated hospitals. Fellowships are funded through a combination of sources including the trainee's home program (where available), the Division and the hospitals.

Continuing Education

Quarterly city-wide rounds are organized by the Division of Palliative Care in the DFCM. As well, the UHN hosts monthly Pain and Symptom Management Rounds as well as an annual full-day course on palliative care for the non-specialist. At the upcoming retreat, we will discuss how some of these local efforts can be scaled up to a city-wide level and how to avoid duplication and increase collaboration.



RESEARCH

International leadership in research will be a priority for the Division of Palliative Medicine. The inaugural Departmental Division Director (DDD), Dr. Camilla Zimmermann, is a clinician scientist who has Canadian Institutes of Health Research (CIHR) funding, an international reputation in palliative care research and well-established international connections. She is a member of the Scientific Advisory Board for the European Palliative Care Research Centre and the European Association for Palliative Care Research Network, which has 17 collaborating centres including U of T.

Collaborative city-wide research will be fostered through yearly competitions for divisional grants, which require participation of at least two sites. These grants will be funded jointly by the Division and by the Global Institute of Psychosocial, Palliative and End-of-Life Care, an extra-departmental unit at U of T. Projects will be presented at a yearly Research Day, which will feature research by trainees as well as staff. Currently, most research in palliative medicine at the University is in oncology, and an aim will be to expand this research to non-cancer populations.

Palliative Medicine residents interested in research will be identified early in their training to establish appropriate mentorship. They will be encouraged to pursue the two-year research fellowship program after their training, while completing an advanced degree.

FACULTY

There are approximately 20 Royal College–certified internists who are working as consultants in palliative medicine in University-affiliated hospitals across Toronto. Approximately half work full-time as palliative care specialists, while the other half also practise in another subspecialty, such as general internal medicine, respirology or emergency medicine.

Palliative medicine is relevant for many subspecialties of the DoM, and there may be other members of the DoM interested in contributing to academic activities in the Division such as collaborative research, teaching for the Royal College program or participating in continuing education.

Currently, faculty working full-time as specialists in palliative medicine have appointments in other divisions or in the DFCM. Following distribution of the departmental palliative medicine Faculty Survey, faculty will indicate their interest in a primary or cross-appointment to the Division of Palliative Medicine, and appointments will be requested accordingly.

Most current faculty practising palliative medicine are clinician teachers. Therefore, a concerted effort will be made to recruit and train clinician investigators and clinician scientists. Appropriate protected time, commensurate with job description, will be ensured by

funding through individual practice plans at the relevant site, as well as start-up divisional funding.

QUALITY AND INNOVATION

Quality and innovation are of great importance in palliative medicine. Current and planned initiatives include

- developing standards for thromboprophylaxis in patients in inpatient palliative care settings,
- using mobile technology to assess symptoms, and
- developing a mechanism for symptom screening with targeted early palliative care involvement for symptomatic patients.

Early palliative care has been a focus of research and innovation. Specialized palliative care clinics have been created for patients with cancer, interstitial lung disease, movement disorders and heart failure. These clinics have been created for patients awaiting or receiving organ transplants; a clinic is planned for patients with connective tissue diseases.

There is a high rate of burnout in palliative medicine. Burnout is related not only to working with patients and families facing advanced illness, but also to the perception





of a lack of resources and the stigmatizing both of patients with advanced illness and of those treating them. The acknowledgement of palliative medicine as a subspecialty is a large step that will bolster morale for practising physicians and encourage trainees to enter this rapidly advancing field. Palliative care is practised in hospital-based interdisciplinary teams. It is likely that for most physicians, their source of support will continue to be their local palliative care team. In addition to medical colleagues, team members from the professions of nursing, social work, psychology, spiritual care and psychiatry are potential sources of support.

As part of their academic half-day, residents in the Royal College training program are involved in a multi-part self-care series assisted by two faculty members in the DFCM who have experience in physician wellness. These sessions allow residents the opportunity to discuss challenging issues and explore methods of coping. Residents are provided with relevant articles and resources over the course of their training. The faculty mentor also facilitates resident wellness through regular meetings that explore stress and concerns and provide counselling and support as needed. As well, during many of the palliative medicine rotations, the resident will be in a supportive interprofessional team.

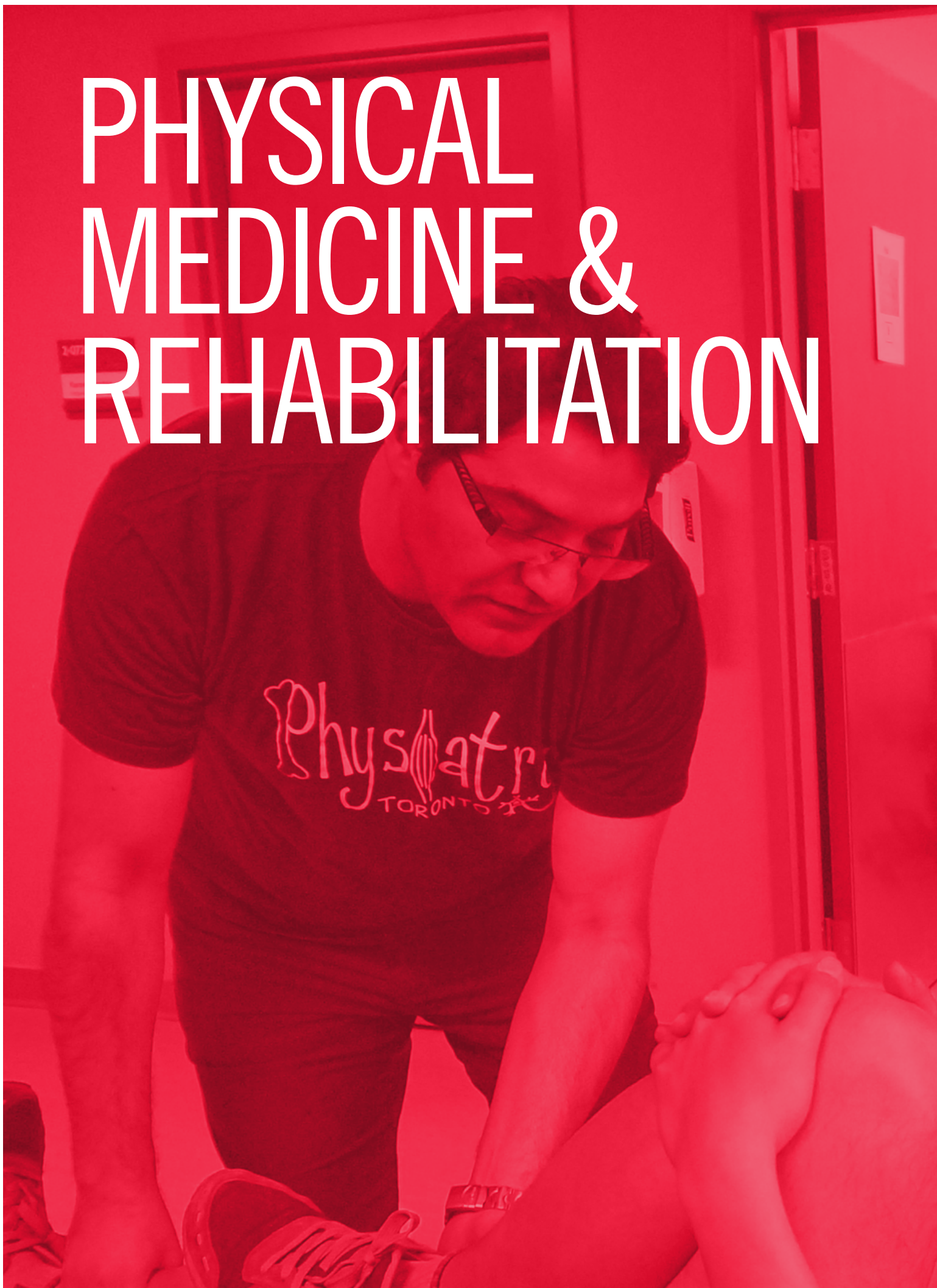
There will be a retreat every second year, which will be attended by both staff and trainees. The retreat will provide a relaxed setting, provide opportunities to reflect on wellness and resiliency and promote self-care.

MENTORSHIP, EQUITY & DIVERSITY

A formal mentorship program is in place for residents in the Royal College palliative medicine program and will be developed for new staff under the direction of a mentorship facilitator. Mentors will be chosen according to areas of academic interest, job description and career goals. A short survey will be completed at the end of every academic year to track the success of the mentorship program.

Across the world, palliative medicine is practised mainly by women; however, this is less so in academic palliative medicine and even less so in leadership positions. Among the 20 faculty members who are practising as palliative medicine consultants at hospitals affiliated with U of T, half are women, and 70 per cent of those are working full-time as palliative medicine specialists. Principles of gender equity and diversity will be upheld for all committees including the executive, Search Committees and the Residency Program Committee. The Residency Program Committee also includes one or more representatives from nursing, social work, bioethics, spiritual care and/or pharmacy.

