

AN INSIDE LOOK AT THE LARGEST SURGICAL PROGRAM IN CANADA

# SPROTT

DEPARTMENT OF SURGERY

**Meet  
the team  
saving  
lives and  
changing  
the world**



# When I think of Sprott Surgery, I think of our patients.

The middle-aged mom of two young kids battling breast cancer with the help of every tool we have. I also think of the young man living with heart failure as we prepare him for life after a heart transplant. And the lifelong athlete waiting for a surgery that will allow them to keep running, to keep pursuing what gives them joy. What all of them have in common is access to the world-class expertise at the Sprott Department of Surgery.

Currently those patients, and most of our patients, have to make their way to one of our hospitals, in downtown Toronto, in order to access the care they need. In a country as vast as ours, getting the care you need often requires you to leave your home, your family and your community. University Health Network's vision of A Healthier World speaks to our determination to provide our brand of excellence in care, education and research to anyone, anywhere.

The limitations of bricks and mortar should not be the reason someone who needs it does not benefit from the everyday and yet incredible innovations our team is known for. It might be surprising to hear that some Sprott patients never see the inside of an operating room (OR). The OR is but one place our surgeons care for patients, and a scalpel is only one of the tools in their vast tool kit. Some patients require expert diagnostics and treatment in the form of medication, physiotherapy or a whole host of non-invasive procedures. Our surgeons are

not just experts in the technical aspects of surgery but also experts in the diseases and conditions they treat.

So how do we expand the reach of Sprott Surgery across Canada so that any Canadian can benefit from our expertise – that person on Salt Spring Island, B.C., or St. John's, N.L., or in a remote Indigenous community? How do we ensure that geographic location is not a limiting burden for those who need our help? Can we provide access to our experts and our innovations through virtual consoles or a distributed model, as an example, or perhaps partnering with like-minded institutions? We can't be everything to everyone, but we need to be everything for some, our local population, and offer something for everyone, as the expert tertiary and quaternary care service that allows us to be "Canada's hospital."

At Sprott Surgery we are inspired by problems that are difficult. After all, if not us, then who? It is a privilege to imagine what our program can offer without boundaries, geographic or otherwise. Serving any patient, anywhere – that is the future of Sprott Surgery.

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Surgeon-in-Chief, Sprott Department of Surgery  
James Wallace McCutcheon Chair in Surgery  
University Health Network

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# In review

The Sprott Department of Surgery is where many of the world's leading procedures, medical innovations and most complex operations happen. Here's a snapshot of the past year across Sprott Surgery's three sites: Toronto General Hospital, Toronto Western Hospital and Princess Margaret Cancer Centre.

The Sprott Department of Surgery is made up of 13 divisions:

- Cardiac
- General
- Gynecology
- Oncology
- Neurosurgery
- Ophthalmology
- Orthopedic
- Otolaryngology/Head & Neck
- Plastics
- Surgical Oncology
- Thoracic
- Transplant
- Urology
- Vascular

**22,130**  
surgeries performed

12,199  
at  
Toronto  
General  
Hospital

8,888  
at  
Toronto  
Western  
Hospital

1,043  
at  
Princess  
Margaret  
Cancer Centre

**140+**  
surgeons at Sprott Surgery

**9,847**  
endoscopic procedures performed

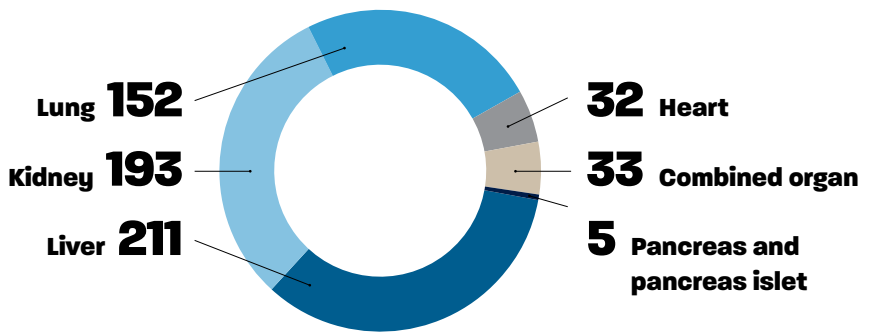
**2,480**  
cardiovascular and vascular  
surgeries performed by the Sprott  
Department of Surgery with the  
Peter Munk Cardiac Centre at UHN

**39**  
operating  
rooms

**342**  
robotic surgeries  
performed

Number of transplants  
performed by the Sprott  
Department of Surgery  
with the Ajmera Transplant  
Centre at UHN

**626**



## Gift of a lifetime

In 1988, Eric and Vizma Sprott founded The Sprott Foundation, which focuses on food security and homelessness. In 2012, The Sprott Foundation gave one of its largest gifts - \$25 million - to Uni-

versity Health Network's (UHN's) department of surgery, which was then renamed the Sprott Department of Surgery. Since then, The Sprott Foundation has donated more than \$25 million of additional support to surgery at UHN. "We support organizations that are leaders in their field," said Eric Sprott after his first donation. "Surgeons at UHN have, among

other things, pioneered numerous heart and brain surgeries, and developed the Toronto Ex Vivo Lung Perfusion System. These innovations have gone on to save the lives of millions of patients around the world."

The gift has helped UHN hire and retain world-leading surgeons, and make new investments in best-in-class surgical technology,



(From L to R)  
**Larisa, Vizma, Eric and Juliana Sprott**

including robotic systems and organ repair innovations. Thanks to The Sprott Foundation's generosity,

the Sprott Department of Surgery is one of the top surgical departments in the world. ■



**Madison  
Freeman**

nearly lost her right  
eye. Spratt Surgery  
saved it with a  
cornea transplant.

# More than meets the eye

Just as an out-of-control infection was about to cost one woman her eye, the ophthalmology team at University Health Network stepped in to save it.

By Glynis Ratcliffe

**W**hen 27-year-old Madison Freeman left for Central America in February 2022, her plan was to travel from country to country, teaching English to schoolchildren. The trip was the opportunity of a lifetime, but it quickly became a living nightmare in which Freeman nearly lost her right eye because of a fast-moving corneal infection called fungal keratitis that she acquired in Honduras.

Often referred to as the window of the eye, the cornea is the transparent, dome-shaped covering over the iris and pupil, made up of six layers and measuring just a half-millimetre thick. In Freeman's case, her fungal keratitis was caused by a fusarium species, a fungus that lives in tropical and subtropical soil in countries in Africa, Asia,

and North and South America. Symptoms include redness, pain, excessive tearing, discharge and sensitivity to light.

About one million people are diagnosed with fungal keratitis annually worldwide. Of those cases, approximately 100,000 need the infected eye removed, either because of late diagnosis or a poor response to treatment.

Thankfully, Freeman's eye was saved with a cornea transplant performed by Dr. Clara Chan, cornea surgeon, and Dr. Sara AlShaker, cornea surgery fellow, both with the Sprott Department of Surgery and the Donald K. Johnson Eye Institute at University Health Network (UHN). But her journey to that UHN operating room (OR) was a harrowing one.

## A foreign infection in a foreign land

Freeman was staying in a small village when she felt sharp pains in her right eye in early May. A local physician diagnosed her with conjunctivitis, but as the pain worsened over the next two days and she sought out a second opinion, her situation escalated. She was sent to a hospital, where she needed emergency surgery.

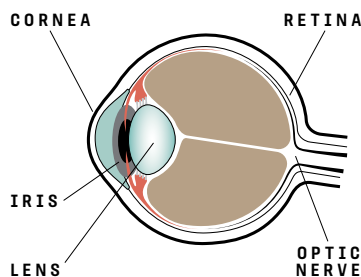
As Freeman lay on an operating table with a clamp keeping her right eye open, she tried desperately not to move. The surgeon had just explained that her cornea was so inflamed that what he was about to do would likely hurt, despite freezing. A medical team held her down as the surgeon began to cut the infection out of her eye, while the staccato of unrecognizable Spanish words coming out of their mouths only left her terrified. "It was horrifying; one of the most painful things I've ever experienced," Freeman says.

A few days later, the surgeon could see the infection had spread. She was whisked into an OR for a second surgery. This time, they took some of the conjunctiva – the outer layer that covers the white of the eye – and sewed it together overtop the cornea to encourage the eye to heal itself. That resulted in temporary blindness in that eye. "While he was suturing the tissue closed, I could see less and less until it was nothing," she says.

Soon after the second surgery, on Victoria Day weekend, Freeman and her partner returned to Canada in case further treatment was needed. Her surgeon said he had done all he could.

## How it works

The cornea is the clear, dome-shaped outer layer of the eye. Any damage done to the cornea, whether it's from infection, injury or disease, can affect vision.



## Unexpected escalation

The way Freeman was treated in Honduras is not typical in Canada. Here, she would have received antifungal eye drops, with surgery used if the infection didn't improve. Lower-resource countries often don't have cornea tissue

readily available, making it impossible to perform an emergency transplant.

The pain sent Freeman, now in Canada, to her local emergency department in Waterloo, Ont., where two cornea specialists told her to prepare for the possibility of losing her eye. She knew the infection was serious, but she was still shocked.

“I didn’t know that was even on the table,” she recalls. “I felt very low, and as much as you want to be positive, the idea of not having an eye anymore is frightening.”

Fortunately, Freeman’s mom, who had flown in from Alberta to provide moral support, wasn’t ready to accept her daughter’s eye removal as a foregone conclusion. Together, they pushed for a second opinion, which resulted in a referral to Dr. Chan and her team at UHN.

**In good hands**

When she met Drs. Chan and AlShaker, Freeman felt relief. The room filled with other residents and specialists, all examining her eye – which was still sutured shut – and discussing the details of her case. She remembers Dr. Chan and others on her team telling her they were going to do whatever they could to save her eye and make it right.

The plan was to aggressively treat the infection with antifungal eye drops and oral medications to bring down the swelling, at which point they would remove the sutures and assess the eye. But after several weeks on that treatment regimen, Freeman was still in tremendous pain. On June 19, she called Dr. AlShaker in the middle of the night. As a fellow, she is already a fully licensed ophthalmologist who spent a further two years gaining subspecialty expertise and is integral in providing acute 24-hour corneal emergency care with Dr. Chan’s supervision. Freeman asked Dr. AlShaker if she should come to the emergency department, because she was ready for someone to remove her eye just to make the pain end.

