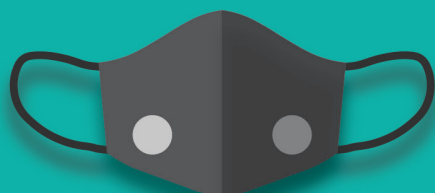
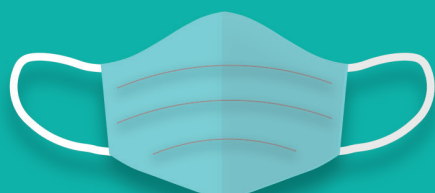


Dean's Report



What happens when
everything changes.

MESSAGE FROM DEAN LISA DOLOVICH

When the Leslie Dan Faculty of Pharmacy unveiled its “I’m Pharmacy” platform in December 2019, we had no idea that an unprecedented societal shift was just over the horizon.

The COVID-19 pandemic has changed everything — from how we study and work — to how we deliver health services and connect with each other.

But what didn’t change is how the Faculty continues to move science and health.

The pandemic has shaken our collective trees and accelerated the need for innovation in education, research and community impact. I am tremendously proud of and grateful for the resilience and commitment demonstrated by our students, faculty and staff. Our community has stepped up to meet the many challenges presented by COVID-19 and is helping to chart the course for what a “new normal” might look like.

The pharmacy and pharmaceutical sciences virtual learning opportunities that our academic leaders co-created with students are innovations that will stay with us and carry us forward as we enhance pharmacy education and redefine pharmacy practice. In the wake of COVID-19, the public is seeing pharmacists in a new light.

While previously overlooked or “hidden in plain sight,” pharmacists across the globe are in today’s spotlight as one of the most essential and accessible health professionals. Now more than ever patients are turning to their pharmacist and we must seize this opportunity to grow our profession and amplify our impact.

Not only is our practice changing, so is our research.



The Faculty is home to a strong line-up of scientists that successfully pivoted their research to support COVID-19 because their drug discovery and drug use in society work is built on a strong foundation of first principles, such as establishing mechanisms of action, safety, effectiveness and equity.

While COVID-19 is a recent area of focus, our research impact reaches far beyond. In the last year, the Centre for Pharmaceutical Oncology opened its new radiopharmacology lab, led by Professor Ray Reilly, which is already home to a first-in-humans clinical trial exploring a treatment for brain metastases.

Professor Jillian Kohler, director of the WHO Collaborating Centre for Governance, Transparency and Accountability in the Pharmaceutical Sector, is engaged in critical global health research to support global health systems embattled by COVID-19.

The students, faculty and staff at the Leslie Dan Faculty of Pharmacy are moving the profession and the science forward in ways that nobody has ever considered before, resulting in insights, breakthroughs and advances in medications, health care and health.

Together, let’s keep moving science and health – while showing the world what pharmacists and pharmaceutical scientists are capable of.

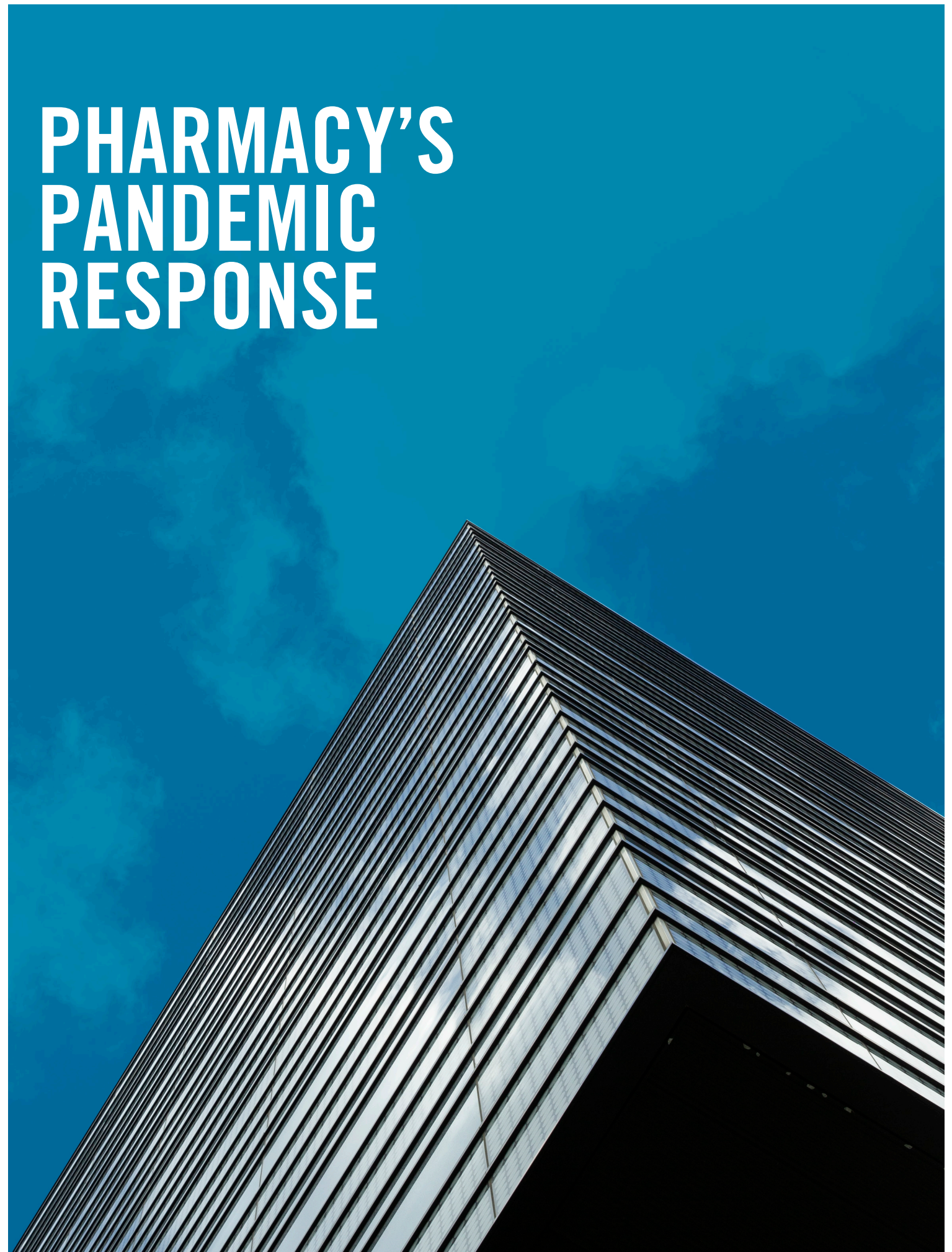
Sincerely,

A handwritten signature in black ink, appearing to read 'Lisa Dolovich'.

Lisa Dolovich

Professor and Dean
Leslie Dan Faculty of Pharmacy
University of Toronto

PHARMACY’S PANDEMIC RESPONSE



FIVE PHARMACY STUDENT RESEARCH TEAMS EARN U OF T COVID-19 FUNDING

Written by Eileen Hoftzyer
Photos by Steve Southon

While the COVID-19 pandemic has had a significant effect on pharmacy students – halting research projects, cancelling rotations and postponing licensing exams – many have been using their skills to make an impact against COVID-19.