PHYSICAL MEDICINE & REHABILITATION





OVERVIEW

The Division of Physical Medicine and Rehabilitation (PM&R) has a strong and growing presence across a wide breadth of clinical, educational and research areas. The Division spans four academic health science centres, two community-affiliated hospitals and other physical sites across the Greater Toronto Area. The Division is the largest and most productive physical medicine and rehabilitation unit in Canada and one of the strongest in North America.

At a systems level, PM&R has led the development of important national guidelines for delivery of care in stroke, brain injury and spinal cord injury (SCI). It has developed several Cochrane Reviews addressing musculoskeletal pain and disability. The Division leads an educational model called Extension of Community Healthcare Outcomes (Project ECHO Ontario) in which primary care physicians are educated on how to best care for patients with pain and other disabilities.

The Division has a strong group of young and mid-career faculty who focus on quality improvement and patient safety. Their areas include the introduction of regular physician huddles and morbidity and mortality (M&M) rounds into the rehabilitation arena, improved transitions across sites of patient care, and improved patient education. The group has also established indicators of quality care for rehabilitation settings.

Faculty and residents have active research programs in the treatment of specific clinical disorders including spasticity, myofascial pain, osteoporosis, anoxic brain injury, amputee rehabilitation, cardiac rehabilitation and peripheral nervous system injuries. The Division continues to make innovative research discoveries and translate that knowledge into the clinical setting, so that patients with disabilities can improve function and community participation after serious illness and injury.

In 2015, a strategic-planning process that focused on city-wide engagement was completed. The planning incorporated an extensive and open consultation which included the following:



EDUCATION

The number of undergraduates and postgraduates (core residents, electives, fellows) who rotate through the University's PM&R clinical sites has increased over the past four years. The growth in postgraduate numbers over the past three years was largely due to the increase in core PM&R residents and fellows.

The Division's residents and fellows rotate to eight Toronto hospitals as well as to community sites and hospitals in other cities.

- interviews with individuals inside and outside the Division;
- focused working groups that engaged all Division members;
- surveys that gathered information on preliminary goals and priorities; and
- a Division retreat that confirmed six final priorities: faculty development, communications, intraprofessional collaboration, quality improvement, education and research initiatives.

Ultimately, the purpose of the plan is to

- guide meaningful investment in faculty members;
- promote the patients' voices in education programs to produce physicians better prepared to meet patients' health care needs;
- resource research appropriately to drive discovery and innovation; and
- translate new knowledge effectively through education and multidisciplinary collaboration and partnerships.

Leadership

The Executive Committee is led by the Departmental Division Director, Dr. Larry Robinson, and includes Drs. Mark Bayley, Lisa Becker, Cathy Craven, Nora Cullen, Chris Fortin, Amanda Mayo and Perry Tepperman. The Committee meets quarterly and communicates more frequently by email.

Divisional leadership also consists of Dr. Nora Cullen as Mentorship Facilitator, Dr. Lisa Becker as Residency Program Director, Dr. Andrea Furlan as Fellowship Committee Lead, Dr. Julia Warden as Undergraduate Medical Education Lead and Dr. Cathy Craven as Research Committee Lead.

Undergraduates

PM&R takes an active role in undergraduate medical education. A junior faculty member, Kim Coros, is the designated lead for Exercise Is Medicine across multiple pre-clerkship courses. The Division actively engages in problem-based learning, introducing clinical examination and observership opportunities. PM&R hosts additional evening training workshops, called Musculoskeletal (MSK) Training Nights, to enhance skills in the examination of limbs and joints. There is an active and well-supported PM&R special interest group in the medical school class.

Residents/Graduate Trainees

The interest in PM&R residency training at the University of Toronto (U of T) is growing significantly. For example, over 60 pre-clerkship students attended the Division's November 2015 Introduction to PM&R lunchtime talk. In the 2016 residency program, our Division had three Canadian Medical Graduate positions. Four graduating U of T medical students applied, and a total of 36 applications were received through the Canadian Residency Matching Service. The Division interviewed and ranked 25 of the 36 applicants and ultimately matched three of the top six choices. Postgraduate Medical Education (PGME) recently approved a fourth residency training spot; there were previously three. In part, this reflects workforce needs. In the United States, there are 3.0 physiatrists per 100 thousand population, while in Canada and Ontario there are only 1.3 physiatrists per 100 thousand. Highlights of the residency training program include the following:

- We have the largest PM&R Residency Program in Canada with a total of 21 residents.
- Residents are very involved in peer teaching, including teaching MSK clinical skills to family

medicine residents and giving lunchtime talks to internal medicine residents.

- Residents participate in undergraduate medical education teaching.
- The PM&R program hosts the MSK Clinical Skills Night for second-year U of T medical students, at which staff and residents provide small group teaching to students to enhance their MSK clinical exam skills.
- PM&R residents consistently win awards at the Canadian Association of Physical Medicine and Rehabilitation (CAPMR) annual meeting for their research and essays.
- We offer a resident research mentorship program, in which all residents have a research mentor from the Division of PM&R.
- Toronto co-hosts the Canadian Comprehensive Review Course in PM&R offered to senior physiatry residents on a two-year cycle.
- We provide opportunities for local, national and international electives.
- Last year, we had a 100 per cent success rate on Royal College examinations.
- Over the last five years, 100 per cent of our residents have been hired—locally, nationally and internationally.

Fellows

The Division of PM&R has an active clinical fellowship training program. Clinical fellowships offer advanced clinical training to fill the specific learning needs of the trainee, which are framed within the CanMEDS roles of medical expert, communicator, collaborator, manager, health advocate, scholar and professional. The clinical fellowship is an educational experience that also involves significant patient contact and care provision in an interdisciplinary environment supervised by a physician who holds an appointment in the Division of PM&R. Several of the clinical fellowships provide exposure to clinical research in the field and the opportunity to conduct a clinical research or quality improvement project.

All PM&R fellowship programs provide at least one half day per week of protected academic time.

A limited number of fellowships funded through the Division of PM&R are available. Both visa and non-visa applicants are advised to seek funding support from their own institutions or governments. The clinical fellowship is a non-accredited program for board-certified or board-eligible physicians. The fellowship does not lead to certification by the Royal College of Physicians and Surgeons of Canada (RCPSC). Fellowships offered within the Division of PM&R include amputee rehabilitation, brain injury rehabilitation, cancer rehabilitation, cardiovascular prevention and rehabilitation, chronic pain rehabilitation, multiple sclerosis rehabilitation, neurological rehabilitation, and SCI rehabilitation.

Continuing Medical Education

The Division leads various continuing medical education (CME) initiatives, which include

- U of T Annual PM&R Conference,
- training in ECHO, and
- leadership in the Canadian Association of PM&R.

In addition, faculty members individually lead CME events for specific impairment groups. For example, Dr. Mark Bayley has contributed to Canadian Partnership in Stroke Recovery meetings; Dr. Nora Cullen will host the International Brain Injury Society; Dr. Cathy Craven will lead the Eighth National SCI Conference; Dr. Paul Oh has developed the Cardiac College and related online tools; Drs. Chris Boulias and Farooq Ismail lead spasticity CME events; and Dr. Anthony Burns has led development of SCI-U, an online resource for patients and family members.



RESEARCH

In terms of research productivity, PM&R faculty reported 405 publications on WebCV between April 1, 2012, and March 31, 2017.

PM&R researchers are highly cited: 1,495 citations appeared during the review period and had a citation impact rating of 3.69. Divisional faculty held an average of 29 grants each year over the reporting period, totaling \$8.681 million.



Research Environment

The PM&R Division has leveraged opportunities for collaboration extensively across the University of Toronto. Division faculty work with a variety of medical and surgical disciplines as well as engineers, health services researchers and quality improvement experts. Many of these projects are national or international. PM&R faculty have had a large national and international impact via guideline development, development of novel techniques, assessment of health conditions, and evaluation of rehabilitation therapies and technologies used around the world. Examples include the following:

- Dr. Mark Bayley led development of health services and guidelines for brain-injury stroke rehabilitation both in Canada and with colleagues in Australia.
- Dr. Cathy Craven developed a process for acquiring and analyzing knee-region bone density scans and identifying fracture risk factors. She has also worked with national collaborators to evaluate drug and rehabilitation therapies (functional electrical stimulation, body weight supported treadmill training and whole-body vibration, WBV) for treatment of osteoporosis after SCI (www.robacotrial.com).
- Dr. Nora Cullen performed collaborative research on hypoxic ischemic encephalopathy and the collection of practice-based evidence about rehabilitation of moderate to severe traumatic brain injury.
- Dr. Andrea Furlan implemented and studied the ECHO program for pain, conducting systematic reviews about neck and back pain in partnership with the Institute for Work and Health.