Freeman made it through that night, but her UHN team booked her in for surgery the following morning. Because the conjunctival tissue was still sewn over her cornea, acting like a patch, Drs. Chan and AlShaker had to dissect it off, using a microscope and microsurgical instruments to remove the sutures and cut away the inflamed tissue so they could see what was underneath. “Her cornea was basically eaten away by the infection and had a hole in it,” Dr. Chan explains. “After exploring what remained of her infected cornea, we proceeded with a cornea transplant.”

**Working as a team**

According to Dr. AlShaker, the goal of a cornea transplant is to restore the anatomy of the eye and remove the infection by cutting away whatever infected tissue is present and replacing it with



(From L to R)  
**Dr. Sara AlShaker, Dr. Clara Chan and Bryan Cisneros** work together to help patients like Freeman see again.



**Madison Freeman** in San Pedro Sula, Honduras, after her first emergency surgery.

new tissue. The cornea tissue essentially works as a cap, protecting the iris, lens and intraocular structures from anything outside the eye. The cornea also prevents the inside contents of the eye from being pushed out during a sneeze or a spike in blood pressure. The time between removing the old tissue and replacing it with the new is extremely stressful because an eight-millimetre gaping hole exists in the eyeball.

This moment requires more than just a cornea surgeon – it requires an OR nurse who can hand over the correct microsurgical instrument without needing to be asked. Bryan Cisneros, a registered OR nurse in the Sprott Department of Surgery, is one such individual, having moved to a focus on ophthalmology from spine and neurosurgery at the beginning of 2021. “The sutures used in corneal surgery are microscopic. As the OR nurse, I have to make sure the correct instrument is being handed to the surgeon. For example, we check that the needle tip, which is about the size of an eyelash, is loaded correctly into the needle loading instrument with the assistance of a bright overhead light,” he notes, adding that the surgical techniques and instruments are constantly changing, as the team acquires advancements in surgical tools to improve patient outcomes.

During that crucial moment between removing the old tissue and replacing it with the donor tissue, everyone on the team, surgeons, anesthesiologists and nurses, is working to ensure each element of the transplant – whether it’s correctly sizing the donor tissue, properly loading suture needles or ensuring a consistent blood pressure in the patient – goes smoothly. “It’s not a one-person show,” says Dr. AlShaker, adding that the anesthesiologists are equally important. Ophthalmology, which works in coordination with anesthesia, is “a very multidisciplinary team,” Cisneros says. “We collaborate to make sure we’re preparing the patient for the best surgical outcomes.”

Freeman’s cornea transplant was successful, allowing her to keep her eye without the infection returning. The healing process takes upwards of 18 months, and her vision won’t improve until the final sutures are removed at the end of that period. Even then, she may need glasses, contact lenses or laser corrective surgery. Still, this is a major win for her. “I’m no longer in pain and I’m not sensitive to light anymore, which is big,” she notes. “And the swelling and redness in my eye is mostly gone, so I look close to normal again.” ■

**600,000**  
Number of people who go blind due to a fungal infection worldwide, annually.  
SOURCE: THE LANCET INFECTIOUS DISEASES, 2020

# Changing the game

How robotic-assisted bronchoscopy is shortening hospital stays and reducing complications in patients.

By Mark Brown

**D**r. Kazuhiro Yasufuku isn't much of a gamer, but if you put him in the right setting and hand him a controller, good luck trying to pry him away from the screen. His specialty is recon missions – ones that require him to penetrate deep inside sensitive territory to capture a hidden threat.

A 3D map and streaming video flash on a large heads-up display, guiding him with surgical precision through a labyrinth of branches that shoot off in all directions. While Dr. Yasufuku is steering his way to his target using something that resembles a reconfigured Xbox controller, this isn't a game – he's conducting a robotic-assisted bronchoscopy.

Robotic-assisted bronchoscopy is the next evolution in the fight against lung cancer, says Dr. Yasufuku, who is a scientist, inventor and surgeon all in one. The device allows him to send a probe through the patient's airway into the perimeter of the lung to biopsy a tumour. Although Dr. Yasufuku, internationally recognized as a leader in the field of minimally invasive diagnostics and therapeutics for cancers in the chest cavity, has been manually performing this type of procedure for years, he says the new device improves the accuracy of a lung biopsy. "The robot has really revolutionized how we do surgery," says Dr. Yasufuku, the Head of the Division of Thoracic Surgery in the Spratt Department of Surgery, where he leads the Interventional Thoracic Surgery and Thoracic Robotic Surgery programs.

Spratt Surgery's Interventional Thoracic Surgery Program is the only one of its kind in Canada and the only centre in the country with a robotic-assisted bronchoscope. It starts with a specialized ultrasound system that Dr. Yasufuku, who is also the William Coco Chair in Surgical Innovation for Lung Cancer and the EG. Pearson – R.J. Ginsberg Chair in Thoracic Surgery at University Health Network, helped develop earlier in his career to



**Judy McConnell** manages Dr. Yasufuku's translational research lab in Spratt Surgery.



## Keeping control

Dr. Yasufuku uses a controller similar to that of an Xbox to perform robotic-assisted bronchoscopy.



**Dr. Kazuhiro Yasufuku**

is the first surgeon in Canada to perform a robotic-assisted bronchoscopy.

improve localization of a nodule in a patient's lung. That image serves as a map to guide him as he uses a video game-like controller to steer the flexible catheter down the narrow passages to a precise nodule deep in the lung. Once the catheter is in place, surgeons can biopsy the tumour and analyze the sample, sometimes right

in the room, to develop a treatment plan.

"It's exciting that we were the first institution to use it in patients in Canada," says Judy McConnell, Clinical Research Coordinator, Division of Thoracic Surgery, Spratt Department of Surgery, who manages Dr. Yasufuku's translational research lab. The minimally invasive procedure reduces surgical complications and shortens hospital stays. "You're in and out in a couple of hours," she explains.

The precision offered by the robotic-assisted bronchoscopy is critical when descending that deep into the lung. It's also what will allow Dr. Yasufuku and others like him to take this technology to the next level, moving away from recon to seek and destroy. Currently, the lab is looking at different techniques to allow surgeons to treat small tumours in the lung using different technology, including the use of nanoparticles.

The applications they're studying offer several benefits, especially for treating early-stage cancers and helping patients who may not be good candidates for surgery or other treatments, explains McConnell. Because the robotic-assisted bronchoscopy is so targeted, it could also be used to offer relief to palliative patients and give them more time, she adds. Clinical trials are just getting underway.

Rather than taking years to master the technique, the platform allows a greater number of surgeons to perform the procedure and treat more lung cancers. The robotic system "is actually kind of fun," to use, says Dr. Yasufuku. "It's a lot like playing a game." ■

# Laying the groundwork

Prepping rooms, scheduling staff and calming patients – it’s all in a day’s work for the Sprott Department of Surgery team.

By Anna Sharratt

**L**ong before most people wake up, the Sprott Department of Surgery’s team of nurses, nursing attendants and anesthesia assistants is hard at work creating as safe an environment as possible. They’ve checked their patients’ identities and vitals, and assessed their anesthesia needs. Some will have met with specialists to manage additional health conditions. Others have diligently prepared the operating room (OR), discussed the procedure with the surgeons and briefed the post-surgical team. Most importantly, they’ve devoted a large part of their day to reassuring and comforting their patients.

It takes a small army of professionals to pave the way for all of the groundbreaking surgical procedures that happen at University Health Network (UHN). With a commitment to personalized care, they ensure a patient’s surgical journey is as worry-free as possible, clearing the way for a complication-free recovery. Many people make Sprott Surgery tick, but here are four key players setting up the OR, and its surgeons and patients, for success.

## The mastermind: Clare Attley

Patient Care Coordinator, cardiac and vascular ORs, Sprott Department of Surgery

If anyone knows the inner workings of Sprott Surgery, it’s Clare Attley, who has spent 42 years at UHN and has, by her estimate, seen more than 20,000 patients. “Even after four decades, I come to work and hope that, as a team, we can make a difference in people’s lives,” she says. The Patient Care Coordinator helps oversee six cardiac and vascular ORs and, with the OR Clinical Manager and three other patient care coordinators, leads a team of 120 nurses, ensuring they’re prepped for the surgeries they’re involved in.

Attley used to be a scrub nurse in the OR, but she’s since turned her attention to implementing several innovative programs at Sprott Surgery. For instance, she’s played an integral role in creating a cardiac-focused minimally invasive surgery program at UHN during the pandemic. “Patients want to have less invasive procedures,” she says. “If they’re the right candidates for this type of surgery, they can be in the hospital for less time, have shortened anesthetic times and don’t need to be hooked up to a heart-lung machine during heart surgery.”

The original plan was to send nurses to train in Germany, where one of Sprott Surgery’s minimally invasive surgery surgeons came from, but that trip was cancelled due to COVID-19. Instead, she set up training at UHN, while at the same time having to figure out how to



Clare Attley



Romeo Cruz

order key instruments during supply chain-challenged times. “The learning curve was steep,” she says about the program.

More broadly, when it comes to keeping ORs running smoothly, Attley goes above and beyond, ensuring everyone is where they need to be at all times. “I have to keep everyone happy,” she laughs. Attley’s biggest source of pride, however, is how her team pulls together when surgical patients arrive. “We have the best team here – everyone pitches in when a patient is in dire circumstances,” she says. “It means everyone is doing their best to save a person’s life.”

## The troubleshooter: Romeo Cruz

Clinical Nurse Specialist, Sprott Department of Surgery

Many of Romeo Cruz’s patients struggle with physical and mental health issues. They have swallowing and eating issues related to tumours or are dealing with side-effects, such as nausea or mouth and throat swelling, from radiation or chemotherapy. “I have to make sure they are fit and ready for surgery,” says the Clinical Nurse Specialist in Sprott Surgery’s Head and Neck Inpatient Unit.



Cruz spends most of his days working with head and neck cancer patients, who are preparing for mouth, larynx, thyroid or salivary gland surgeries. Many have other medical conditions, such as coronary heart disease, chronic obstructive pulmonary disorder and diabetes, which must be addressed before surgery. Timelines are often tight, with surgeries happening just weeks after an initial consultation. “The turnaround for surgery is so small,” he says, adding that he has to work quickly to consult with clinicians about care plans or arrange pre-op services for the patient.

The 21-year UHN veteran must also liaise with nutritionists and dietitians to address nutritional issues and meet with patients’ families to help them understand the plan of care.

After surgery, Cruz follows up with patients, arranging for home care and hospital visits. “I have to ensure a seamless transition between episodes of care,” says Cruz. “The best part is knowing that you’re helping patients go through this as safely and comfortably as possible.”