Five research teams led by students from the Leslie Dan Faculty of Pharmacy, have received U of T COVID-19 Student Engagement Awards, with a total of 150 student teams from across the university each receiving up to \$3,000.

“This funding is incredibly important. It opens the door for us as students to lead new research projects,” says Maria Marchese, a Master of Science in Pharmacy student and pharmacist at Sunnybrook Health Sciences Centre who received one of the awards. “This has been an amazing opportunity to use this time to be part of something meaningful.”

Marchese and her co-lead Angela Heintzman, a PharmD student and pharmacist at Thunder Bay Regional Health Sciences Centre, are using the award to survey oncology pharmacy practitioners at cancer

centres across Canada to learn how they have delivered virtual care during the pandemic. They will then use the survey responses, along with interviews and a process map developed by the Sunnybrook oncology pharmacy team, to develop a framework that can be used by cancer centres around the world to enhance patient care during and after the pandemic.

“We have the potential to make such an impact on patient care with this project,” says Heintzman. “We can learn from the strategies that other groups are using. The whole process is so exciting.”

While many non-essential medical procedures were postponed during the peak of the pandemic, cancer treatments continued. Many patients maintained or even started chemotherapy during this time, and oncology pharmacists continued to counsel and support patients. But how they delivered these services changed rapidly, particularly because cancer patients are at high risk of COVID-19 complications.



Maria Marchese, a Master of Science in Pharmacy student and pharmacist at Sunnybrook Health Sciences Centre

“We really had to minimize contact with the patients,” says Marchese. “We were accustomed to interviewing the patient, collecting the medication history and explaining all the medications to them in person. We had to swap all that for virtual services.”

While some in-person services remained, Marchese, her supervisor Carlo DeAngelis and the rest of the oncology pharmacy team at Sunnybrook began to offer virtual medication reviews and supportive care, day-before chemotherapy calls and follow up sessions over telephone and video conferencing. With patients now coming to the cancer centre alone, the virtual services allowed the pharmacy team to continue to include caregivers in the discussions, who are often critical for acting as a second set of ears and even translation when English is not the patient’s first language.

After the initial rush of changes to care in March, the Sunnybrook team wanted to explore how oncology pharmacy practitioners at other cancer centres were addressing the same challenges. “Other centres might have their own initiatives, and we wanted to learn what everyone is doing and describe the landscape of practice,” says Marchese.

Marchese and Heintzman’s survey will ask oncology pharmacy practitioners about how they delivered virtual care during the pandemic, as well as barriers and facilitators to success, which will help to identify best practices. They plan to share the findings through international oncology pharmacy associations in order to help change practice and virtual care globally, even beyond the pandemic. “Now we’re looking at which initiatives are most efficient and work best for patients,” says DeAngelis. “What can we take from this experience and move forward into day-to-day practice in the future?”

When students have opportunities like this to bring in funding, it enables the ability to bring new ideas forward, allows more innovation and expands the potential of your research program.”

While the team had already been working on developing a process map for Sunnybrook’s oncology pharmacy services, the new student award is helping them to develop and distribute the survey. “Having students



Carlo DeAngelis, Graduate Supervisor and Clinician Scientist at Sunnybrook Health Sciences Centre

come in with very different perspectives is critical and helps you to think in different ways,” says DeAngelis

“When students have opportunities like this to bring in funding, it enables the ability to bring new ideas forward, allows more innovation and expands the potential of your research program.”

More than 1,000 students from across the university are involved in the 150 successful teams, including 16 from the Leslie Dan Faculty of Pharmacy. Pharmacy-led student teams were particularly successful in the competition, with a 62.5% success rate, and represent a diverse range of initiatives.



ICU PHARMACIST REFLECTS ON WORKING THROUGH COVID-19

Lisa Burry also participates in multidisciplinary research to improve outcomes for patients with COVID-19

Written by Eileen Hoftzyer
Photo by Steve Southon

Health care professionals working in the intensive care unit (ICU) are familiar with unpredictable and stressful situations, and complex patient loads.

But a highly contagious viral pandemic and global shortages of critically important drugs created new challenges, even for seasoned ICU professionals.

Lisa Burry, assistant professor at the Leslie Dan Faculty of Pharmacy, is an experienced ICU pharmacist at Mount Sinai Hospital. Burry worked in the ICU during the SARS outbreak in 2003. Working during SARS gave her and her ICU colleagues a sense of what was to come early in the year as the severity of COVID-19 intensified.

“Some of the fear and anxiety that we dealt with through SARS probably helped us cope better with COVID-19. We had some insight as to the potential impact,” she says. “However, we were also fearful because we knew what was coming.”

That meant knowing the discomfort of wearing personal protective equipment all day long, the stress of being

exposed to highly contagious patients for full shifts and demanding case loads. It also meant preparing for a surge of ICU patients and potential drug shortages. As a member of the Society of Critical Care Medicine’s Fundamental Disaster Management Working Group and the American College of Chest Physician’s Task Force for Mass Critical Care and Disaster Management Steering Committee, Burry had important insight and access to resources, which she says was important in helping the ICU prepare for what was to come.

The hospital prepared for the height of the pandemic when it might exceed the ICU capacity, and it had created temporary ICUs in areas of the hospital that were not being used during the pandemic, such as post-op recovery rooms.

Burry’s research expertise – sedation and delirium in the ICU – put her in high demand to lead and support various research projects. Current practice for many conditions recommends that patients on ventilators receive pain medication to be calm and comfortable, but as alert and interactive as possible. However, this wasn’t possible with patients with COVID-19 who were put on ventilators, as they needed to be deeply sedated.

“Patients with COVID-19 in the ICU were ventilated for very long periods of time and had huge drug requirements for pain, agitation and delirium, just to make their ventilation safe,” she says. “The amount of drug that was required per patient, per day was extraordinary.”

Hospitals across the province and the country were all experiencing the same scenario and trying to access the same sedatives, and supplies of the first-choice sedative began to run low. Now, on top of dealing with high numbers of patients and complex cases, pharmacists were facing shortages of essential drugs they needed.

“In the beginning, those of us in critical care were trying to solve these problems in isolation, and not recognizing that another site was dealing with the same thing,” says Burry. “That led to a group of us working together to deal with the issue on a provincial level and ultimately led to research to test new strategies to manage it.”

Challenges in patient care leads to new clinical trials

At a time when Burry’s clinical work was busier than ever, research opportunities were also rapidly growing. She worked closely with multi-disciplinary teams to develop research proposals to study potential solutions to the drug shortages they were facing in the ICU, two of which were successful. As co-investigator, Burry brings her valuable pharmacy perspective to research examining alternatives to traditionally used intravenous sedatives for patients on ventilators to ease pressure on the drug supply.

One trial, led by Drs. Angela Jerath and Brian Cuthbertson from Sunnybrook Health Sciences Centre and Dr. Claudio Martin and Marat Slessarev from London Health Sciences Centre, will compare inhaled gases typically used in the operating room to intravenous sedatives for COVID-19 patients on ventilators. Inhaled sedatives are not used outside of the operating rooms in North America, but are cheap, widely available and reduce lung inflammation and improve oxygen levels. But these sedatives have not typically been used for prolonged periods of time, such as in patients in the ICU.