- Dr. Julio Furlan has described the health and economic outcomes of neurosurgical intervention for SCI.
- Dr. Dinesh Kumbhare developed a novel method for ultrasound imaging of muscle to facilitate diagnosis of myofascial pain.
- Dr. Larry Robinson developed the Robinson index, used worldwide for electromyographic diagnosis of carpal tunnel syndrome.
- PM&R faculty contributed to the World Health Organization's *Rehabilitation in Health Systems* guideline. Our PM&R team provided the evidence for five of nine recommendations (http://www.who.int/rehabilitation/rehabilitation_health_systems/en/).
- PM&R faculty have leadership roles in the care and classification of para-athletes. For instance, Dr. Steve Dilkas led medical care for the Canadian Paralympic team at the games in Seoul, and Dr. Sivakumar Gulasingam travels worldwide to classify and care for disabled athletes during competition.

FACULTY

PM&R faculty provide patient care at clinical sites, actively educate medical students and future physiatrists and conduct important research in the efficacy and efficiency of rehabilitation along the patient-care continuum. Over the past five years, we have worked to increase the number of faculty members. The Division currently has 25 full-time, 31 adjunct and six part-time faculty. A number of cross-appointed faculty have additional specialties in anatomy and psychiatry.

Faculty cover a wide range of rehabilitation specialty areas including the following:

- Acquired brain injury
- Amputee
- Anatomy
- Burns
- Cardiac
- Electromyography (EMG)
- Multiple sclerosis
- Musculoskeletal
- Neurological
- Neuromuscular
- Oncology
- Orthotics
- Paediatrics
- Pain management
- Respiratory
- Spasticity
- Spinal cord injury
- Sports medicine
- Stroke

Over the last five years, the Division has enhanced relationships with other divisions and hospitals in various ways. They include

- building acute-care consult services at several fully affiliated hospital sites;
- establishing collaborative research projects;
- sharing educational opportunities across divisions and departments (academic half days, workshops);
- collaborating on fundraising opportunities when possible; and
- using social media and a monthly newsletter to share news of interest.

Table 18.1: Academic Position Description of Full-Time Physical Medicine & Rehabilitation Faculty

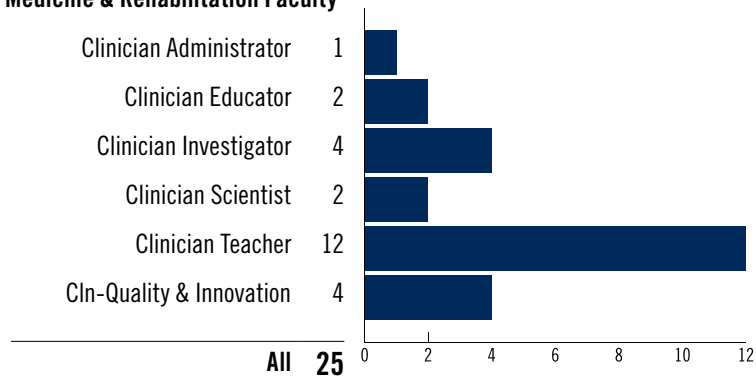


Table 18.2: Affiliation of Full-Time Physical Medicine & Rehabilitation Faculty

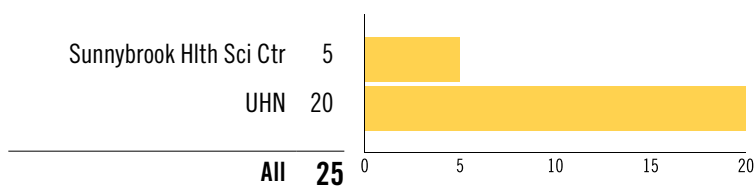
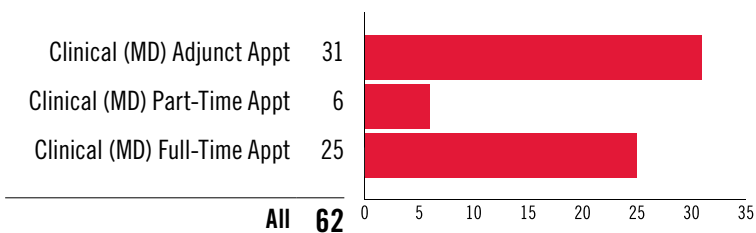


Table 18.3: Primary Appointment of Physical Medicine & Rehabilitation Faculty



Challenges

One divisional challenge has been securing operating and salary funding awards. A second challenge has been finding ways to overcome the physical distances between sites. The Division has approached this challenge by exploring online resources, including distance participation in education, whenever possible.

Planning Ahead

Over the last four years, the division has been meeting key milestones identified in the most recent strategic plan, including faculty development, communication, interprofessional collaboration, quality improvement, education, and research. It is expected that in spring of 2019, nearing the end of the current division director's initial five-year term, a Division review will be completed. Based on feedback from that review, as well as input from stakeholders, a new strategic plan will be developed for the 2019–2024 timeframe.

Supporting Faculty

Depending upon their faculty status (full-time, part-time or adjunct), faculty members are subject to regular review to ensure that they are academically on track and appropriately mentored and resourced. At our fully affiliated hospitals, all faculty are reviewed yearly. Part-time and adjunct faculty are given an opportunity for yearly meetings with the Division Chief if requested. In the past five years, two of our faculty were promoted or appointed to full professor (Drs. Mark Bayley and Larry Robinson).

Each year, the Division of PM&R seeks nominations for awards to be presented to members of our faculty who have provided exceptional service to the Division. Nominations are open to both full-time and part-time faculty. All members of the Division of PM&R are eligible for a maximum of one award in each category within a five-year period.

- The Achievement Award is presented to an individual who has offered, over several years, exceptional service toward the development and growth of the Division (e.g., organization of teaching programs, creation of specialized clinical programs or services, mentorship, etc.)
- The Innovator of the Year Award is presented to an individual for a remarkable professional achievement. This achievement may be related to research, education, creative professional activities or any other

major activity that promotes and enhances the profile of the Division of PM&R at U of T.

- The Distinguished Academic Service & Leadership Award is presented in recognition of valued academic contribution for more than 20 years and for exemplary leadership in the Division of Physical Medicine and Rehabilitation at the University of Toronto.
- The Distinguished Lifetime Career Award is presented in honour of invaluable lifetime contribution to the speciality of Physical Medicine & Rehabilitation.

The first two awards are presented annually, provided an eligible recipient is identified. The latter awards are presented on an occasional basis.

The Awards and Recognition Committee also nominates members of our Division for Faculty of Medicine awards and for awards presented by outside organizations such as the CAPMR, College of Physicians and Surgeons of Ontario and the RCPSC.

Promotions have been emphasized over the past five years. We have attempted to move lecturers forward to assistant professors as soon as they meet the criteria. Several community-based faculty members have been promoted to assistant professor (Drs. Steve Dilkas, Chris Boulias and Farooq Ismail).

Faculty accomplishments are regularly recognized in our monthly newsletter and on our divisional Facebook page.

Junior and mid-career training is encouraged. The Division has an annual retreat, an annual Quality Day and an annual Research Day to which all faculty are invited. Many are asked to present. Often there are keynote lectures or workshops to enhance skills. At times, more advanced training is encouraged. For instance, one of our Associate Professors, Dr. Dinesh Kumbhare, recently obtained his PhD.

Our communication philosophy is one of inclusiveness and recognition. It includes the following::

- Annual retreat given off-site. Faculty from diverse backgrounds are asked to present, making sure that presenters are spread evenly between:
 - » sites across the GTA,
 - » community and academic sites,
 - » junior and senior faculty, and
 - » women and men.

- Social media/Facebook community. See <https://www.facebook.com/Physical-Medicine-Rehabilitation-University-of-Toronto-853694601410615/>.
- The monthly newsletter includes content about the Division, specifically information about annual retreats, social events, lectures, resident community engagement (city-wide community), etc. See <http://www.deptmedicine.utoronto.ca/node/668>.



Faculty Wellness

The Division actively promotes faculty wellness. There are three yearly social events. Many of our faculty members are drawn to exercise and use this opportunity to promote wellness. Many teach about exercise in the undergraduate and postgraduate setting.

Recruitment Plans

Our recruitment over the next several years will focus on placing physiatrists in acute-care settings at Sunnybrook, St. Michael's Hospital and at University Health Network acute care sites. We also see opportunities at Mount Sinai as well as our community partner hospitals.

QUALITY AND INNOVATION/ADVOCACY

Quality improvement (QI) has been a significant focus of our Division. We particularly wish to build capacity for this very important work. We recently completed a Division-wide initiative to improve medication reconciliation; this initiative resulted in a doubling of compliance at the three clinics that participated. Our senior residents also participate in a new QI initiative each year.

Our Division has had significant involvement with Choosing Wisely Canada (CWC). Dr. Larry Robinson is the CWC leader for the specialty in Canada.

Dr. Cathy Craven has taken a leadership role in developing structure, process and outcome indicators for spinal cord injured patients across Canada.