**Nejaha Abubeker**



## The early bird: Nejaha Abubeker

OR Attendant, Sprott Department of Surgery

Every morning at 3:30 a.m., a bleary-eyed Nejaha Abubeker gets out of bed, turns on the coffee maker and gets ready for work. The OR attendant rides the mostly empty bus to the hospital, arriving an hour and a half before most of her co-workers walk through the door. Her job? Setting up the OR for a busy day of surgeries. “I love that early shift because I can go at my pace,” she says. “I’m setting up the rooms with IVs, blood, blood warmers and tools.”

Once she’s prepped her ORs, most of which perform cardiac, ear, nose and throat, or general surgeries, she escorts the surgical patients to their procedures. “I greet them, make sure I check their arm bands and ensure I am getting the right patient to the right room,” she says.

Part of her job is also to calm down and relax anxious patients, which she does by telling them amusing stories about her five children. “I’m here to help the patient,” she says, adding that she takes time to answer any questions a patient might have and put their mind at ease. Her methods work. “I’ve never had a panicking patient I couldn’t calm down,” she says. After the surgery is done, Abubeker meticulously cleans the OR and brings in any extra equipment needed for the next procedure.

Abubeker’s days, which usually end around 2:30 p.m., may be jam-packed, but she says it’s special working alongside a closely knit team. “My fellow OR attendants and the nurses, managers and surgeons are like family,” she says. “It’s busy, but I love it.”

## The trailblazer: Rajesh Patel

Charge Anesthesia Assistant, Toronto Western Hospital, Sprott Department of Surgery

Rajesh Patel knows about flexibility. The charge anesthesia assistant, who has been with UHN since 1992, is responsible for scheduling 45 anesthesia assistants at Toronto Western Hospital and Women’s College Hospital. His staff, who are specially trained registered respiratory therapists and critical care registered nurses, must move fluidly between the main ORs and other surgical divisions, as well as endoscopy, echo labs, cardiac procedure rooms and MRI units, providing coverage where needed and giving breaks to anesthesiologists.

His team’s flexibility has proven invaluable at a time when COVID-19 has created a backlog of surgeries. “UHN is leading this profession,” he says of the role, adding it has helped boost surgical efficiency. “We increased the number of surgeries we do.”

In 2001, UHN became the first centre to widely implement the role of an anesthesia assistant.

While anesthesia assistants are not anesthesiologists, they can work independently in an OR under orders from an anesthesiologist, where they can assess the patient, place IVs and administer anesthetics safely. Anesthesia assistants enable the anesthesiologists to run more complex and difficult cases, while the anesthesia assistants complete shorter and less-invasive cases. Anesthesia assistants play a vital role in the OR, and with them, UHN has been able to increase the number of surgeries performed daily.

Patel is most fond of the constant learning opportunities and challenges his position deals with. “It can be a quiet, calm day in the cataract room or a difficult one in the cardiac room,” he says. “We do so many varied and different cases. No day is the same.” ■

**Rajesh Patel**





**Dr. Tulin Cil**

is on a mission to deliver superior breast cancer care to UHN patients.

# Innovations in breast cancer surgery

The Sprott Department of Surgery's new breast cancer operating room is home to state-of-the-art imaging technologies.

By Claire Sibonney

**P**icture this: a young woman with a breast tumour sits in a room, waiting for her lumpectomy, during which the cancerous area is removed. Sticking out of her breast is an incredibly uncomfortable thin metal wire – a wire that was inserted earlier that morning to help surgeons pinpoint her tumour's location. The “needle or wire localization,” as it's called, means this wire juts out of the skin until the operation takes place. Finally, the woman gets called into surgery, but before going in, she has to sit in a dressing gown, cold, uncomfortable and scared, and she must be careful not to jostle the wire.

This exact scene plays out for countless women in surgical centres around the world. While precisely locating and marking a lesion for surgery, a process called localization, is a crucial step in the fight against breast cancer, it's an awful experience for the patient.

“It may be uncomfortable for patients to have that procedure right before their operation,” explains Dr. Tulin Cil, Head of Breast Surgical Oncology in the Division of General Surgery



just five minutes and can be done days before the operation – instead of the morning of. Essentially, a radiologist inserts a tiny magnet “seed,” which is smaller than a grain of rice, into a breast cancer patient’s tumour, precisely guiding the magnet with ultrasound or mammography to place it at the spot where surgery is required.

Sarah Rotstein, Clinical Nurse Specialist, Breast Surgery in the Sprott Department of Surgery, says she’s seen first-hand how much more relaxed patients are with magnetic markers versus wire, including one woman who

unfortunately had the opportunity to try both after a recurrence of breast cancer years later. “She told me, ‘I’m so glad I don’t have to have that wire again. That was awful. That was actually the worst part.’”

What’s more, the MOLLI markers allow for more flexibility in the scheduling and timing of hospital procedures, creating less stress around booking and more capacity to fit in patients – which is key to reducing the pandemic-related backlog all hospitals face at the moment.

**Margin management in the OR**

To further streamline breast cancer surgery, Sprott Surgery introduced the MOZART system, which uses tomosynthesis, an imaging technique considered to be the gold standard for diagnostic mammography. Tomosynthesis allows surgeons and radiologists to accurately assess if a tumour’s radiologic margins (the edge around the tissue that was removed) are free of cancer cells, by creating 3D images of breast specimens with detailed views of lesions and margins.

Thanks to the MOZART system, surgeons can now image the tissue in real time during surgery, right in the OR, which Rotstein says gives patients and surgeons more peace of mind – even if it’s not the final pathology.

Having all this technology in one room not only makes imaging easier to do but also dramatically improves the patient experience. Women can now go home on the day of surgery and feel better about not having such an intrusive wire make an already emotionally taxing operation that much more difficult. “The new technology has improved surgical flow and has helped with patient experience,” notes Rotstein. “It’s absolutely moving patient care forward.” ■

**Sarah Rotstein**

has seen how much more relaxed patients are when they use the MOLLI markers.

in the Sprott Department of Surgery, and the Gattuso Chair in Breast Surgical Oncology. “You come into the hospital; you’re fasting because you’re undergoing surgery. It’s a very stressful, anxious time.”

Fortunately, the wire localization procedure’s days are numbered – at least at University Health Network (UHN), where innovations in breast cancer imaging and surgery now allow women to have a more efficient and less invasive pre-operation experience using first-in-Canada technology.

**New OR, new tech**

Improving both the patient experience and surgery efficiency are two priorities in breast cancer treatment at Sprott Surgery. So, when the breast cancer team moved into their new operating room (OR) at Toronto General Hospital in January 2022, they took the opportunity to upgrade their diagnostic technology.

“Breast imaging and breast surgery are very integrated,” says Dr. Cil. The breast cancer team decided to revamp the way breast cancer imaging is done – both before and during the operations – and introduce state-of-the-art technologies into its new home. “We had to change how we do things to allow us to image in the same building and OR,” explains Dr. Cil. “Our goal was to ensure our new OR stayed excellent for patient care and was as efficient as possible.”

That includes easier – and more comfortable – localization of tumours and lesions with wire-free MOLLI markers, as well as accurate image assessments that can now be done right in the new OR owing to another system, called MOZART. “We’re very interested in surgical innovation and introducing new technology into surgical care,” says Dr. Cil. “Not only in the OR, but also from the minute we meet the patient, we’re thinking about how we can give them the best experience and most personalized breast cancer care.”

**A better way to find tumours**

MOLLI, which stands for magnetic occult lesion localization instrument, has been described as a stud finder, the handheld metal detector that locates studs behind drywall. In the OR, the surgeon uses a wand to locate the magnet, and the system it’s connected to shows the surgeon exactly where and how deep to cut.

This localization process takes

**89%**

The five-year survival rate of breast cancer patients in Canada.

SOURCE: CANADIAN CANCER SOCIETY

**28,600**

Estimated number of Canadians diagnosed with breast cancer in 2022.

SOURCE: CANADIAN CANCER SOCIETY

**MOLLI markers**

are inserted into affected breast tissue to precisely mark where the surgeon needs to be.



**3.2 mm**  
The size of each MOLLI seed.



**Localization wand**

is used to guide the surgery.

PHOTOGRAPHY: COURTESY OF MOLLI SURGICAL (SIDE BAR)

**Melissa  
Ramrup**

was able to have a baby despite an endometrial cancer diagnosis, thanks to the team at UHN.



# A new hope

How the Sprott Department of Surgery’s bariatric and gynecological oncology teams are collaborating to give endometrial cancer patients a chance to have children.

By Elizabeth Chorney-Booth

**B**y March 2020, Melissa Ramrup had finally reached the point in her life when she felt ready to have children. The now 41-year-old from Markham, Ont., had always experienced irregular periods, but at the time, some unusual bleeding led to a scan that revealed polyps on her uterus, which were soon diagnosed as endometrial cancer. Suddenly, her dream of a family was in jeopardy, as she faced the frightening prospect of undergoing treatment for gynecological cancer. Early endometrial cancer generally has a good prognosis, but the standard treatment is a hysterectomy, which would leave Ramrup unable to become pregnant.

“At first I wanted to go ahead and have the hysterectomy right away,” Ramrup says, admitting that she was worried about losing her life. “I didn’t want to have the cancer in me, and thought I’d just have to give up the idea of ever having a baby myself.”

As it turns out, thanks to a clinical trial facilitated by Dr. Sarah Ferguson, a gynecologic oncologist at University Health Network (UHN), Ramrup would have the best of both worlds. Today, two years after her diagnosis, she is cancer-free and finally a mother.

Dr. Ferguson is working on a clinical study to delay hysterectomies in patients with endometrial cancer by placing a progestin intrauterine device (IUD) to correct a hormone imbalance that often causes the cancer. Normally, the treatment is followed by a hysterectomy at some point, but

a small window of opportunity is available for patients like Ramrup to become pregnant, typically through IVF. Dr. Ferguson’s research has shown that the procedure is about 60 per cent successful in reducing cancerous growths long enough for endometrial cancer patients to have children. She was looking for a solution for some of the other 40 to 45 per cent of patients who wanted to safely attempt a pregnancy after their cancer diagnoses, particularly those with an elevated BMI.

Together with Dr. Tim Jackson, Medical Director of the Operating Room at Toronto Western Hospital, who also leads the Bariatric Surgery Program in the Sprott Department of Surgery and holds the Medtronic Chair in Minimally Invasive Surgery, Dr. Ferguson came up with an idea that could be revolutionary.