“We know the way in which we sedate people, the drug we select, how we do it and how long we do it can all impact how long they spend with us and their overall recovery,” says Burry.

The trial is receiving more than \$2 million from the Canadian Institutes for Health Research (CIHR) COVID-19 Rapid Response Competition, ranking the top research grant in the special competition.

“While the trial may be COVID-centric, it addresses issues we can apply far beyond this pandemic. This is valuable work because it has the ability to improve patient care, but also deal with drug shortages and issues without compromising patient care,” says Burry.

The second clinical trial, funded through a McMaster Medicine Associates Innovation Grant, is led by Dr. Alison Fox-Robichaud at Hamilton Health Sciences and Dr. James Downar at the Ottawa Hospital. It is examining whether adding the old beta-blocker propranolol to standard sedation regimens reduces the amount of primary sedative required, another approach to decrease the consumption of essential sedatives.

As Burry reflects on the challenges of the last several months, she is proud of the work that she has done serving both her patients and her profession through participating in the new research projects and the professional working groups.

“Access to drugs is an important part of disaster management, and I’m proud to have contributed to guidelines and protocols that have helped in this pandemic,” she says. “I’ve been given some good opportunities to be part of championing work that we’ve published about supply shortages.”

“Despite all the challenges of COVID, I’ve made new connections, built new research networks and learned to do things more quickly and efficiently. The research we are doing may improve treatment for COVID-19 and should lead to shorter ICU stays and improved outcomes. Some positive things have come out of the last few months.”



Pharmacist Mike Colebrook in his Coldwater, ON pharmacy

WHAT IT'S LIKE BEING A COMMUNITY PHARMACIST DURING A PANDEMIC

Written by Nicole Bodnar
Photos by Mike Colebrook

Q&A with Leslie Dan Faculty of Pharmacy alumnus Mike Colebrook who describes his pharmacy's radical transformation in response to COVID-19

Flashback to March 2020 to when the COVID-19 crisis hit Ontario. Millions of office workers started working from home. Elective surgeries were cancelled, patients met virtually with their medical specialist, and family doctors prioritized in-person appointments that required hands-on examination.

As the entire health system scrambled to modify services to support the stay-at-home mandate, pharmacists were among the only remaining front-line health professions that could knowledgeably address patients' health questions.

Mike Colebrook (BScPhm '94) is a community pharmacist who thoughtfully transformed his workplace to maintain essential services for his community and fill a much-needed COVID-19 information gap. He did so while protecting his staff, running a profitable business, and keeping himself — and his patients — informed during a media firestorm.

Colebrook spoke with Leslie Dan Faculty of Pharmacy about his response to the unprecedented COVID-19

crisis and how he's advocating for pharmacy practice reform across Ontario.

What happened on March 17 when Ontario declared COVID-19 an emergency?

When the state of emergency was declared, things seemed to change almost every day and we had to adapt immediately. There was very little guidance from any of the regulatory bodies (government, Ontario College of Pharmacists, etc.).

My business partner and I would often have late night discussions to figure out what we had to do next to ensure our staff and customers were safe. We immediately closed off the store to public access and operated through a plexiglass window. Nothing was accepted into the store unless it could be sterilized (or put aside for 3-5 days) and put into a Zip-Lok bag. Patients who had cell phones were instructed to wait in their car for a call when the order was ready. Most completed prescriptions and over-the-counter orders were brought out to the patient's cars for curbside delivery.

Many doctors closed access for most of their patients, which put the burden on pharmacists to field an increased spectrum of questions while their doctor was unavailable. We also saw an increased need for advice to treat ailments, since many patients preferred to self-medicate rather than risk going to a walk-in clinic. During these counselling sessions, we also had to evaluate when further medical attention was necessary.

Can you describe how your day-to-day operations changed?

Our volume of phone calls and prescriptions drastically increased to the point that we did not have the staff to handle it. Every transaction took extra time since we often needed to select over-the-counter products for the patients, manually ring in credit cards and bring out the completed order to their car. Some customers would hold up the technicians on the phone asking them to select even the most unessential items such as birthday cards and chocolate bars.

Those who didn't have credit cards had to come to the entrance of the store where they could 'tap' a debit card or (only as a last resort) pay cash, which was handled with gloves and then sterilized with alcohol before being placed into the till. We also had to deal with multiple calls and visits per hour from customers looking to purchase personal protective equipment and items such as hand sanitizer, gloves, alcohol and thermometers, most of which had become totally unavailable. Some people would take their frustration out on us when they could not find these items.

“Being one of the most accessible health professionals, we quickly became the front-line service that dealt with the public’s health concerns. People came to us first when they were sick since access to doctors and walk-ins became extremely limited.”

How did you ensure the safety of your staff?

The staff were concerned about their safety. Within days of the state of emergency being declared, we closed off public access to minimize risk of exposure at the work place but extra expectations were also placed on them to follow the isolation rules at home as well. Wage increases were given to all staff to help compensate for the extra responsibilities we placed on them.

Was your supply chain affected?

Around the time that COVID-19 was declared a pandemic, we had to spend a lot of time keeping up with manufacturer supply updates and Ontario Drug Benefit policy as more and more patients demanded early refills and large quantities. We had many challenges dealing with patients who were trying to hoard medications who then became angry when we would deny their attempts to stockpile.

The stress on the pharmacy increased as broken supply chains started to cause supply issues. Some products were not available and most were allocated based on previous ordering history with maximum supplies being sent only based on dispensing a one-month supply. In some cases, only a one-week supply was allocated.

Did your location in Coldwater, Ontario play a role?

Allocation placed a specific stress on our pharmacy since we are located in cottage country. We had an increased volume due to many people leaving the city and isolating themselves at their cottages. Additional supplies of medications were needed at our location, but we were only being allocated based on our historical usage and no concessions were being made by wholesalers or manufacturers for our disproportionate increase in demand. Delivery was also a challenge due to the large geographical area that we service with many patients travelling long distances to use our pharmacy.

Did you engage in any government advocacy efforts?

When the government was deciding how to handle the negative feedback they were getting about dispensing 30 days, I sent a letter to the Minister of Health asking her to leave it up to the individual pharmacy's discretion whether to charge or not on the third dispensing event.

In the letter, I explained the increased costs and challenges associated with keeping our essential service running as one of the most accessible health professionals during the pandemic. I called for a show of support and appreciation to pharmacists by giving us the ability to be compensated for our services on the third event, which would send the message that our services are worth paying for.



What happened once masks were mandated in July?

Once Simcoe County made masks mandatory, we felt that we could look at reopening the doors. This required a total enclosure of the dispensary with plexiglass. Sanitizer stations were installed at entry and exit and physical distancing markings were laid out. Masks and sanitizer were also supplied to the staff. The cost has been thousands for the renovations to shut off access to the store, then open up with the dispensary enclosed, and to provide personal protective equipment and sanitation supplies.

This is the way we are currently operating and as long as the cases stay low, we feel we can continue to operate this way until the pandemic ends, which could be many months or potentially years.

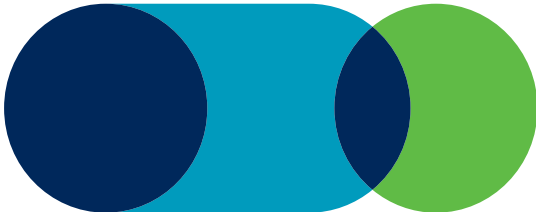
What do you think is the future for pharmacists in a post-COVID-19 world?

