



2020 COVID-19

ANNUAL REPORT



UNIVERSITY OF ALBERTA
FACULTY OF MEDICINE & DENTISTRY
Department of Medicine



**Alberta Health
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Let us not pray to be
sheltered from dangers
but to be fearless when
facing them.

Rabindranath Tagore



In Memoriam

Dr. Geoffrey David Taylor

It is my sad duty to inform you that we have lost a beloved colleague and friend, Dr. Geoff Taylor. Geoff passed away peacefully after a brief illness at home, surrounded by his family, on July 17, 2020.

A member of the Department of Medicine since 1985, he completed his undergraduate education at the University of Regina, his medical degree at the University of Saskatchewan, specialization in Internal Medicine in New Zealand (where he had the good fortune of meeting his wife Prudence), and Infectious Diseases training at the University of Alberta. He also trained in epidemiology and public health at McGill and Tufts Universities. After involvement in outreach opportunities in Fiji early in his career, he maintained a Global Health focus through a longstanding relationship with the IDSA AIDS Training Program and Makerere University in Uganda.

Always quietly effective, Dr. Taylor co-founded the Northern Alberta HIV Program and established the first hospital Infection Control Unit in Alberta. He was a founding member and integral part of the Canadian Nosocomial Infection Surveillance Program, a force for development of national surveillance of hospital-acquired infections and antimicrobial resistance in Canada. He served in numerous leadership roles, including Director, Division of Infectious Diseases from 2008–2013, and Senior Medical Director for AHS Provincial Infection Prevention and Control.

Described by a colleague as a “very accomplished, ‘real deal’ person who is modest and reserved”, he provided his patients with kind, compassionate care, and was a steady advocate for vulnerable and stigmatized populations from the early days of HIV/AIDS.

He was deeply interested in and supportive of everyone he worked with, and was a valued mentor to many over the years. He believed in the potential for excellence and good in anyone, often supporting and challenging young professionals (including his children) through impromptu quizzes and vigorous debate to fine-tune critical thinking skills.

A firm believer in a well-rounded life, Geoff enjoyed Alberta’s Rocky Mountains and sharing his passion and vast knowledge of the history of western Canada, mountaineering, and explorers. His quiet manner also belied an adventurous streak. A devoted skier and hiker, he was always on the lookout for his next mountain adventure in Canada or New Zealand.

Reflecting on his life in his final days, Geoff noted, “I am fortunate to have had so much, when so many have had so little. I will never ask for more.”

His wife, Prudence; children, Duncan and Alex (Pär); grandson, Oskar; and extended family wish to extend their thanks to the numerous health care providers who provided Geoff with outstanding and compassionate care.

Our 2020 annual report provides snapshots of a year that will be etched in our collective memory forever. The theme of “our Department’s response to COVID-19” was chosen only in part because that was our reality. As I write this, vaccinations are on the rise and we can begin to see that the worst of this pandemic might be behind us around the fall of 2021. When that happens, and as time passes, it is important to have a record not only of the immediate impact COVID had upon us, but of the lasting impact showcased by our responses.

By impact, I mean that despite our fear, anxiety, and fatigue during the pandemic, we achieved extraordinary things. The stories in this report—our stories—show the world our resilience, our problem-solving, and our daily acts of courage in the face of a pandemic the extent and seriousness of which none of us have faced before.

Dr. Narmin Kassam

Professor and Chair, Department of Medicine

Chair's Message



Many of us dived head-first into a new role or a situation that had changed overnight. When I took over as Chair in April, it was heart-wrenching for me to know that we were unable, as a first departmental action, to celebrate and thank outgoing Chair **Dr. Barbara Ballermann** in-person for her decade-long leadership. Under Dr. Ballermann's tenure, the department flourished and grew significantly in capacity and stature.

One of the highlights of the Chair's role is the opportunity to get to know everyone in the largest academic department of the University of Alberta and clinical department within Alberta Health Services. In-person meetings, hallway greetings, and informal chats are an important way to feel the pulse of the department. I wondered at first how it would be possible to get to know people virtually, and as the pandemic progressed, how colleagues and staff were coping, juggling family and professional demands from home.

I knew then and know even more now, that we are a strong and resilient group. We help and support each other. We are very good at finding solutions to problems. As the stories in this report show, our innovative push to use new tools and connections, which we wouldn't have imagined using pre-COVID, helped us succeed.

Administrative staff members, such as **Andee Pullin**, became adept users of new apps and technologies to keep the fundamental machinery of the department, clinical patient care, working smoothly. Within 48 hours, **Sita Gourishankar** and her team were able to turn a packed, in-person weekend of interviews for more than 500 medical school applicants from across Canada into a success, virtually. **Steve Caldwell** and **Karen Kroeker** transitioned in-person undergraduate and resident clinical learning and assessments to virtual while maintaining national standards for quality.

Sangita Sharma, **Sebastian Straube**, and many other researchers paused their primary focus to pursue urgent COVID-related questions. By doing so they were able to contribute substantially to this new area of desperately needed knowledge and were supported by funding from all quarters. Members of the Division of Infectious Diseases took on clinical trials related to potential COVID treatments, again contributing important data to better understand the virus and its variants.

General Internal Medicine division members carried the bulk of COVID care on hospital wards. The accounts of site chiefs **Fraulein Morales, Hernando Leon, Jay Varghese, Winne Sia, Dan Slabu and Neeja Bakshi** speak of the overwhelming onslaught of COVID in hospital wards during Wave Two. It led to a new and very welcome relationship among the sites as they worked together on all aspects of pandemic planning. Their reports also attest to the incredible support and help of so many specialists and community colleagues: “knowing that your colleagues have your back gave all of us on the COVID wards a much-needed second wind.”

The planning that goes into managing a pandemic response at the hospital, provincial, and national levels is not always visible to medical professionals, never mind to the public. Thanks to the indefatigable actions of infectious disease experts **Stephanie Smith** and **Robyn Harrison**, we had the best, most up-to-date knowledge with which to develop and implement policies that have kept us safe as health care providers.

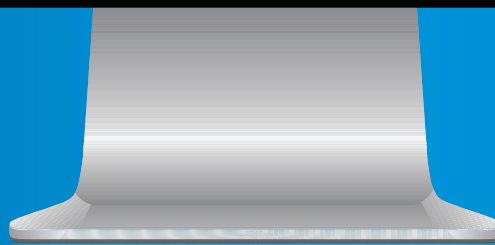
Knowledge is key in a health crisis. The flood of COVID-related postings on social media was and continues to be contaminated with misinformation. **Lynora Saxinger**, our cover subject, along with colleagues **Neeja Bakshi** and **Ilan Schwartz**, waded into those choppy waters to promote factual pandemic information on Twitter and in media interviews across Canada.

COVID-19 propelled us to embrace the future. The Edmonton Zone Virtual Hospital Project led by **Greg Hrynchyshyn** and **Lesly Deuchar** is an approach to acute care delivery in the patient’s home. The project was launched three years prior to the pandemic, but saw accelerated interest and partnerships from many quarters as we all became part of this new virtual care reality.

The determination to deliver the best care, research, and training despite daunting challenges is characteristic of an excellent medical sciences community. When I say community, I mean all of us—staff, faculty, and learners—who worked so hard to become a truly cohesive organization in the face of the pandemic, leveraging strong partnerships with the Faculty of Medicine & Dentistry as well as with Alberta Health Services. Our ingenuity, versatility, flexibility, and adaptability are the highlights of 2020 for me. I am proud and honoured to work with, and on behalf of, such an amazing cadre of professionals.

Steering Committee 2020

Department of Medicine Steering Committee Members

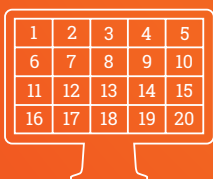


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7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24

- 1 **Narmin Kassam**, Chair
- 2 **Wayne Tymchak**, Director, Cardiology
- 3 **Robert Gniadecki**, Director, Dermatology
- 4 **Peter Senior** (until November 30, 2020), Director, Endocrinology & Metabolism
- 5 **Jacques Romney** (as of December 1, 2020), Director, Endocrinology & Metabolism (Interim)
- 6 **Daniel Baumgart**, Director, Gastroenterology
- 7 **Peter Hamilton**, Director, General Internal Medicine
- 8 **Adrian Wagg**, Director, Geriatric Medicine, Deputy Chair, Assistant Chair, Finance
- 9 **Joseph Brandwein**, Director, Hematology
- 10 **Karen Doucette**, Director, Infectious Diseases
- 11 **Branko Braam**, Director, Nephrology
- 12 **Doug Zochodne**, Director, Neurology
- 13 **Chester Ho**, Director, Physical Medicine & Rehabilitation
- 14 **Sebastian Straube**, Director, Preventive Medicine
- 15 **Giovanni Ferrara**, Director, Pulmonary Medicine
- 16 **Jan Willem Cohen Tervaert**, Director, Rheumatology
- 17 **Evangelos Michelakis**, Associate Chair, Research
- 18 **Vijay Daniels**, Associate Chair, Education and Faculty Development
- 19 **Steven Katz**, Associate Chair, Postgraduate Medical Education
- 20 **Steven Caldwell**, Associate Chair, Undergraduate Medical Education
- 21 **Gopi Sutendra**, Associate Chair, Graduate Education
- 22 **Fraulein Morales**, Associate Chair, Clinical Faculty
- 23 **Francois Bouman**, Assistant Chair, Administration
- 24 **Elaine Yacyshyn**, Ambulatory Representative

ZCDEC Committee 2020

Zone Clinical Department Executive Committee Members, Internal Medicine



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|---|---|--|
| <p>1 Narmin Kassam
Zone Clinical Department Head, Medicine</p> <p>2 Elaine Yacyshyn
Deputy Zone Clinical Department Head, Medicine</p> <p>3 Robert Gniadecki
Zone Section Chief, Dermatology</p> <p>4 Jacques Romney
Zone Section Chief, Endocrinology & Metabolism (<i>Interim</i>)</p> <p>5 Clarence Wong
Zone Section Chief, Gastroenterology</p> <p>6 Peter Hamilton
Zone Section Chief, General Internal Medicine</p> <p>7 Adrian Wagg
Zone Section Chief, Geriatrics</p> | <p>8 Joseph Brandwein
Zone Section Chief, Hematology</p> <p>9 Karen Doucette
Zone Section Chief, Infectious Diseases</p> <p>10 Branko Braam
Zone Section Chief, Nephrology</p> <p>11 Sebastian Straube
Zone Section Chief, Occupational Medicine</p> <p>12 Giovanni Ferrara
Zone Section Chief, Pulmonary Medicine</p> <p>13 Jan Willem Cohen Tervaert
Zone Section Chief, Rheumatology</p> <p>14 Winnie Sia
Zone Site Chief, Medicine, Royal Alexandra Hospital</p> | <p>15 Fraulein Morales
Zone Site Chief, Medicine, University of Alberta Hospital</p> <p>16 Hernando Leon
Zone Site Chief, Medicine, Sturgeon Hospital</p> <p>17 Jayant Varghese
Covenant Site Chief, Medicine, Grey Nuns Community Hospital</p> <p>18 Dan Slabu
Covenant Site Chief, Medicine, Misericordia Community Hospital</p> <p>19 Yvonne Suranyi
Executive Director, Medicine Program</p> <p>20 Pam Mathura
Clinical Quality Improvement Consultant</p> |
|---|---|--|

SPOTLIGHT

ON AWARDS & HONOURS

DEPARTMENT OF MEDICINE AWARDS

Beach, Jeremy/Cherry, Nicola	Medical Education Publication Award
Cervera Alvarez, Carlos	Clinical Investigation Publication Award
Cooper, Ryan David	(UofA/AHS TB Consilium Team Lead) Cooperation, Collaboration, and Teamwork Award
Katz, Steven	Thomas J. Marrie Mentorship Award
Masoud, Andrew	Translational Research Fellowship Award
Osman, Mohammed Seif El-Nasr	Jonathan B. Meddings Clinical Innovation Award
Shojai, Soroush	Clinical Investigation Publication Award
Small, Ashley	J. Charles "Chuck" Morrison Award
Wagg, Adrian Stuart	Paul W. Armstrong Excellence in Research Award

DEPARTMENT OF MEDICINE UNDERGRADUATE MEDICAL EDUCATION TEACHER OF THE YEAR

Agusto, Clarissa	University of Alberta Hospital
Fagarasanu, Andrei	Royal Alexandra Hospital
Senaratne, Manohara	Grey Nuns Community Hospital
Slabu, Dan	Misericordia Community Hospital
Wirzba, Brian	Grey Nuns Community Hospital

DEPARTMENT OF MEDICINE POSTGRADUATE MEDICAL EDUCATION TEACHER OF THE YEAR

Anwar, Saifal	Grey Nuns Community Hospital
Ao, Peter	Royal Alexandra Hospital
Baur, Martin	University of Alberta Hospital
Sawler, Daniel	Subspecialty Hematology- Grey Nuns Community Hospital
Shafraan, Daniel	Misericordia Community Hospital

INTERNATIONAL RESEARCH AWARDS & HONOURS

Ashworth, Nigel L.	Innovation Award 2020 Coalition for Physician Enhancement
Lee, Karen Kooi-Hua	2020 Prose Award, Nursing & Allied Health Category, Association of American Publishers
Long, Richard	Lifetime Achievement Award International Union Against Tuberculosis and Lung Disease Coalition for Physician Enhancement
Paterson, Ian	Gerald M. Pohost Award Society for Cardiovascular Magnetic Resonance
Tateno, Toru	Academic Councillor The Japanese Society for Hypothalamic and Pituitary Tumors
Wagg, Adrian Stuart	Best Reviewer in 2019 (CPE) (announced in 2020) <i>The Journal of Urology</i>

NATIONAL RESEARCH AWARDS & HONOURS

Chan, K Ming	Best basic science paper Canadian Society of Plastic Surgery
Ezekowitz, Justin	Fellow, Canadian Academy of Health Sciences
Gramlich, Leah Marie	Fellow, Canadian Nutrition Society
Kaul, Padmaja Ravikanti	Chair, Sex and Gender differences, Diabetes Canadian Institutes of Health Research
Sharma, Arya	Fellow, Canadian Academy of Health Sciences
Veldhuyzen Van Zanten, Sander	Fellow, Canadian Association of Gastroenterology
Wong, Clarence Kar Wah	Fellow, Canadian Association of Gastroenterology

UNIVERSITY OF ALBERTA RESEARCH AWARDS

Halloran, Brendan Philip	David and Beatrice Reidford Research Scholarship Faculty of Medicine and Dentistry
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INTERNATIONAL TEACHING AWARDS

Caldwell, Steven S.	Fellowship in the Royal Society of Medicine Royal Society of Medicine; London UK
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NATIONAL TEACHING AWARDS & APPOINTMENTS

Clifford, Alison	Culture Changer Champion Canadian Federation of Medical Students
Daniels, Vijay	Culture Changer Champion Canadian Federation of Medical Students
Lazarescu, Adriana	Culture Changer Champion Canadian Federation of Medical Students
McCombe, Jennifer Ann	Culture Changer Champion Canadian Federation of Medical Students
Yacyshyn, Elaine Ann	Canadian Federation of Medical Students Mistreatment Task Force
McMahon, Alan	Certificate of Merit Award Canadian Association for Medical Education

PROVINCIAL TEACHING AWARDS

Aaron, Stephen L.	Teaching Award Section of Rheumatology, Alberta Medical Association
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UNIVERSITY OF ALBERTA TEACHING AWARDS

Oswald, Anna Elfiky	McCalla Professorship University of Alberta Centre for Teaching and Learning
Yacyshyn, Elaine Ann	David Cook Award
Yeung Laiwah, Roseanne Oye-Pihn	David Cook Award Faculty Learning Committee

NATIONAL CLINICAL AWARDS

Chow, Eunice Yan-Tao	Dermatologist of the Year Canadian Skin Patient Alliance
Katz, Steven	Practice Reflection Award – Gold Canadian Rheumatology Association

PROVINCIAL CLINICAL AWARDS

Sandhu, Roopinder	Patient Experience Award Health Quality Council of Alberta
Ye, Carrie Xu	Clinical Innovation Award, Section of Rheumatology, Alberta Medical Association

LOCAL CLINICAL AWARDS

Camicioli, J. Richard	Researcher of the Year Award Edmonton Zone Medical Staff Association
Lewanczuk, Richard Z.	Physician Innovator of the Year Edmonton Zone Medical Staff Association

NATIONAL ADMINISTRATION AWARDS & APPOINTMENTS

Bhutani, Mohit	Member, Executive Committee Canadian Thoracic Society
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PROVINCIAL ADMINISTRATION AWARDS

Hinshaw, Deena	Premier's Public Service Award Government of Alberta
Svenson, Lawrence Walter	Premier's Public Service Award Government of Alberta

UNIVERSITY OF ALBERTA GRADUATE RECRUITMENT SCHOLARSHIP

Rafieetabrizi, Ataollah (Ata)	
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Alone, we can do
so little; together,
we can do so much.

Helen Keller

A hand holding a red marker with 'Coronavirus' and 'positive'/'negative' labels.

**AHS Site Chiefs
Response
Department
of Medicine.**



Winnie Sia

Facility Chief Royal Alex

The Royal Alexandra Hospital (RAH) is located north of downtown Edmonton. It houses the academic departments of ophthalmology and obstetrics and gynecology. In addition to its busy medical, surgical, and mental health services, RAH is a major centre for trauma. It also houses the Addiction Recovery and Community Health (ARCH) team with the only in-hospital safe consumption site. RAH is also adjacent to the ambulatory mental health service called Access 24/7.

Winnie Sia is the site chief for the Department of Medicine at the Royal Alex, coordinating internal medicine specialists who deliver inpatient and consultative care. It's a busy job at the best of times. With the outbreak of COVID-19, Dr. Sia's job became exponentially busier.

"We were one of the first hospitals in the Edmonton zone to have COVID patients at the beginning of the pandemic," she says. "And we were one of the only sites that was designated to admit the COVID-positive recalcitrant patients—those who declined to self-isolate in the community."

By the time COVID spiked in late November and early December, Dr. Sia's COVID physician teams had grown from one to six. Colleagues in family medicine and in the sub-specialties, as well as those in the community, stepped in to help.

In December, there was a peak of more than 100 COVID patients on the wards in the hospital, with outbreaks on 13 units. "We worked closely with our administrators to figure out which wards would be the next COVID units and where we could find space to move non-COVID patients."

Caring for COVID patients was challenging due to the rapidity of deterioration. On many occasions Dr. Sia and her colleagues had to meet with patients and families to discuss end-of-life decisions. "It was a very tough time for everyone—patients and their families, and nurses, physicians, and administrators."

The age of the Royal Alex meant that the number of private spaces for patient isolation was limited. There was one weekend when she was afraid there was absolutely no physical space left to accommodate more patients. Thankfully, that weekend passed, and they managed.

"Throughout the pandemic, all the Edmonton area sites were helping each other. We had become very tight," Dr. Sia says. While everyone at the Royal Alex gave their utmost, she highlights GIM Division Lead **Dr. Neeja Bakshi** as having done an outstanding job for the GIM program at the Royal Alex site.

Dr. Winnie Sia is Professor with the Division of General Internal Medicine in the Department of Medicine.

