COURAGE IS...

DARING TO LEAD

2013

YEAR IN REVIEW

See Inside for Cover Story, page 6
Message from the Chair & CEO

In looking back at this past year at University Health Network (UHN), we are struck by the diversity of accomplishment in the fields of patient care, research and education. But, we must single out the opening of the Krembil Discovery Tower as the highlight of 2013-2014. This was a long journey, supported throughout by many, many people, including the Krembil family, whose support was enthusiastic from the beginning.

Our cover this year features a young researcher who is seeking solutions to diseases which cause blindness. The fact that he will now have a state-of-the-art facility in which to work is cause for celebration, but his story is made even more compelling by the fact that he is a patient himself, and that he may be blind before he discovers an answer to the problem. In his story we see every element of this organization which offers hope to so many, whether they are patients, clinicians, educators, volunteers or researchers.

We hope that you will take the time to look at the stories within this report, explore the links and watch the videos. It has been a year of growth, change and accomplishment and we want you to celebrate this past year with us.

Dr. Bob Bell, President and CEO, and John Mulvihill, Chair of the Board of Trustees. *(Photo: UHN)*

*Dr. Bob Bell held the position of President & CEO at UHN from June 2005 – May 2014.*
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Fighting blindness: Researcher aims to cure own disease

While completing his master’s degree in retina-related research, 23-year-old Stuart Matan-Lithwick met with an optometrist to learn more about the profession.

After an impromptu eye exam, Matan-Lithwick was told he had a rare, degenerative eye disease called Retinitis Pigmentosa (RP) and would go blind.

“I was in complete shock,” he said. “I went in for an information interview, and came out diagnosed with a blindness disorder.”

Now, the PhD student, 36, is researching retina cell biology in UHN’s newly opened Krembil Discovery Tower (KDT) – racing against the clock to find a cure for diseases that cause blindness – including his own.

Cover story
Matan-Lithwick’s incredible story represents the courage and determination that lives at UHN – and, it’s why Matan-Lithwick was selected to be on the cover of this year’s Year in Review, themed, “Courage is... Daring to Lead”.

Lifetime passion
Long before he was diagnosed with RP, science had always been one of Matan-Lithwick’s biggest passions.

“I love it, I love the thought process, I love investigating things. It’s in my soul,” he said. When a future in optometry was no longer possible due to the RP diagnosis, Matan-Lithwick sought out a career as a high school teacher, hoping that by sharing his passion with students, it would inspire them to also pursue a career in science.

However, a chance encounter at a conference with Dr. Valerie Wallace – “one of the most monumental meetings” of his life – inspired him to return to his roots.

“After being diagnosed with RP, I pursued genetic testing for all the mutations known to cause RP, without success. This led me to believe that I was untreatable,” he explained.

“But talking to Valerie about the details of her research really made me reevaluate that conclusion...It planted a seed in me, a gut feeling that my work was not yet complete,” he continued.

Stars align
Two years later, the stars aligned. Dr. Wallace, who now holds the Donald K. Johnson Chair in Vision Research, moved her Ottawa lab to KDT and needed a PhD student to join her team. Matan-Lithwick was a perfect fit.

“Valerie has been incredible. She took me on with the knowledge that I may not have vision long enough to finish my PhD...not many people would have done that,” Matan-Lithwick said.

In Dr. Wallace’s lab, Matan-Lithwick and his colleagues are working to rebuild damaged retinas using cone photoreceptor cells (cells in the eye which are specialized to receive light).

“If we can learn how to successfully transplant these cells, we are a major step closer to the development of a treatment for people who are living with blindness, including me,” Lithwick said.

Referring to all of the research taking place across Krembil’s labs, he added, “We’re on the verge of so many incredible things, it’s mind blowing. The future really is now.”

KDT: Creating magic
Making the experience even more inspiring is the building itself.

(Continued on next page)
Stuart Matan-Lithwick continuously sees flashes of light, indication that the cells of his retina are dying right before his eyes. He’s researching in the Krembil Discovery Tower to find a cure for blindness. (Photo: Anthony Tuccitto)

“When I thought about what would make the best place to do science, I came close to something like this, but KDT is beyond anything I could have imagined,” Matan-Lithwick said. “To put the people together in the building that they did, in the space that they designed for this building, you create this magic.”

That magic comes in part from KDT’s 105,000 square feet of research space. The design fosters collaboration and innovation among experts researching to cure Alzheimer’s, dementia, stroke, blindness and more.

“So often, people are so focused on their own work, but if you get people talking to each other, you will get the out-of-the-box science that otherwise would not be possible. I’ve been here nine months and I can already feel the energy in this building,” Matan-Lithwick said.

‘Like frosted glass’

As for the current state of Matan-Lithwick’s RP, the Ottawa native has roughly 60 per cent of his vision left. His central vision is clear, he says, but beyond that, it’s like “looking through frosted glass.”

“If I hold my head in a certain position there are segments where I can see perfectly, and segments where my vision is blurred,” he said.

Matan-Lithwick also continuously sees flashes of light, indication that the cells of his retina are dying right before his eyes.

The impact of the disease, he says, is most apparent at night.

“At night, I basically see nothing,” he said.

In the lab, he copes with his disease by keeping organized – and forgiving.

“Every now and then I’ll knock something over. It’s a bit challenging not to be hard on myself. When that happens, I have to just say, ‘C’est la vie, you didn’t see it,’” he said.

Despite these visual reminders each and every day that the world he sees is fading, Matan-Lithwick said losing his sight is the “best thing” that ever happened to him.

“Now, everything I see has so much more value to me, because I know at some point I may not see it ever again,” he said.

Overall, he says he’s just lucky and fortunate to be researching at KDT.

“Regardless of what happens to me and my eyesight, I have the opportunity to make a huge difference in people’s lives. That’s why I became a scientist in the first place, because I believe in what we can accomplish with research.”

RELATED

Krembil Discovery Tower
TWRI recruits leader in vision research
Scientist seeks to cure own disease (original UHN story)
UHN’s programs and services are among the most advanced in the world. To meet the needs of patients, our physicians, staff, services and resources are grouped into 10 programs.

These leading teams include specialized health-care professionals, equipment facilities and are areas of patient care, research, and education. These programs benefit our patients by helping us make the most of our resources.
Organ donation saves lifelong friend

When Sarah Gorsline and Alita Malinowski met as teenagers 18 years ago, they clicked instantly.

They shared everything, from jokes to boy stories, and dancing together at their favourite hangout.

They did not know then that they would share one more gift that would save Gorsline’s life – part of Malinowski’s liver.

At 36, Gorsline had a happy life: a loving husband, a national business career, two healthy children and lots of friends and family.

But Gorsline also had Primary Sclerosing Cholangitis, a rare illness with no known cause.

‘No cure’
The disease results in severe pain, vomiting, infections, liver damage and death. There is no cure.

A liver transplant is the only life-prolonging treatment for patients with the advanced disease.

When Gorsline found out that a transplant was an option, she took a deep breath and decided to be “the Girl who rocked the liver transplant.”

With her generous donation, Malinowski saved two lives: Gorsline’s and a stranger’s, who will get the liver on the deceased donor’s list that was to have been Gorsline’s.

After the procedure, when Malinowski and Gorsline saw each other for the first time, they cried and held hands. They spent the night writing notes to each other, passing their messages back and forth through their nurses.

Malinowski’s gift to Gorsline means the world. She’s excited to watch her children grow up, and be the wife and person she wants to be.

“Every day I am living life more and more and recovering less and less. Just the way I like it,” Gorsline said.

(Continued on next page)

Sarah Gorsline’s blog: The Girl who rocked the liver transplant

Become an organ donor: Beadonor.ca
Ex Vivo Lung Perfusion System
Achieved an unprecedented 28% increase in lung transplants since 2012 due to the world-first Toronto Ex Vivo Lung Perfusion System, developed by UHN Surgeon-in-Chief Dr. Shaf Keshavjee and his research team, which assesses, treats and improves high-risk donor lungs. The use of this system is now standard care at UHN.

Donor survival surpasses benchmark
Recipients of organs from living kidney and liver donors surpass external benchmark for survival at one, five and ten years.

Organ donor outreach
There has been a 62% increase in presentations given to high school students on the importance of organ and tissue donation and registration. This youth outreach program of Trillium Gift of Life, the provincial agency which supports organ and tissue donation and transplantation across Ontario and partner hospitals, has so far reached close to 6,000 students in the GTA.

“Every day I’m living life more and more.”
– Sarah Gorsline

Saving a life: Alita shares her story
Would you donate part of your liver or kidney?
Plus: Hear from Sarah and Alita
Teen cancer survivor beats the odds

Regina teen Tom Fahlman was diagnosed with Ewing’s sarcoma at 15 years old. Four years later, doctors told him his cancer was terminal and he had months to live.

For Fahlman and his parents, the prognosis was difficult to accept. So, they travelled to Toronto for a second opinion. A Toronto oncologist reviewed his scans – and Fahlman was told his cancer was well into remission.

But there were still challenges ahead.