Humanitarian contributions from our faculty members are significant. Dr. Nora Cullen has developed Nepalability—an international effort to bring rehabilitation to individuals with disability in Nepal. Drs. Steve Dilkas, Sivakumar Gulasingam, Amanda Mayo and Gaetan Tardif have supported para-athletes worldwide and at the Paralympics and Invictus Games.

MENTORSHIP, EQUITY & DIVERSITY

Division mentorship is coordinated by the Mentorship Lead, Dr. Nora Cullen. There is both formal and informal mentoring. Mentors are assigned when new faculty start. In addition, both Drs. Nora Cullen and Larry Robinson work to connect faculty members with mentors inside and outside the PM&R Division.

Equity and Diversity

Dr. Larry Robinson is an integral member of the DoM Committee on Mentorship, Equity and Diversity. A conscious effort is made to build diversity (gender, age, site of practice, academic/community) in many settings, including search committees, Division committees and Division presentations.

RESPIROLOGY



ORGANIZATION & STRUCTURE

Respirology is a relatively young subspecialty of internal medicine. The field evolved out of the tuberculosis sanatoria in the 1960s with most respiratory specialists having trained in the United Kingdom. In Toronto, under the direction of Dr. Colin Woolf, the Respirology Training Program was established in 1972, the same year as the first accreditation in Respirology by the Royal College of Physicians and Surgeons of Canada. Toronto has played an important role in the evolution of this field in Canada and abroad with several major contributions. These include elucidation of mechanisms involved in the control of breathing during wakefulness and sleep; the development of novel modes of mechanical ventilation and description of ventilator-induced lung injury; the establishment of the first sleep laboratory devoted to sleep-related breathing disorders; the demonstration of the relationship between sleep apnea and cardiovascular disease; the development of the largest adult cystic fibrosis clinic in Canada; as well as the first lung transplantation, to name just a few milestones.

Building on the visionary leadership of Dr. Woolf, the Division has flourished under the guidance of its esteemed Departmental Division Directors (DDD) who have included Drs. Michael Hutcheon, Eliot Philipson, Arthur Slutsky, Gregory Downey and Elizabeth Tullis, all international leaders in their respective fields. They have fostered dramatic growth in the numbers of faculty and in the scope and depth of clinical, research and educational programs. However, following Dr. Downey's departure as DDD in 2006, the Division experienced rapid turnover in its leadership with three DDDs (two of them acting) in six years. In January of 2012, Dr. Douglas Bradley was appointed DDD and has remained in this position.

In 2013, Respirology developed and began implementation of an updated Strategic Plan. To begin the strategic planning process, the Division developed the following Vision Statement to guide its deliberations: *"To achieve international leadership in innovative, productive and world-class respiratory research and training programs."* The Strategic Plan is well aligned with DoM strategic priorities. In particular, the Division created a Research Advisory Committee that helps ensure that research efforts consider future population needs and promote the generation and translation of new knowledge to improve health outcomes.



Organization and Structure

The Departmental Division Director (DDD), along with the Executive Committee, sets the Division's academic mission, including strategic planning, policy implementation and fundraising. The executive is representative of the geographic sites, and of the academic and clinical interests, of the Division's membership.

The Research Advisory Committee (RAC) is responsible for organizing the respirology trainee and faculty research activities of the Division. The RAC consists of a Chair and members representing the Division's research areas.

Specific duties are

- Providing advice about respirology residents' research projects;
- soliciting and reviewing applications for intramural research grants from the Pettit Block-Term Grant Fund;
- organizing the annual Respirology Research Day; and
- overseeing the Meet the Investigators Evening.

The RAC Chair reports to the DDD.

A quality improvement (QI) program has been integrated into divisional activities, and a Director of QI has been appointed to organize and supervise respirology resident QI projects.

The Director of Faculty Development is responsible for meeting all new faculty members and assigning each a

formal mentor to enhance their chances of passing the Continuing Faculty Appointment Review (CFAR) three years after an initial appointment. The Director also meets faculty who are up for promotion to advise them how to successfully navigate this process. The DDD and the Division's Administrator are responsible for publishing the Division's newsletter, *RespNews*, twice a year.

In recent years, DDDs have been provided some discretionary funds to promote University-wide interactions and team building at the research, educational and residency training levels. These activities have given greater meaning to being a member of the University of Toronto's Division of Respirology. The funds have increased the scope of the Division's capabilities and reduced reliance on industry to support various academic initiatives such as bringing in visiting speakers for our Research in Progress Rounds.

RESEARCH

The University of Toronto (U of T) Division of Respirology is world renowned for its research and clinical programs in lung transplantation, sleep-related breathing disorders, cystic fibrosis and lung injury. Accordingly, these areas of excellence have received priority for resource allocation and recruitment. The highest priority was recruiting investigators to work in areas of research excellence.

A key objective was to hire a PhD research scientist to enhance basic research productivity. First, Dr. Bradley hired a new PhD research scientist, Dr. Gaspard Montandon, to work on control of breathing during sleep. Second, a formal search was begun to identify the best individuals for investigator positions. Third, a research rotation was put into effect to encourage respirology trainees to get involved in research and pave the way to academic careers. Fourth, an RAC was appointed to advise trainees on their research rotations and supervisors and to review progress. The RAC received funds from the Pettit Chair in Respiratory Medicine to support a peer-reviewed, intramural grant competition for faculty members (the Pettit Block-Term Grant Fund). Applicants in the first seven years after their appointments receive priority treatment. These grants, which can be as much as \$10 thousand, support the

start-up of new projects and the purchase of equipment; the money helps junior faculty compete successfully for external grants once they have begun a project.

The RAC also organizes an annual Meet the Investigators Evening. New trainees meet the Division's investigators in person in an informal collegial atmosphere to see what research is going on and what sort might suit them for their research rotations.

Each year, the Division holds an annual Research Day. Investigators and their trainees submit abstracts that are then presented at this venue. Generally, 40 to 50 abstracts are presented per year, and approximately 90 to 120 people attend an all-day session. Awards are presented to four winners in basic and clinical science. In 2017, to recognize outstanding research contributions sustained over time, we established two new research awards: the Excellence in Research Faculty Award and the Outstanding Research Trainee Award. These will be awarded annually.

Weekly city-wide Respiriology Research in Progress Rounds are run by Dr. Matthew Binnie. These rounds have attracted excellent local and visiting speakers and very good attendance. Cutting-edge research is disseminated to faculty and trainees in an open forum made widely accessible via video conferencing from the Toronto General Hospital site to four other teaching hospitals in Toronto.

Respirology participates in multidisciplinary, multidepartmental research. For example, Respirology faculty have captured three Department of Medicine (DoM) multidisciplinary Integrative Challenge Grants, the most of any division within the DoM. Funds



from the Pettit Chair provided seed funding to Dr. Chung-Wai Chow; the money supports a joint project between the Faculties of Medicine and Engineering. (Dr. Arthur Chan will participate.) This funding aided successful applications to Canadian Institutes of Health Research (CIHR) and Health Canada to study the cardiopulmonary health effects of air pollutants released by the Fort McMurray wildfires in 2016.

With the support of the Department of Advancement, we raised funds for the Godfrey S. Pettit Chair in Respiratory Medicine to support the Division's academic activities. The Chair was awarded to Dr. Bradley in 2015 and provides funding to the RAC for an intramural, peer-reviewed research grant application. The Pettit Distinguished Visiting Professorship in Respiratory Medicine was also established. It funds a visiting scientist who gives lectures and engages in research interactions with Division members. The balance of the funds is earmarked for discretionary spending on academic activities.

Another high priority is funding a fellowship to support graduates of the Division's respirology training program. The sum of \$150 thousand was raised for the John and Frances Dawson Fellowship, named after the major donors, to provide \$50 thousand for a one-year fellowship for a graduate of the respirology training program in either clinical or research work. To date, three trainees have been awarded this fellowship. The Division has also committed profits from its successful continuing medical education (CME) activities to support another competitive fellowship. This fellowship is open to all qualified postgraduate applicants; the highest priority is given to support graduates of the Division's training program, especially research activities.

Research productivity has increased substantially over the past few years. Although a decline occurred in total grant funding from 2011–12 to 2013–14, a steady rise occurred from then until 2015–16. (See appendix.) Nevertheless, an overall 10 per cent decline occurred in funding between 2011–12 and 2015–16. One of the main reasons for this decline is the very challenging situation at the CIHR where a steady decline has occurred in the percentage of grant applications funded over the last five years. However, despite the decline in total research funding since 2011, the number of grants increased by 36 per cent between 2011–12 and 2015–16. (See appendix.)

The increase in the number of grants has been accompanied by a remarkable 79 per cent increase in the number of publications between 2011 and 2016. This increase was not due to an increase in the number of faculty; a 79 per cent increase occurred in the number of publications per faculty member. To put U of T's respiratory research productivity into perspective, a comparison of publication records for seven universities prominent in respiratory research, between 2011 and 2016, show U of T ranked second behind Harvard, but ahead of the University of California, San Francisco, the University of Washington, the University of British Columbia, McGill University and Oxford (see appendix). Taken together, the data indicates that respiratory research at U of T has had a substantial upsurge in productivity since 2011 and that U of T now ranks among the most productive respiratory research centres in the world.