Jay Varghese

Facility Chief Grey Nuns



Jay Varghese describes the Grey Nuns Community Hospital as offering a breadth of experience for internists, particularly those who have an interest in a specific medical area or who practice dual specialties. For Dr. Varghese, facility chief for the Department of Medicine at the hospital, the diversity and interdependence of the work adds to the collegiality among staff.

The Grey Nuns serves Southeast Edmonton and is the sole site for vascular surgery in Edmonton, drawing patients from all over Northern Canada. Internal medicine physicians from the Department of Medicine group provide pre-operative and post-operative care for these vascular patients. They also provide care for women experiencing medical complications of pregnancy in the Grey Nuns' large obstetrical department.

"We are still a community site," Dr. Varghese says. "While we don't have in-house subspecialties, we have other Department of Medicine members who run the stroke unit and the dialysis centre." When other expertise is needed, the group has strong support from other sites in the city in areas such as hematology and rheumatology.

The arrival of COVID-19 in March caused uncertainty and fear among staff. The Department of Medicine group had candid discussions about risks, but every single member said they would work on COVID units, a fact of which Dr. Varghese is exceptionally proud. "We worked very closely with our colleagues across the Edmonton zone to come up with pandemic operational plans, trying to do what was best at the time," he says.

"Things became very intense, but there was phenomenal collaboration. When staff members had symptoms, they stayed home, which meant calling in back-up physicians," says Dr. Varghese. "These folks had to drop their clinics, their lives, to jump in. It's a challenge, and not only financially, to cancel all your clinics to do this."

When COVID numbers crested in December, there were three lines of COVID physicians to care for 50 patients. "It was terrifying," Dr. Varghese says. "We were begging for an alternate care field hospital because there was nothing else we could do. Fortunately, the numbers didn't exceed 50."

Dr. Varghese highlights the contributions of Interim Operations Director Lana Chivers as astounding. "I've never seen anyone work so hard with the wellbeing of staff and patients always in mind," he says.

Dr. Jay Varghese is Assistant Clinical Professor with the Division of General Internal Medicine in the Department of Medicine.

Lana Chivers



Lana Chivers has the expertise to ensure the wellbeing of patients and staff in any hospital situation. The senior director of operations at the Grey Nuns Community Hospital serves the portfolios of medicine, critical care, cardiology, respiratory and emergency medicine, with decades of prior hospital leadership experience.

COVID-19 tested her and her team as never before, highlighting the importance of planning and communications, responsiveness and resilience, patient and staff support, and, above all, trust, to keep patients safe and to protect staff. While being at the helm of the Grey Nuns Command Post during COVID meant putting other work aside, she kept important, non-COVID aspects of hospital operations at the front of mind for hospital teams.

Dan Slabu

Facility Chief Misericordia



Patients from the west end of Edmonton and outlying communities such as Stony Plain make up most of the admissions to the Misericordia Hospital. Slightly more geriatric patients are admitted than at other Edmonton hospitals because of the proximity of seniors' residences and nursing homes.

Known world-wide for its Craniofacial Osseointegration and Maxillofacial Prosthetic Rehabilitation Unit, the Misericordia also houses one of only two AHS hyperbaric units in Alberta; hyperbaric oxygen treatment is being studied as a potential treatment for respiratory complications in COVID-19 patients.

Dan Slabu started as internal medicine facility chief for the Misericordia Hospital on July 1, 2020, a few days before the hospital was closed to patient admissions because of a full facility outbreak of COVID.

"My responsibilities went from providing leadership for general internal medicine (GIM) and internal medicine subspecialties to discussing with other senior leadership the pros and cons of locking down the hospital," says Dr. Slabu.

Among the first decisions he had to make was what to do with medical students and residents. "I had no idea how many of us were compromised, and because students and residents do rotations at different hospitals, after discussion with undergraduate and graduate medical education we sent them home for what turned out to be more than a month," he says.

Prior to becoming facility chief, Dr. Slabu was the section chief for GIM and had been involved in COVID planning with the deployment of GIM physicians to provide care. At the height of the pandemic in 2020, the Misericordia had three dedicated COVID physician teams and a total of 57 beds. "On Christmas Day, I personally looked after 34 patients," says Dr. Slabu.

The support and cooperation between all the areas of the hospital was extraordinary, Dr. Slabu says. He singles out **Dr. Robert Black**, the hospital's medical director, as someone who represented stability during chaos. "Back in March, he knew we were going to be tested with COVID. He was always there to provide backup and counsel to me in my new role." Dr. Slabu also recognizes **Dr. Emil Nath**, whose dedication to provision of care to COVID patients was exceptional.

Dr. Dan Slabu is a Clinical Lecturer with the Division of General Internal Medicine in the Department of Medicine.

Emil Nath



An accomplished musician, magician, athlete and motivational speaker, **Emil Nath** took on one of the most challenging roles in his life in 2020.

Dr. Nath worked on the Misericordia Hospital's COVID-19 ward where a big part of his role was supporting families unable to visit their loved ones. In the summer, when the Misericordia was locked down because of outbreaks, he worked in the Grey Nuns Community Hospital's Emergency Department, helping to manage the expected surge in medical admissions.

Dr. Nath is currently a physician on the internal medicine service and COVID Unit at the Misericordia Hospital. Throughout the pandemic, Dr. Nath worked alongside his twin brother Ermin, an internist and cardiologist, in the Misericordia's Coronary and Intensive Care Units.

Hernando Leon

GIM Site Lead Surgeon



Hernando Leon became Surgeon General Internal Medicine site chief at the start of 2020. At the time, Sturgeon was implementing Connect Care, the province's integrated clinical information system. Two months later, COVID-19 hit. "It was a very interesting learning experience," says Dr. Leon.

For him, what made this year ultimately a success was teamwork, collaboration, and a huge helping hand from the community.

Sturgeon is often seen as a hospital for the St Albert and Sturgeon County community. In the seven years that Dr. Leon has practised there, he has seen a big shift in patient population, due in large part to the completion of the Henday and relocation of the Remand Centre. The 94-medical bed hospital sees thousands of people daily from all over the greater Edmonton area. "We offer most of what other community sites offer, as we have a Tier One intensive care unit. Our links with outpatient-based specialized practitioners help us manage the complexity," he says. "Many of our doctors in primary care also work in the hospital, so that helps a lot in the transition from acute care to community care."

To tackle COVID, Dr. Leon and his team created a structured plan based on those longstanding links with community doctors. In addition, teamwork among colleagues was paramount. "We are hands-on at Sturgeon and always have been," says Dr. Leon. "Our approach during COVID was and is to help each other and overlap with each other to provide back-up and support if needed. So that created a spirit of community."

Since COVID care was shared, there wasn't a need to have an assigned COVID doctor. "When the cases increased sharply in late fall, that was the moment that one unit was completely COVID, but care for patients was split between family medicine and internal medicine," says Dr. Leon.

In addition to Dr. Leon, the members of Sturgeon's general internal medicine team are **Drs. John Cesarz, Hesham Tarhoni, Maisoon Osman, Inka Toman, Ryan Choudhury** and **Tal Zucker**, all of whom are with the Division of General Internal Medicine.

Dr. Hernando Leon is Assistant Clinical Professor with the Division of General Internal Medicine in the Department of Medicine.

Inka Toman



In 2018, **Inka Toman** began working as a general internist at the Sturgeon Community Hospital. In 2019, she became the medical informatics lead for the Department of Medicine, involved in the Connect Care rollout at the University of Alberta Hospital. Dr. Toman's experiences of training, troubleshooting and clinical use of Connect Care were essential to the system's successful implementation at the Sturgeon in 2020. Connect Care's unique benefits were especially valued by staff during the pandemic because they were able to use remote/virtual chart review and better "real time" review of vital signs for patients with COVID-19.

Fraulein Morales

Site Chief University of Alberta



For General Internal Medicine (GIM) University of Alberta Hospital Site Chief **Fraulein Morales**, a meeting called on December 24, 2020, reinforced for her why the right people go into healthcare.

"The meeting was to clarify the overnight coverage, a fairly simple matter, yet it was called on Christmas Eve and everyone who was invited attended," Dr. Morales says. That sense of responsibility and of working towards a common goal was a constant throughout the COVID-19 pandemic in 2020.

Infection prevention and control (IPC) is a vital but often behind-the-scenes function of hospital life. The University of Alberta Hospital (UAH) is best known for organ transplants and a sophisticated intensive care unit (ICU) that includes a neurosurgical ICU. With COVID, IPC moved front and centre, integral to every part of care and decision making. "I must have consulted IPC the most during the whole of 2020," says Dr. Morales.

The hospital serves a diverse population. During the pandemic peak in December 2020, Dr. Morales observed that a disproportionate number of COVID patients were frontline workers in essential services, such as factories and meatpacking plants, as well as the elderly with multiple co-morbidities.

She worked seven days on one of the four COVID units. "Many patients requiring oxygen were admitted for observation," says Dr. Morales. "And the ones we knew were not going to do well went to the intensive care unit. These were the distressing situations because you couldn't really talk with them. They were short of breath, and you had no idea if they were going to take a turn for the worse or for the better."

At the height of the second wave of the pandemic, Dr. Morales was coordinating the whole Department of Medicine response together with sub-specialties and family medicine hospital care. "Opening and closing a COVID unit requires more than doctors. You need the involvement of nursing, pharmacy, environmental services, supply and laboratory services," she says. "It was everyone getting together to provide efficient care to COVID patients without neglecting the non-COVID patients."

Dr. Morales highlights **Dr. Narmine Kassam's** leadership during the pandemic. "She worked long hours on the COVID unit, so she has a firsthand understanding and knowledge of the issues frontline workers face every day," Dr. Morales says. "She was such a positive spirit. We knew we had her support to do the job we needed to do."

Dr. Fraulein Morales is Associate Clinical Professor with the Division of General Internal Medicine in the Department of Medicine. As of February 2021, Dr. Morales is Zone Department Facility Clinical Chief, Medicine, at the University of Alberta Hospital.

Yvonne Suranyi



Yvonne Suranyi is University of Alberta Hospital (UAH)/ Stollery Emergency and UAH Medicine/Edmonton Zone medicine programs executive director with strategic responsibility for medicine across the Edmonton Zone.

Her portfolio at UAH consists of more than 300 medical beds; during COVID, these increased by an additional 59 beds. Ms. Suranyi and her team conducted pandemic surge planning across the Zone, which included planning and implementing operational surges and physician and staff coverage. At the Zone and provincial levels, she contributes to planning for critical staffing and additional bed recruitment, including practice roles within alternate models of care, and participates on/chairs an immunization task force.



Dr. Greg Hrynchyshyn Lesly Deuchar

Edmonton Zone Virtual Hospital Program

COVID-19 propelled the transition of much non-urgent health care to virtual. For **Greg Hrynchyshyn** and **Lesly Deuchar**, clinical and operational leads respectively of the Edmonton Zone Virtual Hospital program (EZVHp), the transition caught up to what they have been working on for years.

“The EZVHp was funded by Alberta Health Services to move care for those individuals who are often readmitted with alarming frequency into the health system into the community in a systematic way,” says Ms. Deuchar. “Data showed these people weren’t accessing or getting appropriate services after hospital discharge.”

The big difference between the EZVHp and COVID-necessitated virtual medical consultations is the level of care. “The vast majority of our patients are seniors living with chronic and complex disorders. We admit them to the EZVHp upon their discharge from a physical hospital and coordinate and deliver acute care interventions in their homes to stabilize them, using a dispersed team model,” says Dr. Hrynchyshyn. The EZVHp also admits those with a single medical or surgical issue who, after discharge from a physical hospital, require short-term follow-up care. The virtual hospital acts like a bridge for patients and caregivers, helping patients learn self-management strategies that support them to stay well in the community, in their own homes.



Once admitted to the EZVHp, a patient is contacted up to twice daily by nurses and pharmacists. Orders are given by a physician team and required interventions—IV medications, blood draws, fluids—are undertaken in the patient’s own home by field teams that include home care or community paramedics, with the patient’s family practice provider as part of the collaboration.

The EZVHp model had been tested for three years and the model was launched throughout the Edmonton Zone scheduled in March 2020. The pandemic spurred opportunities for partnerships with colleagues in specialty areas of medicine and in other regions, hastening the model’s spread and uptake.

Two of the partnerships—with the Department of Surgery at the University of Alberta and the Complex Care Hub—EZVHp’s counterpart in Calgary—involved implementation trials for specific technologies that support patient care assessment and patient-provider interaction from the patients’ homes. In the works are other partnerships with neurology, cardiac sciences, pediatrics, hematology, and palliative care.

The EZVHp was successful in obtaining clinical AMHSP funding for physicians from Alberta Health in 2020. “Stabilizing our physician funding made us an entity that’s here to stay in the long term,” says Dr. Hrynchyshyn. “With this kind of care paradigm, we’re starting to look at how this program could be fully expressed not only in the Edmonton Zone but across the province, so that every patient at some point in the future would have access to home-based acute care when they need it.”

[Dr. Greg Hrynchyshyn is Associate Clinical Professor with the Division of General Internal Medicine in the Department of Medicine.](#)

Research Response Department of Medicine.

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To raise new questions,
new possibilities, to regard
old problems from a new
angle, requires creative
imagination and marks
real advance in science.

Albert Einstein



Sangita
Sharma

Sangita Sharma

COVID in the Far North

SANGITA SHARMA, THE ALBERTA HEALTH SERVICES CHAIR IN INDIGENOUS HEALTH AND PROFESSOR IN INDIGENOUS AND GLOBAL HEALTH RESEARCH, USES THE WORD PARTNERSHIP FREQUENTLY WHEN SHE DESCRIBES HER WORK.

For more than 15 years, Dr. Sharma's leadership of research projects in the Northwest Territories (NWT) and Nunavut has become an example in Canada of the preferred way to conduct community-based research projects with Indigenous communities.

"Throughout Canadian history, assimilation policies, such as residential schools and the Sixties Scoop, have understandingly resulted in distrust of the health care system," says Dr. Sharma. "It is essential that Indigenous communities co-lead and advise on all aspects and stages of any research." As an example, all research Dr. Sharma is involved with in the NWT is co-led with the Hotii ts'eeda NWT SPOR SUPPORT Unit, funded by the Canadian Institutes of Health Research (CIHR). Hotii ts'eeda is the only SPOR Unit embedded within an Indigenous government with a Governing Council made up of Indigenous leadership from many governments and communities in the territory.

Her partnerships with Indigenous communities and governments, and the territorial governments, have led to projects ranging from cancer screening utilization to vaccine hesitancy in remote Arctic communities. In early 2020, the partnerships enabled the group to expand to include COVID-related research with projects that have garnered a total of \$7 million in funding from government and industry.

One grant from CIHR and another from Hoffman-La Roche investigates the impact of COVID-19 and COVID-19 prevention strategies in 10 communities in NWT and six in Nunavut, where the research is being co-led by the Aqqiumavvik Arviat Wellness

Society (Nunavut) and Hotii ts'eeda NWT SPOR SUPPORT Unit. This research is also supporting the development of culturally safe COVID-19 prevention and management messaging from and for the communities. "It is also essential that we capture the Elders' perspectives and advice as many community members reach out to Elders for information," says Dr. Sharma.

Later in 2020, the team's continuing partnership with Indigenous communities led to the expansion of a CIHR-funded, pre-pandemic project on the utilization of and hesitancy around HPV vaccination to include concerns for SARS-CoV-2 vaccines. The team will also assess the safety and efficacy of COVID-19 vaccination, as a result of funding from the COVID-19 Immunity Task Force and Vaccine Surveillance Reference Group.

"Providing training for local community research assistants is an integral part of all projects, and builds capacity and local employment," says Dr. Sharma. "We work closely with the communities and share the research results with all partners, including Indigenous organizations and governments and territorial and provincial governments, which are responsible for implementing pandemic prevention strategies."

Dr. Sangita Sharma is Professor with the Division of Endocrinology & Metabolism in the Department of Medicine.





Sebastian
Straube

Sebastian Straube

Aerosol Generating Procedures Study

COVID-19 REINFORCED MANY EXISTING COLLABORATIONS IN CLINICAL MEDICINE. IT ALSO INITIATED SERENDIPITOUS COLLABORATIONS ON THE RESEARCH FRONT, SAYS SEBASTIAN STRAUBE, PREVENTIVE MEDICINE DIVISION DIRECTOR.

A researcher in occupational medicine and specialist in conducting systematic literature reviews, Dr. Straube has a research record in such diverse areas as opioid therapy, random drug and alcohol testing in the workplace, and interventions for back pain prevention. His latest research was sparked by the airborne risks to health care workers in the pandemic.

COVID's global advance was accompanied by concern about how to best protect health care workers from SAR-CoV-2 transmission while they were caring for patients. "Aerosol-generating procedures are high risk because the virus in aerosolized form is quite transmissible," says Dr. Straube. "A COVID-positive patient undergoing an aerosol-generating procedure could transmit the virus to health care workers or bystanders. That has implications for the selection and use of appropriate protective measures, including personal protective equipment."

Differences in the classification of medical procedures by various authorities as aerosol-generating, possibly aerosol-generating, or not aerosol-generating presented a challenge: there wasn't a comprehensive, consensus-based list of aerosol-generating procedures, but there was a need for one. "Such a resource could help develop guidelines to protect clinical staff who conduct these procedures as part of their care of COVID patients," says Dr. Straube.

An international collaboration was quickly formed in April. Group members included infectious disease and occupational medicine physicians, other researchers, a medical librarian, and medical students. Among the collaborators were Dr. Straube's research associate, "Dr. Tanya Jackson, who was first author on the resulting paper, and University of Alberta Assistant Professor Dr. Quentin Durand-Moreau, whose contacts were instrumental in assembling the international research team.

The team conducted a rapid systematic review of 128 documents containing 1248 mentions of aerosol-generating procedures and categorized them into 39 procedure groups. Procedures classified as aerosol-generating or possibly aerosol-generating by at least 90% of the reviewed sources include intubation and extubation procedures, bronchoscopy, manual ventilation, airway suctioning, and cardiopulmonary resuscitation.

For procedures for which there was more disagreement in the scientific literature, Dr. Straube points out that such disagreement doesn't mean these procedures do not emit generate aerosols. However, to remedy this uncertainty, "there's a need for further research on these procedures to develop definitive guidance," says Dr. Straube.

The study results were published in BMJ Open Respiratory Research in October to considerable media interest, and the results were also shared among the World Health Organization's Evidence Collaborative for COVID-19, of which Dr. Straube is a member.

Dr. Sebastian Straube is Professor and Director of the Division of Preventive Medicine in the Department of Medicine.



Medical Education Response Department of Medicine.

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Medical education does not exist to provide students with a way of making a living, but to ensure the health of the community.

Rudolf Virchow



Karen
Kroeker

Karen Kroeker

Competence by Design

"I ALWAYS APPRECIATED THE WORK AND TIME THAT PEOPLE PUT INTO TRAINING ME TO DO MY JOB," SAYS KAREN KROEKER, WHO HAS HEADED THE GASTROENTEROLOGY RESIDENCY PROGRAM FOR FIVE YEARS. IN 2019 THE PROGRAM BEGAN EVOLVING INTO COMPETENCE-BASED TRAINING TO MEET THE REQUIREMENTS OF THE ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF CANADA.