Fahlman had spent much of the previous two years on bed rest. As a result, he was unable to stand – and many feared he may never be able to.

In Toronto, he and his parents were introduced to Dr. John Flannery, Medical Director, Musculoskeletal Rehab at the Toronto Rehabilitation Institute.

Dr. Flannery promised to help Fahlman walk again.

Walking off plane

Fahlman’s prolonged time in bed had caused his leg muscles to shrink – they had decreased in mass and the muscles and tendons in his legs, ankles and left knee had shortened. Making it worse, because his legs had contracted so much, his feet were pointed in a permanent ballerina position.

“I came to Toronto Rehab with the goal of walking off the plane back home in Regina,” said Fahlman. “I knew it would be a journey.”

“Our team was challenged by the complexity of Tom’s case,” said Dr. Flannery. “To make

(Continued on next page)
his recovery possible, we had to bring together a team of specialists.”

Team Fahlman
This team included pharmacists who prescribed an off-label drug to partially paralyze Fahlman’s calf.

Once that was done, orthopaedic surgeon Dr. Khalid Syed, Toronto Western Hospital, and his team could perform three surgeries over the year to lengthen his muscles and reconstruct his ankles and knees.

“Tom’s care was phased carefully between our team and Dr. Syed’s surgical team,” explained Dr. Flannery. “We needed the surgeries to happen at the right time in terms of his recovery and we needed to know how hard we could push him in therapy before his next surgery. Working together this closely and in this manner was a first for our teams.”

For much of his rehab, Fahlman wasn’t able to bear weight on his legs so the physiotherapists relied on the therapeutic pool to improve function in his leg muscles.

Dream come true
A year later, Fahlman had gone from standing on his own to walking again.

“Leaving Toronto Rehab and its team was bittersweet,” said Fahlman. “My dream was always to walk off the plane. And, this came true.”

The Toronto Rehab team celebrated Fahlman’s recovery with a surprise farewell party.

“One of the most fulfilling things you’re able to do as a physician is to watch a patient progress in the fashion you envisioned. Tom’s recovery was remarkable,” said Dr. Flannery.

Meet Tom Fahlman in the Toronto Star’s coverage of his celebration

Tom Fahlman’s left knee had been stuck at a roughly 90-degree angle. After surgery, his ability to walk slowly returned. (Photo: UHN)

Lean: Improving patient care
Lean, an approach that helps create new processes for more efficient and effective patient care, facilitated patient care improvements in the Spinal Cord Rehab, Stroke Rehab and MSK Rehab Programs with faster access to rehabilitation, faster return home and better recovery of function.

Dotsa Bitove Wellness Academy
Toronto Rehab launched Dotsa Bitove Wellness Academy. A first in Canada, the centre provides an innovative arts-based program for people living with mild to moderate dementia. Informed by research, it gives participants a chance to live as full a life as possible.

RELATED
Dementia program provides dignity, quality of life

The Cardiovascular Prevention and Rehabilitation Program is leading ACCELERATION, a multi-province research project that will examine how Canadians can prevent chronic diseases including cardiovascular disease, cancer and diabetes.
How do you increase screening rates in remote communities with populations at high risk for disease? If you’re Dr. Michael Brent, you empower the community. It has long been recognized that people living on reserves have a high risk of developing diabetes and low rates of screening for eye conditions. This combination is putting people on reserves at risk of developing diabetic retinopathy (DR), a disease of the retina. While DR is the leading cause of severe vision loss in working-age Canadians, the incidence of the disease is five times higher among aboriginal populations.

“I knew remote communities in Ontario were lacking [access to treatment] and felt it was an area that needed attention,” said Dr. Brent, ophthalmologist at the Donald K. Johnson Eye Centre of the Krembil Neuroscience Centre.

To address the problem, Dr. Brent devised a care model that not only established a screening program on a reserve, but one that screens as many people as possible. Dr. Brent’s pilot program, SAVE SIGHT, (First Nations Reserves Diabetic Retinopathy Screening Program Using Tele-Ophthalmology) tackles the issue in three steps.

Step 1: New, portable technology
By combining two screening tools – an imaging system that takes photos of the back of the eye, and an Optical Coherence Tomography (OCT) machine that can detect swelling – health practitioners can acquire enough data for a three dimensional image of a patient’s eye. The screening tools, which together weigh no more than 10 pounds, fit into a small suitcase and travel with a nurse between reserves.

Nurse practitioner Dana Strength sets up the eye screening system with the help of technicians at the Wahta Reserve. (Photo: Dr. Michael Brent)

Step 2: Empower local health-care teams
As respected members of their community who are regularly involved in the health care of residents on the reserve, nurses can best identify who should be screened for DR. The nurses travelled to UHN to learn how to operate the technology and take these enhanced photos of their patients’ eyes.

Above, reserve locations in northern Ontario. (Graphic: Google Maps)

Step 3: Instantly connect
Once a patient is screened, the nurse uploads the images to Ontario Telemedicine Network’s secure network for Dr. Brent to review from anywhere in the world. A report is then filled out and returned to the nurse. Patients are advised on their findings and given recommendations for further assessment or required treatment.

Every few weeks, Dr. Brent travels to the region to meet with the nurses and discuss any improvements that can be made to the program.

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Seven reserves
The pilot program was launched in 2013 and will include seven reserves along the shores Georgian Bay. One imaging unit travels among the communities and each reserve clinic was outfitted with a special table to accommodate the unit.

The program will screen approximately 1,000 people on reserves in the Georgian Bay region. The hope is to expand it to the rest of the province and use it to screen for other eye diseases such as macular degeneration, glaucoma and cataracts.

Dr. Brent is pleased with the outcome of the program and says he couldn’t have done it alone.

“The real success of the program is based not just in getting the screening tools to these communities but by doing the most eye exams possible, and that could only be accomplished by engaging local health practitioners,” he said.

Federal health nurse Susan Siwik (centre) and nurse practitioners Connie Foster (left) and Dana Strength (right) were trained at the Donald K. Johnson Eye Centre to screen for diabetic retinopathy. (Photo: Dr. Michael Brent)

Krembil Discovery Tower
November 20, 2013 marked the official opening of the Krembil Discovery Tower, home to researchers of the Toronto Western Research Institute working to find cures to treat epilepsy, Parkinson’s disease, Alzheimer’s, arthritis and other neurodegenerative and neuromuscular conditions.

Neurosurgery
The Krembil Neuroscience Centre is participating in the first stem cell trial of its kind in Canada. The research examines whether stem cells can repair a damaged spinal cord and restore some mobility to patients. Neurosurgeon Dr. Michael Fehlings, a principal investigator in the trial and scientist in the McEwen Centre for Regenerative Medicine, treated his first patient in February 2014.

Deborah Finbow suffered from Complex Regional Pain Syndrome (CRPS) until Dr. Mohammed Shamji alleviated her pain with a spinal cord stimulator. The electrical pulses override the pain signals sent to the brain replacing them with a tingling sensation. The procedure has given her a new lease on life.

Neurology
Krembil Neuroscience Centre’s TAMS Unit project was awarded the Best New Approach for Cardiovascular and Stroke Care, chosen from the top AFP Innovation Fund projects in the province for 2011-2013. The award was presented to Dr. Leanne Casaubon, neurologist and director of the unit, by Deputy Premier and Minister of Health and Long-Term Care, Deb Matthews.

Media release: TAMS opening

Related
Spinal Cord Clinic
When Dr. Korosh Khalili and his fiancée, Ladan, printed “monetary gifts preferred” on invitations for their wedding in 2011, guests arrived at the reception with sealed envelopes in hand. While most couples look to apply the money received towards hefty wedding or honeymoon expenses, these newlyweds had a different plan. With the cash collected from the wedding — and additional donations from colleagues and friends — they raised $37,000 — all of which was put towards the purchase of a portable Ultrasound machine and supplies for the Black Lion Hospital in Ethiopia.

**Impact abroad**

Having worked as an abdominal radiologist at JDMI for 10 years before he met Ladan, Dr. Khalili said he was eager to make even more of a difference in the world — but this time, while seeing it. So, he decided to take a one-year sabbatical after getting married.

“I was really excited to share my specialized skills through volunteer work abroad,” he said.

After researching and considering several developing countries, Addis Ababa, Ethiopia, was the couple’s top choice.

**Khalili heads to Ethiopia**

In Addis Ababa, Dr. Khalili worked with the University of Toronto-affiliated TAAAC (Toronto Addis Ababa Academic Collaboration) and was co-tasked with organizing a fellowship training curriculum for radiologists at the Black Lion Hospital.

While there, he started the first subspecialized training fellowship in Abdominal Imaging, recruiting two eager Ethiopian Fellows for a two-year program.

Before long, Dr. Khalili had introduced, taught and observed both Fellows complete their first imaging-guided biopsies of the kidney and liver.

This was a huge leap forward — since, until that point, biopsies (Continued on next page)
Joint Department of Medical Imaging

(Continued from previous page)

at the Black Lion Hospital were either performed through surgery or by feel.