### A new use for a tried-and-true surgery

While obesity can be a contributing factor to various cancers and other diseases, the correlation between endometrial cancer and an elevated BMI is much more direct. Extra weight can trigger metabolic abnormalities that affect hormone balance and allow endometrial growths to develop. Dr. Ferguson knew her colleagues in the Sprott Department of Surgery perform bariatric surgery – particularly sleeve gastrectomies, which significantly reduce the size of a patient’s stomach, thus limiting caloric intake and resulting in relatively quick weight loss – as a preventive measure against obesity-related diseases. She wondered if bariatric surgery to prompt quick and significant weight loss could help combat endometrial cancer, allowing patients of child-bearing age to delay and even avoid hysterectomies. The hope is that the surgery and subsequent weight loss will act to change patients’ metabolic state and naturally balance hormones in a more effective and permanent way than a progestin IUD could on its own.

“Regular monthly periods offer the protection of progestin to help balance estrogen, but patients with a higher BMI don’t always ovulate every month, so their uterine lining can grow and cause cancerous changes,” Dr. Ferguson says. “If losing body mass and changing a metabolic state prevents endometrial cancer in all age groups, as studies have shown over and over, can we use bariatric surgery to treat cancer by lowering body weight?”

### Surgical collaborations

Sprott Surgery just happens to have a world-class Bariatric Surgery Program, one of the oldest and most robust in the country. As an elective procedure, bariatric surgery is not usually performed on cancer patients, since the disease and traditional therapies like chemotherapy can create a heightened risk, but Drs. Ferguson and

**8,100**

Estimated number of Canadian women diagnosed with uterine cancer in 2022.

SOURCE: CANADIAN CANCER SOCIETY

**500+**

Number of bariatric surgeries performed by Sprott Surgery annually.

SOURCE: UHN



Jackson came up with a plan to not only operate on endometrial cancer patients with a BMI of at least 35 (patients approved for bariatric surgery typically have a BMI of 40 or above unless there are other immediate health concerns), but also expedite the process so they can reap the benefits before their cancer progresses. In 2022, together with their team, Drs. Ferguson and Jackson initiated a small randomized trial, implanting some of her patients with just the IUDs and offering others the IUDs along with sleeve gastrectomy surgeries.

“With the IUDs, it felt like I was trying to change cancer outcomes, but I hadn’t changed what was driving the cancer in the first place,” Dr. Ferguson explains. “Researchers are now looking at cancer risk and treatment in a much more holistic way. We’re trying to use surgery to help treat a cancer in a way that isn’t just removing it but trying to treat the pathways that are driving it.”

Bariatric surgery is often misunderstood and carries a certain degree of stigma – despite the surgery’s track record of preventing disease and changing patients’ lives, there is still a cultural misperception that the procedure is little more than a quick fix to replace a healthy diet and exercise regimen. The UHN trial is currently not designed to prove the surgery has positive outcomes when it comes to either fertility or cancer (though they are certainly keeping track of those measures) – it’s trying to determine if patients are even willing to consider bariatric surgeries in place of hysterectomies. Only a handful of patients have participated in the trial so far, but Dr. Jackson says he’s excited to apply this surgery that has changed the lives of so many patients to a new cohort.

“It’s a totally different way of thinking about treating this cancer,” Dr. Jackson notes. “It’s such a nice way of doing it because not only do we actually treat the disease, but also we treat the overall health of the patient. Then the third bonus is really that we don’t burn bridges for fertility and family planning. It really is a triple win.”

**Dealing with different kinds of patients**

Dr. Jackson says his more traditional bariatric surgery patients are often surprised to learn how safe and non-invasive the procedure has become over the years, with patients usually

(From L to R)

**Dr. Sarah Ferguson**

is working to change endometrial cancer outcomes through her clinical trials.

**Dr. Tim Jackson**

is collaborating with Dr. Ferguson to treat endometrial cancer patients in a new way.

**Katie Warwick**

spends up to a year with prospective bariatric surgery patients to ensure they’re prepared for the process.

being discharged the day after their operation. That said, the complicated part of the procedure is the pre-surgery intake process, as well as the aftercare – the sleeve gastrectomy is not a magic bullet, and patients need to be prepared to be active participants in their weight loss. Katie Warwick is a patient care coordinator and registered dietitian in the Bariatric Surgery Program in the Sprott Department of Surgery. Typically, she and her team will spend up to one year consulting with prospective patients to ensure they’re good candidates for the surgery, are psychologically and medically fit, and can commit to one year of followup care. The process is expedited to about four months with Dr. Ferguson’s patients to address the urgency of the cancer.

“Our usual patients need to pass through an assessment pathway in order to qualify for surgery,” Warwick says. “But for these expedited cases, it’s more of a preparation pathway. We’re preparing them for the surgery and putting more of the focus on the education piece to make sure they feel ready and have the knowledge they need to be successful.”

The trial is still in the early stages of assessing if the bariatric surgery route is even feasible, but Dr. Ferguson says she’s seen early successes, and some of the first patients who have tried the surgery are now cancer-free and undergoing IVF treatment to attempt pregnancy. Both Drs. Ferguson and Jackson are hopeful their collaboration will result in a full clinic, helping patients with elevated BMIs have the same joy Ramrup has experienced in realizing her dream of pregnancy even after an endometrial cancer diagnosis.

“These treatments are about saving a life, but I’ve also been given the opportunity to have a child, which is very emotional,” Ramrup says. “I’m very thankful to be part of this journey that the doctors have put so much work and dedication into. They’ve given us so much hope.” ■

# Double duty

By specializing in two fields, Dr. Eran Shlomovitz is applying experience from interventional radiology to make general surgery safer and easier.

By Lindsay Kneteman

**A**s the Sprott Department of Surgery's lone minimally invasive surgeon and interventional radiologist – and the only physician in Canada with a full practice in both fields – Dr. Eran Shlomovitz is used to managing his busy schedule with the same exacting precision he uses to wield his endoscope – a long, thin flexible camera-equipped tube that lets him see inside a patient.

Depending on the day, Dr. Shlomovitz might be in an operating room, using his endoscope to shave an early cancerous mass off the side wall of a colon, saving a patient from painful and potentially difficult surgery. A few hours later, he could be in the interventional radiology (IR) clinic, using minimally invasive techniques to remove gallstones from someone whose health prevents them from undergoing traditional surgery.

As packed as his schedule may be, Dr. Shlomovitz's unique background gives him an advantage: by specializing in two fields, he can adapt techniques from one area and apply them to the other. "There's overlap between what you do as a surgeon and what you do as a radiologist," he explains, adding that minimally invasive surgery and IR are on the same medical specialty spectrum.

## Only in Canada

Interventional radiologists use medical imaging, such as ultrasounds, to conduct complex procedures while looking inside a patient in real time. Minimally invasive surgeons make small incisions – rather than performing traditional open surgery – to remove tumours and polyps, and even conduct heart surgeries. Dr. Shlomovitz specializes in both fields, further focusing on the gastrointestinal tract.

As a medical student, Dr. Shlomovitz clicked with the technical aspects required of laparoscopic surgery, a common minimally invasive procedure. But he was also drawn to IR, which he had also been introduced to as a medical student. Rather than pick one lane, he decided to do both. "Once you start using



**"There's overlap between what you do as a surgeon and what you do as a radiologist."**

DR. ERAN SHLOMOVITZ

technology that makes your work easier, safer, more precise, you don't want to go back," he explains.

In 2012, after passing two licensing exams and a fellowship, Dr. Shlomovitz was recruited by Sprott Surgery into his dual role. He now splits his time between the general surgery and IR departments. "I've really benefited from having good collaboration between both departments," he says.

## Facing new frontiers

Dr. Shlomovitz says Sprott Surgery has allowed him to "build this niche where I get to explore the boundaries of surgery and interventional radiology." He's currently exploring an innovative procedure called magnetic compression anastomosis, which uses magnets to open certain blockages that can, for example, occur following liver transplant surgery. "The bottom magnet is on the bowel side and is delivered with endoscopy, and the other magnet, on the liver side, is delivered with percutaneous [through the skin] techniques," explains Dr. Shlomovitz. "It's a nice combination procedure that takes skills in both of my specialties."

At some point, Dr. Shlomovitz won't be the only physician pulling double duty. Other IR fellows at Sprott Surgery are increasingly interested in endoscopy and other minimally invasive surgery tools. "Having both is a good idea," he says. "Hopefully some more people will join me." ■



**Dr. Peter Slinger**

keeps patients' lungs properly ventilated during the In Vivo procedure.



# A breath of fresh air

Chemotherapy is notoriously hard on the body. An innovative University Health Network-made system is helping.

By Diane Peters



**F**or about a year, Kayleigh Tahk could not shake feeling tired. She would come home from her job in digital printing and sleep until she had to go back – and she’d still be exhausted. Her bones also ached, to the point where her doctor referred her to a rheumatologist.

Then, the 27-year-old felt a lump on her tongue. A biopsy in November 2019 led to a referral to University Health Network (UHN) and crushing news: she had alveolar soft part sarcoma (ASPS). This rare disease accounts for just one per cent of all sarcomas, which are cancers of the soft tissues. It usually spreads, often to the brain or the lungs, and is difficult to treat.

Tahk actually felt relieved by the diagnosis – she knew something was wrong, and now she could try to fix it. “From there I was just set on figuring out what I can do to fight it and get back to my normal self,” says the always practical and positive Tahk, whose family lauds her inspiring attitude.

In January 2020, after intense research and a consultation with her care team, she decided to allow a team at the Sprott Department of Surgery to remove 90 per cent of her tongue. It would affect her ability to speak, taste and eat, but it would prolong her life.

She also needed five weeks of radiation, during which her mouth became so sore she couldn’t eat and she had to get nutrients via a tube in her stomach. What remained of her tongue swelled up so much she needed a tracheotomy to breathe. “Slowly, it’s getting better,” Tahk says of her speech, for which she’s had speech therapy and then months of taping herself speaking and listening back to the recording. Her family can understand her, but she still has a strong speech impediment.

Tahk, who moved back in with her parents in Mississauga, Ont., was doing well and hoped to return to work. But in September 2020, scans revealed there was cancer in her lungs, which didn’t surprise Tahk, who had researched her disease extensively. “I wasn’t happy, but I was prepared. I knew it was

**Kayleigh Tahk** is one of seven patients who have undergone In Vivo chemotherapy treatment.

going to happen – it was just a matter of time.”