In contrast to time-based residency training—typically three years of core internal medicine and two years of gastroenterology—Competence by Design (CBD) means residents must demonstrate proficiency at each stage of assessment before advancing to the next one. The requirement to demonstrate skills is balanced with funding realities. "You can't train for ten years when we have funding for two," says Dr. Kroeker. Making the balance work is a challenge, one that, as a self-described problem solver, she enjoys.

"We went live with CBD two years ago, so in 2020 we had residents in their second year having to change their training," she says. "We used to do end-of-rotation evaluations. Now we do what is called Entrustable Professional Activities (EPAs)." Through EPAs, residents are assessed on a range of key tasks of the specialty to show they are doing a good job and to receive feedback on how to improve. "Residents get the breadth of training and assessment and can show they have the skills during it."

Training in 2020 posed new challenges. Because of COVID-19, access to specialized labs and diagnostic procedure suites was curtailed. Clinics went virtual. Residents attended academic half-day and did clinic from home, missing much of the faculty support and the bonding with fellow residents.

Dr. Kroeker juggled a lot of schedules to ensure that training continued. "We created a curriculum map to chart completed and outstanding EPAs. I moved certain rotations to next year for some residents, and more residents were spread out over the year," she says.

As it turned out, there were fewer trainees than usual and room to adjust the schedule. "We were fortunate in that we were able to revise the schedule enough to help everyone get the experiences they needed," says Dr. Kroeker.

"It's exciting to be a residency program director during this time because you get to be part of the change and have input into what we're going to assess," she says. "My job is to make sure they're competent at the end, but also to design a program that will set them up for success."

Dr. Karen Kroeker is Associate Professor with the Division of Gastroenterology in the Department of Medicine and a member of the national GI Specialty Committee.





Steven
Caldwell

Steven Caldwell

Impact of COVID-19 on Learners

ASSOCIATE CHAIR OF UNDERGRADUATE MEDICAL EDUCATION (UME) STEVEN CALDWELL IS RESPONSIBLE FOR CLINICAL ROTATIONS, THE CORE LEARNING EXPERIENCES IN INTERNAL MEDICINE FOR THIRD- AND FOURTH-YEAR MEDICAL STUDENTS. THE ADVENT OF COVID-19 MEANT ALL MEDICAL TEACHING HAD TO MOVE TO VIRTUAL, EVEN THE IN-HOSPITAL ROTATIONS. DESPITE THE LOSS OF IN-PERSON LEARNING, HE AND HIS COLLEAGUES IN THE UME OFFICE HAD TO ENSURE THE PROGRAM WOULD DELIVER THE KNOWLEDGE EVERY STUDENT NEEDED TO GRADUATE ON TIME.

Along with getting up to speed quickly with virtual technology, Dr. Caldwell had to recruit colleagues in the Department of Medicine and from other departments to deliver daily online teaching. “It was a scramble,” Dr. Caldwell says. “We moved daily personal teaching, our classroom teaching, and our weekly academic half-day—where students attend in-person lectures by sub-specialists, residents, and faculty from other departments—all on-line.” The critical part of physician training—in-person bedside teaching—was replicated as best as possible with virtual clinical scenarios, simulated bedside teaching, and the use of an online tool called Aquifer that tested learners’ application of clinical knowledge.

When third- and fourth-year students were allowed back on clinical wards mid-year, their rotations were reduced by one-quarter to ensure everyone had access to the rotations needed for graduation. Academic half-days continued to be delivered online, and a virtual version of the objective structured clinical exam (OSCE) that assesses clinical skills at the end of each rotation was developed.

Dr. Caldwell summarizes the effect of the virtual learning experiences on learners’ examination results as positively neutral. “That sounds like a contradiction, but it was a good thing. We weren’t seeing an excess of failures or an inappropriate number of high marks either,” he says. “We took into consideration the unique circumstances necessitated by COVID-19 and gave learners the benefit of the doubt at every opportunity.” For example, rules around minimum attendance had to be made more flexible to allow for student absences because of self-isolation due to suspected virus exposure or illness.

While some aspects of virtual learning may continue post-COVID, Dr. Caldwell is looking forward to the resumption of full in-person clinical learning. “There’s really no substitute for in-person education,” he says. “You need to be hands-on with your preceptor, caring for patients, learning at the bedside, practising your skills both mentally and physically.”

Dr. Steven Caldwell is Clinical Professor with the Division of Nephrology in the Department of Medicine. He is also honorary professor with the University of Edinburgh’s College of Medicine & Veterinary Medicine.



Sita Gourishankar



Sita Gourishankar

Virtual MD Applications

ORGANIZING ADMISSIONS TO THE UNIVERSITY OF ALBERTA'S MD PROGRAM IS NO SMALL TASK. FROM JULY TO OCTOBER EACH YEAR THE FACULTY OF MEDICINE RECEIVES UP TO 1600 APPLICATIONS.

The following March, over 500 applicants participate in a packed weekend of in-person, individual mini-interview stations and panel interviews involving about 400 support staff, interviewers, and faculty members.

For the last five years, nephrologist **Sita Gourishankar** has been the assistant dean of admissions for the MD program. As she puts it, "It is a massive undertaking that I am ultimately accountable for if it all falls apart."

In March 2020, that was top of her mind. As she and her team were preparing for the medical school applicants' marathon interview weekend, COVID-19 exploded. "Things were evolving at such a fast pace," she says. "They were shutting things down. I realized we weren't going to be able to do this in-person. We had 48 hours to go virtual."

Under Dr. Gourishankar's leadership, all the candidates were informed. All the questions candidates would be asked in interviews or by panels were adapted to a Zoom-style platform. Med IT expanded the faculty's Zoom license to 25 virtual rooms so that they could be run concomitantly.

While the candidates stayed home, the interviewers—masked and separated at a safe distance—were on site. This reduced the chance of communications problems if technological difficulties arose. Dr. Gourishankar also made her cell phone number available in case any of the 530 applicants needed to speak to her during the interview weekend. "Applicants are often stressed enough in these interviews. Having to do them virtually because of COVID meant that it was really important to be

supportive and, if needed, they could speak to a human voice," she says. As it turned out, only two people called, and their problems were resolved quickly.

Dr. Gourishankar had concerns initially about the assessment validity of the virtual interviews. "We didn't know if we would get a similar quality of assessment of non-cognitive attributes that an in-person interview provides," she says, "or if we would be able to differentiate enough between candidates' performances."

Although the format of the interviews had to be abbreviated, the performance metrics of the assessments showed the interviews were comparable to previous years' in-person interviews. "I really do believe that we will continue to use this format, in some fashion, going forward. The costs savings alone are enormous—thousands of dollars are spent by the program and by the candidates flying all over the country," says Dr. Gourishankar.

"In the end, everything worked," she says. "We were willing to pivot. Not a single person on the team said to me 'We can't do this.' Everyone jumped in to help, with special credit to the MD admissions team, Dr. Hollis Lai, our Director of Assessment, Dr Tracey Hillier, the Associate Dean at the time, and MedIT."

Associate Professor Sita Gourishankar is with the Division of Nephrology in the Department of Medicine. She is Medical Director of the Kidney Transplant Program and Director of the Kidney Transplant Fellowship training program.



A blurred background image showing a pair of hands holding a tablet computer. The image is rendered in a monochromatic orange color scheme, matching the overall design of the page. The hands are positioned in the lower right quadrant, with the tablet held horizontally. The background is out of focus, emphasizing the text in the foreground.

Clinical Response Department of Medicine.

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One of the essential qualities of the clinician is interest in humanity, for the secret of the care of the patient is in caring for the patient.

Elizabeth Bradley

Lynora Saxinger



Lynora Saxinger

Social Media & COVID

BEFORE 2020, LYNORA SAXINGER USED PROFESSIONAL TWITTER FAIRLY MINIMALLY FOR SCIENTIFIC INFORMATION AND CONNECTIONS. BUT THE DARK SIDE OF SUCH PLATFORMS DETERRED HER FROM SEEKING A PUBLIC SOCIAL MEDIA PRESENCE AS AN ACADEMIC. WHEN COVID-19 STRUCK, THE WAVES OF MISINFORMATION SHE ENCOUNTERED CHANGED HER MIND.

As an infectious diseases specialist interested in public health and emerging infectious diseases, and with her involvement in Alberta Health Services' (AHS) Scientific Advisory Group, she felt a responsibility to provide good information. "I thought, 'If I can add any perspective, I should take that risk and do it,'" says Dr. Saxinger.

One year, more than 7200 tweets, and nearly 15,000 followers later, Dr. Saxinger is one of Canada's best-known experts on COVID-19, receiving frequent requests for media interviews and invitations to co-author papers, join projects, and participate in important conversations. "In one week, I spoke with the president of the University of Alberta, Prime Minister Trudeau, and Peter Mansbridge," she says. "Doing media gives you credence and an aura of authority in the public eye, which I find a bit uncomfortable personally, but which is very helpful in sharing scientific information."

Despite her discomfort, her ability to translate often opaque scientific information into thoughtful, down-to-earth, conversational language has proven to be another of Dr. Saxinger's strengths. That translational role also parallels her work as co-chair, with Dr. Braden Manns, of Alberta Health Services' provincial COVID-19 Scientific Advisory Group.

Formed during the pandemic, the group comprises experts from relevant branches of medicine, public health, and academia. Its recommendations feed up to AHS's Emergency Coordinating Council to inform policy decisions and public health actions. As part of their mandate, the Scientific Advisory Group produces rapid scientific reviews—with plain language summaries—on questions coming from all directions, from AHS internal analysts to infection control policy makers to practising clinicians.

"It's a nice example of being between places in a really practical way, which we don't always see on the academic side. We're asking questions and trying to answer them with the most up-to-date, rigorous science to inform decisions in the pandemic," Dr. Saxinger says. "There's a direct applicability to peoples' health and lives."

AHS' Scientific Advisory Group

Associate Professor Lynora Saxinger is with the Infectious Diseases Division of the Department of Medicine. She is medical lead of Antimicrobial Stewardship for Northern Alberta, Alberta Health Service, and has advised national bodies, including the Public Health Agency of Canada, on antimicrobial resistance.





Robyn Harrison

Robyn Harrison

Workplace Health & Safety

INFECTIOUS DISEASE SPECIALIST ROBYN HARRISON BECAME A PROVINCIAL COMMUNICABLE DISEASE CONSULTANT JUST BEFORE THE H1N1 INFLUENZA PANDEMIC HIT IN 2009. "THERE WERE LOTS OF CONCERNS AT THAT TIME, BUT IT BECAME CLEAR EARLY ON THAT H1N1 WASN'T GOING TO BE AS CATASTROPHIC AS PEOPLE FEARED," SHE SAYS.

In retrospect, it was a dress rehearsal for COVID-19. For Dr. Harrison, whose role is to help keep health care workers safe from communicable diseases, it was all hands on deck day and night to field technical questions and respond to fear and anxiety. "People were looking to Italy and New York City and thinking that all the healthcare workers were going to be affected," she says. "We have highly trained and educated professionals, and they were genuinely frightened—for their patients, their families, and themselves."

She was uniquely positioned to help. In addition to her consultant role with Alberta Health Services, Dr. Harrison serves on other provincial committees—the Alberta Advisory Committee on Immunization and most recently the Acute Care Outbreak Task Force—as well as the National Advisory Committee on Immunizations.

To help deliver the right information, Dr. Harrison and the Workplace Health and Safety team developed an online testing dashboard for healthcare workers that is updated with weekly summaries and infographics to give a true picture of health care worker infections.

Other online tools followed that were developed with AHS's expertise and feedback from frontline workers. "We worked closely with Public Health and Infection Control (including Dr. Stephanie Smith) to answer health care workers' questions such as those around testing, when they should or shouldn't work, and when they needed to be in quarantine or isolation," says Dr. Harrison.

The most challenging message to get across was that frequent changes in recommendations and policies needed to happen to reflect the changes in the pandemic's course. "We really pushed the message that the online space was where people could find the necessary information," she says.

The result was an unprecedented level of frontline health care worker engagement: it's one of the good things, Dr. Harrison thinks, to come out of the pandemic. "As the year ended, we had solid processes, policies, communication tools, and structure up and running thanks to people's feedback," says Dr. Harrison. "We found new ways to support our workplace health and safety team and then, ultimately, our frontline health care workers."

Robyn Harrison is Clinical Professor with the Division of Infectious Diseases in the Department of Medicine.





Stephanie
Smith

Stephanie Smith

Infection Prevention & Control

“EVERY HOSPITAL HAS A PANDEMIC PLAN,” SAYS INFECTIOUS DISEASE EXPERT STEPHANIE SMITH. “BUT EVEN THOUGH YOU HAVE SOMETHING ON PAPER, MOST PEOPLE WORKING IN A HOSPITAL AREN’T ALWAYS AWARE OF IT. DURING COVID-19, IT’S BEEN ABOUT TRANSLATING WHAT’S ON PAPER INTO REALITY.”

Dr. Smith is director of infection prevention and control (IPC) for the University of Alberta Hospital. She has a nine-person team composed of nurses and technicians specially trained in infection control and prevention. Provincially, she is medical lead for the Edmonton Zone for IPC. She is also on national committees with the Public Health Agency of Canada to help develop policies for managing COVID in acute care settings.

Her role is to implement and adjust policies around personal protective equipment that is evidence-based and keeps patients—and health care workers—safe in the hospital.

As the pandemic has evolved, policies have evolved in response, and health care workers have had to adapt to many changes. Instilling trust and keeping the lines of communication open were paramount for Dr. Smith and her team in order to make changes effective.

She offers the example of COVID transmissibility. “Pre-COVID, the whole issue of asymptomatic or pre-symptomatic transmission wasn’t on the radar,” she says. “Then it became clear that people were transmitting COVID before they had symptoms or when they didn’t have symptoms. We had to change our policies fast, which is why we have implemented masking both in hospital and out in the community.”

Dr. Smith and her team work closely with provincial and national networks of health care professionals, including Dr. Harrison with Workplace Health and Safety, to share information and come together to develop necessary policy changes. At the local level, in the hospital, she and her team set up site command posts to coordinate information and are a constant presence, always visible and ready to communicate with frontline staff.

“This pandemic has shown just how incredibly linked we all are and how we all need to work together to keep our patients safe, keep our health care workers safe, and get through it,” says Dr. Smith.

Dr. Stephanie Smith is Professor with the Division of Infectious Diseases in the Department of Medicine.



Neeja Bakshi



Neeja Bakshi

Care of COVID Inpatients

"AT THE BEGINNING OF 2020, WE WERE READY TO IMPLEMENT SOME REALLY BIG CHANGES AROUND EFFICIENCY IMPROVEMENTS," SAYS NEEJA BAKSHI, GENERAL INTERNAL MEDICINE (GIM) DIVISION LEAD AT THE ROYAL ALEXANDRA HOSPITAL.

When COVID-19 hit in March, planning switched from the new initiatives to pandemic response. "We could see COVID-19 going from zero to sixty globally," Dr. Bakshi says. "We focused on creating bed and staffing capacity to prevent the disasters we were seeing abroad."

The planning started with the agreement among the GIM team that they would provide the primary service for COVID patients at the hospital; this agreement became the consensus provincially. Next was workforce, protocols, and processes planning. With scant evidence to guide them, Dr. Bakshi and her team turned to the other hospital sites.

"We've been able to really work together and have a collective brain trust on how we needed to tackle this," says Dr. Bakshi. "It's one of the silver linings that's come out this."

Within the Royal Alex, one of the big changes for Dr. Bakshi was working closely with the hospital's operations team. "We knew very little about COVID-19, including its infectivity. It meant all areas of the hospital, including physicians and managers for nursing, respiratory therapy, patient care, and operation leads, needed to work together to figure out every aspect of managing COVID. "

One detail Dr. Bakshi and the team looked at was the proximity of a COVID unit to the intensive care unit (ICU). The team timed themselves walking, then running from different units to the ICU, to select the unit for COVID patients.

"There were lots of changes to processes as we learned more," says Dr. Bakshi. Her two biggest roles were ensuring that physicians were kept updated about changes, and setting up workforce planning to manage the increasing patient numbers. By fall, staffing the six COVID teams, especially at night, was a problem. "It was a daily, sometimes hourly battle to find who was going to cover. It's a mental burden you just can't get away from."

The Government of Alberta's COVID-19 AMHSP funding enabled nighttime coverage by fellows in different subspecialties. "Without that funding, we wouldn't have been able to survive," says Dr. Bakshi.

Dr. Bakshi points to another silver lining. "I've been at the Royal Alexandra for eleven years, and it's the first time that operations and physicians are working hand-in-hand. I don't think either party could have done it without the other," she says.

Neeja Bakshi is Associate Clinical Professor with the Division of General Internal Medicine in the Department of Medicine.



A hand is shown typing on a laptop keyboard. The laptop screen displays a video conference grid with three participants: a man with glasses in the top right, a man with glasses and a beard in the middle, and a woman with blonde hair in the bottom left. The background is a solid magenta color.

Administrative Response Department of Medicine.

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Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect.

Chief Si'ahl (*Seattle*)



Andee
Pullin

Andee Pullin

Mastering Virtual Administration

“COVID-19 CATAPULTED US INTO A VIRTUAL WORLD,” SAYS ANDEE PULLIN, CLINICAL ADMINISTRATIVE ASSISTANT WITH ALBERTA HEALTH SERVICES (AHS).

Ms. Pullin has been working in the General Internal Medicine Division for over ten years. In July 2019, she was moved from the University’s Department of Medicine to AHS as part of the restructuring of clinical services and supports at the University of Alberta Hospital.

While her responsibilities stayed the same—provision of clinical outpatient support for Doctors Peter Hamilton, Vijay Daniels, Rob Hayward and Peter Hwang—the pandemic changed the dynamics of her position. “In 2020 we became 100% paperless,” she says.

For Administrative Assistants, going virtual meant rapid learning and use of several different software programs and applications. “Before COVID arrived, we were all going through the transition to Connect Care. It wasn’t easy, but in retrospect, it couldn’t have come at a better time,” says Ms. Pullin. “Without it, I’m not sure we could have handled the onset of COVID and working remotely as well as we did.”

She’s found that working from home means her productivity has gone up, with fewer interruptions and less time spent commuting. “The number one benefit for us is that working from home keeps us safe and socially distanced,” she says. “But the biggest positive is to our patients. They are loving the phone and virtual appointments—it’s surprising how many of our elderly patients have become savvy with Zoom. Patients love the convenience of not having to travel to their appointments, not having to pay for parking if they drive, and not having to sit among other sick patients while they wait for their appointment.”

Ms. Pullin hopes remote working becomes the new norm. She can see coming into the office now and then—she currently comes into the office once a week—but there are too many benefits of working from home to ignore. She does have to remind herself to take breaks, though. “You really have to force yourself to stick to a balanced routine. You get so engrossed in your work that you’re not watching the time. The day can fly by.”



Division Directors Department of Medicine.

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In my view, all that is necessary for faith is the belief that by doing our best we shall succeed in our aims: the improvement of mankind.