Looking ahead
In September 2013, Dr. Khalili and his team of dedicated volunteers acquired seven ultrasound machines (four purchased through donations, three donated in full) for the Addis Ababa University. “TAAAC’s impact continues to grow with plans for a new fellowship in cardiovascular-thoracic imaging,” said Dr. Khalili. “They have also acquired grant funding to start an interventional radiology program at the Black Lion Hospital and while still in the early stages of planning this project, we are recruiting interventional radiologists and nurses to help organize the training.”

Always in need
Those interested in donating to Dr. Khalili and TAAAC’s cause can refer to the Dr. Mehrangiz Ashtari memorial fund through the Toronto General & Western Hospital Foundation.

Coral Viewer
In 2014, Coral Viewer, JDMI’s new Picture Archiving and Communications System (PACS) viewer, was introduced to provide clinicians at UHN, Mount Sinai Hospital and Women’s College Hospital with immediate access to patient images. It has significantly improved accessibility, patient privacy and security.

Canadian first
Led by Dr. Robert Beecroft, the JDMI’s Interventional Radiology team performed the first three Nanoknife procedures in Canada. This treatment offers first-stage liver cancer patients ineligible for Radio Frequency Ablation and Surgery (due to the location of the mass) a viable option for treatment without undergoing chemotherapy. While traditional techniques damage all tissues (both healthy and cancerous), Nanoknife is a targeted and minimally invasive therapy, offering patients a potentially curative alternative.

Improving imaging access
Since 2009, JDMI has led provincial efforts to improve access to imaging by informing best practices and piloting tools to help physicians choose the right scans for their patients. Recently, Ontario’s Ministry of Health asked JDMI to develop guidelines to help chronic pain sufferers get the care they need.
Saving lives: Canada’s largest, most comprehensive PTE program

Things really came to head for Gordon Payne in the winter of 2005 when he picked up a load of firewood.

The 68-year-old farmer, an “ordinary guy” from Pontypool, Ont., had been ignoring his aches and pains and putting off going to the doctor.

“When I went to unload that wood, I just couldn’t do it. I felt totally sick and totally out of breath,” Payne recalled.

Half a heart

After a week of tests at the local hospital, doctors told him only half of his heart was working.

He was diagnosed with pulmonary hypertension, a rare, life-threatening disorder of the blood vessels in the lungs.

“I thought I was done for it and should settle up with my maker,” said Payne.

Then someone recommended a doctor who might be able to help him: Dr. Marc de Perrot, a thoracic surgeon at Toronto General Hospital.

Payne’s timing was perfect. Dr. de Perrot had spent the previous year in France training to perform the difficult-to-learn Pulmonary Thromboendarterectomy or PTE, a complicated specialized surgery for treating patients with Payne’s problem.

‘Someone had to be first’

On Aug. 30, 2005, Payne underwent the first PTE procedure at Toronto General Hospital, performed by Dr. de Perrot.

“It was risky, but someone had to be first,” said Payne, who, today, at 76, is going strong – still going to the market and doing a little farming.

Cooling the body

The PTE procedure involves cooling the body to about 20 degrees Celsius. This is so doctors can safely stop the heart and lung circulation and drain the blood out of the lungs. During that time, Dr. de Perrot uses a magnifying telescope to carefully remove the inner

Toronto General Hospital is the only hospital in Canada that offers a full range of options for patients with pulmonary hypertension, including a world-class pulmonary thromboendarterectomy (PTE) program, an excellent medical program and lung transplantation. (Photo: UHN)
lining of all the tiny diseased blood vessels where scar tissue has developed.

Dr. de Perrot says the surgery can be an alternative to a lung transplant, often with better outcomes.

“The PTE operation restores people with pulmonary hypertension to excellent health, and post-surgery patients are on blood thinners rather than anti-rejection drugs.”

The same year, Dr. de Perrot, now Director, Pulmonary Endarterectomy and one of Canada’s premier PTE surgeons, established a Pulmonary Endarterectomy Program at Toronto General Hospital.

100th PTE patient
In March 2013, the program celebrated its 100th PTE patient, giving James Walton a second chance a life.

“The province is lucky to have someone like Dr. de Perrot,” said Walton, who celebrated his ‘Happy- to-see-50’ birthday party in June.

“If someone doesn’t have access to this procedure they are going to die prematurely,” Walton said. “The operation saved my life.”

Disease underdiagnosed
Although hundreds of Canadians suffer from this disease, Dr. de Perrot said pulmonary hypertension is underdiagnosed and many doctors don’t look for it.

TGH is the only hospital in Canada that offers a full range of options for patients with pulmonary hypertension, including a world-class pulmonary thromboendarterectomy (PTE) program, an excellent medical program and lung transplantation.

(Continued from previous page)

“If someone doesn’t have access to this procedure, they are going to die prematurely. This operation saved my life.”

– James Walton, 100th patient of PTE procedure, TGH

Before his operation, James Walton, above, could not walk and talk at the same time due to his pulmonary hypertension. Here is James, post-surgery, with his wife, Brenda. (Photo: James Walton)

Telesimulation leader
Neurosurgery and anesthesia modules have been added to the pioneering telesimulation distant learning lab. UHN is a leader in developing laparoscopic telesimulation programs for teaching around the world. The program has been expanded to 15 countries, including Ukraine, Kuwait, Ghana, China and in Ontario, providing training to 400 physicians.

Bariatric Centre of Excellence
Patients of UHN’s Bariatric Centre of Excellence experience significant improvements in physical and mental health as soon as six months after surgery. This includes average weight loss (34% at 6 months), improvements in body shape perception, depression and anxiety scores, and overall mental and physical health scores.

Early Recovery After Surgery (ERAS)
70% of colorectal patients report that a new approach has benefited their recovery. The Early Recovery After Surgery (ERAS) method includes no prolonged fasting and allows patients to drink up to two hours before the procedure. After surgery, patients are encouraged to eat what they like and to sit up and walk as soon as possible.
The son was “phenomenally sick,” Dr. Terrence Lawrence Yau recalled. “His lungs failed, his liver failed and for a while we had him on a circuit where he had two artificial heart devices. We even had one circuit to replace his lungs. We thought there was a high probability that he would not survive.”

With such a grim prognosis, Dr. Yau, a heart surgeon at Peter Munk Cardiac Centre, and his team hoped Jason Truong would somehow turn the corner.

The 39-year-old husband and father of two had been in the cardiovascular intensive care unit (CVICU) for more than a month in the fall of 2013, too ill to be considered for a heart transplant. Jason had cardiomyopathy, a condition that inhibits the pumping of blood to the heart.

But he wasn’t the only one in the family with heart trouble.

“One day, Jason’s wife came to me and said she was very worried about Jason’s mother as well, because each day that she came to see her son, she got angina,” Dr. Yau said of Jason’s mom, 60-year-old Lien Truong. That worry had an immediate impact on the 15-year veteran surgeon.

“I started to become more worried for her. I wouldn’t want her to have a heart attack when visiting her son,” he said.

‘Exceedingly rare’

Lien was slated to have a triple bypass at another hospital. Her procedure and ensuing recovery would have made visiting her son next to impossible. So the family formally requested to have Lien’s procedure performed at the Peter Munk Cardiac Centre and specifically by Dr. Yau.

“I was a bit surprised at the beginning,” he said.

“That is the only situation that I’ve been involved in where we had a mother and son in the hospital at the same time for heart surgery. It is exceedingly rare,” he said.

Rare, too, was what followed. A few days after his mom’s successful surgery (her’s was more routine than her son’s), Jason asked how long it would be until he had a new heart.

“I told him there’s nothing we or you can do to change when it’s going to happen,” Dr. Yau said, adding that getting the right size heart, the same blood type and the perfect match with the clock ticking – (Continued on next page)
Conserving blood
Funded by PMCC’s “Dragon’s Den-style” Innovation Committee, Dr. Keyvan Karkouti and his team’s blood conservation program has reduced the use of blood in cardiac procedures by over 20%, and decreased the need for platelets and plasma by over 40%. The initiative has been extended across UHN and may be adopted in other Canadian health-care facilities.

Reduced radiation exposure
Dr. Narinder Paul, PMCC’s Division Chief of Cardiothoracic Imaging, along with his team, created and validated a customized approach to cardiac CT scan imaging that guarantees the lowest radiation dose possible, while ensuring the best image quality. This new method adapts to the body and has reduced radiation levels by 25%. This is in addition to the 80% decrease in radiation exposure that Dr. Paul’s team instituted during the initial research phase.

Surgery program broadened
The thoracoabdominal aneurysm program now offers both endovascular and open surgery options to patients with a wide range of complex aortic problems. State-of-the-art care is provided by cardiac and vascular surgeons, anesthesiologists, nurses, perfusionists and critical care physicians. Ontario patients are now being accepted for management by our Aortic Centre of Excellence.

Called in for ‘main event’
Two days after Lien’s bypass surgery, Dr. Yau was on a day off when Jason’s transplant procedure was set to take place. But, as Jason’s mother had hoped, he was on-call and able to perform the most important procedure – ‘the main event’, as the surgeon called it.

“Everything went spectacularly well with both of them,” Dr. Yau said.