I feel that our pharmacy will continue to maintain practices such as extra hand-washing and physical distancing, particularly with patients who are sick.

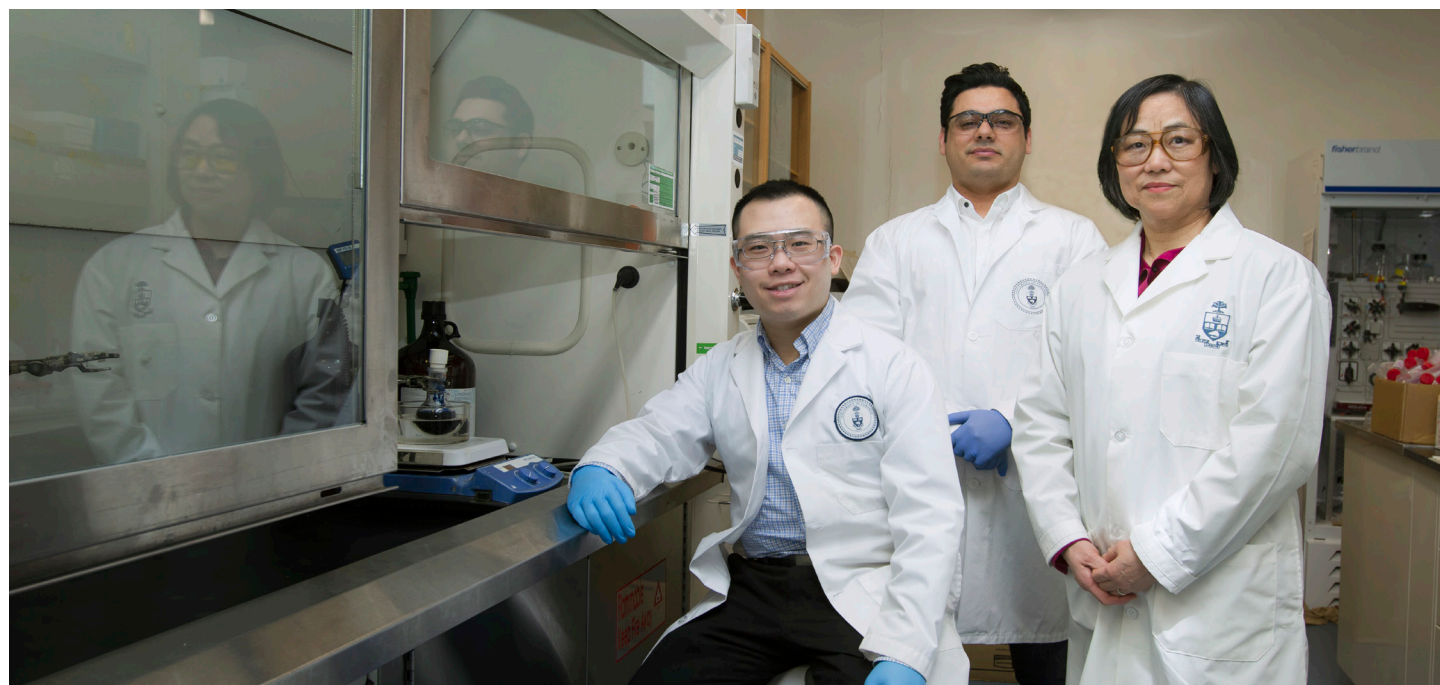
We have to be prepared to continue answering questions from customers that are hyper-aware of emerging diseases and to understand some of the mental health issues when counselling patients as a result of the stress and other changes made during the pandemic.

Hopefully we go another 100 years before another pandemic, but if it happens again in my lifetime, I feel that our pharmacy staff and community have the knowledge and tools to more quickly implement measures to prevent transmission such as isolating at home, physical distancing, wearing masks and sanitizing.

Hopefully we don't all forget.



RESEARCH IMPACT



From left to right: Brian Lu, Amin GhavamiNejad, and Shirley Wu

FIRST-OF-ITS-KIND SKIN PATCH AIMS TO PREVENT LOW BLOOD SUGAR IN DIABETES

Written by Kate Richards
Photos by Steve Southon

An innovative skin patch has the potential to prevent low blood sugar levels (hypoglycemia) in people with diabetes.

A team led by Shirley Wu, a professor in the Leslie Dan Faculty of Pharmacy who studies drug delivery systems, designed a “smart” patch that delivers the hormone glucagon to the bloodstream in response to falling blood sugar, thus preventing the dangerous condition.

The microneedle patch looks like a nicotine patch, but it features 100 tiny needles less than a millimetre long.

“Our microneedle patch is the first of its kind,” says Wu. “No other microneedle patch is responsive to low glucose concentration. Ours is sensitive enough to detect hypoglycemia and release glucagon when it’s needed,” she says.

A considerable number of people with diabetes need to administer insulin to manage their high blood glucose levels.

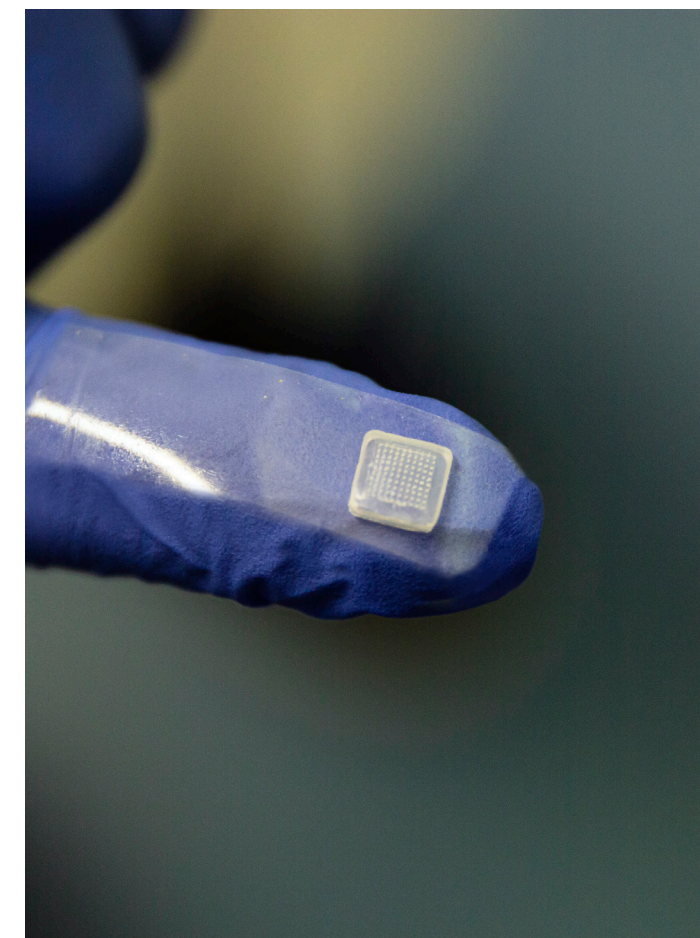
But intensive insulin therapy may often lead to hypoglycemia, causing sweating, shaking, confusion, seizures and even death. At present, episodes of severe hypoglycemia are treated with an emergency injection or nasal spray of glucagon formulation, but people with diabetes or their caregivers need to recognize the symptoms and deliver an emergency treatment quickly. This is a big challenge for people with hypoglycemia unawareness or who are unable to handle the complex treatment procedures.