Rosalind Franklin

DEPARTMENT OF MEDICINE

2020 DIVISIONAL LEADERSHIP



1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

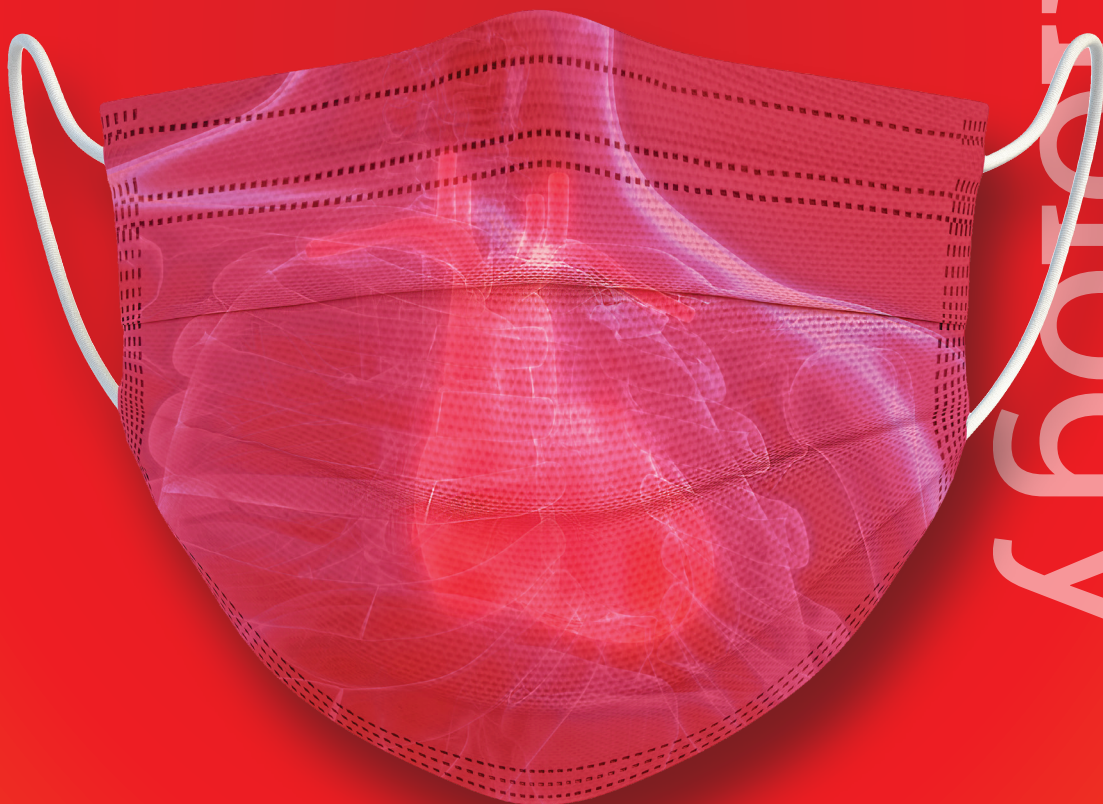
- 1 **Wayne Tymchak**, Cardiology
- 2 **Robert Gniadecki**, Dermatology
- 3 **Peter Senior** (until November 30, 2020), Endocrinology & Metabolism
- 4 **Jacques Romney** (as of December 1, 2020), Endocrinology & Metabolism (Interim)
- 5 **Daniel Baumgart**, Gastroenterology
- 6 **Clarence Wong**, Zone Section Chief, Gastroenterology
- 7 **Peter Hamilton**, General Internal Medicine
- 8 **Adrian Wagg**, Geriatric Medicine
- 9 **Joseph Brandwein**, Hematology
- 10 **Karen Doucette**, Infectious Diseases
- 11 **Branko Braam**, Nephrology
- 12 **Douglas Zochodne**, Neurology
- 13 **Chester Ho**, Physical Medicine & Rehabilitation
- 14 **Sebastian Straube**, Preventive Medicine
- 15 **Giovanni Ferrara**, Pulmonary Medicine
- 16 **Jan Willem Cohen Tervaert**, Rheumatology

Division Director **Wayne Tymchak** wasn't surprised by the indirect effects of COVID-19 in cardiac clinical care. "In the early days of the pandemic," he says, "there was a big reduction in patients presenting to hospital, and we expected that."

This was also documented at other centres throughout North America. Patients were anxious about coming into hospital." Patients who delayed coming into hospital were much sicker, requiring more aggressive measures to try to address their disease.



Cardiology



AS WITH ALL DEPARTMENT OF MEDICINE DIVISIONS, DIVISION OF CARDIOLOGY PHYSICIANS, LEARNERS, AND ADMINISTRATION WORKED FROM HOME WHENEVER POSSIBLE. "IT'S DIFFICULT DOING A VIRTUAL CONSULT WITH A NEW, COMPLEX PATIENT BECAUSE YOU CAN'T TELL IF THEY ARE MINIMIZING SYMPTOMS," SAYS **DR. TYMCHAK**. "IT'S EASIER WITH LONG-TERM PATIENTS BECAUSE THEY CAN VERIFY SYMPTOMS AND MEDICATIONS."

Timely discharge is central to one of the division's most significant innovations of 2020: the ASPIRE program, coordinated by **Kevin Bainey**. ASPIRE's advanced nurse practitioners work with physicians to identify acute coronary syndrome patients who can be safely discharged early from intensive care or general cardiology wards. These patients are followed up daily for three days after discharge to ensure medications are being taken properly. The program has resulted in a reduction of serious adverse outcomes in these patients.

Another innovation was the establishment of the Hypertrophic Cardiomyopathy Clinic by **Gavin Oudit**, **Wayne Tymchak**, **Ian Paterson**, **Anita Chan**, and **Ken Quadros**. The clinic centralizes appropriate diagnosis, care, and genetic counselling to patients with hypertrophic cardiomyopathy, and other disorders such as Fabry's disease, various forms of dilated cardiomyopathy, and amyloidosis. **Dr. Paterson** also received COVID rapid response funding from the Canadian Institutes of Health Research and Alberta Innovates for the Multi-Organ Imaging with Serial Testing in COVID-19 Patients study

Drs. Chan and **Quadros** were two of four recruits to the division in 2020.

Dr. Chan specializes in cardiac nuclear imaging for diagnoses of ischemic burden and infiltrative cardiomyopathies such as amyloidosis. **Dr. Quadros** uses new invasive methods to address serious ventricular arrhythmias. **Anoop Matthew**, a specialist in structural adult congenital heart disease, and **Janek Senaratne**, a leader in simulation and medical education, were also welcomed to the division. **Dr. Senaratne** was awarded Teacher of the Year by Grey Nuns cardiology.

Dr. Tymchak highlights implementation of the mitral clip procedure instead of mitral valve surgery as a major achievement in high risk for surgery patients. The clip is inserted using a new trans-catheter system, a non-surgical approach that reduces risk for older patients.

Dr. Tymchak also highlights the top three publications by division members: "Angiotensin-Converting Enzyme 2: SARS-CoV-2 Receptor and Regulator of the Renin-Angiotensin System: Celebrating the 20th Anniversary of the Discovery of ACE2," in *Circulation Research*, with lead author **Gavin Oudit**; "Peripheral Vasoconstriction During Mental Stress and Adverse Cardiovascular Outcomes in Patients with Coronary Artery Disease," in *Circulation Research*, with **Paolo Raggi** as a co-author; and "Natriuretic Peptide Response and Outcomes in Chronic Heart Failure with Reduced Ejection Fraction in *Journal of the American College of Cardiology*, with **Justin Ezekowitz** as a co-author.

CARDIOLOGY DIVISION

Graduate Students: 17

Residents: 14

Fellows: 8

Specialized & Multidisciplinary Clinics: 20

JANEK SENARATNE



Assistant Clinical Professor Janek Senaratne joined the division in 2020 as a cardiac intensivist and educator in cardiology and critical care. His interests include medical education, ultrasound, invasive hemodynamics, simulation, and clinical trials. **Dr. Senaratne** is one of the Vital Heart Response Program physicians and a member of the task force that designed the University of Alberta Hospital's COVID-19 Protected Code Blue and

Intubation Protocols. As simulation lead for cardiology, he uses in-situ team-based simulation and video learning to teach and protocolize management of COVID patients in the Cardiac Intensive Care Unit, Cardiac Catheterization Laboratory, and Electrophysiology Laboratory.

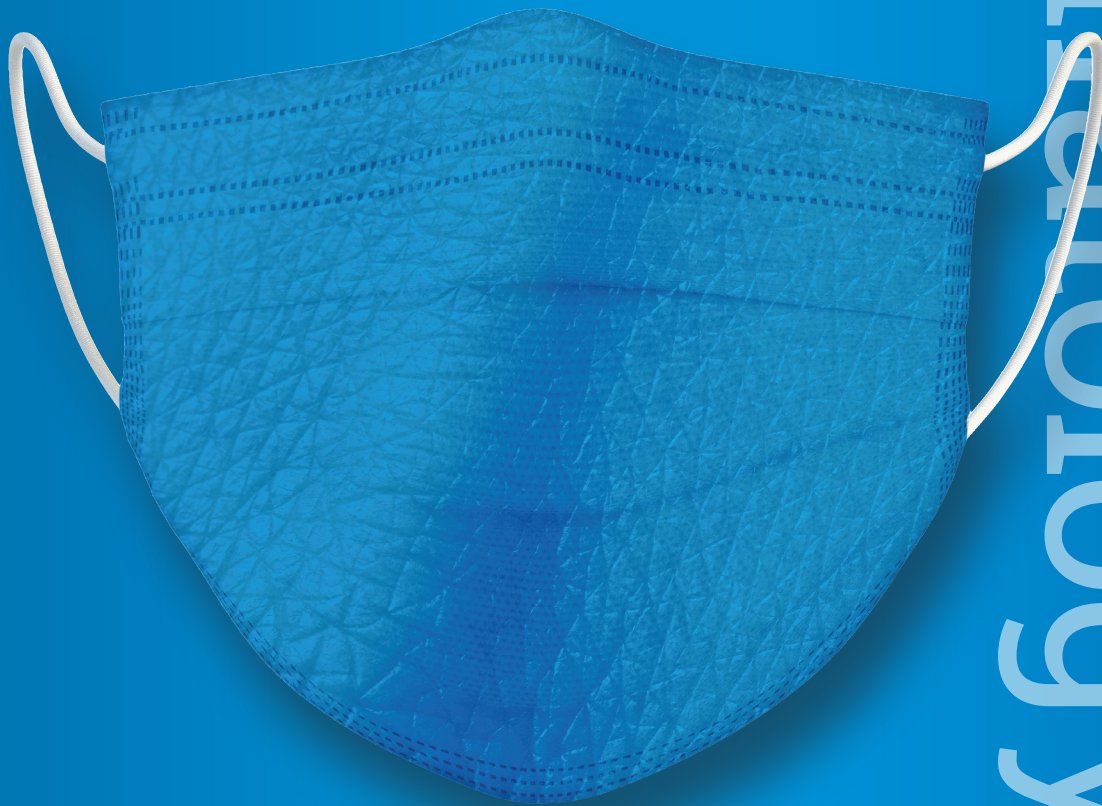
PAOLO RAGGI



Professor Paolo Raggi is a distinguished researcher (over 400 PubMed references) and clinician who has pioneered many advances in cardiology. He was the first to show that the presence of coronary artery calcium (CAC) poses a risk for severe heart disease and has published more than 100 papers in the field. Recently, he headed an international trial of a novel inhibitor of hydroxyapatite that demonstrated significant slowing of CAC progression. His study was presented at the 2019 American Heart Association meeting and published in *Circulation*. He is currently investigating the link between mental disorders and coronary artery disease.

“During the pandemic, when many things were shut down, we decided not to close our nine specialty clinics,” says Dermatology Division Director **Robert Gniadecki**. “These are high-volume clinics providing about 16,000 consultations a year.

Everyone on our team agreed to keep treating patients and worked together to make the clinics safe. We didn’t abandon our patients. That’s our biggest success in 2020 and what I am most proud of.”



Dermatology

THE DIVISION'S MULTI-YEAR FOCUS ON RESEARCH HAS LED TO A SIGNIFICANT INCREASE IN SCIENTIFIC PRODUCTIVITY.

Dr. Gniadecki's research group, which focuses on cutaneous T-cell lymphoma and autoimmune skin diseases, had 21 peer-reviewed publications by division members in 2020: lead author **Alshwarya Iyer** and co-authors **Sandra O'Keefe, Dylan Hennessey, and Jordan Patterson** on "Independent Evolution of Cutaneous Lymphoma Subclones in Different Microenvironments of the Skin," in *Nature Research Scientific Report*; lead author **Dr. Iyer** and co-authors **Ms. O'Keefe, Mr. Hennessey, Dr. Patterson, Gane Ka-She Wong, and Robert Gniadecki** on "Branched Evolution and Genomic Intratumor Heterogeneity in the Pathogenesis of Cutaneous T-cell Lymphoma," in *Blood Advances*; and lead author Arunima Sivanand, and co-authors **Dr. Iyer, Mr. Hennessey, and Ms. O'Keefe** on "The Neoantigen Landscape of Mycosis Fungoides," in *Frontiers in Immunology*.

Associate Clinical Professor and Dermatology Residency Training Program Director **Eunice Chow** won the Practitioner of the Year Award from College of Physicians and Surgeons of Alberta. Dr. Chow founded the Division's Medical Hair Loss Clinic and co-founded the Pigmented Lesion Clinic with **Thomas Salopek**.

"Looking ahead," says Dr. Gniadecki, "I see the division building on our research success and strengthening our capacity for clinical research and clinical trials."

DERMATOLOGY DIVISION

Graduate Students: 2

Residents: 14

Fellows: 2

Multidisciplinary Clinics: 4

Specialized Clinics: 5

JAGGI RAO



Clinical Professor Jaggi Rao is medical director for *ConsultDERM™*, Canada's most widely used teledermatology platform for physicians. He founded Telederm Outreach, a philanthropic telehealth service, to provide care to developing countries. In addition to his clinical practice, Dr. Rao focuses on medical education and is the creator of *DermaCon™*, the largest dermatology conference for family physicians and pharmacists in Canada. His clinical research includes technological device trials and pharmaceutical testing in industry-sponsored trials in dermatology. In 2021, Dr. Rao focused on the identification of COVID-related skin problems and has presented his findings to family physicians and the Department of Medicine.

MAGGIE XIAO



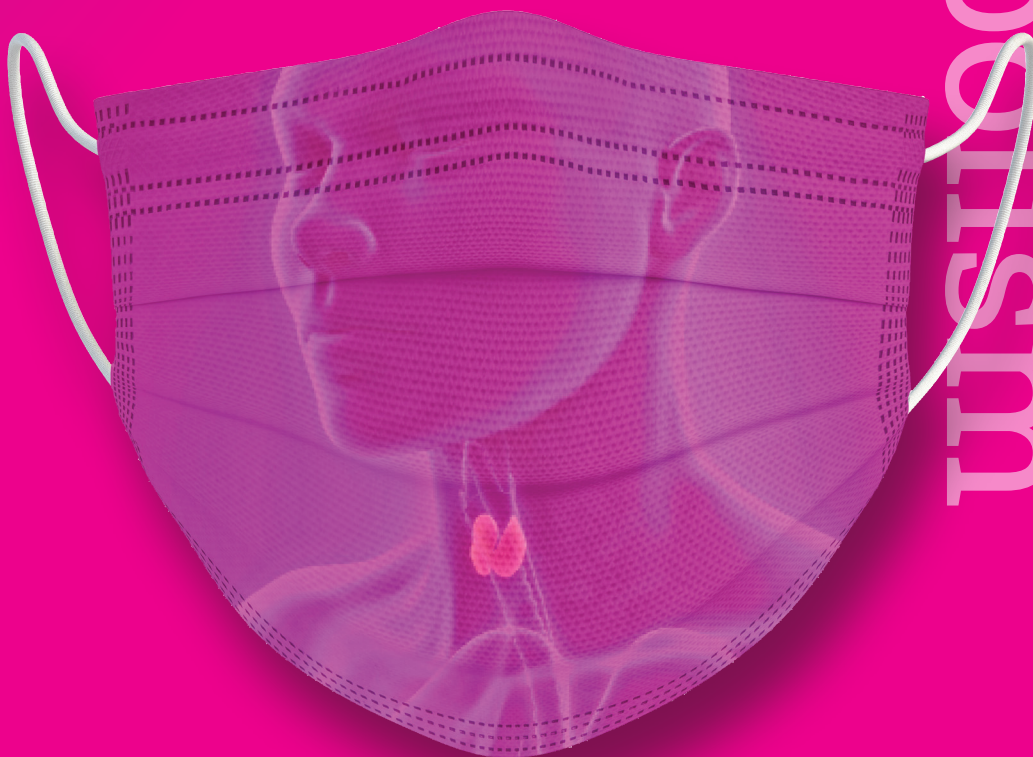
Molecular geneticist Maggie Xiao is a research trainee in Robert Gniadecki's lab. The research group is investigating the genome of Mycosis Fungoides, a rare and incurable T-cell lymphoma that affects the skin. Her translational research project integrates transcriptomic data to identify RNA expression patterns in disease progression. Early results point to clusters of changes that could be the basis for identifying causes of disease progression. Ms. Xiao is a medical student at the University of Alberta in the class of 2023.

“The pandemic capped a year of tremendous change,” says Division Director **Peter Senior**, who was succeeded by **Jacques Romney** as interim division director in December, 2020. “We were in the final stages of implementing Connect Care and transitioning support staff to Alberta Health Services.

One of our achievements was retaining Connect Care access for several of our fee-for-services doctors—**Jennifer Jacquier**, **Anna Rogers**, **Sarah Cawsey**, and **Sarah Kwong**—who started their own community practice as of January 1, 2021. This was fundamental for them to be able to remain working and keep close ties with us.”



Endocrinology & Metabolism



A MAJOR DIVISIONAL SUCCESS WAS THE PIVOT TO DIGITAL AND VIRTUAL CARE. "WE CONSCIOUSLY AND DELIBERATELY LOOKED OUT FOR OUR TRAINEES, ACADEMIC STAFF, CLINICAL STAFF, AND SUPPORT STAFF," SAYS DR. SENIOR.

"We converted our annual Endocrine Day into a successful virtual series in October. And attendance at our now virtual weekly journal club and case conference sessions has never been better."

Another highlight in virtual learning is the division's collaboration with Pediatric Endocrinology to offer *Endocrinologists in Cars Getting Coffee*, based on comedian Jerry Seinfeld's *Comedians in Cars Getting Coffee*. "These are informal Zoom sessions for first-year medical students that invite them to 'have coffee' with faculty endocrinologists (**Liz Rosolowsky**, **Andrea Oppenorth**, and **Tammy McNab**) and gain insights into the specialty," says **Dr. Romney**, who came up with the idea.

"As a similar example of creativity, for our fourth-year CaRMS matching process, we hosted a Zoom open house for prospective applicants to show who we are, what we offer, and what we are looking for," says Dr. Senior. "Our senior resident **Rukia Swaleh** had done a virtual video tour of the clinics which we showed as part of the session."

"Collegiality within the division is one of our greatest strengths and was very much evident in our wonderful year-end virtual celebration, organized by **Ashley Small** [winner of the 2020 Chuck Morrison Award from the Department of Medicine]," says Dr. Romney.