Leader in quality care
“There is no question that the care provided for patients at the Peter Munk Cardiac Centre, and the support we offer their families engenders a lot of trust,” said Dr. Yau. “You are the person they have entrusted their son, mother, husband to. Not surprisingly, if they are feeling good about the kind of care that person is getting, that confidence transfers on.”

In this case, like mother, like son.

The Toronto Star’s coverage of the Truongs’ heart surgeries was read and shared on Facebook. (Graphic: Facebook)
The ‘invisible’ partner in patient care

Jackie Herman was diagnosed with cancer in 2008. It changed her life.

In October of that year, the 44-year-old Brampton, Ont. resident had surgery to remove her carcinoid-neuroendocrine tumours, which turned out to be cancerous.

Ever since, the Toronto native has had follow-up appointments with her doctors and has blood drawn for surveillance testing.

“Living with cancer has been a life-changing experience,” said Herman, who lives with her husband and two dogs.

“I found myself wanting to do everything in my power to ensure I could get more time to enjoy life.”

Unknowingly cared for

Among those who were crucial in her journey back to health was UHN’s Laboratory Medicine Program (LMP).

“Jackie’s cancer journey is unique and tailored to her specific diagnosis,” said Dr. Sylvia Asa, Medical Director, LMP. “But what isn’t unique is how many times she has been cared for by LMP without even realizing it.”

Dr. Asa noted that, for example, the lab performed the initial pathology diagnosis of her tumour, blood transfusions during surgery, monthly blood tests and even genetic testing.

Better patient care

LMP is always involved in clinical investigations and integration of data to ensure the most appropriate clinical care.

Take, for example, the case of a 23-year-old woman who came into the emergency department with headaches and nausea.

Her physical exam failed to show what was wrong and a clinical diagnosis could not be made by history and physical alone. The patient had a seizure in the emergency department and began to lose consciousness.

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The laboratories were immediately called upon to make the diagnosis.

Using multiple technologies and various tests in the hematology, coagulation, biochemistry and microbiology laboratories, the patient was finally diagnosed with Thrombotic Thrombocytopenic Purpura (TTP) — which can be fatal within hours if undiagnosed. Without treatment, TTP is nearly 100 per cent fatal due to stroke, cardiac arrhythmia or multi-organ failure. The disease only affects four in 1 million people.

Once a diagnosis is made, the best treatment is Plasma Exchange which improves survival from 0 per cent to 90 per cent. LMP’s blood transfusion laboratory arranged for fresh frozen plasma to be quickly provided to start emergent plasma exchange therapy within four hours.

By the next day the patient was awake, seizures had stopped, and she went on to fully recover.

“The Laboratory Medicine Program will continue to drive clinical integration across UHN,” explained Dr. Asa. “LMP will improve care by working alongside every clinician, every researcher and every patient.”

Dr. Asa’s commitment means a lot to Herman, who now serves as president of the Carcinoid-NeuroEndocrine Tumour Society of Canada.

“I now understand that LMP is always hard at work, working alongside physicians and surgeons, getting the answers we need to help improve our care,” Herman said.

Many patients aren’t aware of the vital role labs play in their treatment and recovery process.

(Photo: Anthony Tuccitto)

UHN’s Laboratory Medicine Program is one of the largest academic labs in the world. (Photo: Anthony Tuccitto)

HIGHLIGHTS

New diagnostic technologies
- “Next-Gen” genetic sequencing (over 3,000 patients tested)
- Rapid Autopsy
- Digital pathology & CellaVision
- Rotem POCT (Point-of-care-testing)
- Advanced Barcode and Tracking

Canadian BioBanking
- Specimens for 5 studies with The Cancer Genome Atlas (TCGA)
- Canadian Foundation for Innovation Research Hospital grant to increase infrastructure

Faster diagnostics
- Clinical database for annotation of clinical specimens
- CA Tissue infrastructure for specimen handling
- Intra-Operative PTH (parathyroid hormone) testing
- Auto-release of blood test results (first site within TC LHIN)
- Integration of laboratory information systems (LIS) platforms across partner sites to improve regional communication of patient information
Pharmacist takes action: Program eases stress, cost for cancer patients

At the time, Chuk was Manager, Outpatient Pharmacy at Princess Margaret Cancer Centre. She was all too familiar with the stress patients and families experienced – along with the frustration of health care teams – trying to navigate a piecemeal system to secure coverage for drugs not publicly funded.

Taking action
The win-win solution? Chuk and the UHN Pharmacy team developed a centralized Medication Reimbursement Specialist (MRS) position to support and guide clinicians and patients through the maze of processes related to drug coverage and medication procurement.

The oncology-focused, on-site MRS would proactively coordinate processes among public agencies, private insurance programs, and patients through the maze of processes related to drug coverage and medication procurement.

The goal was to improve patient care and reduce workload for health care providers by streamlining the access process and exhausting every opportunity for maximum drug coverage.

Winning initiative
Results were so positive the MRS test project became a permanent program at the Princess Margaret with one, and now two full-time specialists. This year, the cancer centre received the 2013 Quality Award from the Cancer Quality Council of Ontario for implementing this innovative approach.

• Drug coverage and access secured for 98.3% (529 of 538 patients)
• Average turnaround for drug access, seven days vs. three weeks to three months
• Estimated total medication costs avoided $2+ million (average $3,700 per patient)
• Total cases handled, 886 (all drugs, all patients)

(Continued on next page)
Esther Fung, Pharmacy Director, Corporate Business and Outpatient Operations, said the feedback from patients inspires them every day, including the comments below, written in cards and letters from cancer survivors:

“Thank you for helping me fight and beat cancer. You are amazing.”

“From the bottom of my heart, I want to thank you for all your help.”

“With more compassion like yours, the cancer journey is not so daunting.”

Watch the video series, ‘Kids Talk: the ABC’s of Cancer’, part of the Princess Margaret’s 2014 World Cancer Day coverage. (Video: UHN/YouTube)

HIGHLIGHTS

New cancer drug
A drug developed by scientist Tak Mak’s team was approved for human testing by Health Canada and the U.S. Food and Drug Administration. In pre-clinical studies, the drug inhibited growth in several types of human cancers.

Left: Dr. Tak Mak announces a new cancer drug at Princess Margaret Cancer Centre. (Photo: The Princess Margaret Cancer Foundation)

QuickStart radiation treatment planning
In November, the Radiation Medicine Program’s Breast Site Group received Honourable Mention for Innovation from the Cancer Quality Council of Ontario for “QuickStart”, which offers same-day radiotherapy planning and treatment for early stage breast cancer patients. QuickStart uses software developed at the Princess Margaret that automates analyzing diagnostic images and mapping tumours, reducing treatment planning from two hours to six minutes.

Multiple myeloma discovery
Dr. Rodger Tiedemann discovered the root cause of multiple myeloma relapse, explaining why this incurable cancer of the bone marrow persistently escapes cure by an initially effective treatment that can keep the disease at bay for several years. The reason is intrinsic resistance found in immature progenitor cells. The research was published in Cancer Cell in September.

Related
Dr. Tiedmann describes research
Media release: View the release on UHN.ca
Toronto Star: Resistant cells to blame for multiple myeloma relapse

Related
QuickStart Program: Same-Day Radiotherapy for Early Stage Breast Cancer
New ankle replacement surgery has patient, 67, hiking again

It’s taken more than a decade, but Dr. Johnny Lau’s idea of a new and improved ankle replacement device has come to life.

It all began with a few sketches on a piece of paper.

In 2002, during a clinical fellowship at Union Memorial Hospital, Dr. Lau and four collaborators in Baltimore, Maryland, came up with the design for a prototype to improve ankle replacement surgery.

Today, when Dr. Lau looks at the implant, made of specialized metal and plastic, it is exactly what he imagined it would be — and it’s been life-changing for patients like 67-year-old Mark Geiger.

**Ski injury**

Geiger was Dr. Lau’s first patient to undergo surgery using the new implant to replace his ankle.

A skiing injury 15 years ago caused arthritis in Geiger’s ankle, which eventually caused his cartilage to deteriorate. Coping with bone-on-bone contact, Geiger couldn’t bear the pain anymore.

When Dr. Lau first saw Geiger’s X-ray it was clear that he had no cartilage left.

Geiger’s pain was undeniable.

“I had more and more trouble just walking,” said Geiger. “I considered myself fairly active. I love cross-country skiing and hiking, both of which were out of the question.”

When Geiger learned about the device Lau was designing, he was excited to be one of the first “guinea pigs”.

“I did quite a bit of research and this device really seemed to mirror the natural ankle,” said Geiger. “Dr. Lau is one of the best in his field, and I was really desperate for help.”

**Innovative approach**

To implant a new ankle, Dr. Lau uses an innovative surgical approach.

(Continued on next page)
**ARThRITIS PROGRAM**

**Highlights**

**Stem cells and osteoarthritis**

The Arthritis Program is investigating the effects of injecting a patient’s own stem cells into their knees affected by osteoarthritis.