FACULTY

Respirology has 56 full-time faculty members at five hospital sites: 30 at University Health Network (UHN)/Mount Sinai Hospital, four at Sunnybrook Health Sciences Centre, 15 at St. Michael's Hospital, three at Women's College Hospital, one at West Park Hospital and three at the U of T campus. Of these, 20 (31 per cent) are women and 44 (69 per cent) are men. The distribution among ranks is 29 (45 per cent) assistant professors, nine (14 per cent) associated professors and 26 (41 per cent) full professors. In terms of job descriptions, 18 (33 per cent)

Table 19.1: Academic Position Description of Full-Time Respirology Faculty

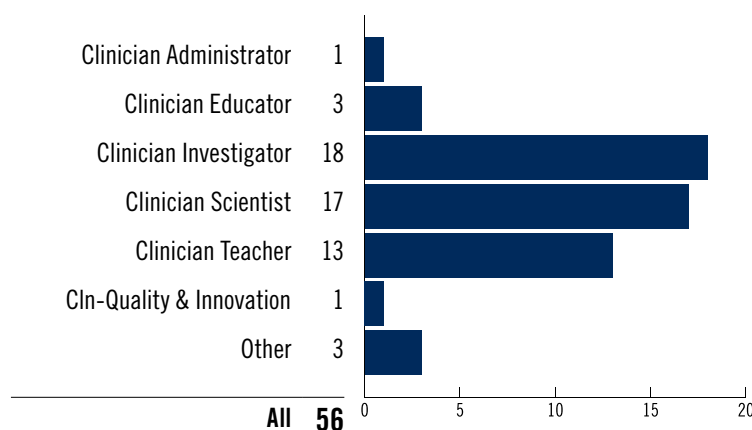


Table 19.2: Affiliation of Full-Time Respirology Faculty

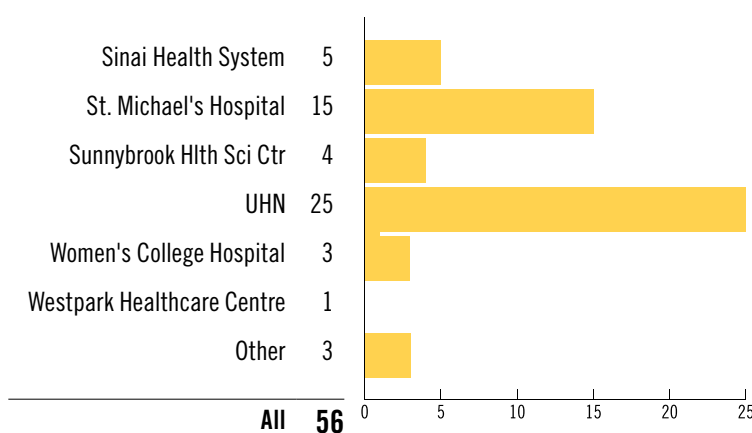
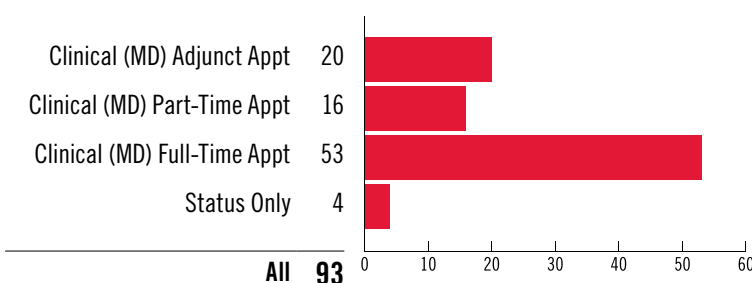


Table 19.3: Primary Appointment of Respirology Faculty



are clinician investigators (CIs), 13 (27 per cent) are clinician teachers (CTs), 17 (25 per cent) are clinician scientists (CSs), three (6 per cent) are clinician educators (CEs), four (6 per cent) are research scientists (RSs), one (2 per cent) is a clinician in quality and innovation (CQI) and one (2 per cent) is a clinician administrator (CA). The Division members are young: approximately 22 faculty (35 per cent) are in their first 10 years of academic appointment. Approximately nine members of the Division (14 per cent) are due to retire within five years.

A top objective of the Division's 2013 strategic plan was to hire people to work in areas of research excellence. This objective has been largely achieved: since 2011, there have been 15 new hires of whom 10 (67 per cent) are either CSs, CIs or RSs. Of these ten, nine have been hired to work in areas of research excellence: four work on sleep disorders, three work on lung transplantation, one works on adult cystic fibrosis, and one works on lung injury. Five of the recent hires (33 per cent) are women, and 10 (67 per cent) are men. The net result: we have increased the Division's research capacity in its areas of excellence and are moving toward critical mass in key programs.

Future Hiring

To guide hiring, the Division will revise the present strategic plan for 2018–23. Hiring will be guided by clinical, teaching and research priorities set by the new 2018 strategic plan. All new faculty positions will be filled after a formal search occurs.

Faculty Development

Before 2013, some new faculty members failed to pass CFAR largely because of their failure to obtain peer-reviewed grants or to publish enough original papers to meet their job expectations. Therefore, to enhance faculty chances of successfully passing CFAR, Dr. Bradley appointed Dr. Tullis as Director of Faculty Development. Dr. Tullis meets with all new faculty and assigns them a formal mentor who regularly meets with new faculty to offer them advice and assistance in academic matters. Dr. Tullis then meets all junior faculty before CFAR to advise them how to prepare for it. Since this process was implemented, no new faculty member has failed CFAR.

Dr. Tullis also helps prepare faculty for promotions to associate and full professor. She meets all candidates to advise them how to prepare for promotion. Since this process has been implemented, all the Division's candidates for promotion have succeeded.

Several awards have been established to recognize the outstanding achievements of the Division's faculty. These include the Excellence in Research Faculty Award, the

Sheldon Mintz Undergraduate Teaching Award and the Postgraduate Faculty Teaching Award.

Communication and Team Building

To improve University-wide communication and engagement, Dr. Bradley established and edits, with Rhiannon Davies, a twice-yearly Respiriology newsletter, *RespNews*. In each issue, an important divisional theme is discussed, a priority program is highlighted, divisional members' achievements are announced and celebrated, important divisional events are announced, and the achievements of two alumni are featured.

The Division also holds social events. These include a welcome dinner for the new respirology residents, a Meet the Investigators Night to introduce new residents to potential research supervisors and projects, and an outdoor barbecue to which all residents, fellows, faculty and their families are invited. These events are all popular and well attended.

EDUCATION

Undergraduate Education

Under the stewardship of Dr. Harvey Wong, the Year 1 and 2 Respiriology curriculums have been consolidated into a single new foundations block that incorporates both basic science and clinical aspects of the field. The new block was rolled out in February 2017, and the new curriculum places less emphasis on the large group lecture.



Dr. Wong and his team have also developed online learning modules. Small group-learning activities remain an important component in the new curriculum. They include the use of skills-based seminars and case-based learning sessions.

Postgraduate Education

Adult respirology training at U of T is a two-year program that accepts four to five Ontario Ministry of Health-funded trainees and up to one foreign-funded trainee per year. It is directed by Dr. Christopher Li, who heads the Training Program Committee, which includes two resident representatives. The current Royal College of Physicians and Surgeons of Canada accreditation status of the program is “Accredited Program with Follow-up by Regular Survey.” The respirology training program has enjoyed an increase in applications from 20 in 2012 to 45 in 2016.

The program provides robust training in general respirology. There is also unique access to specialized areas within the Division, including

- rotations in lung transplantation,
- pulmonary arterial hypertension and interstitial lung diseases,
- sleep disorders medicine,
- adult cystic fibrosis, tuberculous and non-tuberculous mycobacterium (TB/NTM),
- airways diseases, and
- interventional pulmonary medicine.

Faculty are frequently described as knowledgeable, dedicated and enthusiastic teachers.

The program offers a comprehensive academic half day, a seminar series coordinated by Dr. Shane Shapera. Embedded in the academic half day is a dedicated procedural-skills curriculum, which includes two sessions per year in the surgical skills laboratory. Students study simulation activities in chest ultrasound and airway and pleural procedures. Trainees receive high-level instruction in research methodology and critical appraisal from Dr. Matthew Stanbrook, who leads the Respirology Journal Club. All residents carry out two blocks of research during their training and are expected to present their work at the annual Respirology Research Day.