Endocrinology won the Block of the Year award from Undergraduate Medical Education, and **Dr. Senior** won the Systems Block Lecturer of the Year Award, both from the Year One cohort of the Medical Students Association. **Dr. Senior** also won the Diabetes Canada Gerald Wong Award. **Sarah Cawsey** won Teacher of the Year Award for Endocrinology, and **Liz Rosolowsky** won Block Coordinator of the Year for Endocrinology for the second year. **Arya Sharma** was appointed a Canadian Academy of Health Sciences Fellow.

Several division members had top publications in 2020, including **Dr. Sharma** with other co-authors of "Obesity in Adults: A Clinical Practice Guideline," in *Canadian Medical Association Journal*; and **Dr. Senior** and other co-authors of "Pharmacologic Glycemic Management of Type 2 Diabetes in Adults: 2020 Update," in *Canadian Journal of Diabetes*, and of "Serum Urate Lowering with Allopurinol and Kidney Function in Type 1 Diabetes," in the *New England Journal of Medicine*.

ENDOCRINOLOGY & METABOLISM DIVISION

Graduate Students: 1

Residents: 4

Fellows: 1

Specialized Clinics: 1

ANNA LAM



Assistant Professor Anna Lam's clinical and research focus is Type 1 diabetes (T1D). She sees patients in the T1D clinic, the general endocrine clinic, and as part of the islet transplant program. Dr. Lam is a core member of the international Trial Outcome Markers Initiative in T1D, funded by the Juvenile Diabetes Research Foundation and Diabetes UK, which seeks to slow or prevent T1D by accelerating drug development. In 2020, the team assembled the largest worldwide inventory of completed clinical trials and observational studies in T1D, which will be used to model anticipated drug effects and to design more efficient clinical trials.

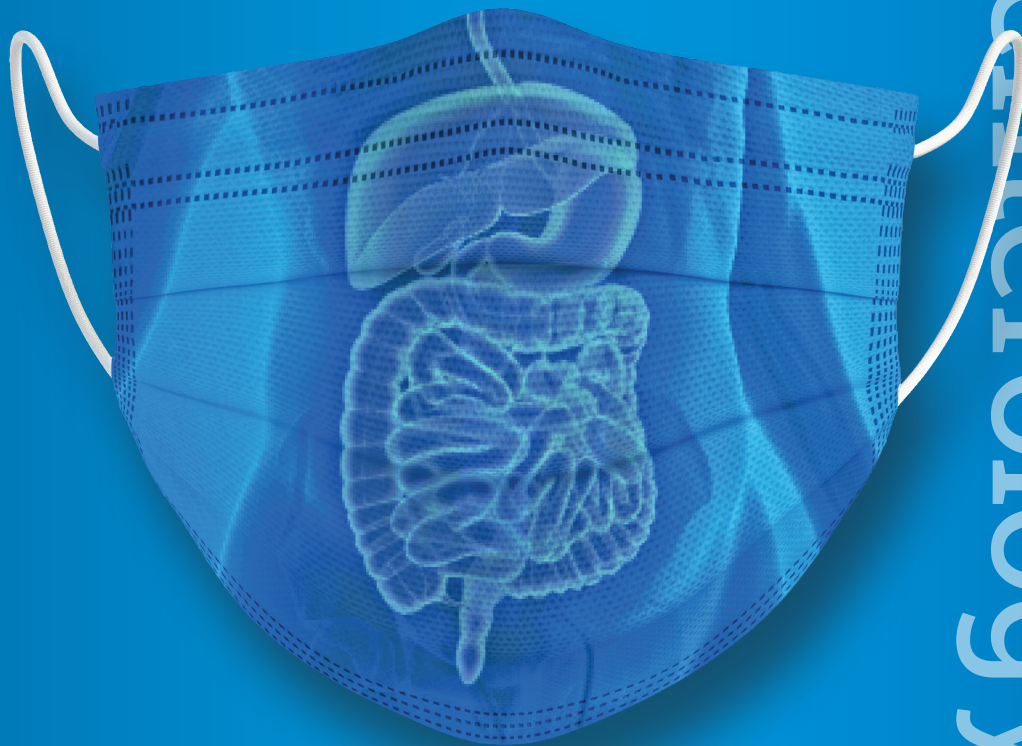
TORU TATENO



Assistant Professor Toru Tateno is academic lead of a multidisciplinary team that provides care for patients with pituitary disorders. Dr. Tateno's clinical and research focus is identifying new biomarkers for pituitary tumours and developing new therapeutic options to treat pituitary tumours. Two publications in 2020 resulted from his collaborations with scientists at the University of Alberta and in Japan on basic research around pituitary tumours. In 2021 he published a review of medical treatment options for aggressive pituitary tumours.

Division Director **Daniel C. Baumgart** was an early advocate for expanding the description of SARS-CoV-2 as more than a respiratory disease. “We published research early on how SARS-Cov-2 enters and involves the digestive tract,” he says.

“Now policy documents reflect our evolved understanding of SARS-CoV-2, and preventive and diagnostic measures were adapted. It’s a good example of how knowledge and science translate into immediate health system action.”



Gastroenterology

THE EFFECTS OF THE PANDEMIC ON THE DIVISION WERE SIGNIFICANT, WITH DIVISION MEMBERS STEPPING UP TO PROVIDE FRONTLINE PATIENT CARE ON COVID UNITS AND STAFF NUMEROUS BACK-UP SUPPORT SYSTEMS AND SCHEDULES.

Despite the strain of the pandemic on division activities, **Dr. Baumgart** highlights the establishment of **Mang Ma's** provincial FIB-4/NAFLD pathway as a significant innovation in 2020.

Nearly 25 per cent of Canadians have non-alcoholic fatty liver disease (NAFLD), which in severe cases can lead to cirrhosis and liver failure. Dr. Ma investigated the use of the fibroscan to non-invasively measure the stiffness of the liver without a biopsy. This approach triages patients requiring advanced liver care and those who can be returned to primary care support. "This is a profound finding that has an immediate implication for health care," says Dr. Baumgart.

The pathway findings resulted in one of the division's top publications: "Impact of Implementing a 'FIB-4 First' Strategy on a Pathway for Patients with NAFLD Referred from Primary Care," in *Hepatology Communications*, with lead author **Mang Ma** and co-authors **Puneeta Tandon**, **Juan Gonzalez-Abraldes**, and **Tracy Davyduke**. The Gastroenterology Division continues to make unique contributions to indigenous healthcare as highlighted in research on "Antibiotic Dispensation Rates among Participants in Community-driven Health Research Projects in Arctic Canada," led by **Karen Goodman**.

Division members garnered a number of awards. **Rahima Bhanji** won the Gastrointestinal and Liver Disease Research Group Hepatology Fund award and received a research grant from Paladin Labs. **Leah Gramlich** was named a Canadian Nutrition Society's CNS-SNC 2020 Fellow. **Brendan Halloran** won the Faculty of Medicine and Dentistry's David and Beatrice Reidford Research Scholarship. **Adriana Lazarescu** received the Canadian Federation of Medical Students 2020 Culture Changer Award. **Farhad Peerani** won both the Division of Gastroenterology Teacher of the Year award and a University Hospital Foundation Champions of Care award. **Sander van Zanten** was named a Fellow of the Canadian Association of Gastroenterology, as was **Clarence Wong**, who was also named the GI Residency Training Program's Teacher of

the Year. **Winne Wong** was named peer-nominated leader during the Connect Care launch by University of Alberta Hospital's Medical Staff Association.

"Despite COVID, we have successfully continued our trifold mission of innovation in education, research, and patient care," says Dr. Baumgart. He regrouped the divisional leadership team with the appointments of: **Dina Kao**, University of Alberta Hospital clinical site chief; **Sergio Zepeda-Gomez**, director of the endoscopy unit; **Aldo Montano-Loza**, director of clinical research; and **Karen Wong** and **Shawn Wasilenko**, Triage, Referral, and Care Pathway Leads.

GASTROENTEROLOGY DIVISION

Graduate Students: 62

Fellows: 6

Advanced Fellows: 5

Internal Medicine Residents in GI Rotations: 100

Specialized &

Multidisciplinary Clinics: 31

LEAH GRAMLICH



"It seems like just yesterday," says Leah Gramlich, "that I graduated from medical school, completed my GI fellowship, and joined the GI Division." Dr. Gramlich is now professor of medicine and provincial medical advisor for nutrition services in Alberta Health Services. She cares for patients at the Malnutrition Clinic and in the Northern Alberta Home Nutrition Programs. Her research focuses on knowledge mobilization in nutrition. She co-chairs the Canadian Malnutrition Task Force and the Nutrition Science Advisory Committee of Health Canada and is a Fellow of the Canadian Nutrition Society and of the American Society for Parenteral and Enteral Nutrition.

ADRIANA LAZARESCU



Associate Professor Adriana Lazarescu is director of the University of Alberta Hospital's Gastrointestinal (GI) Motility Lab. Her clinical and research interests include esophageal motility disorders and medical education. She directs the Neurogastroenterology and Motility Fellowship program, is co-director of the Edmonton Motility Course, and is a member of the Royal College Gastroenterology Examination Committee. In 2020, she was recognized as a Canadian Federation of Medical Students Culture Changer. Dr. Lazarescu is the only Canadian on the international committee that developed the Chicago Classification 4.0 for testing and diagnosing esophageal motility disorders.

“The majority of acutely-ill COVID-19 patients admitted to hospital in the Edmonton Zone were cared for by general internal medicine (GIM) physicians. This was done in close collaboration with family medicine and our subspecialty colleagues. I thank them for their continued support,” says GIM Division Director, **Peter Hamilton**.

“There was a lot of strong bonding and collaboration between physicians, not only at the university but, more importantly, between sites in the Edmonton Zone,” says Dr. Hamilton. “Site leads **Jay Varghese** (Grey Nuns), **Fraulein Morales** (UAH), **Hernando Leon** (Sturgeon) and **Dan Slabu** (Misericordia), along with **Winnie Sia** (Royal Alexandra) and **Narmin Kassam** came together as a group to steer us through this COVID storm.”



General Internal Medicine



SEVERAL DIVISION MEMBERS WERE AWARD RECIPIENTS IN 2020. **SAIFAL ANWAR** WON THE WILLIAM OSLER AWARD, AND **JONATHAN CENA** WON THE ETHEL MARLISS AWARD FOR STAFF PHYSICIANS.

Jennifer Ringrose and **Raj Padwal** were granted funding from the National Research Council's Industrial Research Assistance Program via the Canadian Space Agency and Western Canada Diversification Fund. **Finlay McAlister** became the Scientific Director for the Alberta SPOR Support Unit. **Dr. McAlister** also provided oversight of research protocols for multiple research studies regarding COVID patients.

Division members produced top-ranked publications in 2020. **Raj Padwal** and **Peter W. Wood** co-authored "Digital Health Approaches for the Assessment and Optimization of Hypertension Care Provision," in the *Canadian Journal of Cardiology*; **Jennifer Ringrose** was lead author on "The Elegance of Simplicity," in the *Journal of Clinical Hypertension*; **Darren Lau** and **Finlay McAlister** co-authored "Implications of the COVID-19 Pandemic for Cardiovascular Disease and Risk-Factor Management," in the *Canadian Journal of Cardiology*; and **Dr. McAlister** was lead author and **Jeffrey Bakal** a co-author on "Which Adults Presenting for Severe Acute Respiratory Syndrome Coronavirus 2 Testing Are Most Likely to Produce a Positive Swab Result?: A Population-Based Cohort of 15,132 Adults," in *Chest*.

GIM Division residents also had notable achievements. **Dominic Mudiayi** accepted the Volunteer Liaison position on the Royal College Residency Accreditation Committee for the Resident Doctors of Canada for the 2020/2021 academic year. **Meagan Lyszczyk** won the Ethel MarliSS Award for Residents, and **Nazia Sharfuddin** won the 2020 Alberta Jenkinson and Stephen Buhl Award.

Dr. Sharfuddin also led several projects that she presented at conferences and to senior faculty leadership on topics that included antiracism, medical education, refugee referral pathways (with **Lindsay Bridgland**), improving patient communication via digital medical interpretation, advancing health equity for COVID-19 via digital medical

interpretation platforms (with **Lindsay Bridgland**, **Narmin Kassam**, and **Pam Mathura**), and a national clinician survey of access to and delivery of refugee and migrant mental health services during COVID.

Jesse Basnak helped developed a drug app with **Peter Hamilton**, **Tim Chan**, **Ann Thompson**, and **Sheri Koshman**. **Leo Smyth** was a co-author of "Canadian Internal Medicine Ultrasound (CIMUS) Recommendations Regarding Internal Medicine Point-of-Care Ultrasound (POCUS) Use during Coronavirus (COVID-19) Pandemic," in the *Canadian Journal of General Internal Medicine*.

The division welcomed new members **Alicia Strand**, **Caitlyn Collins**, and **Patricia Araneta**. Clinical administrators **Lisa Houle** and **Leigh Dunford** left the division in 2020.

GENERAL INTERNAL MEDICINE DIVISION

Graduate Students: 5

Residents: 12

Specialized Clinics: 7

SAIFAL ANWAR



Assistant Clinical Professor Saifal Anwar completed his medical degree in Pakistan, and his residency and fellowship at the University of Alberta. Dr. Anwar actively participates on the GIM Division's steering committee and is director of the Vibe Medical Specialists Clinic. He has a special interest in health informatics. He is a provincial clinical knowledge lead in internal medicine for Connect Care and was an area trainer and super user. In 2020 Dr. Anwar won PGME Teacher of the Year and the William Osler Award.

THIRZA CARPENTER



After completing her medical degree and residency in internal medicine at the University of Alberta, Thirza Carpenter joined the Department of Medicine in 2015. Her interest in medical education led to her becoming the first chair of the general internal medicine (GIM) Subspecialty Program Competency Committee as Competency by Design was launched. She subsequently became associate program director for the Core Internal Medicine Program as their competency chair. In her outpatient practice, Dr. Carpenter works closely with the Division of Hematology through the Thrombosis Clinic and by performing bone marrow biopsies.

“The major impact of COVID-19 for us was on delivering clinical care,” says Division Director **Adrian Wagg**. “We were severely restricted and remain restricted in terms of in-person care.

We now deliver care by telephone, as many of our patients don’t have the infrastructure to use other platforms.”

The division has continued to develop its rural outreach ambulatory care programmes and, in collaboration with Care of the Elderly program colleagues, has expanded physician support to home care services across the city.



Geriatric Medicine



INPATIENT CARE HAS CONTINUED AT THE UNIVERSITY OF ALBERTA HOSPITAL AND THE ROYAL ALEXANDRA HOSPITAL, BUT DR. WAGG HAS NOTED THAT MANY SENIORS ARE NOT SEEKING HEALTHCARE BECAUSE OF COVID ANXIETY.

Reaching out to seniors has become paramount. One of the division's achievements was community engagement webinars, developed by **Dr. Wagg, William Gibson** and **Angela Juby** in collaboration with seniors' organizations, which achieved connections with seniors in Edmonton and further afield.

Dr. Wagg also collaborated with senior living care provider Optima Living Communities to develop and deliver monthly healthy ageing webinars. These share information with seniors across Canada about healthy living and how to manage their lives during the pandemic.

Medical training was altered because of COVID, and Dr. Wagg considers this transition one of the most significant innovations in 2020. "The transformation of the postgraduate and undergraduate curricula to online delivery required redesigning and production of educational materials for virtual delivery and recording of broadcasts for revamped seminars," he says.

In the research area the pandemic effect was more profound. "There's been an almost complete cessation of in-person research, and difficulty in recruiting subjects for research, even when there is virtual delivery, because patients are scared or anxious about participating," says Dr. Wagg. Some research activity continues with secondary analyses and work on papers for publication.

Two clinical lecturers were recruited in 2020: **Mohammad Rahman** and **Amany Saad**, working at the Royal Alexandra Hospital and North East Edmonton home Care/Fort Saskatchewan Health Centre respectively.

Top publications by division members included: "Exercise intervention in the management of urinary incontinence in older women in villages in Bangladesh: a cluster randomised trial," in *Lancet*

Global Health with **Adrian Wagg** as lead author; "Efficacy, safety, and tolerability of mirabegron in patients aged ≥ 65 yr with overactive bladder wet: a phase IV, double-blind, randomised, placebo-controlled study (PILLAR)," in *European Urology* with **Adrian Wagg** as lead author; and "Incontinence in frail elderly persons: Report of the 6th International Consultation on Incontinence," in *Neurourological Urodynamics* with co-lead authors **William Gibson** and **Adrian Wagg**.

GERIATRIC MEDICINE DIVISION

Graduate Students: 3

Residents: 4

Specialized & Multidisciplinary Clinics: 9

REBECCA LEE



Rebecca Lee is undergraduate medical lead for geriatric medicine at the University of Alberta Hospital. Her challenge in 2020 was to completely redevelop the undergraduate rotation in geriatric medicine, in partnership with Martin Moran, the undergraduate lead for geriatric medicine in Edmonton who is based at the Royal Alexandra Hospital. COVID-19 complicated their plans, necessitating halving the clinical rotation time and switching to online learning for lectures and interactive tutorials. Drs. Lee and Moran revised the program's learning outcomes and exams to accommodate the changed teaching approaches. Feedback from students is being used to further revise and improve the rotations.

MOHAMMAD RAHMAN



Geriatrician Mohammad Ashif Rahman works at the Royal Alexandra Hospital, where he provides care in the acute care of the elderly unit, the emergency department, and inpatient geriatric consult services. At the Glenrose Rehabilitation Hospital he is a consultant with the outpatient seniors clinic and for the geriatric inpatient ward. Dr. Rahman supervises medical students and does resident teaching and assessments. He was actively involved in infection prevention and control and maintaining prevention precautions and procedures during the COVID-19 outbreak in the hospital's geriatric units.

“COVID-19 had a pretty severe effect on our division in terms of research,” says Division Director **Joseph Brandwein**. “Our labs were shut down for a good chunk of the year, and much of our clinical research and innovation were put on hold.”

In the clinical area, care has been delivered virtually and in-person. Acute leukemia patients, for example, need regular treatment and close monitoring, so we must see them in-person.”



Hematology

TO PROMOTE AND ACCELERATE CLINICAL RESEARCH IN 2021, THE DIVISION IS INITIATING AN INTERNAL RESEARCH COMPETITION, SUPPORTED BY THE MARSHALL ELIUK FUND FOR CLINICAL INNOVATION IN HEMATOLOGY.

The move of **Nadia Jahroudi** from Nephrology to Hematology in 2020 will also help in the division's research efforts. "Dr. Jahroudi's work aligned very closely with hematology, and by joining our division she has new opportunities to collaborate with our members," says Dr. Brandwein.

The recruitment of **Aniket Bankar** adds to the division's clinical strengths in malignant hematology. Dr. Bankar arrived in Edmonton after completing a fellowship in leukemia and myeloid malignancies at the Princess Margaret Cancer Centre in Toronto.

Cynthia Wu, director of the Cancer Associated Thrombosis Clinic, was involved in clinical trials evaluating thrombosis in COVID patients.