This study, which is a first in North America, will measure improvements in pain relief, function, activity levels and quality of life, as well as cartilage and structural tissue regeneration.

**Spondylitis Program**

New clinical research from the UHN Spondylitis Program is providing patients with ankylosing spondylitis a better standard of care. As part of a multi-centre study, Drs. Nigil Haroon and Robert Inman demonstrate, for the first time, that early intervention with biologic medications significantly slows the progressive fusion of the spine in these patients.

**Lean and the Arthritis Program**

Through inter-professional collaboration, new processes were created to reduce the number of overnight stays for hip fracture patients at Toronto Western Hospital. Thanks to the Lean initiative, the number of inpatient days was reduced from 12 to roughly 5.7, resulting in patients getting access to rehab earlier.

Instead of replacing the ankle through the typical method from the front of the ankle, Dr. Lau uses a lateral (side) approach. This helps preserve nerves, retain bone, minimize wound complications and recover faster.

**Back on the trails**

While an ankle replacement can never fully restore a person’s range of motion to the way it once was, the procedure has a significant impact on a person’s quality of life.

"Pain relief is the biggest benefit to ankle replacement surgery," said Dr. Lau. "There are no medications that can make cartilage grow back and until we can do that, we will continue striving to improve surgery for patients."

Today, Geiger is no longer in pain and doesn’t feel slowed down.

"I am running up stairs and cross-country skiing five kilometres," he said.

(Continued from previous page)

Dr. Jas Chahal, orthopaedic sports medicine surgeon, hopes to one day use stem cells to help patients regenerate their own cartilage and tissue in their knees. (Photo: UHN)

Dr. Johnny Lau’s ankle replacement device, made of specialized metal and plastic, has been life-changing for patients. (Photo: UHN)

**“Pain relief is the biggest benefit to ankle replacement surgery.”**

– Dr. Johnny Lau
Medical and Community Care

S.C.O.P.E.: Preventing return visits to emergency room

Family physician Dr. Bill Etzkorn doesn’t have a “typical” patient. They come from all walks of life. Some are living with a single chronic condition, like diabetes, others battle multiple diseases at the same time, such as heart disease and arthritis.

Despite the differences, there is one thing a small group of his patients share – which more than surprised Dr. Etzkorn: Even though these patients visited him regularly, they were all also making repeated visits to the emergency department (ED).

Dr. Etzkorn, whose family practice clinic is a few blocks from Toronto Western Hospital, knew these trips were preventable and that there had to be a way to end the cycle.

Determined to reduce patients’ return visits, he joined a new pilot project called Seamless Care Optimizing the Patient Experience (S.C.O.P.E.).

Teaming up for patients

S.C.O.P.E. provides 30 community-based family physicians, including Dr. Etzkorn, with access to a hub of health-care providers, including a nurse navigator, health coaches, CCAC* coordinator and hospital-based specialists to help reduce avoidable emergency department visits and hospital admissions for high-needs patients.

The program is thanks to a partnership between UHN’s Toronto Western Hospital, Women’s College Hospital and the Toronto Central Community Care Access Centre.

“Our elderly population is living much longer and their health can become quite fragile, not to mention there are many patients across the age spectrum who are dealing with multiple conditions such as diabetes and cancer, as well as mental health issues and poverty,” said Dr. Pauline Pariser, lead physician for S.C.O.P.E.

(Continued on next page)
“But we know that with the right support, that an initiative like S.C.O.P.E, can provide many of these issues can be managed in the community,” she continued.

Dr. Bill Etzkorn said there are two major “game changers” as a result of the S.C.O.P.E. program.

The first is access to electronic health records from the hospital. The second is the option to send patients to the Acute Ambulatory Care Unit instead of the emergency department.

“S.C.O.P.E advertised a number of services that I didn’t have access to, especially as a solo family doctor,” said Dr. Etzkorn. “I now have the ability to call one number and talk directly to an internist, or book my patient to see a dietician quickly, which means my patients don’t feel the need to go to the emergency department because they know they will get assistance they need.”

*Community Care Access Coordinator

Andrea Miller, Clinical Nurse Specialist with the Diabetes Transition Program, helps transplant patients manage their diabetes before leaving the hospital. (Photo: UHN)

Dr. Bill Etzkorn, a family physician in downtown Toronto, joined S.C.O.P.E. to reduce repeat trips to the emergency room for his patients. (Photo: UHN)
As Canada’s preeminent research hospital, UHN is home to some of the world’s best and brightest researchers who insist on relentless inquiry.

Our human resource team brings top programs that build leaders, foster workplace positivity and ensure that staff are inspired to achieve our goals.

As an international leader in education, we share our wisdom through teaching thousands of students every year across all health professions.

Finally, UHN’s focus on local accountability enables us to ensure we have the funding, space and advanced technology needed to care for our patients.
Financial success: The building blocks of UHN

UHN’s Finance, Performance Measurement, Strategic Developments and Infrastructure departments comprise a multi-disciplinary team focused on helping clinical teams improve patient care outcomes, and providing leadership to the larger health-care environment.

This year, by successfully navigating the complexities of the Ontario Health System Funding Reform, the team ensured that UHN received the necessary funding to deliver innovative and high quality care to patients.

**Trusted advisor**

Setting strategies and closely monitoring monthly financial and performance results has resulted in balancing the hospital’s budget. The Ministry of Health and Long-Term Care has recently posted results that show UHN continues to be highly efficient. The organization has had the privilege of contributing in an advisory capacity to the future development of the Health System Funding Reform.

The team is highly attentive to the renewal of facilities and equipment that will provide safe environments and innovative technology to continually improve patient care – which is one of the biggest challenges in the health-care system. Focused efforts have led UHN’s Energy Program to become a Canadian leader in demonstrating how a strong Sustainability Program can contribute to patient care through support of a safe, efficient and engaged environment.

**Highlights**

- **Training tomorrow’s leaders**
  In developing the finance professionals of tomorrow, UHN is proud to be the first and only Ontario hospital to be approved to work in partnership with CPA Ontario (Chartered Professional Accountants) to obtain approval as a recognized Training Office.

- **Building the future**
  UHN has a five-year property development plan to address needed improvements to patient care areas:
  - Princess Margaret Cancer Centre - major space transformation to enhance patient care areas and amenities
  - Toronto General Hospital - Transplant Expansion, Dialysis Services, and 2nd Floor Redevelopment
  - Toronto Rehab - Lyndhurst site patient amenities improvements; and Bickle Centre renewal approved by the Ministry of Health and Long-Term Care
  - Toronto Western Hospital – Surgical Services Redevelopment, McLaughlin Backfill, 7 Tesla whole-body MRI Infill, and Emergency Department Redevelopment

- **RELATED**
  Krembil Discovery Tower LEEDS UHN

Watch the construction of Krembil Discovery Tower in less than 60 seconds. (Video: TGWHF/YouTube)
Collaboration creates groundbreaking tools to improve patient care

There was a time, not too long ago, when UHN’s IT and clinical services teams worked independently of each other. They realized, however, there were some cons to this practice.

Clinicians would request that the IT team build a tool to address a particular issue. The IT team would go off, build the tool and hand it back to the clinicians to use. But since they worked so separately from each other, the tools were often cumbersome, failed to integrate efficiently into clinical workflows, and sometimes required several rounds of changes.

Breaking down silos
Recognizing the problem, UHN and SIMS changed their approach.

They decided that if the goal was to build better tools for clinicians, then the solution was to bring clinicians, project managers and technical specialists to the table at the same time — providing the opportunity for each department to understand each other’s challenges and develop and build tools together.

Approach improves care
Following the adaptation of this approach, the Advanced Clinical Documentation Inpatient Electronic Patient Record (ACD IP EPR) project was born.

Working closely with UHN’s nursing and health professionals, SIMS technical and project teams have built a variety of comprehensive electronic assessments, as well as new dashboards and reporting tools within the electronic patient record system.

The approach is as revolutionary as the tools themselves. Bringing all of the involved disciplines together to collaborate on each aspect of the project has led to a better understanding of clinicians’ needs and the role that mobility and documentation play at the bedside.

More effective tools
The result? Clinicians are now able to identify patients’ risks more quickly, adjust care to ensure the best possible outcomes, and view trends that can guide future practice. This enhanced understanding of clinicians’ needs translates to more effective clinical tools and improved outcomes for patients.

As the organization moves forward, the guiding principles developed and lessons learned will form the foundation of SIMS’ work and be key in developing the next generation of clinical support tools. It is clear that the future of health information technology is in inter-professional collaboration. Implementing a new electronic patient record system across the organization will help transform UHN and SIMS into the research hospital of the future.

As other hospitals and teams recognize the opportunities that it presents, this model will likely be embraced across the health-care sector.
Clinicians are now able to identify patients’ risks more quickly, adjust care to ensure the best possible outcomes, and view trends that can guide future practice.

The Inpatient Electronic Patient Record project brought clinicians, project managers and technical specialists together to help improve patient outcomes. (Photo: UHN)


HiGhLiGhTS

Connecting GTA
The ConnectingGTA program, funded by eHealth Ontario and Canada Health Infoway, was created to advance the delivery of Ontario’s electronic health record. Acting as a hub for electronic patient data, the program is aimed at making it easier for patients and their caregivers to move through the continuum of care in the GTA.