With funding from the non-profit JDRF, which funds type 1 diabetes research, Wu’s team developed a disposable, one-time use patch that can currently prevent the condition in animal models.

“The tiny needles penetrate the first layer of the skin allowing access to interstitial fluid to sense glucose levels, but they don’t reach any pain sensors, so the patch application is painless and minimally-invasive,” says Amin GhavamiNejad, a post-doctoral researcher in the Wu lab.

The microneedles contain a sponge-like microgel loaded with glucagon. One of the microgel components bonds with glucose, blocking glucagon from being released into the blood at high or normal blood sugar levels. But when blood sugar level is low, glucose separates from the microgel causing the microgel to shrink, which physically squeezes the encapsulated glucagon into the tissue rapidly through the microneedles.

“It circumvents the need for patients or caregivers to recognize the symptoms of hypoglycemia, since it senses the episode and takes care of it automatically,” says Brian Lu, a PhD student in the Wu lab. “This smart design is what makes the patch unique and novel.”



Researchers at U of T have developed an innovative skin patch that can help prevent low blood sugar levels in diabetes patients, a potentially dangerous condition

Since the team published the research several months ago, they say a number of people with diabetes and caregivers have asked when the patch will be tested in clinical trials. More research needs to be done before trials can begin, but the team says it is excited about the potential of this innovative technology to transform diabetes treatment and care.

“Our goal is to benefit patients,” says Wu. “We need to work harder and faster to move this technology to the community.”

U OF T RESEARCHERS LAUNCH IN-DEPTH EVALUATION OF STRATEGIES TO CURB ‘HALLWAY MEDICINE’ IN ONTARIO

Written by Rahul Kalvapalle
Photo by Nick Iwanyshtyn

Professors Sara Guilcher and Kerry Kuluski are launching a multi-pronged research project that aims to help the province of Ontario identify solutions to tackle the problem of “hallway medicine” in hospitals.

Each year, thousands of Ontario patients designated “Alternate Level of Care” (ALC) endure prolonged stays in hospital after their treatment is complete because the next place of care that they need – such as a long-term care facility, assisted living or home care – isn’t available.

These discharge delays result in a dearth of vacant hospital beds for incoming patients, who are forced to wait in emergency rooms and receive treatment in hospital hallways – hence the term “hallway medicine.”

“It’s an issue that crosses all patient populations,” says Guilcher, an assistant professor at the Leslie Dan Faculty of Pharmacy. “It’s not specific to hip fracture or Alzheimer’s or diabetes. It’s a big systems issue that affects everyone.”

Combining interviews with patients, caregivers and health-care providers with population-level data, the CIHR-funded study by Kuluski and Guilcher will examine the impact of 12 best practices compiled by patient flow specialist Elaine Burr and health authorities in 2015 and adopted by 22 Ontario hospitals.



U of T researchers Sara Guilcher (left) and Kerry Kuluski are launching a research project aimed at identifying solutions to “hallway medicine” in Ontario

The best practices include setting up processes to proactively ensure that patients are referred to community care co-ordinators before they are declared ALC and finding alternatives to hospitalization for emergency room patients.

Anecdotal evidence on the impact of these strategies is encouraging, Guilcher says, but with hospitals implementing them to varying degrees – and possibly interpreting them differently – a multi-method investigation is needed to accurately assess their impact.

“We hypothesize that hospitals that have implemented these practices would see shorter lengths of stay for ALC patients, as well as better outcomes after being discharged to the community,” says Guilcher. “And that would translate to reduced costs.”

Kuluski is a social worker by training and specializes in health services research, while Guilcher is a physical therapist whose research focuses on the “care journeys” of people with complex health and social needs.

Both Kuluski and Guilcher specialize in “multi-methods” research that combines qualitative and quantitative data.

“This is an issue that crosses health and social systems,” Guilcher says. “Big problems require collaboration across disciplines.”

RESEARCH FUNDING

100
active grants

- 48 Tri-Agency
 - 28 CIHR
 - 16 NSERC
 - 2 SSHRC
 - 2 Other
- 11 Private Sector
- 23 Not-for-Profit
- 18 Government

500+
publications

\$10.6M+

Total research funding awarded to Leslie Dan Faculty of Pharmacy researchers

\$5.1M+

Tri-Agency
(CIHR, NSERC, and SSHRC)

\$1M+

Private Sector

\$1.9M+

Non-for-Profit Sector
(including foundations)

\$2.5M+

Government
(NIH, IDRC, Ontario Genomics, etc.)

EDUCATION

PHARMACY PROFESSOR USES SIMULATED PATIENT PLATFORM FOR CLINICAL COURSE

Written by Kate Richards
Photos by Steve Southon

When COVID-19 hit, all classes at the University of Toronto were required to transition online within weeks. For Natalie Crown, Assistant Professor in the Teaching Stream at the Leslie Dan Faculty of Pharmacy, this presented a significant challenge.

Crown leads a second year physical assessment and injections course where students learn to assess patient symptoms and interpret physical findings. The course is typically conducted in a simulation lab using mannequins to help build patient care skills in a setting that is closer to real life.

“We had two simulation labs left and could have just converted to lectures but I had piloted an online simulation platform and saw this as an opportunity to implement it in the course,” said Crown. This is the first time a virtual simulation platform has been used for physical assessment in pharmacy education in Canada.

The platform, Digital Clinical Experiences developed by Shadow Health, allows students to engage with a patient avatar to perform a physical exam and gather patient history information. The students then develop recommendations for a pharmacy care plan as a follow-up assignment.



Assistant Professor (Teaching Stream) Natalie Crown

Second year PharmD student Andrea Sarbu found the experience of assessing “Tina” who was having asthma-related problems, very helpful for building her skills.

“It really helped me perform a complete physical assessment,” said Sarbu. “I could also replay the sounds to hear the differences in breathing in normal and unhealthy lungs which was very useful. The graphics were very good quality and the patient interactions felt very real.”

Given this is the first time a virtual digital simulation platform has been used in pharmacy education in Canada, Crown is also working to share the experience with other faculties of pharmacy across the country. “I think there’s a real opportunity here to apply innovative instructional design that will help us train exceptional pharmacists into the future.”



A pilot project using virtual reality technology to help support students through high stakes assessments is underway

VIRTUAL REALITY TECHNOLOGY SUPPORTS STUDENTS THROUGH HIGH STAKES EXAMS

Written by Eileen Hoftzyer
Photos by Steve Southon

Many students experience high anxiety around exams and assessments, especially when the assessment takes place in an unfamiliar environment. Worrying about logistics and the process of the assessment can even distract students from focusing on preparing for the content of the exam.

A project in development at the Leslie Dan Faculty of Pharmacy (LDFP) is piloting the use of virtual reality technology to help support students through high stakes assessments. By allowing students to repeatedly experience the exam process, though not the content, in advance, they can feel more comfortable and focus on the content they are required to learn. Research has shown that doing something many times generally helps to decrease levels of anxiety.