Daniel Sawler received resident teaching and mentoring awards, and **Andrei Fagarasanu** received a resident teaching award. **Dr. Sawler** and **Linda Sun** were lead authors of "Time from Suspected Thrombotic Thrombocytopenic Purpura to Initiation of Plasma Exchange and Impact on Survival: A 10-year Provincial Retrospective Cohort Study," in *Thrombosis*. **Dr. Brandwein** was lead author on "Outcomes of Patients with Relapsed or Refractory Acute Myeloid Leukemia: A Population-Based Real-World Study," in *American Journal of Blood Research*. **Dr. Wu** was a co-author on "Diagnosis of Pulmonary Embolism with d-dimer Adjusted to Clinical Probability," in *New England Journal of Medicine*.

HEMATOLOGY DIVISION

Graduate Students: 6

Fellows: 1

Residents: 4

Specialized &

Multidisciplinary Clinics: 9

DANIEL SAWLER



Assistant Clinical Professor Daniel Sawler has a primary appointment at the Royal Alexandra Hospital. He has special interests in medical trainee advocacy and medical education. In 2020 Dr. Sawler was awarded the Post Graduate Medical Education (PGME) Subspecialty Teacher of the Year by the Department of Medicine. He also won the PGME Internal Medicine Resident Award for Resident Advocacy for contributions to medical education, resident advocacy, and career planning. In 2020 he assumed the role of director of the new internal medicine resident ambulatory rotation. Most recently he was appointed as the associate program director for the hematology residency training program.

MINAKSHI TAPARIA



Associate Clinical Professor Minakshi Taparia's areas of expertise include rare malignant blood disorders, including cutaneous lymphomas, mastocytosis and histiocytosis, and allogeneic stem cell transplantation. Two years ago, in collaboration with Dr Robert Gniadecki from the Division of Dermatology, Dr. Taparia created a joint multidisciplinary clinic that evaluates and treats complex cutaneous T-cell lymphoma patients and others with hematological disorders involving the skin. The complexity of care required by these patients is met by the integrated clinic, which provides skin-directed therapy, systemic therapy, and consultations with a radiation oncologist and pathologist to discuss treatment.

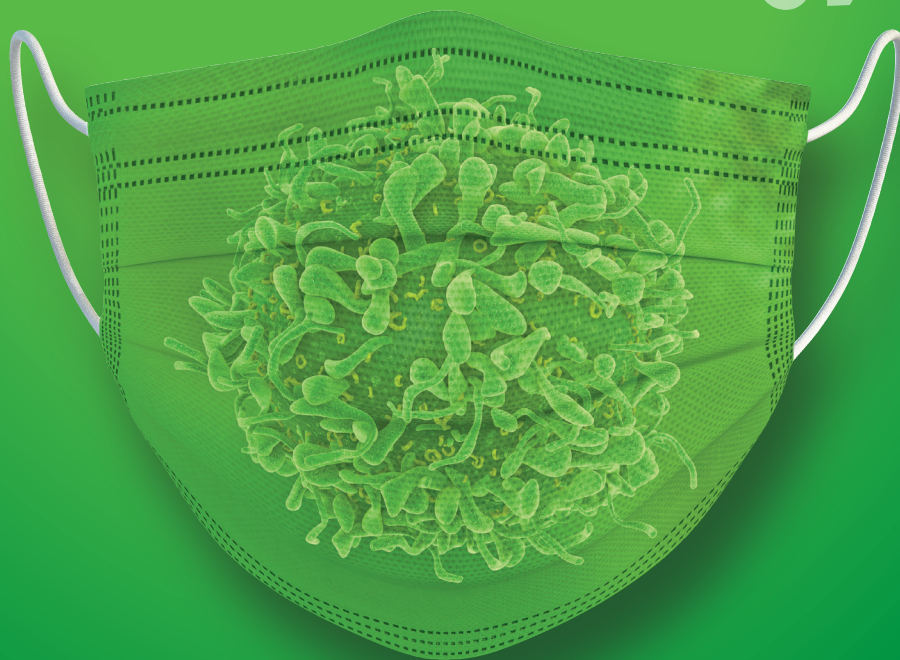
“We’ve gone through 2020 as a division very well—all working together as a team,” says Division Director **Karen Doucette**. “We’re a division that has a very large ambulatory practice, and we transitioned the majority of that to virtual care quite effectively.

As research shut down across much of the campus, our clinical trials unit ramped up because of COVID-19-related trials.”

One of these was the WHO Solidarity/CATCO trial—an international effort across 30 countries that looked at repurposing drugs such as hydroxychloroquine and lopinavir/ritonavir for treating COVID, ultimately concluding that these therapies had no effect in treating the disease. As a platform adaptive trial, it continues to add new arms to the study and to enrol patients to help find effective treatment for COVID.



Infectious Diseases



TOP PUBLICATIONS IN THE DIVISION INCLUDE: "BALOXAVIR MARBOXIL FOR PROPHYLAXIS AGAINST INFLUENZA IN HOUSEHOLD CONTACTS," WITH DIVISION MEMBER **NELSON LEE** AS A CO-AUTHOR IN *THE NEW ENGLAND JOURNAL OF MEDICINE*; "A RANDOMIZED TRIAL OF HYDROXYCHLOROQUINE AS POSTEXPOSURE PROPHYLAXIS FOR COVID-19," WITH DIVISION MEMBER **ILAN SCHWARTZ** AS A CO-AUTHOR IN *THE NEW ENGLAND JOURNAL OF MEDICINE*; AND "HIGH RATES OF INFLUENZA-ASSOCIATED INVASIVE PULMONARY ASPERGILLOSIS MAY NOT BE UNIVERSAL: A RETROSPECTIVE COHORT STUDY FROM ALBERTA, CANADA," WITH LEAD AUTHOR **ILAN SCHWARTZ** AND CO-AUTHORS **NELSON LEE** AND **STEPHANIE SMITH** IN *CLINICAL INFECTIOUS DISEASES*.

Ryan Cooper and members of the University of Alberta/Alberta Health Services Tuberculosis Consilium won the Department of Medicine's Cooperation, Collaboration and Teamwork Award. **Carlos Cervera's** "Donor Graft Cytomegalovirus Serostatus and the Risk of Arterial and Thoracic Solid Organ Transplantation" won the Department of Medicine's Clinical Investigation Publication Award. **Lynora Saxinger** won the University of Calgary's CME Top Teacher Award.

The division welcomed **William Stokes** as clinical lecturer who has a primary appointment in Laboratory Medicine and Pathology as a virologist along with clinical expertise in infectious diseases and travel medicine.

Division members mourned the passing of colleague **Geoffrey Taylor** in July. Dr. Taylor was a co-founder of the Northern Alberta HIV Program and established the first modern infection prevention and control program in Alberta. The Dr. Geoffrey Taylor Memorial Lectureship was established in collaboration with his family and the Division plans to launch the inaugural lecture in 2021.

"Many division members, due to COVID, were heavily committed in medical leadership roles." Says Dr. Doucette. "Another major focus was on delivering care and medical education virtually. We have learned virtual care can work very well for many of our patients and this will endure in those settings, beyond the pandemic. Educational leaders supported transition at all levels and in many settings, to remote/virtual learning and ensured this delivered a high quality learning experience."

INFECTIOUS DISEASES DIVISION

Graduate Students: 7

Fellows: 2

Residents: 7

Specialized &

Multidisciplinary Clinics: 4

CURTISS BOYINGTON



Clinical Professor Curtiss Boyington's interest in medical education led to him becoming principal teaching physician for medical residents at the Grey Nuns Community Hospital. In 2020 he had to give up his teaching role to focus on Covenant Health's occupational health response to the pandemic. The team, of which he is co-medical director, is responsible for managing and preventing COVID-19 within Covenant medical sites, which employ approximately 12,000 staff. In 2021 Dr. Boyington received a national education award from the Canadian Association of Medical Education.

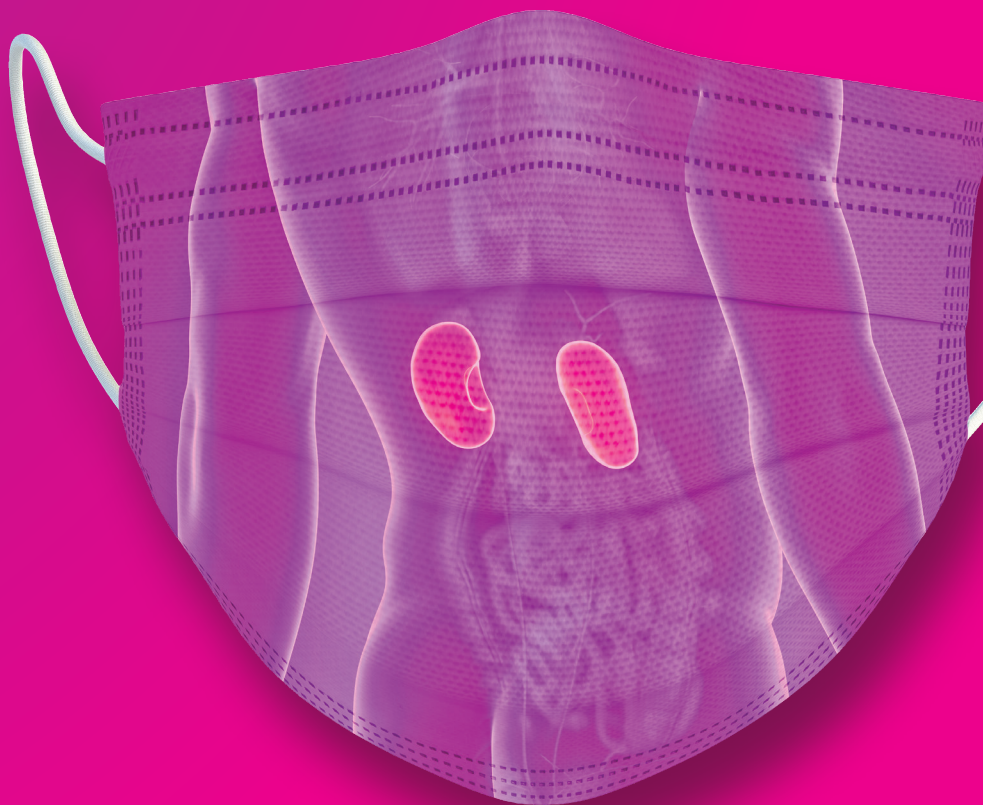
ILAN SCHWARTZ



Assistant Professor Ilan Schwartz's social media proficiency made him a go-to COVID-19 expert in 55 national and international media stories in 2020, including several in *The New York Times*. He founded a Twitter-based journal club to help infectious diseases doctors keep up with the rapidly evolving literature. Dr. Schwartz presented international talks on fungal infections complicating COVID at the World Antimicrobial Resistance Congress and the Philippine Society for Microbiology and Infectious Diseases Annual Convention. He was co-principal investigator on a province-wide hydroxychloroquine clinical trial and part of a CIHR grant to advance a feline antiviral to clinical trials for COVID.

“Division activity was almost entirely directed to the pandemic,” says Nephrology Division Director **Branko Braam**. “We as kidney specialists were really involved in COVID-19 care for about six weeks by running one of the COVID wards.

There was a tremendous sense of collegiality with the general internal medicine group and with other specialists. Altogether, it was a very strong bonding experience.”



Nephrology

DESPITE THE FOCUS ON COVID, THE DIVISION TOOK AN INNOVATIVE IDEA INTO REALITY WITH THE REVISION OF THE LIVING KIDNEY DONOR PROGRAM. AFTER VISITING HIS FORMER DIVISION IN THE NETHERLANDS, DR. BRAAM THOUGHT THAT SIGNIFICANT PROCESS IMPROVEMENTS WERE POSSIBLE. THE LIVING DONOR TEAM ENTHUSIASTICALLY EMBRACED THIS PROSPECT AND STARTED WORKING ON CHANGES.

The 15-to-18-month wait time for donors was unsustainable, creating significant opportunities to improve speed and communication, and to get recipients off dialysis earlier. As a result of the program changes, the wait time from donor identification to the donor being ready for donation will be reduced to three-and-a-half months. Transplant nephrologists and transplant surgeons designed a multidisciplinary clinic to integrate the evaluation.

In a big boost for the program, a \$1-million PRIHS grant from Alberta Innovates awarded to **Soroush Shojai** supports special training of patients to use their social networks to expand the search for living donors beyond their families. On the recipient side of the transplant program, streamlining of care means that the initiation of the workup of the transplantation is identified and dealt with early on by general nephrologists and then handed over to the transplantation physicians.

Sita Gourishankar took charge of the program in April 2020. Together Dr. Braam and Dr. Gourishankar are ensuring that, in Dr. Braam's words, "transplantation will be in everyone's mind all of the time whether you are a general or transplant nephrologist."

The division also received a two-year, \$2.2-million grant from AMGEN for quality improvement projects across the spectrum of nephrology that aim to improve wait times for kidney procedures and cardiovascular and renal outcomes of CKD patients; to better coordinate care between the kidney program and primary care; to develop a smoother start of dialysis and examine frailty in dialysis patients; and to improve peritoneal dialysis patient outcomes.

Top publications by division members include "Availability, Accessibility, and Quality of Conservative Kidney Management Worldwide," in *Clinical Journal of American Society of Nephrology*, by senior author **Sara Davison**; "Discovering Novel Injury Features in Kidney Transplant Biopsies Associated with TCMR and Donor Aging," in *American Journal of Transplantation*, by first author **Philip Halloran**; and "Association of Initiation of Dialysis with Hospital Length of Stay and Intensity of Care in Older Adults with Kidney Failure," in *JAMA Network Open*, by senior author **Brenda Hemmelgarn**.

NEPHROLOGY DIVISION

Graduate Students: 6

Fellows: 5

Specialized &
Multidisciplinary Clinics: 4

PHILIP HALLORAN



Distinguished University Professor Philip Halloran's research focuses on molecular assessments of biopsies from kidney, heart, lung, and liver transplants and inflammatory bowel disease patients. His team of ten works in the Alberta Transplant Applied Genomics Centre and collaborates with more than 90 scientists internationally. They aim to discover the molecular basis of disease and tissue response to injury by using new technologies to understand disease mechanisms, to make precise diagnoses, and to improve care. They measure mRNA genome-wide in biopsies and in relevant experimental models, and interpret the results using advanced machine learning technology to generate automated reports. The team is supported by Thermo Fisher and Natera.

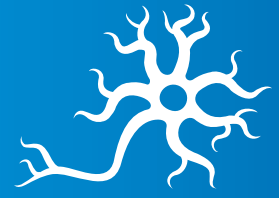
SORUSH SHOJAI



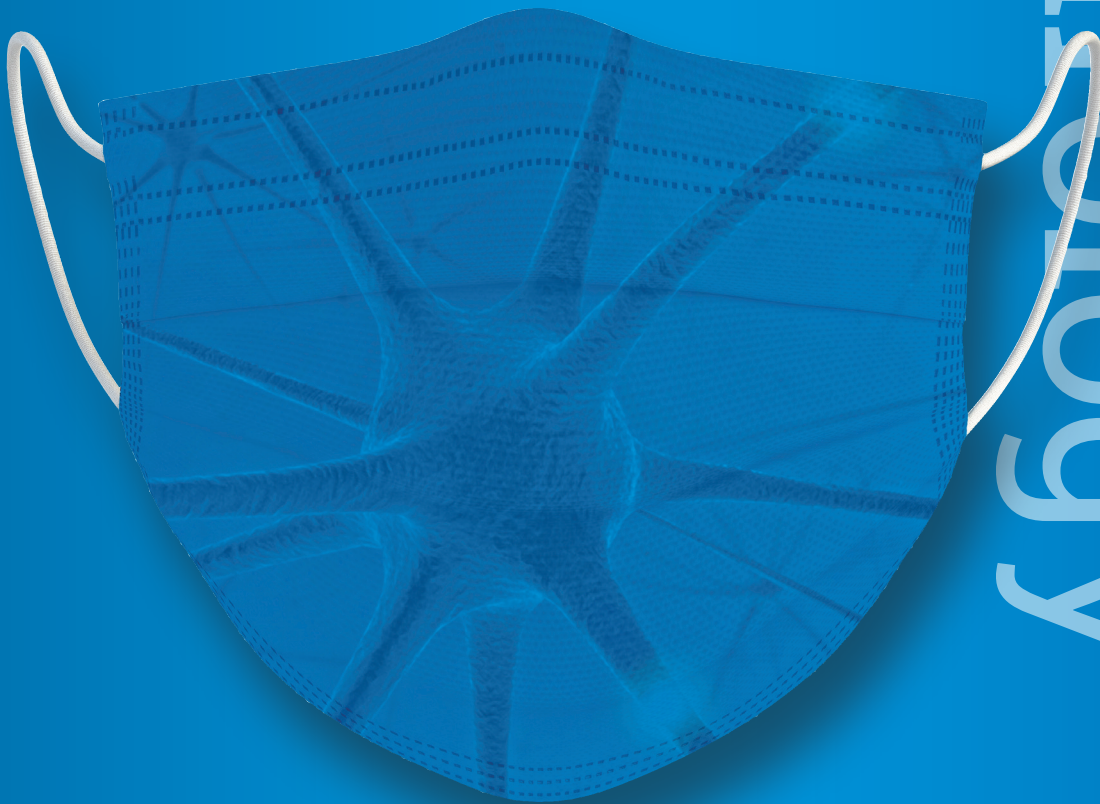
Currently, 20% of patients waiting for a kidney transplant die because of a lack of donor organs. Transplant nephrologist Soroush Shojai leads an innovative approach that makes kidney transplantation more accessible to all eligible patients through living kidney donations. In 2020 Dr. Shojai and his team received a three-year, \$1-million Alberta Innovates grant for the Multidisciplinary Support To Access living donor Kidney Transplant (MuST AKT) project, an individually tailored, person-centred intervention for Albertans. MuST AKT's goal is to increase living kidney donation in Alberta and, if successful, to become a model for adoption by other transplant centres.

“Division members really stepped up and went to work, especially in the early days of COVID-19 when there was significant uncertainty about everything from personal protection equipment to on-call schedules,” says Division Director **Douglas Zochodne**.

“I think our group adapted to virtual neurology care very well. Virtual epilepsy care, in particular, has proven to be an excellent way to track patients.”



Neurology



SEVERAL DIVISION MEMBERS RECEIVED MAJOR FUNDING, RECOGNITION AND AWARDS.

David Westaway received a Canada Foundation for Innovation award of \$3.8 million (CFI component) for protein misfolding research, and **Sanjay Kalra** received Brain Canada support of \$2.8 million for ALS research. **Janis Miyasaki** became vice-president of the American Academy of Neurology. **Glen Jickling** was awarded a Canada Research Chair in Stroke Genetics and Genomics and the Toupin Chair in Neurology. The Canadian Institutes of Health Research awarded \$800,000 grants to projects from both **Donald Gross** and **Douglas Zochodne**, and **Jason Plemel** received a National Multiple Sclerosis Society pilot grant.

Jennifer McCombe was named a Canadian Federation of Medical Students Culture Changer. **Cecile Phan** received a clinical teaching honourable mention award from the Professional Association of Resident Physicians of Alberta. Neurology resident **Kaylynn Purdy** created the cover image for the September 15, 2020, edition of *Neurology* entitled “The Neurology Residents of COVID-19.”