When completed, the project (which is already in operation) will enhance care for half of Ontario’s population by providing clinicians from hospitals, primary care, home care and community agencies with the data they need to make care decisions.

GTA West DI-r
The GTA West DI-r, jointly-funded by Canada Health Infoway and eHealth Ontario, allows for the secure and seamless sharing of diagnostic imaging and reports between partner healthcare facilities. Clinicians no longer have to rely on CDs or other print mediums, nor do they have to wait for a patient’s medical history to be transferred in order to view studies and reports performed at other health-care facilities.
Taking a stand on workplace incivility

It can happen in many ways – from failing to acknowledge one another, focusing on their mobile devices instead of the person speaking, showing up late for meetings, or rolling their eyes and gossiping.

At first, Deb thought most of it was about letting off steam and nothing to be overly concerned about.

That was until she attended a leadership course and learned how impactful these small acts of disrespect and incivility can be.

Importance of respect

At the next Nursing Education Day, Deb led a conversation about respect and civility.

She started with herself, acknowledging there had been times when she had engaged in some of the behaviours she wanted to speak about.

During the session, the team talked about what it felt like to be respected and the difference it made to their workday.

Deb talked about what she learned in the session – how impactful and hurtful disrespectful behaviours are, even when there is no intention to harm. She shared with them a simple way of giving feedback when the “respect line” is crossed.

The team agreed that they would be more aware and use the feedback tool when needed.

Taking action

Workplace incivility and disrespect are serious issues that unfortunately occur in every type of industry and organization.

Recognizing the negative impact they can have on organizations, Human Resources conducted a hospital-wide assessment to understand the extent of incivility at UHN.

The results showed that while UHN had made considerable inroads to building a positive work culture, incivility still occurred in the organization.

To address it, in 2014, Human Resources launched Respect & Civility@Work to refocus efforts to build a respectful, considerate and caring work environment.

The campaign began with the launch of rounds and education for leaders and employees, along with an Intranet hub with resources.

Managers like Deb are being provided education and a Get Started Kit to help them engage their teams in dialogue and action. The Respect & Civility@Work tagline “Skill Up. Speak Up. Stand Up.” underlines that it takes everyone’s engagement to build a respectful workplace.

Commitment statement

As part of ongoing efforts to create a respectful, caring, and inclusive workplace, Human Resources facilitated several dialogues with racially diverse employees to discuss barriers to career mobility. A statement of UHN’s commitment to equity and inclusion is one of several actions that the Executive has endorsed as a result of these dialogues, demonstrating UHN’s commitment to championing accessibility and diversity.

Volunteer Resources supports HELP

Volunteer Resources plays an important role in supporting UHN’s Hospital Elder Life Program (HELP). The program is designed to prevent older patients from a decline in both their physical and mental/cognitive abilities while in hospital. Working with an Elder Life Nurse Specialist, volunteers lead assigned patients through a range of therapeutic activities including reading, conversation, physical activity and board games.
In July 2013, Dr. Donald Weaver packed his bags and left Dalhousie University in Halifax for Toronto.

It was then that the leading neurologist and medicinal chemist – Dr. Weaver is one of few experts in the world with these two specialties – became UHN’s new Director of the Toronto Western Research Institute (TWRI).

Dr. Weaver brings with him an impressive array of clinical and research credentials, a fresh perspective on the future of TWRI and an innovative research program of his own.

Leading vision
With a world leader at the helm, the goals of the Institute are both ambitious – and achievable.

“I envision TWRI becoming one of the top five medical research institutes in terms of contributions to our understanding of human disease processes,” he said. “The knowledge created will be applied to produce innovative diagnostic and therapeutic products for managing chronic diseases of the nervous system, including eyes, and the musculoskeletal system.”

“Every night I pick a neuroscience institute somewhere in the world and I read about it, and think about how we’re different and what insights I might be able to bring here. Once I exhaust all the neuroscience institutions, I’ll start reading about all the arthritis research institutes,” he continued.

Alzheimer’s and more
His own research focuses on the applications of computer-aided drug design for the discovery and development of new potential therapeutics for neurological disorders, including Alzheimer’s, dementia and epilepsy.

His work is strongly involved in knowledge translation, commercialization and the creation of “micropharma” companies within the academic sector as a route to effective drug development — and he hopes to share this spirit with TWRI researchers in the translation of their own work as well.

“I’m a medicinal chemist, I make compounds. I’m going to engage our researchers in commercialization and knowledge translation so that our end result is more than a paper – it’s a product that helps people,” he said.

RELATED
Krembil Discovery Tower (featuring Dr. Don Weaver)
Bio: Meet the New Director of the TW Research Institute

HIGHLIGHTS:

Making human heart cells on a wire
TWRI scientists have developed a new way to make mature heart stem cells using a sterile surgical suture known as a “biowire” to grow heart stem cells. Biowire-grown cells mimicked mature cell characteristics—they were rod-shaped, could beat in unison and could be paced using electrical cues.

Understanding blood formation
Researchers at Princess Margaret Cancer Centre have identified a critical molecular “switch” that controls the differentiation of blood-forming stem cells. This finding provides valuable insight into finding ways to increase numbers of blood stem cells for bone marrow transplantation.

Designing smarter wheelchairs
Toronto Rehab scientists evaluated a new intelligent wheelchair system that has anti-collision and navigation assistance features. The system was effective at preventing collisions and navigating around obstacles in simulated environments. In particular, it limited the number of collisions experienced by elderly study participants completing an obstacle course.
Interprofessional Education: Tomorrow’s success in the classroom today

In health care, one of the keys to success is the collaboration and cooperation of all those involved in a patient’s care. From the nurse who takes a patient’s blood, to the technologist who analyzes the sample, to the doctor who diagnoses – it takes a team to succeed. It’s why, at University Health Network, home of and lead hospital partner for the Centre for Interprofessional Education (CIPE), students learn with those of different health-care professions before they’ve even left the classroom.

Students of different health-care professions, including spiritual care, respiratory therapy, physiotherapy and social work learn in a placement at PMCC. (Photo: Debbie Rolfe, Interprofessional Care and Education Leader)

International recognition

The interprofessional model of learning for students and professionals is hailed internationally as a leading approach to breaking down silos and improving patient care through stronger communication and collaboration.

With students of various health care professions learning together before they’ve even entered the workplace, it means the collaboration and success of tomorrow is fostered today.

“The team’s communication and collaboration led to better care for the patients,” said one nursing student. “Each team member respected each other and made an effort to understand each other’s professional lens.”

New book puts UHN on map

Led by Director Maria Tassone, the CIPE has become a global leader as a pioneer in team-based collaboration and (Continued on next page)
interprofessional learning and practice. This year, it will receive further international recognition with the release of the new book, “Creating the Health Care Team of the Future: The Toronto Model of Interprofessional Education and Practice”.

Reflecting on the book, former President and CEO Bob Bell said, “At UHN we recognize that interprofessional education and care goes across everything the organization is trying to accomplish.”

**New ELC**

Another example of interprofessional practice at UHN is the creation of the first fully interprofessional Education Leadership Council (ELC).

With one lead from each of UHN’s 10 clinical programs, the new ELC represents a tremendous opportunity to strengthen relationships between clinical programs and the Education portfolio, along with more effectively advancing the quality of teaching and learning across UHN.

“Working together, rather than in silos, will lead to greater understanding of the different roles and systems across organizations, increase trust among the team and lead to better practice and patient care,” said ELC member and pathologist Danny Ghazarian, Education Lead for the Laboratory Medicine Program.

**NEW- International Centre for Education**

UHN’s ICE builds relationships with international partners that will translate into high quality health care through teaching and learning.

**Conference & Educational Technology Services (CETS)**

The new Conference & Educational Technology Services (CETS) now includes three support services: Conference Services, Central Room Bookings and the ETMS/AV Department*. CETS is also pleased to be a part of the Krembil Discovery Tower’s state-of-the-art conference centre.

**Pledge for HoPingKong Centre - Innovation in Education**

The HoPingKong Centre has received a new pledge from the Raymond Chang Foundation for $3 million over three years. This will support innovative educational programs and promote scholarship in education. These include the development of the use of ultrasound in physical examination teaching, the Art of Medicine program and the thoughtful understanding of clinical reasoning.

*Education Technology and Media Services (ETMS)
Four partner foundations are critical to UHN’s efforts to achieve global impact and make a difference in patients’ lives.

Each foundation helps with the creation of new medical and research facilities, recruitment and retention of the world’s best health-care professionals, the establishment of Chairs, Fellowships and Professorships and more.

Our foundations and their fundraising efforts are key to ensuring UHN’s progress, development and success in delivering the best in patient care.
Friendship inspires arthritis research support

“We have the team that will continue to make breakthroughs, so others will not have to experience the physical and emotional damage I endured.”