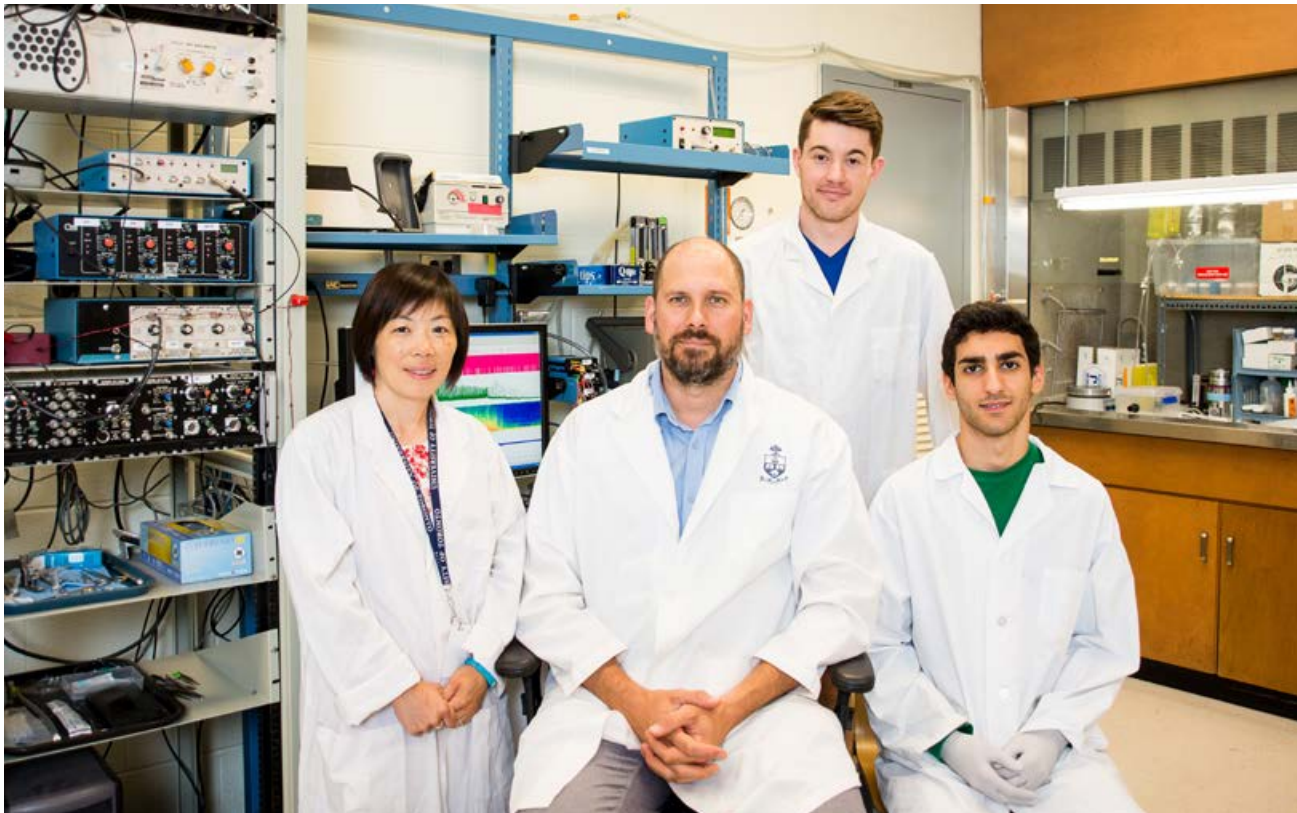
Advanced Training Programs for Postgraduate Trainees

For the academic year 2016–17, 10 residents were enrolled in the training program (five in each of the first and second years) and nine graduate students were enrolled. In addition to research fellowship training, the Division offers specialty training in 11 clinical areas of respirology. The number of our postgraduate fellows has surged from 10 in 2012–13 to 25 in 2016–17, of whom five were Canadian and 20 internationally trained. The 13 countries from which these fellows came include Brazil, the United Kingdom, Finland, Switzerland, Germany, Italy, Ireland, Israel, Saudi Arabia, the United Arab Emirates, India, Japan and Australia. The Division’s vision of “international leadership in training programs” has been achieved, and our leadership role appears to be strengthening, thanks to the excellence of our clinician teachers and investigators.

The Division also recognizes excellence in its trainees and has established two annual awards for this purpose: the Outstanding Research Trainee Award and the Jae Yang Memorial Award for Excellence in Teaching.

Continuing Medical Education

CME is an important part of Respirology’s educational program, as it extends its educational reach beyond the University into the community. Respirology has an annual CME event, Day in Respirology, established for local physicians in 2006. In 2013, the previous Director



of CME, Dr. Anna Day, organized a multi-day CME course in respiratory for physicians in the United Arab Emirates. It was funded by their government and held via video conferencing. This day has enhanced the scope and reputation of our Division in the Middle East.

In 2016, Dr. John Thenganatt took over as Director of CME and has since expanded CME activities. Attendance at the Day in Respiriology has risen from 195 in 2013 to 234 in 2017. Profits from these CME events go to the Division and are accumulating to fund a Respiriology fellowship. To extend outreach, two large CME events per year (in November and June) are planned; they will target a provincial and national audience and highlight the Division's areas of excellence.

QUALITY IMPROVEMENT AND PATIENT SAFETY

Dr. Kieran McIntyre heads QI for the Division. He has made progress in integrating QI into the Division's activities. PGY5 residents participate yearly in the DoM's Co-Learning Curriculum in QI. Residents receive formal instruction in the science of QI and work longitudinally as a group to carry out a QI project, which is presented at the end of the year at the DoM's Annual QI Day. Dr. McIntyre is also our Division lead in the Choosing Wisely program at St. Michael's Hospital and, along with Dr. Samir Gupta, collaborates with colleagues at the Canadian Thoracic Society to launch a Canada-wide version of Choosing Wisely to reduce unnecessary testing and improve efficiency in health care and patient safety.



MENTORSHIP, EQUITY & DIVERSITY

Following an initiative of the DoM Mentorship, Equity and Diversity committee to create a Mentorship Facilitator position for each division, Respiriology appointed Dr. Liz Tullis to this role.

As part of the 2013 Strategic Plan, the Division outlined a number of objectives around Mentorship and Faculty Development. In particular, the Division created a mentorship process to assist divisional faculty undergoing Continuing Faculty Appointment Review (CFAR). The Division identifies a content-specific mentor for the review process and provides samples and walks the mentee through the process of creating a successful Review and Promotion dossier.

The Division has undertaken efforts to promote the role and accountability of mentors by enrolling faculty in mentorship training workshops.

FUTURE DIRECTIONS

In the next few years, Respiriology will primarily seek to improve upon past successes by continuing to enhance existing priority programs and to expand into promising new areas poised for growth. Renewal of the strategic plan is key. The new strategic plan will propose expansion into areas of excellence. One such area being considered is airways diseases (AWD) research.

A committee struck by Dr. Bradley and consisting of faculty involved in AWD research has met twice. They discussed what areas should be emphasized and what sorts of individuals should be hired. A third meeting will be held in September 2018. Recommendations on AWD research that arose from these meetings will be considered by the Strategic Planning Committee. Other new areas of excellence under consideration include interventional pulmonology, knowledge translation and TB/NTM.

Because of the advent of Competence by Design and the increasing number of fellows attracted to our programs, Dr. Christopher Li can no longer act as both Program Director and Fellowship Director. So, Dr. Bradley has appointed Dr. Cecilia Chaparro as the interim Fellowship Director. Resources to support this new position are being sought. Key objectives are to better integrate fellows into Respiriology and provide better oversight of fellowship programs.

There is room to expand the size and scope of the Division's CME programs. In the past, CME has, by and large, been aimed at local audiences. Profits from successful CME activities have been set aside to further the Division's academic activities. In view of the excellence of several subspecialty clinical, teaching and research programs at U of T, we plan to expand CME activities to national and international venues that have the potential to generate more revenue and enhance the Division's academic activities.



RHEUMATOLOGY



OVERVIEW

The Division of Rheumatology dates back to the early 1960s when the first Rheumatic Disease Unit was founded by Dr. Metro Ogryzlo. He was the Division Director until his death in 1977. Subsequent division directors have included Dr. Hugh Smythe (1977–91), Dr. Robert Inman (1991–2002) and Dr. Claire Bombardier (2003–16). The position has been held by Dr. Heather McDonald-Blumer since July 2016.

In April 2017, the Division participated in a forward planning retreat which provided a framework for where the Division will be in 2027. The members at the retreat stated a vision: the University of Toronto's Division of Rheumatology will be a global epicentre for innovative rheumatology. The Division will focus on specific areas:

- Define and advance intracity and interdisciplinary collaboration on core research themes that change the face of rheumatic diseases.
- Recruit, support, educate and mentor the leaders of tomorrow.
- Develop and disseminate innovative models of education and clinical practice that will enhance care and outcomes.

Background

The full-time Division currently includes rheumatologists based at five major University of Toronto (U of T) teaching hospitals. These hospitals are St. Michael's Hospital (SMH), Sunnybrook Health Sciences Centre (SHSC), Women's College Hospital (WCH), Mt. Sinai Hospital (MSH) and the Toronto Western Hospital site of the University Health Network (UHN/TWH). While the MSH and TWH units are technically part of the UHN Department of Medicine and share a hospital Division Head, the units operate relatively distinctly. Faculty have their primary appointment at the hospital where they mostly work and an associate appointment at the other site. Only one-quarter of the faculty work routinely between the two sites. At the other hospitals, there is a unique division head, and the rheumatology faculty are appointed to the single hospital.