Top publications by division members included “Diverse, Evolving Populations of Tau Conformers in Frontotemporal Lobar Degeneration Caused by the Same MAPT-P301L Mutation,” in *Acta Neuropathologica*, with lead author **David Westaway**; “Leadership, Recognition Awards, and Publication by Men and Women in the American Academy of Neurology,” in *Neurology*, with lead author Janis Miyasaki; “A Prospective Harmonized Multicenter DTI Study of Cerebral White Matter Degeneration in ALS,” in *Neurology*, with lead author Sanjay Kalra; and “Fiery Cell Death: Pyroptosis in the Central Nervous System,” in *Trends in Neuroscience*, with co-author **Christopher Power**.

Dr. Zochodne highlights the innovative work of **Oksana Suchowersky** who heads the multidisciplinary Huntington disease clinic, part of the Movement Disorders Clinic. The Huntington disease clinic is the only centre in Western Canada to conduct antisense oligonucleotide research that aims to “silence” the Huntington gene. This research has garnered more than \$1.2 million from Roche and WaveLife Sciences.

The division welcomed three new clinical faculty in 2020: **Maresh Kate, Sibi Thirunavukkarasu**, and **Aakash Shetty**.

NEUROLOGY DIVISION

Graduate Students: 27

Fellows: 9

Residents: 23

Multidisciplinary Clinics: 3

Specialized Clinics: 8

SANJAY KALRA



Professor Sanjay Kalra investigates amyotrophic lateral sclerosis (ALS), an incurable, fatal disease. He created the first multicentre ALS imaging biomarker development platform—the Canadian ALS Neuroimaging Consortium (CALSNIC)—with sites throughout North America. Participants undergo standardized clinical, imaging, and speech assessments at each centre. A new platform—the Comprehensive Analysis Platform to Understand Remedy and Eliminate ALS (CAPTURE ALS)—advances CALSNIC to include biofluid sampling and the establishment of an open science biorepository, with the aim of developing a global resource for ALS research. He received funding in 2020 from Biogen Inc and ALS Canada and in 2021 from Brain Canada.

DAVID WESTAWAY



Professor David Westaway’s research investigates the origins and early events in non-inherited forms of dementia. Dr. Westaway is director of the Centre for Prions and Protein Folding Diseases at the U of A, holds a Canada Research Chair (Tier 1) in Prion Disease, and is a Fellow of the Canadian Academy of Health Sciences. Recent studies from his laboratory concern the processing of the cellular prion protein—a nodal point in the development of prion diseases and Alzheimer’s disease—and the prion-like properties of misfolded forms of the microtubule-associated protein tau. In 2021 his research team received \$3.9 million from the Canada Foundation for Innovation.

“Even though COVID-19 disrupted everyone’s life, and it was difficult at first for some people to change their clinical practice to deliver care virtually, in the end the division came through well,” says Division Director **Chester Ho**.

“Virtual care was in many ways more patient-centred. On the research side, people maintained their productivity, and we received substantial new funding.”



Physical Medicine & Rehabilitation



ONE CO-RECIPIENT OF THE NEW FUNDING WAS **JACQUELINE HEBERT**, WHO WAS GRANTED MORE THAN \$500,000 CAD FROM THE CONGRESSIONALLY DIRECTED MEDICAL RESEARCH PROGRAM RESTORING WARFIGHTERS WITH NEUROMUSCULOSKELETAL INJURIES RESEARCH AWARD.

Dr. Ho is senior medical director of the Alberta Health Services Neurosciences, Rehabilitation & Vision Strategic Clinical Network. In that capacity, he helped design in 2020 a provincial rehabilitation response framework for post-COVID-19 that will be implemented in 2021. Also in 2020, **Adalberto Loyola-Sanchez** started a virtual spinal cord injury clinic for the North Zone.

Vivian Mushahwar, director of the SMART Network and ST Innovations and Tier 1 Canada Research Chair in Functional Restoration, was named Killam Professor by the University of Alberta.

Shane Hoerber won the Bellamy Teaching Award. Third-year resident **Calum Scott** won the 2020 Resident Research Day for work in progress, and PhD student **Jenna Senger** received the Canadian Society of Plastic Surgery Best Resident Research Award.

Nigel Ashworth was awarded the "Top Downloaded Paper 2018–2019" by Wiley Publications in 2020 for "The Usefulness of Electrodiagnostic Studies in the Diagnosis and Management of Neuromuscular Disorders" in *Muscle & Nerve*.

Top publications by division members include "Mechanotactile Sensory Feedback Improves Embodiment of a Prosthetic Hand During Active Use," in *Frontiers in Neuroscience*, by lead author **Jacqueline Hebert**; "Changes to Rehabilitation Services Delivery and the Associated Physician Perspectives during the COVID-19 Pandemic: A Mixed-methods Needs Assessment Study," in the *American Journal of Physical Medicine*, by lead author **Jaime Yu**; and "Conditioning Electrical Stimulation Accelerates Regeneration in Nerve Transfers," in *Annals of Neurology*, with **Ming Chan** as co-author.

PHYSICAL MEDICINE & REHABILITATION DIVISION

Graduate Students: 21

Residents: 17

Multidisciplinary Clinics: 33

Specialized Clinics: 10

JACQUELINE HEBERT



Professor Jacqueline Hebert, director of the Bionic Limbs for Improved Natural Control (BLINC) lab, co-established Western Canada's first osseointegration surgery program in Alberta, with orthopedic surgeon Rob Stiegelmar. In osseointegration surgery, a titanium rod is inserted into the remaining bone of the amputated leg and brought out through the skin to attach to a prosthesis. The first two surgeries were performed in 2020, and they will resume when COVID protocols allow. The program has received over a million dollars in funding from the University Hospital Foundation, the Glenrose Rehabilitation Hospital, and the US Department of Defence.

VIVIAN MUSHAHWAR



Professor Vivian Mushahwar is Canada Research Chair in Functional Restoration. Dr. Mushahwar's spinal cord injury research includes the development of technologies to prevent the secondary complications of these injuries and to restore mobility. She is director of the SMART Network and co-founded DepthSee, a company offering portable devices to sense the health of deep-seated tissue, as well as two other health technology companies specializing in neural prostheses. Dr. Mushahwar is Killam Professor and in 2020 received funding from the Canadian Institutes of Health and the US Department of Defense. In 2021 she was named a fellow of the American Institute for Medical and Biological Engineering.

“All of us have adapted quite well to the new reality of working remotely,” says Division Director Sebastian Straube.

“One positive is that in shifting our research priorities to COVID-19, people who might not have normally worked together have collaborated on COVID-related issues.”



Preventive Medicine



ONE OUTSTANDING EXAMPLE OF THIS IS THE COLLABORATION BETWEEN DIVISION MEMBERS AND COLLEAGUES AT THE UNIVERSITY OF TORONTO, UNIVERSITY OF OXFORD, AND OTHER INSTITUTIONS IN EUROPE AND THE US LED BY **DR. STRAUBE**.

Because COVID can be spread by aerosols, the group conducted literature and guideline reviews to arrive at a classification of aerosol-generating procedures. This evidence can be used to better inform protective measures and reduce COVID risk to healthcare workers performing such procedures. Their work resulted in "Classification of aerosol-generating procedures: a rapid systematic review," published in the *BMJ Open Respiratory Research* in October. In addition to Dr. Straube as the study's senior author, Department of Medicine Research Associate **Tanya Jackson** was involved as the study's first author, and **Danika Deibert, Graeme Wyatt, and Quentin Durand-Moreau** were among the co-authors. The study received international media attention.

Other top publications by division faculty include: "Seeking the optimal schedule for chickenpox vaccination in Canada: Using an agent-based model to explore the impact of dose timing, coverage and waning of immunity on disease outcomes," in *Vaccine* with senior author **Alexander Doroshenko**; and "Random drug and alcohol testing for preventing injury in workers," published in the *Cochrane Database of Systematic Review*, authored by **Charl Els, Tanya Jackson, Mathew Milen, Diane Kunyk, Graeme Wyatt, Daniel Sowah, Reidar Hagtvedt, Danika Deibert, and Sebastian Straube**.

Several division members were honoured with awards or appointments. **Dr. Straube** was appointed to the World Health Organization's Evidence Collaborative for Covid-19. **Deena Hinshaw** and **Larry Svenson** received the Premier's Public Service Award for Individual Leadership. **Nicola Cherry** and her research team were awarded more than \$1.5 million from the Government of Canada's COVID-19 Immunity Task Force and the Canadian Institutes of Health Research to study how effective COVID safety measures are in protecting health workers.

PREVENTIVE MEDICINE DIVISION

Residents: 15

Specialized & Multidisciplinary & Outreach Clinics: 1

NICOLA CHERRY



Professor Nicola Cherry launched a research project in April 2020 to study the physical and mental health impacts of COVID-19 on more than 5000 frontline health care workers across Canada. The study will help identify health care work areas that are more at risk for SARS-CoV-2 transmission and chart the effectiveness of mental health interventions. Phase 2, post-vaccine, assesses factors associated with the longevity of antibodies against the virus. Seed-funded by the College of Physicians and Surgeons of Alberta, it has received more than \$1.5 million in funding from the federal government Immunity Task Force, in collaboration with the Canadian Institutes of Health Research.

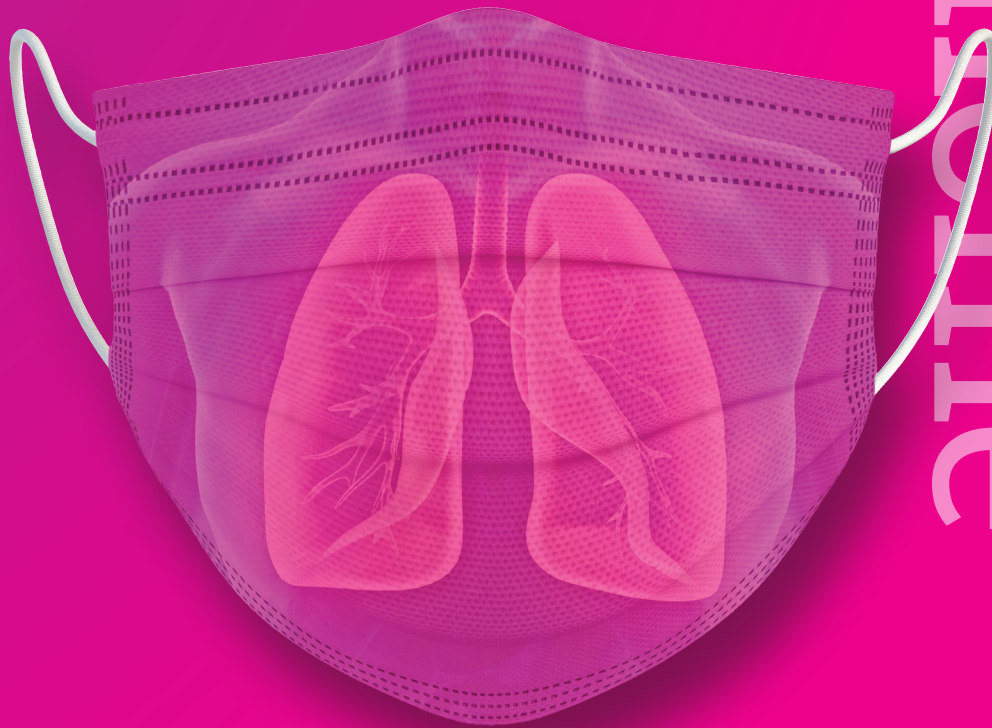
ALEXANDER DOROSHENKO



Associate Professor Alexander Doroshenko is investigator or co-investigator on three COVID-19-related projects that started in 2020: mathematical modeling of COVID pandemic impact on healthcare workers in Alberta; examining the determinants of the Cargill COVID outbreak among newcomers and their families; and, with the Department of Environmental Engineering, testing the effectiveness of homemade masks against COVID. He also leads research investigating herd immunity levels needed for COVID control. Dr. Doroshenko represents public health on Alberta Health Services' COVID-19 Scientific Advisory Group. He is working with Alberta Health on vaccine safety surveillance, with a focus on characterizing COVID vaccine safety epidemiology and reporting.

The most significant innovation for Pulmonary Division Director **Giovanni Ferrara** was the establishment of the **Post-COVID Clinic**.

“In April of 2020 we were hearing from Europe that some patients who survived COVID-19 had persistent long-term symptoms and complications, especially respiratory. We wanted to have something in place for similar patients in Edmonton.”



Pulmonary Medicine

IN JUNE, THE DIVISION LAUNCHED ALBERTA'S FIRST POST-COVID CLINIC TO HELP PEOPLE WITH LONG-COVID. **MAEVE SMITH AND GRACE LAM** LED THIS WORK. THE PULMONARY GROUP CARES FOR RESPIRATORY ISSUES, AND THE CLINIC WORKS AS A HUB FOR MANY OTHER SPECIALISTS—NEUROLOGY, RHEUMATOLOGY, CARDIOLOGY AND PHYSIATRIC MEDICINE—TO MANAGE OTHER PROBLEMS. MORE THAN 500 REFERRALS WERE ACCEPTED BY THE CLINIC. "UNTIL WE STARTED THIS CLINIC, COVID PATIENTS FELT COMPLETELY ALONE, NOT KNOWING WHERE TO GO OR WHO TO ASK FOR HELP," SAYS DR. FERRARA.

Mike Stickland's ongoing research productivity is another divisional achievement. "Dr. Stickland published nine original papers, led a group of ten graduate students, and secured two Canadian Institutes of Health Research grants," says Dr. Ferrara. "He has a huge influence within our division, mentoring junior faculty and promoting initiatives that include the post-COVID clinic and the new Medicine strategic clinical network."

Several division members were honoured with awards and recognition. **Richard Long** received the Lifetime Award from the International Union Against Tuberculosis and Lung Disease. The Osler Award for Best Clinical Teacher was conferred on **Meena Kalluri**. **Alim Hirji** received the Professional Association of Resident Physicians of Alberta Clinical Teacher Award. The Department of Medicine's Cooperation, Collaboration, and Teamwork award was won by the University of Alberta/Alberta Health Services Tuberculosis Consilium that includes division members **Richard Long, Giovanni Ferrara, Anu Parhar, Angela Lau, Vivek Dhawan, and Courtney Heffernan**.

The top publications by division members were "Incidence and Significance of Venous Thromboembolism in Critically Ill Pulmonary Tuberculosis Patients," in *European Respiratory Journal*, with first authors **Angela Lau** and **Richard Long**; "Air Pollution and Systemic Inflammation in Patients With Suspected OSA Living

in an Urban Residential Area," in *Chest*, with lead author **Cheryl Larratta**; and "Azithromycin Prophylaxis after Lung Transplantation is Associated with Improved Overall Survival," in *Journal of Heart and Lung Transplantation*, with co-authors **Justin Weinkauff, Ali Kapasi, Rhea Varughese, Alim Hirji, Dale Lien**, and senior author **Kieran Halloran**.

PULMONARY DIVISION

Graduate Students: 15

Fellows: 2

Residents: 9

Specialized & Multidisciplinary Clinics: 12

GRACE LAM



Assistant Professor Grace Lam focuses on clinical care of and research on patients with cystic fibrosis and those with long-COVID. In 2020 she and colleague Maeve Smith, along with other Pulmonary Medicine Division members, started Alberta's first dedicated Post-COVID-19 clinic for comprehensive care of patients with long-COVID. At the clinic, patients are reviewed by respirologists and, if necessary, by other specialists as well. Dr. Lam is working with provincial partners, including primary care and strategic clinical networks, to create care pathways for these patients. She also worked with Calgary respirologists to help them establish a post-COVID clinic.

MAEVE SMITH



Assistant Professor Maeve Smith's specialty is lung infection, in particular bronchiectasis, a condition that prevents the airways from clearing mucus. She runs the bronchiectasis clinic at the University of Alberta. She has conducted trials in nebulized antibiotics and airway clearance and published numerous papers, which have garnered her several research awards. Dr. Smith is co-director with Dr. Grace Lam of the Post-COVID-19 clinic, supported by the University of Alberta Hospital and the Kaye Edmonton Clinic. She is a member of the American College of Chest Physicians CHEST Cough Expert Guideline panel responsible for CHEST Cough guidelines and statements.

“There are similarities between COVID-19 and certain rheumatic diseases,” says Division of Rheumatology Director and researcher **Jan Willem Cohen Tervaert**, “in that cytokine storms can occur in COVID patients and, more rarely, in rheumatic patients.”

Those similarities led him and his research team to switch research focus. “If a cytokine storm occurs in patients with COVID and rheumatic diseases, there are natural killer cells that don’t work,” he says. “We’re applying the knowledge we’ve gained in our research to understanding more about COVID.”



Rheumatology



FATIGUE IS ANOTHER CONSEQUENCE OF BOTH LONG-COVID (THE LONG-TERM EFFECTS OF COVID) AND RHEUMATIC DISEASES. DR. COHEN TERVAERT'S RESEARCH PROBES THE INVOLVEMENT OF MITOCHONDRIA IN THE FATIGUE EXPERIENCED BY THESE PATIENTS WITH THE GOAL OF APPLYING FINDINGS TO UNDERSTANDING THE FATIGUE IN LONG-COVID PATIENTS.

This flexibility in changing research direction is what he's most proud of during the pandemic year. He highlights the research excellence of division members that has resulted in the following top-ranked publications: "Impaired Natural Killer Cell Counts and Cytolytic Activity in Patients with Severe COVID-19," in *Blood Advances*, by lead author **Mohammed Osman**; "Optimal Length and Usefulness of Temporal Artery Biopsies in the Diagnosis of Giant Cell Arteritis: A 10-year Retrospective Review of Medical Records," in *The Lancet Rheumatology*, by lead author **Elaine Yacyshyn** and division co-authors **Alison Clifford** and **Dr. Cohen Tervaert**; "Outcomes and Findings of the International Rheumatoid Arthritis (RA) BIODAM Cohort for Validation of Soluble Biomarkers in RA," in *Journal of Rheumatology*, by lead author **Walter Maksymowych** and division co-author **Joanne Homik**; and "2020 International Consensus on ANCA Testing beyond Systemic Vasculitis," in *Autoimmune Review*, with last author **Dr. Cohen Tervaert**. In addition, **Dr. Cohen Tervaert's** findings on breast implants and inflammation were publicized widely in mainstream media, including *O, The Oprah Magazine*.

The division welcomed rheumatologist **Omid Niaki** as a clinical lecturer, while **Sarah Troster** left the Kaye Edmonton Clinic for Garneau-Rheumatology.

Division members garnered many awards in 2020. **Anna Oswald** received the University of Alberta McCalla Professorship. **Elaine Yacyshyn** was named the Division of Rheumatology's Teacher of the Year, Department of Medicine's Subspecialty Honourable Mention Teacher of the Year for the University of Alberta site, the Medical

Students Year 2 Discovery Learning Preceptor Excellence Awardee, and the Faculty of Medicine & Dentistry's David Cook Awardee. **Stephanie Keeling** was named Mentor of the Year by Rheumatology residents. **Alison Clifford** was recognized by the Canadian Federation of Medical Students as a Culture Changer Champion. **Dr. Clifford** also received a Certificate of Appreciation Recognizing Excellence in Diagnostics after being nominated by a patient.

