YOUR IMPACT

Issue 7 / Summer 2024

London Health Sciences Foundation

YOUR IMPACT

MESSAGE FROM THE PRESIDENT & CEO

You know the feeling at the beginning of a surprise party, before everyone yells, *Surprise?* Or the hush of a crowd before some performance? The split second before a race kicks off? The moment right before silence breaks?

Anticipation. It's an overfilled balloon; an unwrapped present. It's a test awaiting a result; knowledge on the verge of discovery.

This is where London Health Sciences Foundation thrives, at the crossroads of ambition and opportunity. It's a place that affords us the fortunate position to watch vision materialize into reality. A place where ideas turn tangible.

Here, things are always evolving, always in flux. In fact, just this year, after receiving the largest single donation to a health-care charity in Southwestern Ontario, we celebrated the London Regional Cancer Program being renamed the Verspeeten Family Cancer Centre. This extraordinary act of generosity, compassion and hope by the late Archie Verspeeten has set the stage for a major reimagining of cancer care at London Health Sciences Centre.

This is an extreme example, of course, but picture if we all came together for the betterment of our community. Think of everything we could accomplish. Because things like kindness, decency, inspiration—they snowball. They build momentum and get stored away like energy until they're finally released into some new goodness.

Because goodness heals. For example, what if by offering up just a few hours, you made someone smile who hadn't smiled in weeks? What if you helped give them one more day with family? What if you gave them hope?

Our health care is what we make it. But for it to function properly requires us to believe in ourselves as well as each other; to take charge of our futures by supporting the well-being of our community in whatever way we can. It's up to us. It always has been.

So, as we stand on the brink of new possibilities, let us harness the anticipation, the energy that propels us forward into the unknown. Let us embrace it with courage and determination. For in those hushed and hopeful moments, wound tight as a spring, lies the promise of something extraordinary. All's left is to seize it.

Yours,

John H. MacFarlane, BBA, LL.B, MPA
President & CEO , London Health Sciences Foundation

RESTORING SOUND

YOU MAKE A DIFFERENCE: DR. SUMIT AGRAWAL

Photo credit: Western University

A cochlear implant is an electronic device surgically implanted to provide the sense of sound to a person who is deaf or hard of hearing.

When Dr. Sumit Agrawal, MD, FRCS(C), observed a cochlear implant procedure as a medical student, he immediately knew it was his calling. He viewed it as one of the few specialties where you can give someone back their hearing—a whole sense. Today, he is the interim Chair/Chief of the impressive Department of Otolaryngology – Head and Neck Surgery at London Health Sciences Centre (LHSC) and Co-Director of the Auditory Biophysics Laboratory. With the help of generous donors, Dr. Agrawal and his team are reshaping the future of auditory health care.

> *"Whether it is a young child who was born deaf or someone who lost their hearing later in life, it is so meaningful to witness their quality of life improve."*
>
> Dr. Agrawal

DECADES OF PROGRESS

1987
Dr. Lorne Parnes starts the Cochlear Implant Program at LHSC

1989
Dr. Parnes performs the first paediatric cochlear implant in Ontario

2002
LHSC completes the first MED-EL cochlear implant in Canada

2013
Dr. Agrawal performs the first BONEBRIDGE bone conduction implant in North America on patient Kelly Dickson

DID YOU KNOW?

1 in every 10 people are expected to have disabling hearing loss by 2050.

LHSC offers one of only three cochlear implant programs in Ontario.

LHSC is one of the few unified cochlear implant programs that services both adults and children.

Photo credit: MED-EL

FIRST-OF-ITS-KIND CLINICAL TRIAL

Dr. Agrawal and his team are currently running a randomized controlled trial to test their customized mapping tool for cochlear implants and its direct patient benefits.

Researchers hope to greatly improve the sound quality and listening experience by tuning the implant to fit each person's unique anatomy, similar to tuning a piano.

Taryn Armstrong

After struggling with Meniere's disease for over a decade, Taryn Armstrong enthusiastically joined the trial as patient #1. The implant, paired with Dr. Agrawal's study, exceeded all expectations and she now happily reports clear, distinct sound.

So far, 10–15 patients have been enrolled in this novel trial, with a total enrolment goal of 30 patients.

The emerging insights from this research offer hope to millions of individuals who are presently experiencing hearing loss and those yet to be affected.

> *"Getting this implant has been life changing."* *Taryn Armstrong*

WHAT'S NEXT?

Anticipating the future, Dr. Agrawal is positioned to orchestrate a symphony of advancements in otology. Future developments in cochlear implantation include electrodes that release steroids to reduce inflammation, robots to precisely guide implant insertion to minimize trauma and stem cell therapy to help regrow hair cells and nerves in the inner ear. Because of donors, Dr. Agrawal is empowered to pursue groundbreaking research avenues, leading to improved patient outcomes and a future where everyone has access to sound.