She met with Dr. Marcelo Cypel, Head of Transplant Surgery in the Sprott Department of Surgery, who told her he could do something remarkable: during surgery to remove her lung tumours, he could temporarily cut the organ off from the rest of her body and flood it with high doses of chemotherapy. She’d get up to 20 times more cancer-killing drugs to her lung tissue than a regular course of chemo while experiencing no side-effects as the drugs would not circulate in the blood. “I did a ton of research. What he was offering me isn’t available anywhere else in the world,” says Tahk.

In fact, she’d be just the sixth person in the world to have such a surgery, which uses an adaptation of the groundbreaking Ex Vivo Lung Perfusion System, a dome-shaped incubator-like machine that lets lungs live outside the body for hours, which Dr. Cypel co-invented. “You are providing a hope for a cure for

**1,400**

Estimated number of Canadians diagnosed with soft tissue sarcoma in 2022.

SOURCE: TERRY FOX RESEARCH INSTITUTE

something that today is considered incurable,” says Dr. Cypel, who is also Surgical Director of UHN’s Ajmera Transplant Centre.

**Going inside**

For the 20 per cent of people whose sarcoma spreads to their lungs, surgery often misses microscopic pieces of cancer. “If they have more than three lesions on both lungs, we know the chance of a cure is very low,” notes Dr. Cypel. These are patients who are running out of choices, but they dread the side-effects of regular chemotherapy. “Many have told me I’d rather do any surgery than have chemo,” he says.

The Ex Vivo System is typically used to keep donated lungs alive with a cocktail of blood-like liquids, plus the right level of pressure, temperature and ventilation. The Spratt Surgery team uses medications and other techniques to repair the lungs outside the body, so they can become healthy enough for transplant. The Ex Vivo System has doubled the number of lungs viable for transplant at UHN since it was first used in 2008.

Dr. Cypel has found a way to turn the Ex Vivo System into an In Vivo System, which treats lungs while they’re still inside the body. Using 80 per cent of the device – pretty much everything but the incubator-like dome that holds the organ – he can isolate a patient’s lungs from their bloodstream and airways and apply specialized therapies. “Because of the Ex Vivo System, we were able to learn how to care for an organ in isolation,” says Dr. Cypel.

“Why not? Why not try it?” Tahk told herself when she learned about this unique treatment and agreed to join the clinical trial Dr. Cypel and his team had launched in 2016.

**A shot of chemo**

In early December 2020, Tahk quarantined herself in her bedroom for two weeks to avoid getting COVID-19 or any other infections, with family members leaving trays of food outside her door; she regularly talked on the phone with them to ward off loneliness.

Then, at UHN, during eight hours of surgery, Dr. Cypel removed the visible tumours from both her lungs. He and the surgical team then deflated the left lung, clamped off its connection points to stop blood and air flow, and connected the lung to the In Vivo System.

The device circulated a special blood-like liquid through the lung, while also inflating it. Dr. Peter Slinger, an anesthesiologist at UHN, kept Tahk safely asleep for the lengthy surgery and made sure her lung was properly ventilated with a special ventilator that’s normally used in the intensive care unit (ICU). “We chose the ICU ventilator to try to cut down the possibility of any lung injury,” says Dr. Slinger.



**Dr. Marcelo Cypel**

has found a way to transform the Ex Vivo Lung Perfusion System into an In Vivo System.

The team added chemotherapy for three hours, using the optimum dose they’d discovered during five previous clinical trial surgeries. Finally, they flushed the lung of the drugs, opened up the clamps at the junctions to the rest of the body so blood and air could flow again, sewed up Tahk’s chest and moved her into the recovery room.

In contrast to lung transplant surgery, after which a patient requires post-surgical ventilation to give the new lung time to adjust, with the In Vivo System, the surgical team wants patients to begin using their lungs as soon as possible. The challenge, explains Dr. Slinger, is managing the pain, since the procedure requires a large incision across the entire chest.

The answer? Thoracic epidural catheters, similar to those employed during childbirth but placed higher up on the patient’s spine. With this method, Dr. Slinger says he can gradually

reduce the anesthesia, “and have the patient wake up as comfortably as possible so they can breathe effectively, and we can remove the breathing tube and get them off the ventilator.”

**All systems go**

Working with Jennifer Lister, Clinical Research Manager of the Division of Thoracic Surgery, the team has since completed another sarcoma surgery – bringing the total to seven – and is now expanding the clinical trial, giving sarcoma patients the option of having both lungs treated with chemotherapy. They’re also going to start treating

**“I did a ton of research. What he was offering me isn’t available anywhere else in the world.”**

KAYLEIGH TAHK

patients with colorectal tumours that have metastasized to their lungs with the same procedure but using a different chemo cocktail. So far, it’s been straightforward to get eligible patients to agree to join the trial. “Most of the people I’ve approached have been keen,” says Lister. “They don’t have a lot of options when they get to that point in their treatment. It’s nice to be able to give them something and allow them to have hope.”

In time, In Vivo procedures could treat other cancers of the lung and lung damage after a severe respiratory illness. Meanwhile, other Ex Vivo Systems are in various stages of development at Spratt Surgery and the Ajmera Transplant Centre – for the heart, kidney and liver. Dr. Cypel says there may be potential to do similar In Vivo work with the liver, too, a location where many cancers end up.

After a tough 2020, things are looking up for Tahk. The cancer in her treated lung has not returned, she’s working on her speech, and she hopes to go back to her job in digital printing in early 2023.

“I’m grateful that I ended up in Toronto when I was first diagnosed – UHN really knows how to treat ASPS,” she says, always positive. While she knows her cancer can return at any time, having clear lungs means she can move on for now. “It’s given us a lot of hope.” ■



**Jennifer Lister**

is expanding the In Vivo clinical trial to encompass chemotherapy for colorectal cancer that has metastasized to the lungs.

# Joint effort

A new integrated surgical pathway developed by an inter-professional team of allied health partners at University Health Network is bringing more efficient care to patients with complex foot and ankle issues.

By Jill Foran

**Three joints are fused together in**

Barbara Feldman's foot, shown here in an X-ray.

**Barbara Feldman**

is back to her regular activities, thanks to UHN's Foot and Ankle Rapid Access Clinic.

**O**ne morning in March 2021, Barbara Feldman stepped out of bed and felt severe pain in her foot. At first, her physician didn't think it was anything complex. "My doctor sent me for an ultrasound, and the diagnosis was tendonitis," recalls Feldman. "I had physio, but the pain didn't go away." A second ultrasound, conducted several months later, still suggested tendonitis, so Feldman's physician recommended she see a surgeon at the Foot and Ankle Rapid Access Clinic (RAC) at Toronto Western Hospital, part of University Health Network (UHN).

Launched in early 2019, the Foot and Ankle RAC is an initiative that helps patients access orthopedic care in a timely and dynamic manner. Typically, patients with foot and ankle issues wait an average of six months for an orthopedic consult. Through this clinic, that wait time has dropped to approximately eight weeks.

The clinic's efficiency lies in its collaborative, inter-professional approach: each new referral is assessed by an advanced physiotherapist practitioner (APP) who has received specialized training in musculoskeletal care.

Upon conducting a thorough examination, the APP determines whether the patient needs non-operative management or surgical intervention. If it's the former, the APP provides the patient with care recommendations based on their diagnosis. If it's the latter, the APP organizes another examination, this time in tandem with Dr. Johnny Lau, a foot and ankle surgeon in the Sprott Department of Surgery and Schroeder Arthritis Institute at UHN. "The value of having an APP who understands your patient population is that they can help figure out who would benefit from surgery, and the patients get treated faster," says Dr. Lau.

**Caring for complex needs**

Inspired by similar models within UHN's orthopedic program, the clinic's central intake

**"We're aiming for the patient to go home, because that's usually the best thing for them."**

INGRID SCHON



arrangement was developed to speed up patients' access to care, enhance patient education around surgical procedures and recovery, and assist in care transition for patients with complex needs. "Patients are deemed complex based on the specific surgery they need to have, such as an ankle replacement or some sort of joint fusion," explains Tamara Gotal, a physiotherapist practitioner with the Foot and Ankle RAC, and the APP who oversees the clinic in collaboration with Dr. Lau. "These surgeries are complex because the patient is required to spend a lot of time non-weight bearing."

Feldman's injury, it turned out, was indeed complex. She saw Gotal for her initial consult (conducted virtually due to COVID-19 protocols) in October 2021. "I had to send her pictures of my feet, and then she examined how I walked. After that, she had me come in for an MRI to make sure it wasn't a torn tendon. But that's what it turned out to be," says Feldman.

When Feldman saw Dr. Lau a few weeks later, he explained that even if the tendon could be repaired, it would likely tear again. Instead, his recommendation was that she undergo a triple arthrodesis, which consists of fusing three of the foot's main joints. "I was told I'd need to be non-weight bearing for months," says Feldman, an active senior who, until her injury, had always been involved in fitness programs, played tennis and enjoyed long walks. "I was not a happy camper."

**Offering extra support**

It's not easy to remain non-weight bearing for such a long time, and for some patients, that particular challenge is compounded by a lack of support at home. That's why, as part of the care pathway at the Foot and Ankle RAC, each complex surgical patient receives a pre-op mobility assessment, conducted by an inpatient physiotherapist by telephone about a week before the scheduled procedure. The physiotherapist talks to the patient about their surgery and then asks several questions about their circumstances to determine what sort of assistance they'll need following surgery.

Ingrid Schon, a physiotherapist on the inpatient orthopedic unit, often makes these calls. "We talk about whether they have family that can help them, whether they live in a house or an apartment, if there are stairs, if they have easy access to a washroom with a bathtub.... We go through all the details that will make their lives easier," says Schon. "At the end of the day, we're aiming for the patient to go home, because that's usually the best thing for them."

If the inpatient physiotherapist feels extra support is needed, the patient is given the



(From top to bottom)  
**Dr. Johnny Lau,**  
**Tamara Gotal** and  
**Ingrid Schon**  
 work together to help patients with complex foot and ankle injuries access care faster.

option of going into convalescent care through the UHN Transitional Care Program – Queens Estates. This unique pathway – which was created by a group of allied health professionals across UHN's orthopedic department – makes beds available to complex foot and ankle patients for up to 90 days post-surgery. The program was launched in 2019 in partnership with Silvi Groe, Clinical Director of the Schroeder Arthritis Institute, and Delia Doodram, Program Manager at Queens Estates.

As a senior who lives alone, Feldman was offered a spot at Queens Estates, but she had a daughter who could help when needed, so she declined. Dr. Lau performed her surgery on March 15, 2022, and after the standard two days of inpatient care, she went home to heal.

"The procedure was completely successful," says Feldman. "And the fact that I got the surgery so quickly is incredible. Dr. Lau and the team's follow-up has also been excellent, making sure all is healing as it should be. I'd say the whole process runs very well."