Lachmi Singh, Director, Education Programs and Administrative Services and Sandra Bjelajac Mejia, Assistant Professor, Teaching Stream and Interim Director, Professional Programs, are leading the project, which recently received support from the University of Toronto’s Instructional Technology Innovation Fund (ITIF). The support will allow them to work with the expert staff at the Centre for Teaching Support and Innovation who will design the virtual environment that students will experience.

A 2016 U of T survey found that one of the highest sources of student stress and anxiety is related to exams and testing, and anonymized LDFP data

indicates that students are often concerned about high stakes exams. Knowing that pharmacy students face some particularly high stakes exams on their road to becoming practising pharmacists, Bjelajac Mejia and Singh began thinking of different ways that virtual reality technology could support and enhance the student learning experience.

“Our aim is to help demystify these assessments so our students can focus on what they need to know as pharmacists,” says Bjelajac Mejia.

Initially, Singh and Bjelajac Mejia applied for support from the ITIF to develop a simulation of the Pharmacist Qualifying Examining Part II test environment. This exam is an objective structured clinical exam (OSCE), consisting of timed stations, each with a task or problem for the student to complete. The idea stemmed from the desire to familiarize students with the exam logistics to allow them to focus on mobilizing their knowledge and skills to successfully engage in the tested clinical scenarios.

Due to the COVID-19 pandemic, the spring OSCE was cancelled, and Singh and Bjelajac Mejia took the opportunity to use the technology for other high stakes exams in the pharmacy program. One example being developed is lab-based test environments, which may be particularly helpful for orienting new students and providing a practice environment for returning students. In the future they anticipate that students will be able to sign out the virtual reality headsets and simulate the experience repeatedly to become more comfortable with the exam processes.

They also expect that the virtual reality experience could be helpful for students with different learning styles or who require different kinds of accommodations. “Students with accommodations of various kinds may also benefit from the fact that they would have tools to practice and prepare at their own pace,” says Singh.



The technology may help students with accommodations of various kinds by providing tools to practice for exams at their own pace

“Having a tool where you could spend time in the environment before actually stepping into it may be reassuring.”

The project is early in development, and the project team aims to have a finished virtual reality simulation available for students by fall 2021. They plan to survey students after they have used the technology to understand whether students found it to be a useful tool, which may also suggest other uses for the technology.

“We’re excited about this opportunity to work with the ITIF team of experts to bring this type of educational tool forward,” says Bjelajac Mejia. “Using technology like this is an innovative way of supporting student engagement and success.”

RANKING

1ST in Canada

The Leslie Dan Faculty of Pharmacy is recognized as one of the top faculties of pharmacy in the world.

4TH Internationally

2020 QS World rankings

OUR PROGRAMS

Enrolled: 957
Graduated: 229

PharmD

Enrolled: 140
Graduated: 37

PharmD for Pharmacists

Enrolled: 114
Graduated: 88

International Pharmacy Graduate Program

Enrolled: 140
46 MSc
93 PhD
1 Non-Degree
Graduated: 25

Pharmaceutical Sciences
MSc • PhD

Enrolled: 59
Graduated: 13

Pharmaceutical Chemistry

29 Students from Universities across Canada

Undergraduate Summer Research Program



Pharmacist Ian Stewart in his Etobicoke, ON pharmacy

COMMUNITY

PHARMACY AND ACCESSIBILITY

Why alum Ian Stewart gives back

Written by Nicole Bodnar
Photos by Steve Southon

From student to alumnus, preceptor to supporter – Ian Stewart’s journey with the Leslie Dan Faculty of Pharmacy is truly remarkable.

A community pharmacist in West Toronto, Stewart is a strong advocate for youth, particularly those from under-represented communities.

“I like to motivate students to be the best they can be,” said Stewart, (BScPhm ’88). “I want Black youth to understand that pharmacy is a great career and a well-respected profession. To help them achieve a great outcome — either through motivational coaching or financial support — is rewarding to me.”

That’s why Stewart gave a \$25,000 gift to the Faculty to support the Ian Stewart/Shoppers Drug Mart Scholarship for Black Students in August 2020. Every year, the scholarship will recognize one deserving Black student entering their first year of the pharmacy program who demonstrates a commitment to community volunteering as well as financial need.

Inspired by Stewart’s commitment and generosity, Shoppers Drug Mart decided to match his gift and added their own \$25,000 contribution to the award, doubling the amount each student will receive every year.

“The Faculty and the profession of Pharmacy have

given me more than a career. They’ve given me the opportunity to positively touch countless lives,” said Stewart, who is the Faculty’s inaugural recipient of the Alumni Service Award in recognition of his volunteer service and leadership.

Stewart’s gift arrives at a time when pharmacists are in the spotlight. In the wake of the COVID-19 pandemic, pharmacists are filling the gap created by limited primary care doctor availability.

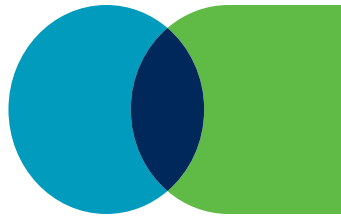
“We’ve heard so much gratitude from patients, and I like how patients have turned to us in recent months. We’ve heard, ‘Wow, I’m so glad you’re here. I didn’t realize how important you were,’” said Stewart, reflecting on how pharmacists are invaluable to patients and the health system broadly.

But Stewart has always understood the critical role pharmacists play as one of the most accessible health professionals in the community.

Shortly after becoming the Pharmacist Owner of his Shoppers Drug Mart franchise location in 1993, he decided that patients deserved to have a pharmacist available 24/7. Today his store is open 24 hours a day, 365 days a year.

“I joke that I have no locks on the doors. People know that no matter what, patients can come here to ask questions about their health and receive appropriate care. If their doctor isn’t available, we can answer their questions and prescribe medications when appropriate,” said Stewart.

The importance of accessibility – both as a resource for patients when they need it and as a career option for marginalized populations – is a vital concept for Stewart. “I encourage all LDFP graduates to join me in making a donation to the LDFP and make a difference in the life of a future leader.”



FOUR PRECEPTORS RECOGNIZED FOR OUTSTANDING TEACHING AND MENTORSHIP

Four advanced practice preceptors have been recognized for their exceptional teaching and mentorship to the next generation of pharmacists. Nominated by their students, the Leslie Dan Faculty

Roya Askarian
Roya Boutique Pharmacy

“I love teaching and coaching the next generation of pharmacists and promoting clinical reasoning, critical thinking and problem solving....I am very honoured to be awarded Preceptor of the Year. It means I was able to accomplish what I love the most: teaching and passing my knowledge to others. My students become like my children, and I want nothing but the best learning experience for them. The recognition puts their appreciation into perspective, but the real award for me is to see them becoming the best they can be.”

Greta Ho-Mah
North York General Hospital – Senior’s Health Centre

“I enjoy seeing my students get excited about applying what they have learned in school to real life....I also love to see how they become more comfortable interacting with the elderly patients despite their hearing, mood or memory problems. It’s a joy when I see patients thank them for their hard work. I feel proud watching my students confidently participate in the inter-disciplinary team rounds and present cool clinical research to my non-pharmacy colleagues. I am so blessed to win such a prestigious award only because a student would take the time to nominate me. The truth is: being a preceptor these days is never easy....ALL preceptors deserve a reminder from their students of how much our mentorship meant to them.”

of Pharmacy’s 2020 APPE Preceptors of the Year demonstrate a high level of commitment to their pharmacy practice, their patients and their students.