THE SOUND OF FREEDOM:

TARYN ARMSTRONG'S STORY

For Taryn Armstrong, sound wasn't just a sense, it was a tether to life itself—a tether she feared she had lost forever. Over a decade ago, while immersed in her role as an Educational Assistant, Taryn experienced a sudden and unsettling change in her hearing. It was as if she were submerged under water.

Taryn Armstrong & Dr. Sumit Agrawal

"Something's wrong," she said to her colleague.

Symptoms flared up more often and worsened. She developed tinnitus. Her world would plunge into silence and spin violently around, making it nearly impossible to concentrate.

Taryn knew she needed help but being an otherwise healthy woman in her 20s, and with symptoms affecting both ears, it made her problem difficult to diagnose. Her family doctor was stumped; the specialist she was referred to was also perplexed. Not knowing was frustrating, but worse, Taryn felt she was being robbed of experiences—robbed of life.

"I had to go down to part time at the school because of the flare-ups," she confides. "Then I had to stop altogether."

Social outings and events proved challenging as Taryn had to gauge every situation in relation to potential triggers. Were there going to be many people? Competing noises left her disoriented. Were there going to be high ceilings? Echoes played hell on her tinnitus. Eventually, she started withdrawing from these aspects of life as well.

However, after about two years of tests and head-scratching, Taryn was referred to renowned otologist-neurotologist, Dr. Sumit Agrawal, at London Health Sciences Centre (LHSC). An expert in the field, Dr. Agrawal diagnosed Taryn with Meniere's disease, a disorder of the inner ear characterized by severe dizziness, ringing in the ears and hearing loss.

"Meeting Dr. Agrawal and getting a diagnosis was the turning point," Taryn says.

Armed with an answer, she could begin moving forward. But while hearing aids helped initially, Taryn soon fell completely deaf in her right ear. Now married with three young children, the knowledge she would lose her hearing altogether—to have her kids' voices taken from her, their cries, their laughs—was heartbreaking.

Then came a glimmer of hope. Dr. Agrawal and his team in the Auditory Biophysics Laboratory had developed new artificial intelligence mapping techniques to fine-tune cochlear implants to a patient's unique anatomy. Furthermore, they were about to begin a brand-new clinical trial using their algorithm and highly advanced cochlear implants produced by MED-EL, a world-leading hearing implant company. And not only did Taryn qualify for the trial, but she was patient #1—the very first to be enrolled.

Nervous and skeptical, albeit determined, Taryn had the new device implanted in August 2023. With Dr. Agrawal performing her surgery, she felt she was in good hands. The surgery was a resounding success with a quick recovery, but it would take another month before they could turn on the device to learn the result.

Late September 2023. The day of her activation appointment had arrived. After more than 12 years of watching the disease take her life apart piece by piece, Taryn went in perhaps somewhat resigned. They switched the device on, it beeped, and Taryn heard it.

> *"Getting this implant has been life changing," Taryn exclaims.*

Indeed, her progress has surpassed everyone's expectations. Taryn has experienced little discomfort and happily reports clear, distinct sound. More than anything, though, it's given her confidence back. She's no longer afraid of the next social gathering or walking through a busy parking lot. The life she once had is coming back. It's a freedom we take for granted, she says, until we find ourselves stripped of it—the freedom of sound.

YOU MAKE A DIFFERENCE

Celebrating 25 Years of the Breast Cancer Canada Translational Research Unit (BCC-TRU)

The BCC-TRU provides extraordinary support to researchers for high-impact breast cancer research and education.

A PATHWAY TO PROGRESS: BCC-TRU MILESTONES

1998	• The BCC-TRU* was created through a partnership between the London Regional Cancer Program (LRCP)** and a $1 million donation from the Breast Cancer Society of Canada (BCSC) • Dr. Ann Chambers is named as BCC-TRU Director
2000	• Recruitment of senior translational breast cancer scientist Dr. Eva Turley to LHSC, focusing on the factors contributing to breast cancer progression
2003	• The BCC-TRU Traineeship Program is established. This important program serves to train the next generation of breast cancer researchers
2006	• Recruitment of junior translational breast cancer scientist, Dr. Alison Allan, who brings new research expertise in breast cancer metastasis and blood-based biomarkers to London
2010	• Catalyst Grant Program created in partnership with LRCP and the Western Department of Oncology. This important program now funds two Catalyst Grants annually to breast cancer researchers across London
2014	• BCC announces a major 10-year, $5 million commitment to the Unit, bringing total support to >$10.4 million
2018	• Dr. Alison Allan is named as the new Director of the BCC-TRU after Dr. Ann Chambers announces retirement
2019	• Recruitment of clinician-researcher Dr. Ana Lohmann and clinician-scientist Dr. Armen Parsyan with the goal of bringing lab findings to the clinic faster
2020	• BCC commits to supporting the BCC-TRU through to 2030
2022	• The Unit is renamed as the Breast Cancer Canada Translational Research Unit (BCC-TRU) to reflect BCSC's name change to Breast Cancer Canada (BCC)