According to Gotal, it's a sentiment echoed by myriad other patients who have passed through the Foot and Ankle RAC since it launched three years ago. "We've done some surveys, and 90 to 95 per cent of patients are extremely satisfied with seeing an APP," she says. "UHN is unique in that it's one of the hospitals with the most advanced practice roles, and that's really innovative. It improves access to care, wait times, patient education and preparation. It's very fulfilling knowing patients leave the clinic satisfied and more informed." ■

**Connie Pillo**

says the UHN team has saved her life at least five times since 1975.



# A lifetime of support

Sprott Department of Surgery patients receive care and support long after they're released.

By Diane Peters

**I**n the 1970s, Connie Pillo prided herself on her family and active life. With her husband, the 42-year-old was raising four daughters in Toronto; every minute she could spare from family life was spent on the tennis court, playing, teaching and organizing junior tournaments and the ladies' Windoor League. "I loved tennis," she says, "but I was always home for lunch and after school, and driving the girls to games or lessons before dinner."

In 1975, however, her legs began feeling strange. "They wouldn't take me anywhere anymore," she recalls. One day the pain became so excruciating, Pillo went to her doctor and was sent to Toronto General Hospital, which is now part of University Health Network (UHN).

Pillo had a severe blockage in her aortic artery – a life-threatening condition. She was admitted to what's now UHN's Sprott Department of Surgery for an emergency operation. In an instant, she went from thinking she was generally healthy to signing a waiver that would allow the surgical team to amputate her legs if need be, a devastating turn of events, she says.

This type of blockage causes peripheral artery disease – a kind of vascular disease that impacts blood flow to the legs. Just five per cent of people in their 50s and fewer in their 40s are affected. Fortunately, surgery to create a bypass in her aorta went well. "I was able to resume my life, first and foremost looking after my family and then playing tennis and giving lessons," Pillo says.

She was told, "If you're lucky, the bypass will last 10 years," but it's endured for 48. However, the operation didn't put Pillo out of the woods. She still had vascular disease, a condition that impacts the blood vessels – and impacts them for life.

"Vascular disease can affect multiple systems," says Dr. Graham Roche-Nagle, Interim Head of the Division of Vascular Surgery at the Peter Munk Cardiac Centre, part of the Sprott Department of Surgery at UHN. "It's not a one-organ disease – it's a multi-organ disease."

Indeed, Pillo, who is now 90, has had to return to UHN multiple times over the years, for both vascular issues and other illnesses. She's had a few



**"When you're referred a vascular patient, it's essentially a relationship for life."**

DR. GRAHAM ROCHE-NAGLE

stents implanted in one of her main arteries and had a pacemaker inserted into her chest with thorough care from Dr. John Ross at UHN's Peter Munk Cardiac Centre. She's also had hernia surgery and received care for gastrointestinal issues, vision loss (Pillo is now legally blind) and more.

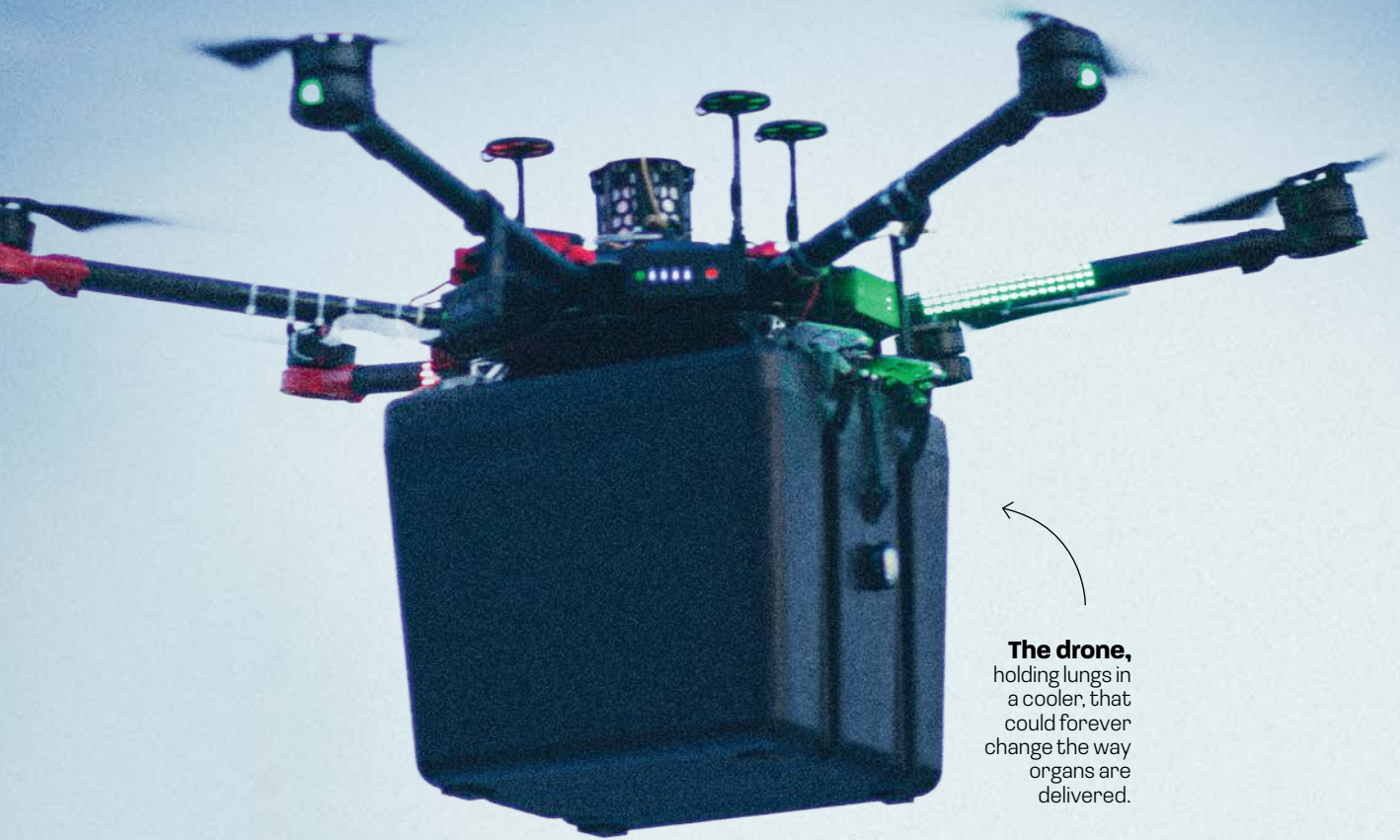
UHN's team, she says, has saved her life at least five times over nearly five decades, largely because her vascular team is always abreast of any treatments and is in regular contact with her other healthcare providers. "These are generally very complex patients," notes Dr. Roche-Nagle, about people with vascular disease. "Any treatment plan you put in place has to take their other ailments into account."

## Constant caring contact

Patients like Pillo are living longer than ever with vascular disease thanks to breakthroughs like better medications, minimally invasive surgeries and implantable devices. At UHN, they also get a team for life. Clinicians and other medical staff collaborate and discuss treatment plans, especially when it comes to vascular patients.

Sprott surgeons stay in touch with their patients, whether they're currently going through intensive treatment or not. They also call patients regularly. "During COVID, at least one if not more of mom's doctors called and talked about the importance of isolating and waiting for vaccines," says Pillo's daughter Fran Pillo-Blocka. "Yesterday, the doctor called because she had a tooth extraction and he wanted to see how she was doing."

This level of care has meant a bit less worry for Pillo-Blocka as she and her sisters, Clare, Lou-Anne and Marie, look out for her mother in her senior years. Pillo herself feels immense gratitude for a long life full of family time and tennis – she now has five grandchildren and six great-grandchildren. "As I've gotten older, I still feel like I'm getting the same great care," says Pillo of her team at Sprott Surgery and across UHN. "I wouldn't be here today if it wasn't for them." ■



←  
**The drone,**  
holding lungs in  
a cooler, that  
could forever  
change the way  
organs are  
delivered.

# On the right path

University Health Network wants  
organ-carrying drones in the sky.

By Bryan Borzykowski



**I**t's 1:20 a.m. on a clear September night, and a nervous Dr. Shaf Keshavjee is standing on the roof of University Health Network's (UHN's) Toronto General Hospital, staring intently into the dark sky. A few minutes later, two bright lights – one green, one red – appear over the horizon, slowly coming into focus.

Dr. Keshavjee, Chief of Clinical Innovation, Director of the Toronto Lung Transplant Program and Director of the Latner Thoracic Surgery Research Laboratories, all at UHN, knows history is about to be made. In another minute, a six-foot-wide drone holding a customized cooler containing lungs will touch down at Toronto General Hospital, after which Dr. Keshavjee, who is also a thoracic surgeon in UHN's Sprott Department of Surgery, will swiftly take the organ inside and transplant it into a patient waiting on an operating room (OR) table.

This was the first drone-delivered lung transplant in an urban environment – another world first for UHN – and it went off without a hitch. The lung travelled for four minutes between Toronto Western and Toronto General hospitals, though Dr. Keshavjee says it felt like an eternity. The successful operation sets up a future where organs can quickly go from hospital to hospital in mere minutes. "This will scale transplantation practice and is going to save a lot of lives," notes Dr. Keshavjee, who came up with the drone delivery idea. He half jokes that the lung transplant was much less stressful than waiting for the drone to land.

**Creating corridors**

Jimmy Qiu and Andrew Sage were also on the roof that night. Both Qiu, Manager of Engineering at UHN's Techna, and Sage, Assistant Scientist at Toronto General Hospital Research Institute and the Toronto Lung Transplant Program, have been integral to developing Sprott Surgery's drone-delivery program, which began in 2019 in collaboration with UHN's Ajmera Transplant Centre. Like Dr. Keshavjee, they each breathed a huge sigh of relief when the lung-carrying drone landed and the organ was rushed to the OR, but they also knew that the successful transplant meant their work was, in some ways, just getting started.

Sage is responsible for marrying science and technology – he spends his days trying to improve lung transplantation through innovative tech, including artificial intelligence and machine learning. Qiu's role was to ensure they had the right technological capability in the drone. Working with United Therapeutics, a company that develops technologies focused on lung disease and transplants, the team tested and validated the custom-built electric-powered vehicle that could fly without radio wave interference and



**Dr. Shaf Keshavjee** (in white) with (from left) **Martine Rothblatt** and **Mikael Cardinal** from United Therapeutics, **Andrew Sage** from Toronto General Hospital Research Institute and UHN CEO **Kevin Smith** on the night of the first successful lung drone delivery.