Table 20.1: Academic Position Description of Full-Time Rheumatology Faculty

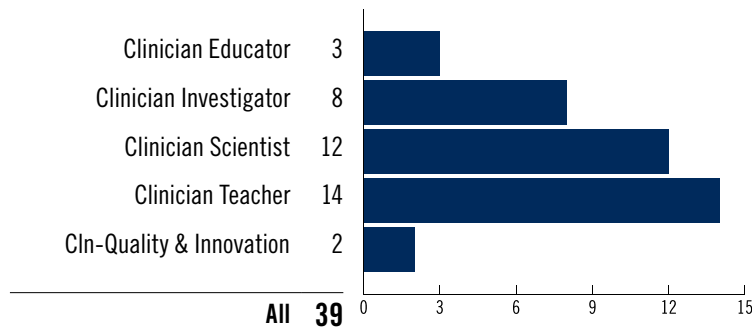


Table 20.2: Affiliation of Full-Time Rheumatology Faculty

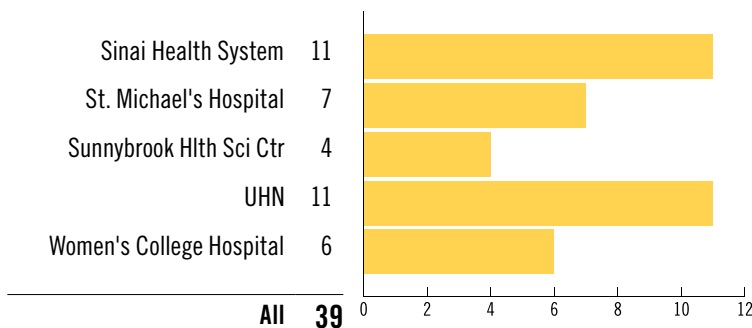
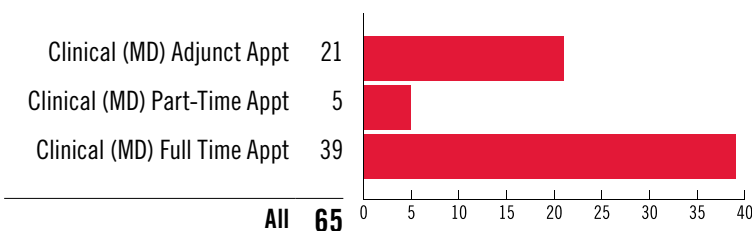


Table 20.3: Primary Appointment of Rheumatology Faculty



From 2012 until the present, the structure of the divisional leadership has evolved. Building on the existing framework, the Divisional Executive Committee (DEC) now actively includes the Departmental Division Director (DDD), the hospital division heads, the rheumatology Program Director (PD), the Faculty Lead for Mentorship, the Faculty Lead for the Fellowship Programs, the Faculty Lead for Undergraduate Education and a faculty member with research expertise. We anticipate that a dedicated Faculty Lead for Research Development will be appointed. In the past five years, a notable change has been the recognition that the Paediatric Division of Rheumatology has a separate leadership and different reporting structure through the Department of Paediatrics. While we still have strong ties with our paediatric colleagues, the two divisions are considered distinct.

The DEC meets every two months and is charged with the overall planning and oversight of education, research and other scholarly endeavours within five hospital sites that are responsible for patient care. The structure of the committee provides the DDD and our leadership

with detailed perspectives of specific areas and aspects of divisional responsibility. It allows for appropriate day-to-day operations and improved planning.

Each member of the DEC has a subcommittee working with them to support planning and to assist with implementation. All subcommittee members are chosen according to their areas of interest and expertise and according to principles of diversity and inclusion.

Currently, the DEC members are senior faculty within the Division. Subcommittee members are more junior and mid-career faculty. The goal over the next five years is to have the current “younger” faculty assume the leadership roles. In the interim, they will be provided with time and support to ensure that their career trajectories are on track, that their leadership skills have been developed and that their family circumstances allow them to engage more broadly within the Division.

There are 38 full-time faculty in the Division, including 14 full professors, nine associate professors and 12 assistant professors. The three faculty who are lecturers will become assistant professors imminently as the individuals have completed their advanced training (Masters) and/or they are now appropriately qualified and/or the CFARs have been completed. The same faculty members, when classified by job description, consist of 12 clinician scientists (CSs), seven clinician investigators (CIs), three clinician educators (CEs), 14 clinician teachers (CTs) and two clinicians in quality and innovation (CQIs). From 2012 until the present, there have been two promotions to the professor rank (one CE and one CI) and three promotions to the associate professor rank (all CSs).



From 2012 to 2017, recruitment focused on ensuring two priorities: (i) CSs and CIs work with senior scientists in various divisional programs (e.g., succession planning) and (ii) CTs and CQIs help address the clinical and educational mandates at selected hospital sites. There have been 11 new faculty recruits: three CTs, two CQIs, two CIs and four CSs.

From 2016 to the present, the divisional leadership has spent considerable time determining our two-, five- and 10-year plans. Each site has had its own strategic planning. Then, collectively, the Division mapped out its broad plans at our April 2017 retreat. We agreed to focus on new faculty who will bring expertise in teaching and education (given the changes in medical education in undergraduate and postgraduate training) and those who will assist or lead the Division in establishing new models of care as we endeavour to optimize collaborative, interdisciplinary care for our patients with complex chronic rheumatic disease.

The Division would benefit greatly from the recruitment of a mid-career translational scientist. This person could advance his or her career within the rich research environment of U of T and provide vision and leadership as the Division works to integrate its separate research programs into one where support, collaboration and synergistic exchange occur readily. This has been a goal over the past five years, but for multiple reasons this recruitment has remained a challenge.

The Division has a large list of adjunct faculty who are variably involved in clinical teaching, mostly in the community setting.

CLINICAL ACTIVITY

Each site participates in active, ambulatory patient care, and each faculty member undertakes clinical work commensurate with her or his university job description. Each hospital focuses on general rheumatology care. Several sites have strong subspecialty rheumatology interests:

- TWH has dedicated lupus, psoriatic arthritis, Sjogren’s syndrome and ankylosing spondylitis clinics.
- SMH has dedicated myositis and hemophilia-related arthropathy clinics.
- WCH has a psoriatic arthritis clinic.

- MSH has a scleroderma clinic, early and late rheumatoid arthritis clinics and a vasculitis clinic.
- WCH and UHN have osteoporosis clinics.

Several sites work with advance practice clinicians within the clinical setting, although this is not widely available.

Each site has an active rheumatology inpatient consultation service with one site – Toronto Western Hospital – having a small dedicated rheumatology inpatient “ward” for which the rheumatologists are the Most Responsible Physicians. The ward traditionally has two-to-four inpatients at any time. The latter service has proven to be controversial in terms of its need, its ability to provide safe patient care and its overall educational benefit to trainees. Significant discussion has occurred over the past 18 months about the future direction of “the ward.” Careful guidelines have been constructed to ensure that patients admitted to the rheumatology service can be safely cared for by the rheumatology team; others considered less stable are admitted to the general medicine service. This remains an area of iterative review.



training to improve knowledge about QI principles. They supervise resident projects.

They are exploring new models of care when moving teens from the Hospital for Sick Children to adult rheumatology care. They are also expanding the expertise of primary-care providers in community settings.

QUALITY IMPROVEMENT AND PATIENT SAFETY

Division faculty include two full-time members who are classified as CQIs: clinicians in quality and innovation. A third faculty member has patient safety and quality improvement training although is technically classified as a CT. The faculty are divided across the teaching hospitals and provide expertise to their local faculty and across the Division. Each has initiated site-specific quality improvement projects. Collectively, they participate in undergraduate, core and dedicated rheumatology

EDUCATION

The Division has three CEs and 14 CTs. While the CEs are dispersed across the main teaching hospitals, the CTs are distributed less evenly. Some sites, like WCH, have predominantly CTs while other sites such as UHN have a paucity of CTs. At this latter site, 10 per cent of the faculty consists of dedicated CTs.

The Division of Rheumatology remains actively engaged in education at multiple levels including the undergraduate medical school training, postgraduate training of internal medicine and other “off service” residents. The Division has a primary interest in training residents who have completed their core internal medicine training and will become rheumatologists. The PGY4–5 program is a focal point of our learner programs. The Division is also responsible for robust fellowship training programs, which

focus on subspecialty rheumatology experiences for those who are already qualified as general rheumatologists. Lastly, the Division supports some continuing education programming for faculty.