Lilia Olaru received a Clinical Innovation Award from the Alberta Medical Association Rheumatology Section for the Multidisciplinary Uveitis Clinic she founded. **Steven Katz** was honoured with the Canadian Rheumatology Association Practice Reflection Gold Award and the Department of Medicine's Thomas J. Marrie Mentorship Award. **Mo Osman** received the Department of Medicine's Jonathan B. Meddings Clinical Innovation Award.

RHEUMATOLOGY DIVISION

Graduate Students: 1

Fellows: 1

Residents: 5

MD Research: 1

Multidisciplinary Clinics: 3

Specialized Clinics: 6

CHARMAINE VAN EEDEN



Many patients with rheumatic conditions suffer from debilitating chronic fatigue, resulting in diminished quality of life. As a research associate in the Cohen Tervaert-Osman laboratory, Charmaine van Eeden's research focus is to understand the link

between mitochondrial dysregulation and the development of chronic fatigue symptoms. A significant number of COVID-19 patients develop persistent symptoms that, in many cases, mirror those of chronic fatigue. A new research focus for Dr. van Eeden in 2021 is to investigate this similarity of symptoms in these conditions, particularly the potential role of mitochondria in long-COVID.

ELAINE YACYSHYN



Professor and clinician-educator Elaine Yacyshyn cares for patients with vasculitis at the Kaye Clinic, where she also focuses on medical education and quality improvement. In 2020 she published a paper on giant cell arteritis, a form of vasculitis, in *Lancet Rheumatology* and was part of a team that established British Society for Rheumatology guidelines on diagnosis and treatment of giant cell arteritis. Dr. Yacyshyn is deputy zone clinical department head of medicine for the Edmonton Zone. In 2021 she was named a Canadian Rheumatology Association Distinguished Teacher-Educator and received the Canadian Association for Medical Education/ACEM Certificate of Merit Award.

“

Prior to penicillin and medical research, death was an everyday occurrence. It was intimate.

Katherine Dunn

Funding & Stats

Department of Medicine.

ENDOWED FUNDS AND CHAIRS

FUND NAME	PRINCIPAL VALUE MARCH 31, 2021
AstraZeneca Chair in Asthma Research	\$3,001,204.88
Brown WF Lecture Physical Medicine & Rehabilitation	\$50,681.92
Cars-Rheumatology	\$14,544.05
Edwards AM Lecture Clinical Education	\$108,552.92
Gastrointestinal Visionary	\$115,962.53
King EG Memorial Endowment	\$165,274.58
Majumdar S ME2 Legacy Endowment	\$123,676.02
Muttart Chair Clinical Immunology Endowment	\$1,675,398.14
Royal Canadian Legion Kidney Research	\$405,269.24
TOTAL	\$5,660,564.28

OTHER ENDOWMENTS	PRINCIPAL VALUE MARCH 31, 2021
Alberta Health Services Chair in Aboriginal Health	\$3,000,615.75
Alberta Health Services Chair in Cardiac Health Outcomes	\$1,501,036.74
Alberta Health Services Chair in Cardiac Sciences	\$1,500,376.75
Alberta Health Services Chair in Healthy Aging Research	\$3,001,118.10
GlaxoSmithKline/RxD/CIHR Chair in Airway Inflammation	\$1,393,792.87
Heart and Stroke Foundation of Alberta, NWT & Nunavut Chair in Cardiovascular Research	\$1,562,650.12
Henri M. Toupin Chair in Neurology	\$2,389,739.91
Kidney Health Research Chair – Translational Research & Health Outcomes	\$8,299,578.15
Spinal Cord Injury Chair	\$3,023,813.54
Tripartite Chair in Occupational Health	\$573,428.50
TOTAL	\$26,246,150.43

2020 CANADA RESEARCH CHAIRS

Dr. Evangelos Michelakis, Cardiology	Tier 1, Chair in Applied Molecular and Mitochondrial Medicine
Dr. Vivian Mushahwar, Physical Medicine & Rehabilitation	Tier 1, Chair in Functional Restoration
Dr. David Westaway, Neurology	Tier 1, Chair in Prion Disease
Dr. Joel Dacks, Infectious Diseases	Tier 2, Chair in Evolutionary Cell Biology
Dr. Glen Jickling, Neurology	Tier 2, Chair in Genomics and Genetics of Stroke
Dr. Gavin Oudit, Cardiology	Tier 2, Chair in Heart Failure
Dr. Patrick Pilarski, Physical Medicine & Rehabilitation	Tier 2, Chair in Machine Intelligence for Rehabilitation

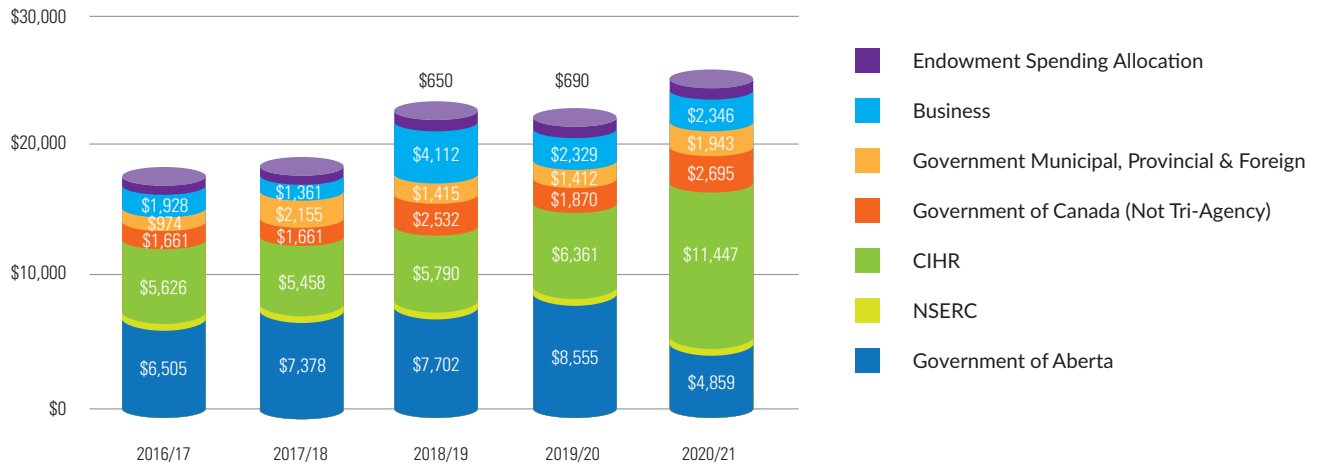
AIHS TRANSLATIONAL HEALTH CHAIR

Dr. Gopinath Sutendra, Cardiology	Chair in Cardio-oncology
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RESEARCH FUNDING

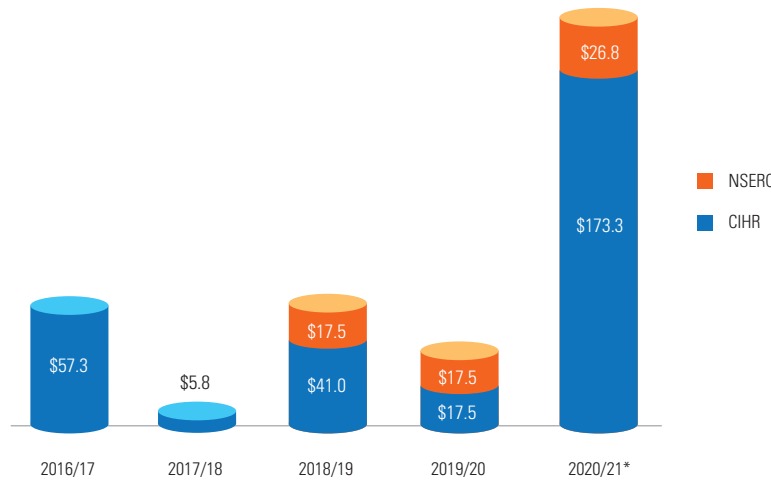
AB Innovates
AbbVie Inc
Alberta Health Services
ALS Society of Canada
Amgen Canada Inc
AstraZeneca Canada Inc.
Biogen Inc
Boehringer Ingelheim Canada Ltd
Branch Out Neurological Foundation
Bristol-Myers Squibb Canada
Can Assoc for the Study of the Liver
Canada Foundation For Innovation
Canada Research Chairs
Canadian Assoc for Medical Education
Canadian Association of Gastroenterology
Canadian Dermatology Foundation
Canadian Hemophilia Society
Canadian Institutes of Health Research
Choosing Wisely Alberta
Ctr Hospitalier de l'Univ Montreal(CHUM)
Edmonton Symphony Society
Glenrose Reh Hospital Foundation
Hamilton Health Sciences Corporation
Heart & Stroke Foundation Canada
Hoffmann-La Roche
Ipsen Pharmaceuticals
Janssen Inc.
Lung Association Alberta & NWT
McGuire Research Institute Inc
Merz Pharma GmbH & Co KGaA
MITACS Inc
Multiple Sclerosis Society of Canada
National Multiple Sclerosis Society
NCE Canadian Glycomics Ntwk – GlycoNet
Northern AB Clinical Trials&Res Centre
NSERC
Octapharma Canada Inc.
Paladin Labs, Inc
Praxis Spinal Cord Institute
Shire Pharma Canada ULC
Sunnybrook Research Institute
The Alberta Paraplegic Foundation
Tri-agency Inst Programs Secretariat
UCB Pharma
Ultromics Ltd.
University Health Network
University Hospital Foundation
University Of Alberta
University of British Columbia
University of Calgary
University of Manitoba
US Department of Defense
Wave Life Sciences UK Limited
Wave Life Sciences USA, Inc.
Workers Compensation Board of AB

TOTAL DEPARTMENT OF MEDICINE RESEARCH REVENUE (\$THOUSANDS)



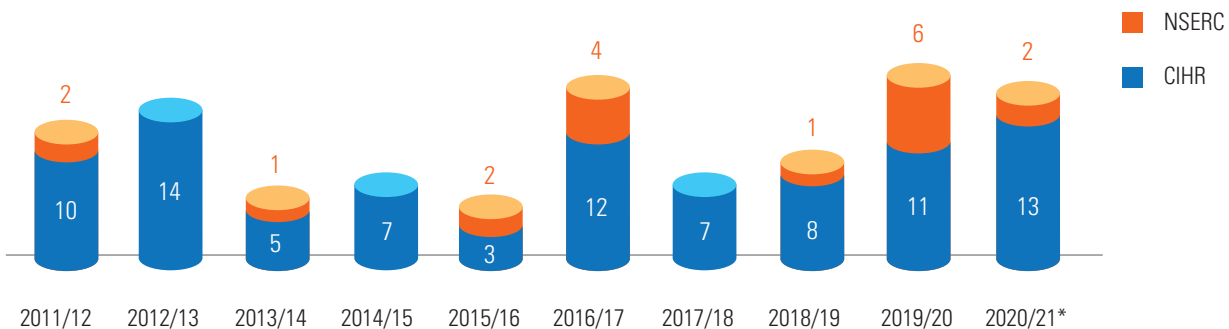
*2020–21 as of March 25, 2021

CIHR & NSERC GRADUATE STUDENT SCHOLARSHIPS – PAST 5 YEARS (\$THOUSANDS)

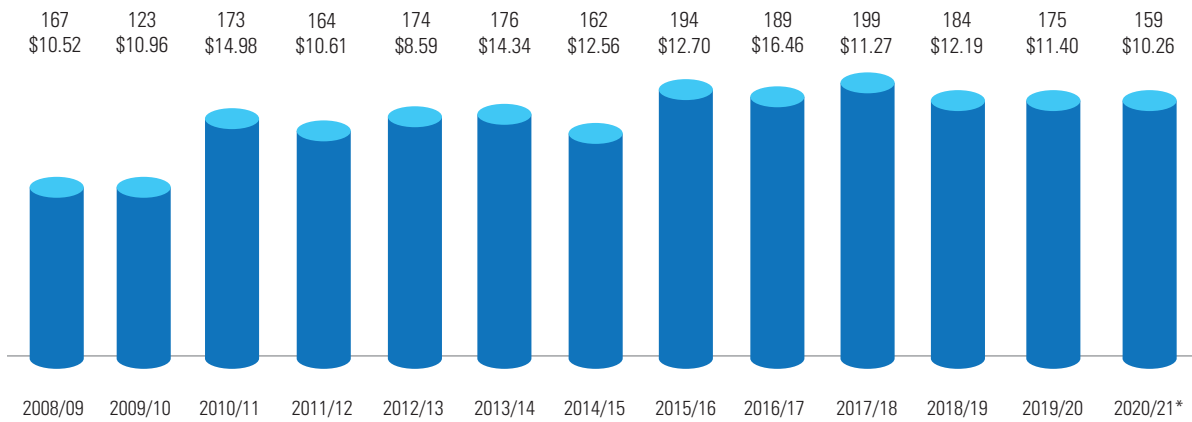


*2020–21 as of March 8, 2021

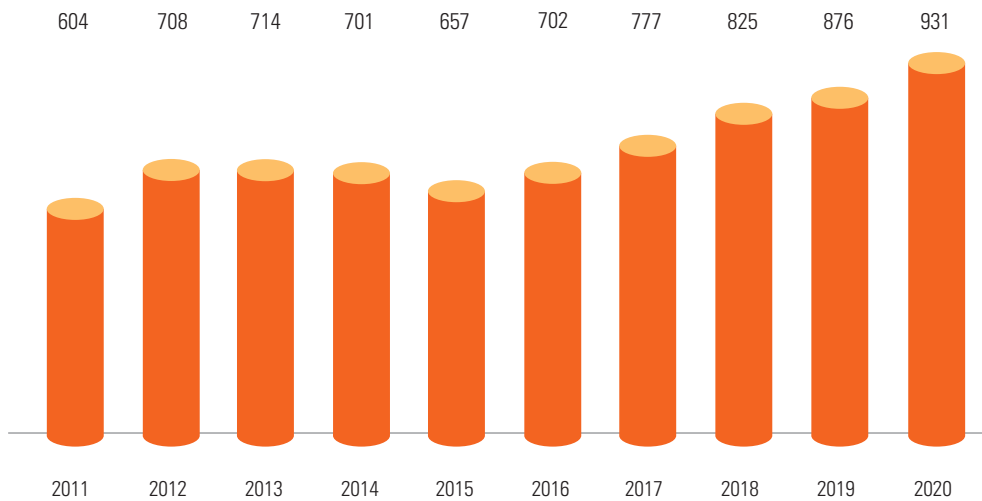
CIHR & NSERC OPERATING GRANTS (NEWLY AWARDED PER FISCAL YEAR)



*2020–21 as of March 25, 2021

CLINICAL TRIALS FUNDING (NEW CLINICAL STARTS/YEAR – INCOME/YEAR \$MILLIONS)

*2020/21 Clinical Trial Income as of Feb 2021

PUBLICATIONS

GRADUATE STUDENT SUMMARY*

Currently Enrolled	93
MSc Program	50
PhD Program	42
Visiting Students	1
Total Publications (including graduated)	118
Number of Students Who Published in 2020	118
Average Publications per Student in 2020	0.72
Active Postdoctoral Fellows	32

* As of March 25, 2021

RECRUITMENT & ATTRITION SUMMARY

	RECRUITMENT				TOTAL	ATTRITION				TOTAL
	Male		Female			Male		Female		
	AMHSP	FFS	AMHSP	FFS		AMHSP	FFS	AMHSP	FFS	
2010/11	2	6	6	9	23	1	0	0	1	2
2011/12	2	14	1	12	29	5	1	8	4	18
2012/13	3	2	3	1	9	3	4	6	4	17
2013/14	4	0	2	1	7	2	3	3	1	9
2014/15	6	2	4	7	19	10	0	2	0	12
2015/16	9	5	11	8	33	5	3	2	3	13
2016/17	3	11	5	6	25	1	0	1	7	9
2017/18	8	17	3	10	38	2	5	4	6	17
2018/19	4	14	1	6	25	6	0	3	1	10
2019/20	2	13	3	5	23	4	1	4	0	9

NEW TO THE DEPARTMENT IN 2020

Bankar, Aniket, Assistant Professor, Hematology

Lam, Grace, Assistant Professor, Pulmonary

Varughese, Rhea, Assistant Professor, Pulmonary

LEFT THE DEPARTMENT IN 2020

Sandhu, Irwindeep, Associate Professor, Hematology

Sandhu, Roopinder, Associate Professor, Cardiology

RETIREMENTS IN 2020

Dafoe, Bill, Professor, Cardiology

Roberts, Ted, Associate Professor, Neurology

IN MEMORIAM 2020

Taylor, Geoffrey, Professor, Infectious Diseases

ACADEMIC PROMOTION

ASSOCIATE PROFESSOR

Cervera Alvarez, Carlos, Infectious Diseases

Halloran, Brendan, Gastroenterology

Hwang, Peter, General Internal Medicine

Sutendra, Gopinath, Cardiology

Wu, Cynthia, Hematology

Yeung, Rose, Endocrinology & Metabolism

PROFESSOR

Cheung, Lawrence, Pulmonary Medicine

Dacks, Joel, Infectious Diseases

Daniels, Vijay, General Internal Medicine

Hebert, Jacqueline, Physical Medicine & Rehabilitation

Karvellas, Constantine, Gastroenterology

Keeling, Stephanie, Rheumatology

Khurana, Rshmi, General Internal Medicine

Montano-Loza, Aldo, Gastroenterology

Pauly, Robert, Nephrology

Sia, Winnie, General Internal Medicine

Smith, Stephanie, Infectious Diseases

Vethanayagam, Dilini, Pulmonary Medicine

Yacyshyn, Elaine, Rheumatology

Promoted effective July 1, 2020

CLINICAL PROMOTION

ASSISTANT CLINICAL PROFESSOR

Chia, Jonathan, Physical Medicine & Rehabilitation

Cho, Victoria, Preventive Medicine

Dissanayake, Tharindri, Rheumatology

Dobrowolski, Peter, Neurology

Gray, Darren Addison, Physical Medicine & Rehabilitation

Hoeber, Shane, Physical Medicine & Rehabilitation

Klein, Kristin, Preventive Medicine

Lo, Alto, Physical Medicine & Rehabilitation

Ross, Katherine, General Internal Medicine

Senez, Joseph, General Internal Medicine

Soo, Jason, Rheumatology

Sprague, Elliott, General Internal Medicine

ASSOCIATE CLINICAL PROFESSOR

Au, Anita, General Internal Medicine

Fagarasanu, Andrei, Hematology

Li, Stephanie, Endocrinology & Metabolism

Smyczek, Petra, Preventive Medicine

Sultanian, Richard, Gastroenterology

Virani, Hakique, Preventive Medicine

Wong, Karen, Gastroenterology

CLINICAL PROFESSOR

Harrison, Robyn, Infectious Diseases

Boyington, Curtiss, Infectious Diseases

Promoted effective July 1, 2020



COVER PHOTOS

DR. LYNORA SAXINGER

Associate Professor Lynora Saxinger is in the Infectious Diseases Division of the Department of Medicine.



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FACULTY OF MEDICINE & DENTISTRY
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