**Jimmy Qiu** is now on a mission to show regulators that drones can fly safely across Toronto.

could safely take off and land in a bustling urban centre. The two, along with other team members, performed more than 100 hours of flight testing across 53 test flights – including 10 in a row with a "dummy payload" with no problems – before the September 25, 2021, flight with the real lung.

Now Sage and Qiu are working to convince Transport Canada and Nav Canada, which controls Canada's civil air navigation system, to allow UHN and, eventually, other centres across the country to follow suit. The challenge is finding appropriate flight paths so deliveries can be made at any time of the day.

While the test flight proved that a drone could fly across downtown Toronto, UHN is now trying to establish flying corridors that its drones can travel without worrying about other aerial vehicles getting in the way. That includes moving between Pearson Airport, which could receive organs from other cities, and Toronto General Hospital. "It's like a highway – we need to get these drones into lanes that can take them from point A to B," Sage explains. "With commercial flights, there are different elevations and flight paths for different airlines – we also need to establish these kinds of lanes."

As well, because these flights are autonomous, although a human monitors the flight path on screen, Qiu has to convince regulators the drone can travel without being in sight of someone on the ground.

**Transforming transplants**

Apart from establishing the flight corridors, the team needs to find appropriate takeoff areas around Pearson where an organ handoff can happen. They must also build the necessary drone port infrastructure, such as improved landing pads or charging stations where the drone can "fill up" before returning to its original location. As well, Qiu wants to improve the drone's measurement and data collecting systems, so it can get more accurate pictures of the local areas it's flying to.

When these dreams eventually become a reality, the way we do transplants will change forever, not just in Canada, but across the world. "It's going to dramatically increase the availability of organs," says Qiu, noting that it will allow donor organs to be sourced from longer distances while taking the strain off other transportation resources.

"I think of the Wright brothers flying for the first time – who knew then you'd now be flying to Japan?" adds Dr. Keshavjee. "Soon organs will be transported like this all the time." ■

**#9**

UHN's drone delivery program's placement on *Toronto Life's* 2022 25 Best Reasons to Love Toronto Now list.

SOURCE: TORONTO LIFE

**1.5 km**



The distance between Toronto Western and Toronto General hospitals.

SOURCE: GOOGLE MAPS

PHOTOGRAPHY: UNITHER BIOELECTRONIQUE/ JASON VANBRUGGEN (DRONE AND GROUP PHOTO)



# Turning the tables

Minoo Mohajer helped  
fundraise for brain research,  
but she never expected  
to benefit from it as well.

By Glynis Ratcliffe

**Minoo Mohajer**  
had a meningioma, which  
put pressure on her  
brain as it grew.

**W**hen Minoo Mohajer was introduced to Dr. Gelareh Zadeh through the Iranian community in 2018, it was with the idea of helping raise money for Dr. Zadeh's lab at University Health Network's (UHN's) Krembil Brain Institute. Mohajer was proud that a fellow Iranian-Canadian was performing such important work and offered to host a fundraiser with her husband. Not long after, Dr. Zadeh gave the couple a tour of her lab, which focuses on conducting genomic and epigenomic analysis of brain tumours to improve patient treatments. Four years later, Mohajer would become a patient at the lab herself.

In January 2022, Mohajer was visiting family in San Diego when she felt tingling on one side of her head and lips, and then numbness in her fingers on her right hand to the point where she couldn't move them for nearly a minute. It quickly disappeared, so she chalked it up to pandemic-related stress. But in the following weeks, her brother-in-law, a retired surgeon, saw her shaking her hands to get the feeling back in her fingers. When Mohajer mentioned the recurring sensations, he suggested that something on her spine or brain could be causing the symptoms. When symptoms worsened in July, the neurologist she was seeing in Toronto set up an emergency MRI, worried that a seizure might be next.

Mohajer had an often-benign tumour called a meningioma in her meninges, which are the three outer membranes that protect the brain and spinal cord. Meningiomas develop along the middle membrane, called the arachnoid, a web-like structure meant to cushion the brain. Mohajer's tumour had likely been there for years, but it was now growing rapidly and needed to be removed immediately.

### A benign tumour that can turn aggressive

Thinking back to the meeting four years earlier, Mohajer decided to ask her doctor for a referral to Dr. Zadeh, who is Head of the Division of Neurosurgery in the Sprott Department of Surgery, the Dan Family Chair in Neurosurgery, Harold & Esther Halpern Chair in Neurosurgery and the Wilkins Family Chair in Neurosurgical Brain Tumour Research at UHN.

Dr. Zadeh, who is also Medical Director of Krembil Brain Institute at UHN, found Mohajer's tumour had invaded an area next to her motor cortex, a structure that controls the movement of her arm and leg. "That's where these tumours become challenging," she says. "Sometimes as they grow and push on the brain, tumours can start invading almost like roots into the brain. They become integrated into the brain matter."

Although not cancerous, these types of meningiomas are more likely to grow back since they are often too close to important blood vessels or structures to remove entirely. The challenge is determining which ones need further treatment, like radiation, and whether continued monitoring can differentiate between scar tissue and tumour recurrence. Early detection of a reoccurrence can be tricky, as an MRI can only identify tumours that have reached a critical mass of about 10 million cells, or one centimetre in diameter.

That's where Dr. Zadeh's lab is helping. The lab is large, both in terms of the number of team members and the amount of funding they need for research – one DNA methylation machine runs upwards of \$300,000. "We are like an incubator," says Qingxia Wei, a scientist in Dr. Zadeh's lab who



(From L to R)  
**Qingxia Wei** and  
**Sheila Mansouri**

perform genomic and epigenomic analysis of brain tumours in the lab.

oversees the neurosurgery residents, fellows and graduate students and helps ensure the work in the lab is as productive and efficient as possible. "Our lab is helping residents and fellows to fulfil their dreams and further life-saving research."

### Decoding a tumour's DNA

Understanding and predicting the behaviour of brain tumours like the one Mohajer has requires in-depth analysis of everything from the patient's medical history to tumour imaging to biomarkers. Sheila Mansouri, another scientist in Dr. Zadeh's lab, explains: "Basically, we're going back and forth between these different types of analysis and then trying to find the best and least aggressive way to treat the patients."

Mohajer underwent brain surgery in September 2022, during which Dr. Zadeh successfully removed the tumour. A sample from the tumour is now undergoing DNA methylation profiling to better determine whether the tumour is benign or aggressive. The lab can also monitor tumour growth and reoccurrence with just a liquid biopsy or blood sample, which, Wei explains, is far less invasive than regular tumour biopsies. The process isn't covered by OHIP, but costs are taken care of for those who need the tests, thanks to support from UHN Foundation and its donors.

"The more samples we have, the more accurate our results will be," explains Mansouri. Right now, the lab's brain tumour bank holds more than 6,000 samples, the only repository of its kind. It's also one of a handful of labs in North America to perform DNA methylation of brain tumours. That this type of scientific research can be translated into clinical practice is due in large part to the multidisciplinary team at UHN, says Dr. Zadeh. "Without their acceptance, adoption and recognition of the value of this research, none of this would be possible."

As for Mohajer, she's grateful to be in such competent hands. "It's just amazing they have access to this kind of technology and diagnostic tools," she says. "I feel very lucky." ■




**Dr. Gelareh Zadeh**

works to improve brain tumour treatments for patients.

**6,000+**

Number of brain tumour specimens stored in the Nervous System Tumour Bank in Dr. Zadeh's lab.

SOURCE: UHN



**Judy Gabrys**  
and technician  
**Kevin Lavoie**  
use CT scans to see  
the path cancer cells  
take inside the body.

## Mapping a brighter future post-cancer

HPV-related cancers are on the rise, but a new type of surgery pioneered in the Sprott Department of Surgery could reduce the amount of radiation and chemotherapy that oropharyngeal cancer patients receive.

By Wendy Haaf

**C**ancer incidences have been declining in Canada since 2011, save for one striking exception: HPV-related cancers. The human papillomavirus (HPV) is a sexually transmitted virus that's responsible for more than 99 per cent of cervical cancers, but it's also a main contributor to back-of-the-throat cancers, which have been rising rapidly. This type of oropharyngeal cancer – which refers to the area that includes the tonsils and the base of the tongue – “is the cancer we see most frequently in the head and neck division at University Health Network (UHN),” says Dr. John De Almeida, a head and neck surgeon in the Sprott Department of Surgery.

While the five-year survival rate for these cancers is close to 90 per cent, the side-effects of treatment can be debilitating. Currently, it's standard practice to use radiation to treat not only the tumour itself but also the lymph nodes on both sides of the neck, in case cancer cells have travelled from one side to the other. This can cause severe dry mouth, changes in taste, difficulty swallowing and dental problems. And because most patients are in their 40s and 50s, they face the prospect of living with these issues for decades.

Dr. De Almeida is hard at work finding ways to ease these side-effects. For one thing, he's one of just a few specialists



had to develop special methods of injecting them. In some cases, for instance, a tiny camera mounted on a fine tube (known as an endoscope) is threaded “through the nose to visualize the tumours of the back of the tongue and administer those injections,” he explains.

Next, an imaging technology called SPECT, or single-photon emission computed tomography, is used to trace the path the radioactive compound takes. “The camera has two heads, 180 degrees from each other, that detect the radiation,” explains Judy Gabrys, UHN’s Nuclear Medicine Clinical Supervisor.

“The camera moves around the patient and then draws a 3D picture.” Since SPECT doesn’t yield a clear image of the surrounding anatomy, “when the patient is on the bed, we move them into the CT portion and do a CT scan. Then the CT scan and the nuclear medicine scan are merged together,” Gabrys says.

Voila: it’s possible to see whether cancer cells have a path to travel from one side of the neck to the other. If they don’t, Dr. De Almeida says, “we treat these patients much more conservatively, because this test gives us a high degree of confidence the cancer doesn’t have a potential route to get there.”

#### Putting the treatment to the test

The next step: launching a large-scale trial to test the strategy in patients with T1 to T3 stage tumours that sit on one side or the other of an invisible line through the middle of the jaw. “It’s a multi-institutional, multinational study that we’re leading, and we’re doing it in conjunction with a collaborative group,” Dr. De Almeida says.

Spanning dozens of centres in several countries, the project is being sponsored by the Canadian Cancer Trials Group and the U.S. National Institutes of Health. “It’s a Phase 3 randomized controlled trial. Basically you flip a coin to see whether someone gets the new treatment or the standard treatment,” Dr. De Almeida explains.