Undergraduate Education

Dr. Lori Albert leads as a course director within the undergraduate program in our Division and is a pre-clerkship curriculum lead of the U of T Undergraduate MD Program. She organizes rheumatology pre-clerkship teaching for the Division. Several of our members participate in undergraduate teaching for quality improvement, ethics and/or professionalism—several “non-medical expert” areas where rheumatology faculty lend their expertise. Dr. Zareen Ahmed is the co-lead for several components of the clerkship program at one of our teaching hospitals and sits on the Clinical Clerkship Committee for the Department of Medicine (DoM). Nearly all our faculty participate in rheumatology clinical skills teaching within the undergraduate program, and about half are tutors who teach more general clinical skills or case-based learning components. We have an active role within the undergraduate educational program.

Postgraduate Education

All our full-time faculty teach internal medicine residents and other junior learners who are completing rheumatology rotations at their respective hospitals. Faculty member engagement is commensurate with his or her academic job description. In total, 100–120 junior residents are supervised and taught each year. Each site has a dedicated curriculum covering key topics in

rheumatology. Teaching scores are consistently high.

Our faculty have had senior leadership positions within the postgraduate training programs (Dr. Heather McDonald-Blumer as Internal Medicine Program Director until June 2016, Dr. Simon Carette as Deputy Physician-in-Chief for Education at UHN). Several faculty members will involve themselves with the upcoming Competence by Design (CBD) curriculum; they’ll act not only as faculty supervisors but also academic advisors for internal medicine residents..

In our PGY4–5 program—fully accredited by the Royal College of Physicians and Surgeons of Canada (RCPSC)—we consistently have three or four trainees per year funded by the Ontario Ministry of Health and often one or two additional trainees completing Royal College certification in rheumatology who are funded by non-Canadian sources.

The Division changed program directors in July 2017. Dr. Arthur Bookman retired from this position, and Dr. Dana Jerome has taken over. The Program Director and Residency Program Committee focus on aligning rheumatology training to meet future population needs.

The two-year training program is being revised to ensure that the development of clinical excellence in our trainees continues and that the training program assists individualized career development plans. The second-year (PGY5) was revamped during the 2017–18 academic year; further changes are planned for the 2018–19 year. The first year (PGY4) will be restructured



in 2019–20. It will incorporate the values of patient centeredness as the RCPSC’s new competency-based medical and rheumatology education curriculum starts.

Nationally, our faculty have taken leadership roles within the rheumatology training landscape. Dr. Heather McDonald-Blumer has been Chair of the Royal College Specialty Committee for Rheumatology and, after completing a six-year term, she is the provincial representative on the same Committee. Dr. Dana Jerome is an active, non-voting member of the Committee. We have three local faculty members on the Rheumatology Examination Board (Drs. D. Mahendira, E. Gridoriadis and D. Cohen). Toronto faculty have been leaders in the development and ongoing implementation of an educational initiative known as the National Rheumatology Residents Weekend, which is a biannual program for residents across the country.

The Division has a robust clinical and clinical research fellowship program that allows rheumatologists who have trained in Canada and abroad to do subspecialty clinical training; many also develop some expertise in research. In any given academic year, between 15 and 20 fellows align with divisional faculty. This year, the fellowship programs were reviewed by the Department of Medicine Fellowships Office and, overall, received a very positive review. Dr. Heather McDonald-Blumer, the interim Fellowship Director, led the review.

The Division has recruited three full-time faculty members from within our fellowship program over the last five-to-six years. This fact attests to the quality of the rheumatologists who train within our fellowship programs. While the clinical training appears excellent and the fellows’ scholarly productivity is strong, the number who complete formal research training remains low.

Continuing Education

We have reassessed and redeveloped our faculty education activity and our city-wide rheumatology rounds.

Based on feedback from faculty, we have consolidated these rounds into a faculty academic half day. It allows improved attendance, particularly of our younger faculty members who find this a more family-friendly use of their time. We have engaged physicians and scientists outside the rheumatology community to help further our understanding of core rheumatologic themes. The rounds focus on state-of-the-art rheumatology practices. We



hope they will enhance rheumatology education within our faculty and city wide.

Preliminary data from the first two academic half days suggests that we are on a positive trajectory toward our aspirational goal. The most recent rounds will be summarized in a scholarly manner and, we hope, will be disseminated to our colleagues nationally. As these rounds mature, we hope that their interdivisional and interdisciplinary nature will continue, that they will lead to collaborative work and that they will generate new scientific knowledge and/or translate the science to favourably affect the delivery of rheumatology care.

The quality of teaching provided by our faculty is excellent. Many receive excellent scores for their student/resident teaching. Each year, many of our faculty receive hospital and/or University-based teaching awards, and several have received national awards that recognize curriculum design and/or teaching excellence.

Educational Goals

Over the next two-to-five years, we seek to achieve the following goals:

- (i) Continue the active presence of rheumatology faculty in all elements of rheumatology education.
- (ii) Successfully implement the CBD curriculum into the rheumatology training program.
- (iii) Optimize the number of CTs at each major teaching hospital and ensure appropriate recognition of their scholarly work and contributions to the Division.
- (iv) Support and recognize the achievements of our divisional CTs.

RESEARCH

Our Division continues to have a robust clinical research program. There are 12 CSs and six CIs, all of whom participate in clinical research. Of this group, three of the CSs also participate in bench/translational work. Most research faculty are based at UHN/MSH. All the CSs have graduate students or clinical research fellows working in faculty research areas of expertise. Research programs tend to be “disease specific” both in terms of focus and funding.

Publication Statistics

From 2011 to 2015 (the closest time window available for summary data), the members of the rheumatology research group each averaged six papers per year. The mean journal impact factor was 4.9. Overall, approximately eight per cent of the papers appeared in journals and had an impact factor greater than or equal to 10. Another 26 per cent appeared in journals and had an impact factor between five and 10. We recognize that the impact factor of many rheumatology-based journals is modest.



Publications also appear to be well cited; over 13 thousand citations have been noted. Some discussion suggests that published papers are not hitting the high-impact journals. We hope that the work of our newest recruits, now five-to-seven years into their academic careers in Toronto, will soon be worthy of publication in top-tier journals.

While the total dollars of grant support have not been calculated for 2012–18, three of our research programs have been awarded CIHR grants, and our junior scientists have had continuous salary support and operational grants. Funds were secured from a wide variety of sources, including peer-reviewed granting agencies, industry partners and hospital foundations.

Our CSs have leadership roles in national and international research cohorts: rheumatoid arthritis, vasculitis, scleroderma, psoriatic arthritis, ankylosing spondylitis, lupus, etc. These efforts have produced important publications in their fields. Many collaborate with basic scientists to collect genetic and biomarker material.

A Research Committee has been struck to advise the Division Director on city-wide research collaboration and the use of the proceeds of the Pfizer Chair. The goal of this Committee is to strengthen research capacity with the Division of Rheumatology. The Committee meets two or three times per year to identify strategic research areas and foster an environment where research can advance.

Optimizing research collaboration across the city is one of the Division’s five-to-10-year goals. While our research activities are productive, they are also siloed according to disease entity. Some recognize that this arrangement is likely not optimal for sharing and advancing science, nor for competing for funds. This remains a work in progress. Mid-career leadership within or outside U of T is felt to be needed to make this transition, but a suitable candidate and appropriate funding must be secured. Discussion also focuses on the need for supporting administrative data linkages of clinical cohorts across the city to enhance research linkages and the related training.

Research Goals

Over the next two-to-five years, we seek to achieve the following goals:

- (i) Support early and mid-career researchers as they develop their careers (mentoring, coaching, leadership training, securing financial support, developing external linkages, etc.).
- (ii) Appoint from within or without a faculty lead for the Research Development Program.
- (iii) Develop an interhospital cohort for collaborative research.
- (iv) Support and recognize the achievements of our divisional CIs and CSs.

FUTURE DIRECTIONS

Faculty

Over the next three-to-five years, we estimate that each of our clinical sites will require more CTs: one or two per site. They are required to meet the clinical need for timely, patient-focused care, to ensure appropriate participation in the educational mission of the DoM—particularly with the introduction of CBD across all divisions—and to ensure that the CSs are suitably protected from doing clinical work above their 20–25 per cent mandated activities.

Recruitment of advance practice therapists or other allied health professionals would benefit too. But, in the current health-care climate, finding funds for these additional personnel is challenging.

We anticipate that five or six of our senior faculty will likely retire over the next three-to-five years. Most are CSs and CIs. A gap will appear in our established international presence, but doors will open—locally and beyond—for new models of collaboration and for mid-career faculty to move into leadership positions.

Education

This is a current strength of the Division. Maintaining excellence and momentum is required as new challenges come forward. Before the new CBD curricula arrive and put time pressures on our teaching faculty, we must develop strategies to ensure that the guiding principles of the Department remain integrated in our care and teaching programs.

Research

As the Division prepares for the retirement of senior faculty, we will need to ensure that current young investigators and scientists are supported well. Adopting a more collaborative, city-wide model of research is the current goal, but determining the specific steps required (to acquire the expertise, IT support, etc.) will need to occur.







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