–Trudy Eagan

Trudy Eagan’s life with Rheumatoid Arthritis (RA) would have been much more difficult without good friends Lem and Karen Janes. Lem remembers playing tennis with Eagan many years ago. But he also remembers when she had to stop playing because of her arthritis. Over the years, Lem has seen the effects of the disease take a toll. Eagan has endured great pain and has had surgeries on both of her hands. Through it all, she’s always kept a positive attitude, refusing to let the disease beat her.

Inspired
Lem and Karen were inspired by Eagan’s passion and commitment to arthritis research – Eagan is a board member for the Arthritis Research Foundation. This sparked their interest in supporting the Women’s Research Campaign, which aims to improve treatment and self-management of these chronic conditions for women. The Janes knew they could have a positive impact and generously donated $300,000 to the cause. The donation is a reflection of their commitment to finding a cure for arthritis.

From left to right, Karen and Lem Janes with longtime friend Trudy Eagan. (Photo: Arthritis Research Foundation)
of the Janes’ commitment to supporting communities, along with the doctors and researchers at the forefront of arthritis and autoimmune disease research.

**Feeling blessed**  
Eagan feels blessed that her friends have been so supportive. She has experienced firsthand the positive results from advances in research. “We have the team that will continue to make breakthroughs, so others will not have to experience the physical and emotional damage I endured,” Eagan said.

Celebrating “Day at the Races”, from left to right, is Dr. Peter Kircher, Sandy Hawley, Honorary Event Patron and Hall of Fame Jockey, Helen Ching-Kircher, Event Sponsor and President of Downtown Fine Cars, and Dr. Ed Keystone, Director, Rebecca MacDonald Centre for Arthritis. The gala, held annually at Woodbine Racetrack, is the Arthritis Research Centre’s signature fundraising event and has raised nearly $2 million for arthritis and autoimmune disease research. (Photo: Jono & Laynie Photo + Film)
Radiation before surgery more than doubles asbestos-related cancer survival

Across Canada, hundreds of people are affected by a rare type of deadly lung cancer. It’s called mesothelioma – and it’s primarily related to asbestos exposure.

Since the disease is difficult to diagnose in its early stages, most patients with mesothelioma die within 12 to 18 months.

However, that may begin to change. Princess Margaret Cancer Centre’s Dr. John Cho and his team are giving hope to those with the disease.

Dr. Cho’s new approach to treatment – a special type of radiation conducted before surgery – is more than doubling the survival rate.

With a strong belief in the value of collaboration, Dr. John Cho, a radiation oncologist, began discussions with thoracic surgeon and head of the Toronto Mesothelioma Research Program, Dr. Marc de Perrot, about a new approach to treating those with mesothelioma.

“The patients in our study experienced shorter treatment, fewer complications and speedier recovery,” explained Dr. Cho. “The three-year survival rate more than doubled from 32 per cent to 72 per cent.”

Noting that exposure to asbestos is the main cause of mesothelioma in the 500 new cases reported in Canada each year, a number which has doubled in the past decade.

Dr. Cho came forward with the idea to treat patients before surgery with a five-day, accelerated course of intensity-modulated radiation therapy. This type of radiation spares the heart, spine and other healthy tissues around the lungs. The surgery is performed shortly after radiation is completed. This is important since radiation wipes out the cancer’s ability to seed itself elsewhere in the chest or abdomen during surgery.

Significant results
To test the approach, Dr. Cho worked in collaboration with Dr. de Perrot. The results were significant.

Value of collaboration
With a strong belief in the value of collaboration, Dr. John Cho, a radiation oncologist, began discussions with thoracic surgeon and head of the Toronto Mesothelioma Research Program, Dr. Marc de Perrot, about a new approach to treating those with mesothelioma.
Highlights

Billion Dollar Challenge
The PMCF launched a BILLION DOLLAR CHALLENGE in April 2012—a five-year initiative dedicated to making ‘Personalized Cancer Medicine’ a reality. Two years into the Challenge, thanks to our generous supporters and world-renowned scientists, $230 million has been donated or pledged, and $225 million acquired through research grants.

Princess Margaret lottery
The Princess Margaret lottery programs delivered excellent results this year—a combined 17-year high of $20.8 million in net proceeds. The 50/50 and calendar add-ons proved to be very popular with ticket purchasers.

Generous donation
Richard Clark, a former patient, generously left a gift of over $5 million to the Princess Margaret in his will. A significant portion of his gift has endowed the Richard H. Clark Chair for Cancer Medicine.

In his will, former patient Richard Clark left a gift of over $5 million to the Princess Margaret. A significant portion has endowed the Richard H. Clark Chair for Cancer Medicine.

NEWS RELEASE:
Radiation before surgery more than doubles mesothelioma survival: UHN study

(Continued from previous page)

Dr. de Perrot said, “These research results offer real hope to mesothelioma patients.”

The new approach was tested with 25 patients over four years. Study results were published in January 2014 in the Journal of Thoracic Oncology.

The funds required to conduct this clinical research ($1.5 million to-date) have been donated by the employee unions representing workers who may have been exposed to asbestos in the work they do and the Imperial Oil Foundation.
More than seven years of planning, fundraising and construction culminated in the celebration of the official opening of the Krembil Discovery Tower on Nov. 20, 2013.

At the heart of the celebration, which welcomed over 300 guests, was a tribute to the generosity of Bob and Linda Krembil and their family. “Our world-renowned researchers have the ideas and passion to advance life-saving medical innovation, and so it is up to us to ensure they are equipped with the resources needed to drive discovery,” said Tennyson Hanson, President and CEO of Toronto General & Western Hospital Foundation.

“The Krembil family knows the importance of investing in research, and we were honoured when they stepped forward with a $30 million lead gift for this project,” she continued.

Gift leads to more funding

The Krembils’ visionary gift helped secure an additional $30 million in private funding, which in turn, leveraged a $29-million grant from the Canadian Foundation for Innovation (CFI) for outfitting projects in the Krembil Discovery Tower.

The total cost of the project was $165 million, which was also supported by both federal and provincial governments. “The Krembil Discovery Tower is now a reality thanks to the fundraising efforts of our generous donor community who were inspired by the Krembil family’s leadership,” said John Mulvihill, Chair of the UHN Board of Trustees.

Mulvihill also acknowledged Robert Krembil’s volunteer services as a UHN Trustee and son Mark Krembil’s involvement as a Toronto General & Western Hospital Foundation Board Member. (Continued on next page)
Krembil family support
The Krembil Family has a long relationship with Toronto Western Hospital.

In 1998, they established the Krembil Family Chair in Neurology and in 2001 the Krembil Neuroscience Centre was named to recognize the family’s ongoing support.

At the celebration, Robert Krembil gave an inspiring speech on behalf of his family about why it was so important to them to support research at Toronto Western Hospital.

“Our family has been involved at Toronto Western Hospital for many years and we have witnessed the evolving breadth and depth of the talent here. This team of scientists and clinicians is exceptionally impressive on many dimensions – world-leaders in many areas – and now there is a facility that is appropriate for such a renowned group.”
There are moments in time that have the potential to transform an organization. On May 29, 2014, Toronto Rehab celebrated the establishment and dedication of the Fred A. Litwin Outpatient Centre, a moment that will undoubtedly go down in the history of the organization.

The recently established Fred A. Litwin Outpatient Centre was made possible through a multi-million dollar commitment from Fred Litwin – one of the largest philanthropic gifts in the history of our organization.

The Fred A. Litwin Outpatient Centre is located in the central hub of Toronto Rehab’s University Centre.

With close to 100,000 outpatient visits annually across Toronto Rehab, the newly named centre is Toronto Rehab’s largest multi-disciplinary facility.

**Regaining independence**

It addresses the unique rehabilitation needs of patients with a focus on helping individuals regain their independence and recapture their potential.

"It is an absolute pleasure for me to play a role in helping to shape the future of rehabilitation in this province, country and around the world," said Litwin.

"Toronto Rehab is transforming rehabilitation to enrich the lives of countless individuals now and in the future," he continued. "My decision to support Toronto Rehab was inspired by the unwavering courage and determination of its patients and staff."

The Fred A. Litwin Outpatient Centre offers specialized care for a wide range of conditions, including:

- Rehabilitation treatments associated with stroke
- Multiple fractures (spine, pelvis and hip) for trauma patients, as well as chronic illness and neurodegenerative diseases

Litwin’s visionary investment will have not only a profoundly positive impact on the health of our community – but it also has the potential to transform Toronto Rehab into the very best hospital and research enterprise of its kind in the world.

"Toronto Rehab is transforming rehabilitation to enrich the lives of countless individuals now and in the future."

-Fred A. Litwin
Recognized for her advocacy work, Toronto Rehab’s Jessica Coriat was named the 2013 Scotiabank Game Changer. She received a $25,000 charitable donation to Toronto Rehab Foundation and a VIP trip to the Grey Cup.

Coriat donated her tickets to Dr. John Flannery so he could reunite with former patient Tom Fahlman. “I am grateful for the chance to show how people living with disabilities can make a profound difference,” said Coriat.

For the chance to show how people living with disabilities can make a profound difference,” said Coriat.