With clinical rotations being a key part of a pharmacy student’s education, preceptors have significant impact on a student’s experience. Their mentorship helps students to grow their skills and gain exposure to new areas of clinical practice. At the same time, preceptors often remark that they also learn from the students and the perspectives and experiences that they bring to the rotation.

The Faculty congratulates the four recipients of the 2020 Preceptor of the Year award.

Joseph Chin
Scarborough Health Network – Centenary

“I enjoy sharing the interesting cases I encounter daily with my students....Showing them how medications are used in real practice and seeing them learn brings me satisfaction. New students also keep me on my toes – I learn from them too. It is an honor for me to receive this award, especially since the nomination is initiated by students. I do this to pay it forward and to help prepare students for their future careers in pharmacy. The fact that students appreciate this work means that they value my efforts.”

Linda Plong
Shoppers Drug Mart #1362

“Helping shape future pharmacists has been one of the most meaningful ways I feel I can contribute to the profession.... Over the years, I have found it very rewarding to see students enter their placement, motivated to learn and willing to step outside their comfort zone. I get to help guide them through situations and troubleshoot with them. I also learn alongside them....It is really lovely to be recognized by students. This recognition validates the time and work I put into teaching and reminds me that my efforts are appreciated. When students end their placement, it often feels like we have accomplished something together. I already feel like I gain so much from the experience that this award is icing on the cake.”

OUR DONORS

The Leslie Dan Faculty of Pharmacy is grateful to our donors for their generous and ongoing support. Your continued donations are critical to advancing the Faculty’s top priorities each year and help ensure that our students continue to succeed.

Dean’s Circle

recognizes individual donors of \$1,000 or more.

Anne Resnick
Barrie Cade
Betty Chai
Charlene C. Ng and Eugene Tan
David A. Milovanovic
David Mirvish
David T. Windross
Dina Dichek
Geor-Ming Lee
Giana M. Houwer Heather
A. Wiegand Heather S. Boon
Inga Hellings
Jim and Margo Watt John
F. Bajc
Lily C. Chan
Lisa Dolovich
London and District Pharmacist Association
Marie A. Rocchi
May Lee
Rochelle Feldberg Rokean
Chapter of Rho Pi Phi Fraternity
Shoppers Drug Mart Alumni Association
Susan Drodge
Undergraduate Pharmacy Society
Vernon K. Chiles
Wayne L. Burns

William Kassel
Yu Chung and Annie Tsang

Presidents Circle

recognizes individual donors of \$1,827 or more, up to \$24,999

Dasantila and Lakshmi Kotra
Edwin C. Chow
Federation of Chinese Canadian Professionals (Ontario) Education Foundation
George J. Schaller
Huadong Sun
Ian Stewart
Irma W. Davies
Jack Gwartz
Jean V. Macie
John Papastergiou
John Poptsis
Judith K. Alilovic
Kam-Sau Wong
Lori A. Howard
Mahmoud Suleiman
Mark Rosenhek
McKesson Retail Banner Services, IDA / Guardian Pharmacy Class of 5T9
Raymond M. and Anita Reilly
Salina Y. Chan
Sherif Guorgui

Donors and sponsors listed below have made leadership gifts cumulating \$1,000 or more or made contributions to their existing pledges to the Faculty between May 1, 2019 to April 30, 2020.

We would also like to extend a special thanks to our anonymous donors for their generous support!

Shoppers Drug Mart/
Pharmaprix Life Foundation
Sidney M. and Elaine Kadish
Steve and Gail Pearson
The Dan Family and Leslie and Anna Dan

Pfizer Canada Inc.
Pharmasave Ontario
Rexall Pharmacy Group
Sandoz Canada Inc.
Trudell Medical International

Estate Gifts

The Faculty of Pharmacy is grateful to be included in many donors’ estate plans. We would like to recognize donors who have confirmed their intention to give and thank our donors whose gifts were realized through bequests, trusts or insurance.

William W. Chung
The Susannah Biggs Family Fund
Edwin E. Holt
Lucille Bahmann Trust

Major Gifts

The Faculty of Pharmacy is grateful to our donors who have made gifts of \$25,000 or more and are currently making payments on existing pledges.