“We’re looking to recruit 500 patients and follow them to see how they do from a cancer perspective. If the new treatment is superior in this trial, it could potentially change practice worldwide,” he adds. And that, in turn, could improve the long-term outlook for many of the hundreds of thousands of people around the globe who are diagnosed with HPV-related cancers each year. ■

in Canada able to offer some patients a different method of treating the original cancer. “We use a surgical robot with instruments that we can lead through the patient’s mouth,” he explains. The system’s miniaturized instruments, manoeuvrable arms and 3D cameras allow Dr. De Almeida to remove early-stage tumours and lymph nodes with tremendous precision and minimal damage to surrounding tissues. “In certain patients, we can even avoid radiation therapy, chemotherapy or both,” he says.

#### Tracing a path

Even with this form of minimally invasive surgery, “we struggle with whether or not there might be microscopic cancer cells in the lymph nodes on the opposite side of the neck,” Dr. De Almeida explains. Until recently, clinicians assumed a route existed in the lymphatic network for fluid and cancer cells to travel not just down one side of the head and neck, but also across the jaw and down the other side. However, Dr. De Almeida questioned whether that was true. And if it wasn’t? Then some patients could be spared such extensive treatment of the lymph nodes.

Dr. De Almeida pioneered techniques that enabled him to test this hypothesis, using a tool that’s already widely used in treating other cancers in a novel way. The technique underpins a surgical procedure called lymph node biopsy, a method of identifying those lymph nodes most closely connected to a tumour so they can be tested for the presence of cancer cells. Now commonly done to help gauge the extent or stage of cancers such as melanoma, historically, sentinel node biopsy hasn’t been applied to oral cavity or throat cancers.

What Dr. De Almeida decided to try was similar to sentinel biopsy, minus the biopsy: using radioactive material to trace the path cancer cells could potentially take. This is known as lymph node mapping. The first step is injecting this radioactive tracer into the tumour.

#### Creating a better picture

However, because head and neck cancers are much more technically difficult to access than, say, breast cancer, Dr. De Almeida

#### Dr. John De Almeida

is reducing unnecessary radiation treatments through lymph node mapping.

# 70%

Oropharyngeal cancer cases estimated to be caused by HPV.

SOURCE: CDC



**Dr. Dean Elterman** is reducing the length of hospital stays by using the GreenLight Laser in more procedures.

# Giving the green light

How a powerful laser could be part of the solution to pandemic-induced surgical backlogs.

By Mark Brown

**G**reenLight Laser procedures have been offering men relief from urinary challenges for years, but the tool may also be just what the Sprott Department of Surgery needs to relieve some of the strain on its surgical backlog.

Since this technology was invented in 2001, the minimally invasive procedure has helped treat benign prostatic hyperplasia (BPH) or prostate gland enlargement. It involves inserting a thin, flexible fibre up the urethra to deliver a high-powered laser to remove tissue from the prostate.

By the age of 50, half of all men will experience BPH, a condition that makes it difficult to urinate, which significantly impacts their quality of life. During the pandemic, though, many of the procedures to treat this condition were delayed or cancelled to free up space to treat patients with COVID-19.

While COVID-19 has eased, delays and cancellations continue to be a challenge. “There is a premium on having inpatient beds at the hospital,” says Dr. Dean Elterman, a urologic surgeon in the Sprott Department of Surgery who’s been using the laser



**Fatemah Hussain** explains the different therapy options to patients.

at Toronto Western Hospital, part of University Health Network (UHN), since 2014.

Eliminating the need for overnight hospital stays is one of the many advantages of using the GreenLight Laser to treat BPH. With the 532-nanometre pulse of the laser, which gives the room a brilliant emerald green glow, Dr. Elterman can quickly and safely vaporize enlarged prostate tissue with less blood loss than other techniques and without requiring an inpatient bed after the procedure.

## Freeing up inpatient beds

That’s not the case in all hospitals. When surgery is required, many still use a procedure called transurethral resection of the prostate (TURP), a technique developed in the 1930s to cut away a section of the prostate. These procedures have side-effects such as pain, bleeding, prolonged catheterization and longer hospital stays.

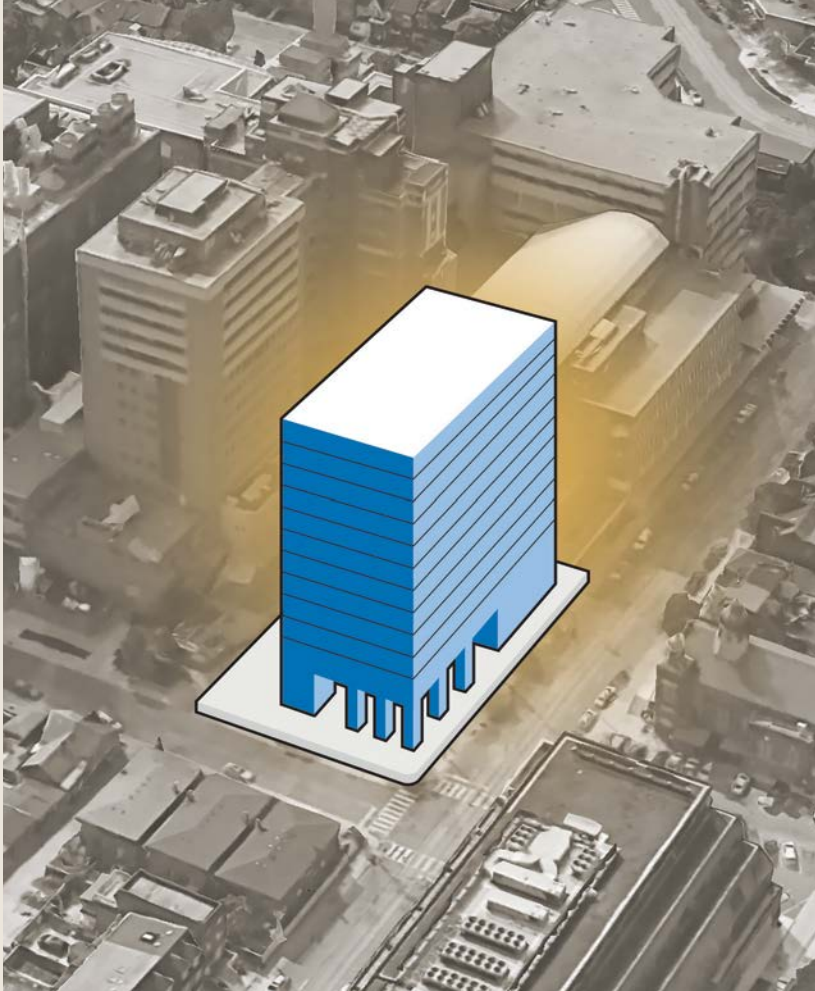
When UHN launched its Backlog Recovery Innovation Challenge (BRIC) in 2022 to reduce the length of post-surgery stays by shifting procedures toward an outpatient model, Dr. Elterman knew increasing access to GreenLight Laser treatments could be a solution. “That’s what’s going to save the hospital beds,” he says.

UHN agreed, awarding Dr. Elterman one of three \$250,000 BRIC grants to expand the program to Toronto General Hospital. “They were doing 200-plus TURPs a year at Toronto General,” he explains. “That’s 200 to 300 hospital bed nights that are no longer going to be required.” He wants 80 per cent of TURP operations to become laser surgeries.

The grant will provide some much-needed relief to men waiting for this procedure. “Most patients are operated on and leave the same day, which they love,” says Fatemah Hussain, a physician assistant in the Division of Urology in the Sprott Department of Surgery. They see results immediately, and they can get back to living their lives, she adds.

Expanding the availability of the GreenLight Laser treatments has been something Dr. Elterman has sought since he first started performing the procedure. At the time, Sprott Surgery was the first centre in the city to provide this advanced surgical treatment. Today, Dr. Elterman is one of the country’s leading experts on the tool, helping Sprott Surgery become the first GreenLight Center of Excellence outside the United States.

UHN is also hoping to see immediate results from its expanded GreenLight Laser program. “Less time in hospital, less demands on resources means more time for other patients and procedures,” explains Hussain. “All of those things come into consideration, but it always comes down to what’s best for the patient.” ■



←

**The new state-of-the-art Patient Care Tower at Toronto Western Hospital**

will increase surgical capacity by 20 per cent over the next 10 years.

the COVID-19 crisis put a pause on our usual pathways to diagnosis, treatment and recovery. Not being able to help our patients continues to be a source of anxiety and distress for our clinicians and teams.

We have a responsibility to our patients to leverage our track record of innovation and excellence in clinical care to tackle this surgical backlog. We are using technology to coordinate centralized intake and streamline service with wraparound patient supports. We are increasing surgical volumes by augmenting minimally invasive techniques and accelerating recovery with shorter hospital stays. And we are investing in infrastructure to expand UHN's operating room (OR) footprint to create enhanced procedural suites by breaking ground on a brand new Patient Care Tower at UHN's Toronto Western Hospital.

Success will be measured by both the direct impact on patient care and how much of a resource it serves for Ontarians. We want to see OR and surgical care capacity increase to more than 100 per cent of historical levels, a reduced length of stay for inpatient surgeries and enhanced patient-centered clinical care. Innovation will be strengthened as we pilot new models of care to both benefit UHN and continue to provide leadership within our broader healthcare system.

Leading through innovation and compassionate care are core to Sprott Surgery's DNA. While the obstacles are significant, they are not insurmountable. Our people are at the heart of what's possible. Our central commitment to our patients is displayed daily, in the way we support one another. In the not so distant future, the new Patient Care Tower will be a reality, and we will have even more opportunity to display our surgical leadership. I, for one, am optimistic about the days ahead and could not be more grateful to be standing next to all of you.

**Dr. Fayez Quereshey**  
Clinical Vice-President  
University Health Network

# Building a strong foundation

Every year, University Health Network (UHN) is named one of the top hospitals in the world, largely based on the accomplishments of our Sprott Department of Surgery. Here we perform some of the most complex and unique surgeries and procedures, diagnose and treat some of the most challenging diseases, and provide care for some of the sickest patients in the country. Our legacy of excellence is built on the shoulders of giants, and we always answer the call to tackle the most profound healthcare challenges. We're nearly three years into the COVID-19 pandemic, and there is no doubt the impact on our surgical backlog is this generation's call to action.

At UHN alone, there are more than 3,300 patients waiting for care. Despite our ability to ramp up clinical care during periods of pandemic recovery, some patients are experiencing long waits for surgical treatment because





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