Sales from Rocket’s book, A Stroke of Luck, helped establish Toronto Rehab’s ground-breaking Rocket Family Upper Extremity Clinic. This clinic is designed for individuals living with neurological and upper body impairment post-stroke. It will incorporate research discoveries directly to patient care through new techniques and treatment.

Former stroke patient Howard Rocket advocates for functional electrical stimulation (FES). (Photo: Toronto Rehab Foundation)
For the year ended March 31, 2014
(Amounts in $ thousands)

Full audited statements are available at wwwuhn.ca.

**Revenue**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontario Ministry of Health &amp; Long-Term Care/</td>
<td>$1,183,843</td>
</tr>
<tr>
<td>Toronto Central Local Health Integration Network</td>
<td></td>
</tr>
<tr>
<td>Other patient services</td>
<td>194,032</td>
</tr>
<tr>
<td>Grants and donations for research and other purposes</td>
<td>251,716</td>
</tr>
<tr>
<td>Ancillary services and other</td>
<td>298,831</td>
</tr>
<tr>
<td>Amortization of deferred capital contributions</td>
<td>56,144</td>
</tr>
<tr>
<td></td>
<td><strong>$1,984,566</strong></td>
</tr>
</tbody>
</table>

**Expenses**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation</td>
<td>$1,224,611</td>
</tr>
<tr>
<td>Medical, surgical supplies and drugs</td>
<td>230,429</td>
</tr>
<tr>
<td>Plant operations and equipment maintenance</td>
<td>104,162</td>
</tr>
<tr>
<td>Depreciation</td>
<td>99,246</td>
</tr>
<tr>
<td>Interest on long-term liabilities</td>
<td>17,412</td>
</tr>
<tr>
<td>Other</td>
<td>277,893</td>
</tr>
<tr>
<td></td>
<td><strong>$1,953,753</strong></td>
</tr>
</tbody>
</table>

**Excess of revenue over expenses for the year**

30,813

**Assets**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>$183,279</td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>198,500</td>
</tr>
<tr>
<td>Inventory</td>
<td>16,010</td>
</tr>
<tr>
<td>Prepaid expenses</td>
<td>10,377</td>
</tr>
<tr>
<td>Long Term</td>
<td></td>
</tr>
<tr>
<td>Loans receivable</td>
<td>2,825</td>
</tr>
<tr>
<td>Capital assets, net</td>
<td>1,276,021</td>
</tr>
<tr>
<td>Long-term investments</td>
<td>298,422</td>
</tr>
<tr>
<td></td>
<td><strong>$1,985,434</strong></td>
</tr>
</tbody>
</table>

**Liabilities and Net Assets**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td></td>
</tr>
<tr>
<td>Accounts payable and accrued liabilities</td>
<td>$399,113</td>
</tr>
<tr>
<td>Current portion of long-term liabilities</td>
<td>18,150</td>
</tr>
<tr>
<td>Long Term</td>
<td></td>
</tr>
<tr>
<td>Due to MaRS Development Trust</td>
<td>82,285</td>
</tr>
<tr>
<td>Deferred research contributions</td>
<td>169,425</td>
</tr>
<tr>
<td>Long-term debt</td>
<td>192,375</td>
</tr>
<tr>
<td>Employee future benefit liabilities</td>
<td>46,747</td>
</tr>
<tr>
<td>Deferred capital contributions</td>
<td>650,189</td>
</tr>
<tr>
<td></td>
<td><strong>$1,558,284</strong></td>
</tr>
</tbody>
</table>

**Net Assets**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internally restricted</td>
<td>76,386</td>
</tr>
<tr>
<td>Unrestricted</td>
<td>348,987</td>
</tr>
<tr>
<td></td>
<td>425,373</td>
</tr>
<tr>
<td>Accumulated remeasurement gains</td>
<td>1,777</td>
</tr>
<tr>
<td></td>
<td><strong>$1,985,434</strong></td>
</tr>
</tbody>
</table>
Program Grouping Activity

<table>
<thead>
<tr>
<th>UHN</th>
<th>Inpatient Separations *</th>
<th>Inpatient Weighted Cases+</th>
<th>CCC RUG Weighted Patient Days **</th>
<th>Day Surgery Cases *</th>
<th>Day Surgery Weighted Cases *</th>
<th>Ambulatory Visits *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute</td>
<td>34,959</td>
<td>81,046</td>
<td>30,402</td>
<td>5,041</td>
<td>947,644</td>
<td></td>
</tr>
<tr>
<td>Rehab</td>
<td>2,141</td>
<td>3,130</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complex</td>
<td>448</td>
<td>73,549</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care (CCC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rehab and CCC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>37,548</td>
<td>84,176</td>
<td>73,549</td>
<td>5,041</td>
<td>1,045,229</td>
<td></td>
</tr>
</tbody>
</table>

* Data is based on General Ledger for Acute, NRS for Rehab, and CCCRS for CCC. PHS for Rehab & CCC Ambulatory Visits; + 2013 HIG Grouper RIW for Acute, 2013/14 grouper year for Rehab; ** 2013/14 RUG III CMI Weights; * Coding (NACRS); * 2013 HIG Grouper 2013 CACS ON RIW; * excludes radiation fractions.

Site Activity

<table>
<thead>
<tr>
<th>Site</th>
<th>Beds</th>
<th>Inpatient Days</th>
<th>Clinic &amp; Day/Night Care Visits</th>
<th>Emergency Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TGH</td>
<td>417</td>
<td>145,101</td>
<td>246,006</td>
<td>45,529</td>
</tr>
<tr>
<td>TWH</td>
<td>261</td>
<td>96,043</td>
<td>432,417</td>
<td>63,598</td>
</tr>
<tr>
<td>Princess Margaret</td>
<td>126</td>
<td>43,173</td>
<td>269,221</td>
<td></td>
</tr>
<tr>
<td>TRI - Bickle Centre</td>
<td>208</td>
<td>65,198</td>
<td>3,483</td>
<td></td>
</tr>
<tr>
<td>TRI - University Centre</td>
<td>158</td>
<td>49,771</td>
<td>37,060</td>
<td></td>
</tr>
<tr>
<td>TRI - Lyndhurst Centre</td>
<td>57</td>
<td>19,036</td>
<td>7,529</td>
<td></td>
</tr>
<tr>
<td>TRI - Rumsey Centre</td>
<td></td>
<td>49,513</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,227</td>
<td>418,322</td>
<td>1,045,229</td>
<td>109,127</td>
</tr>
</tbody>
</table>

Research Activity

<table>
<thead>
<tr>
<th>UHN Research Activity by Program 2013/2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Amounts in $ thousands)</td>
</tr>
<tr>
<td>Arthritis Program</td>
</tr>
<tr>
<td>Joint Department of Medical Imaging</td>
</tr>
<tr>
<td>Krembil Neuroscience Centre</td>
</tr>
<tr>
<td>Laboratory Medicine Program</td>
</tr>
<tr>
<td>Medical and Community Care Program</td>
</tr>
<tr>
<td>Multi-Organ Transplant Program</td>
</tr>
<tr>
<td>Peter Munk Cardiac Centre</td>
</tr>
<tr>
<td>Princess Margaret Cancer Centre</td>
</tr>
<tr>
<td>Surgery &amp; Critical Care Program</td>
</tr>
<tr>
<td>Toronto Rehabilitation Institute</td>
</tr>
<tr>
<td>P.I.s without program grouping assignment</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Inpatient and Outpatient Activity (thousands)

<table>
<thead>
<tr>
<th>Year</th>
<th>09/10</th>
<th>10/11</th>
<th>11/12</th>
<th>12/13</th>
<th>13/14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1144</td>
<td>1163</td>
<td>1390</td>
<td>1406</td>
<td>1464</td>
</tr>
</tbody>
</table>

Revenue ($ millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>09/10</th>
<th>10/11</th>
<th>11/12</th>
<th>12/13</th>
<th>13/14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1564</td>
<td>1589</td>
<td>1832</td>
<td>1910</td>
<td>1985</td>
</tr>
</tbody>
</table>

External Research Funding Awarded ($ millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>09/10</th>
<th>10/11</th>
<th>11/12</th>
<th>12/13</th>
<th>13/14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>221</td>
<td>231</td>
<td>302</td>
<td>331</td>
<td>345</td>
</tr>
</tbody>
</table>
ACHIEVING GLOBAL IMPACT

Exemplary patient care, research and education

ACADEMIC
Position UHN as the institution of choice for trainees
Continue to pioneer new models of teaching and learning

CARING
Measure and improve the value of care
Transform “patient-centred care” to “patients as partners in care”
Become a world leader in documenting and improving patient outcomes

CREATIVE
Further our understanding of the basis of health and disease
through biology and technology platforms
Enable the collection, analysis and application of health information
Leverage experimental therapeutics and health services
research to impact the lives of patients

ACCOUNTABLE
Optimize productivity and integration of care through next generation
information management and technology
Develop new sources of revenue
Enable the collection of new physical space for our clinical programs,
operations, research and education areas

WE
Continue to build organizational capability and capacity