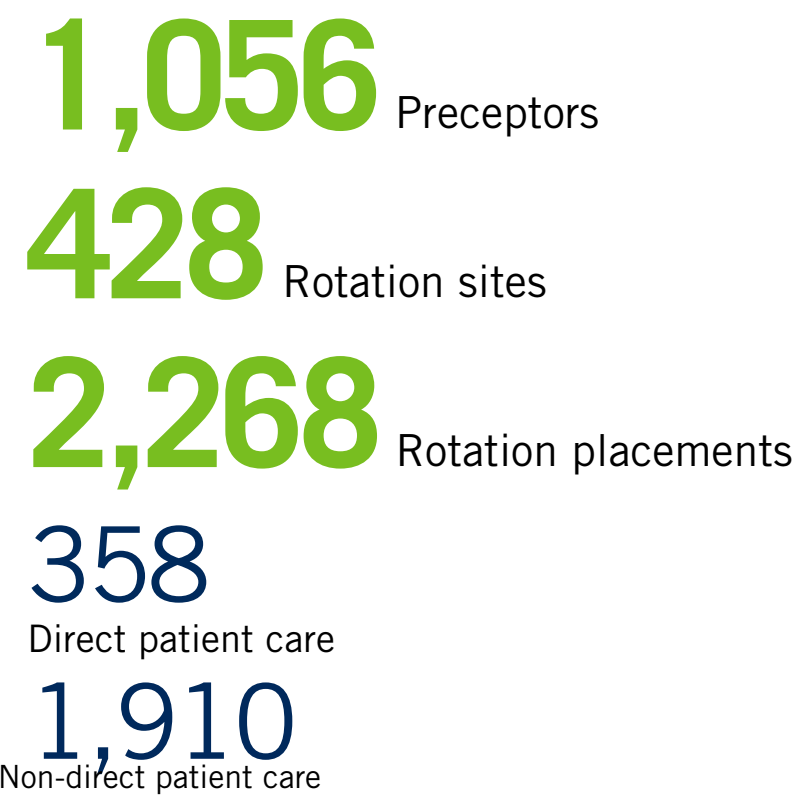
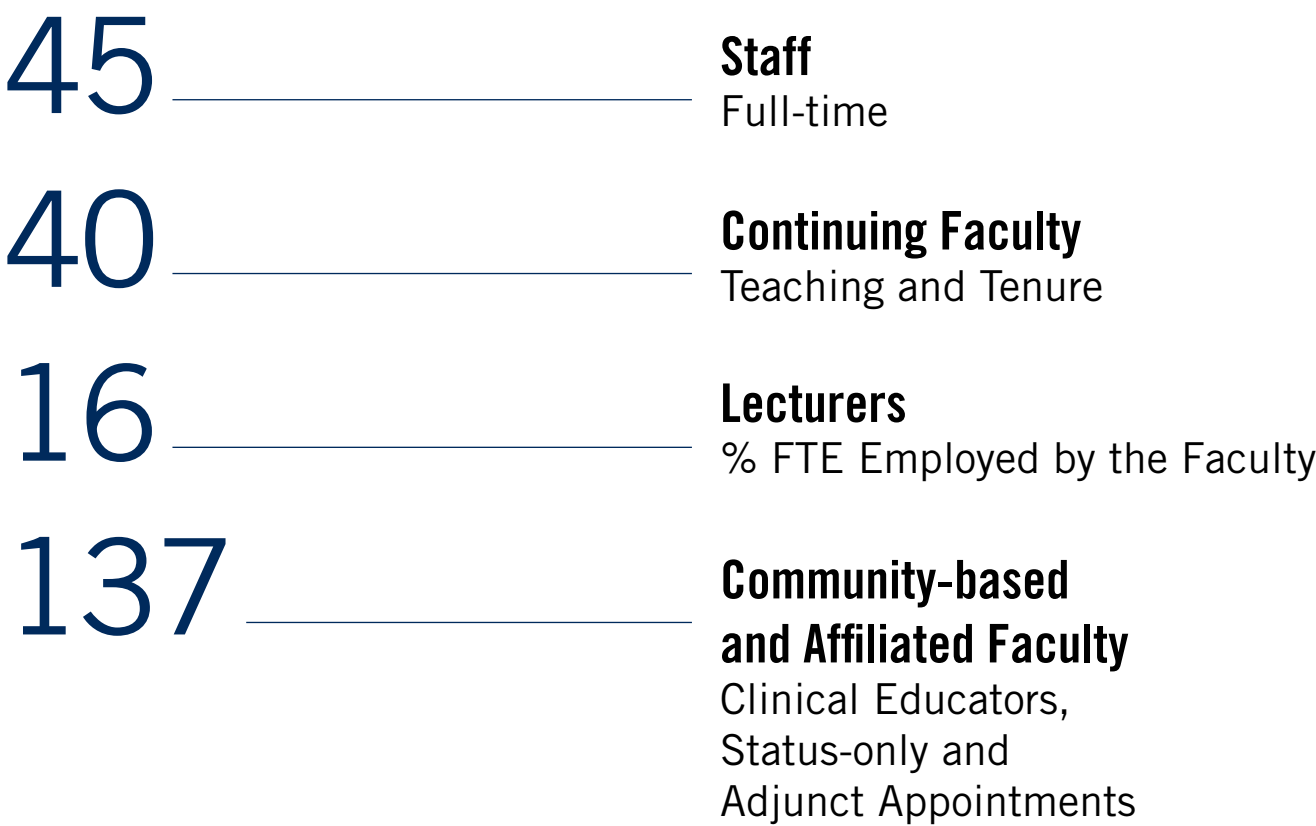
Christine Allen and Michael Woolhouse
Apobiologix
Christine L. Elliott
Erwin S. Bonivart
Kenny Tan
Renate Krakauer
Richard Sevazlian/Medical Pharmacies Group Limited
Roger G. Daher

Sponsors

The Faculty of Pharmacy is grateful to our Sponsors for their generous and continued support of the Faculty

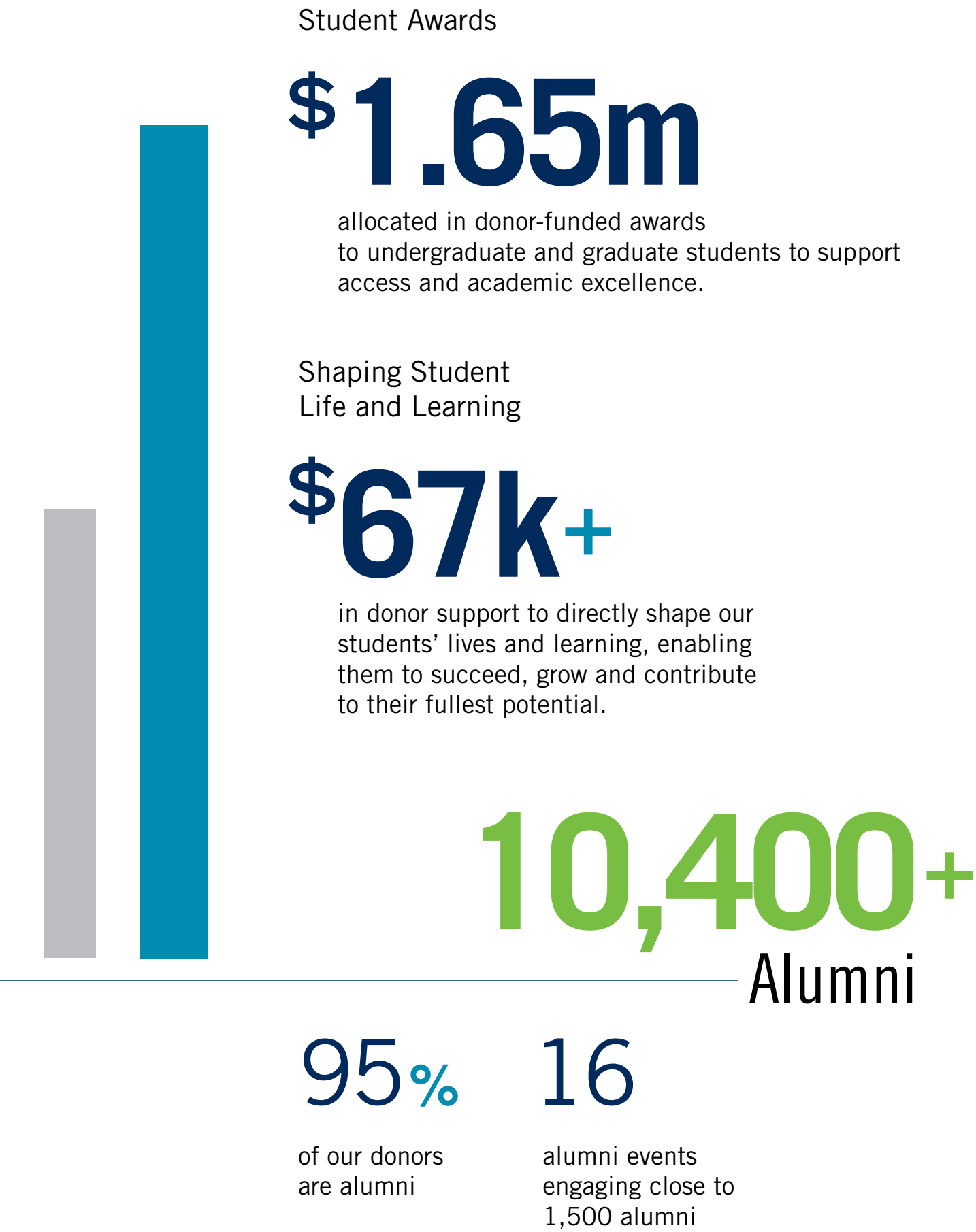
National Bank
Ontario Pharmacists Association

OUR PEOPLE



OFFICE OF
EXPERIENTIAL
EDUCATION

DONOR IMPACT



Leslie Dan Faculty of Pharmacy
University of Toronto

144 College Street, Toronto,
Ontario Canada M5S 3M2
pharmacy.utoronto.ca



@uoftpharmacy