** Formerly known as the Pamela Greenaway-Kohlmeier Translational Breast Cancer Research Unit (1998 – 2020) and the Breast Cancer Society of Canada Translational Research Unit (2020 – 2022)*

*** London Regional Cancer Program (LRCP) renamed Verspeeten Family Cancer Centre in April 2024*

LOOKING TOWARDS THE FUTURE

BCC-TRU researchers are moving into exciting new areas of investigation including population data analysis, genomics and artificial intelligence. By incorporating these "big data" approaches, the team hopes to continue progressing towards a cure for breast cancer.

LEADING THE WAY

Over the past 25 years, research in the BCC-TRU has focused on the understanding, prevention, tracking and treatment of metastasis, the deadliest aspect of breast cancer. Thanks to donor support, the BCC-TRU has served as the exemplar for how to engage basic scientists, clinicians and trainees together to carry out impactful, patient-focused cancer research.

Breast Cancer Canada

RESEARCH SPOTLIGHT
BCC-TRU Director Dr. Alison Allan

Meet Dr. Alison Allan, a remarkable senior oncology scientist and director of the BCC-TRU. Dr. Allan's research is focused on the study of cellular and molecular mechanisms influencing breast cancer development and metastasis, mainly concentrating on two areas:

- The first project seeks to understand why some patients with breast cancer develop lung metastasis. With this knowledge, the team aims to prevent breast cancer cells from spreading to the lungs.
- The second area of focus involves identifying the key characteristics of circulating tumour cells (CTCs) in a patient's blood and investigating how they contribute to breast cancer metastasis and respond to therapy. Dr. Allan and her research team are Canadian leaders in CTC analysis and technology development.

> *"Safe ideas aren't the ones making huge breakthroughs in breast cancer research, especially when patients are anxiously waiting for better, life-saving treatment options. Donor dollars fuel these high-risk but potentially high-reward ideas, working hand-in-hand with scientists to accelerate progress against this deadly disease."*
>
> *Dr. Alison Allan, BCC-TRU Director*

BCC-TRU AT A GLANCE

188 total breast cancer researchers supported by the BCC-TRU

5 different critical areas of breast cancer research

>200 scientific publications published by BCC-TRU researchers

SOME HEROES LEAD THE COMMUNITY

MATTHEW CREIGHTON | PASSIONATE DONOR & BOARD MEMBER | LONDON, ON

1962 - 2024

Earlier this year, we mourned the loss of Matt Creighton, Vice Chair of LHSF's Board of Directors. As a friend, a mentor and a staunch supporter of neuroscience research and investigations into the mysteries of neurodegenerative disorders, Matt was full of heart and will never be forgotten.

We will honour his life by changing the lives of others.
Change lives at **lhsf.ca/heroes**

London Health
Sciences Foundation

NEVER SAY DIE:

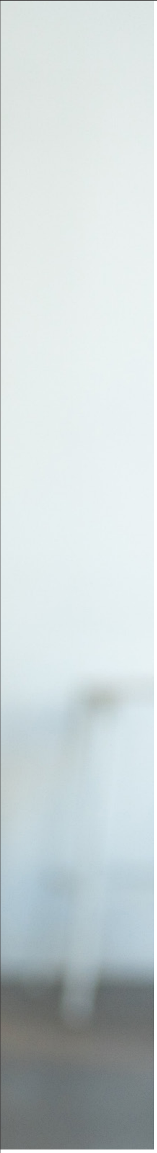
JESSICA WRIGHT'S STORY

The fluorescent lights flicker softly above the ring, the air is cold and heavy. In one corner, Jessica Wright has her feet firmly planted and her red boxing gloves encompass her battered hands. An invisible, sinister entity waits to make the first strike. But she isn't nervous. She knows this enemy well.

Jessica started her medical journey with London Health Sciences Centre (LHSC) when she contracted meningitis at just over three months old. On her fifth birthday, she underwent brain surgery to treat hydrocephalus, a buildup of cerebrospinal fluid in the brain. When she was seven years old, the seizures started. At 10 years old, she received radiation to treat a brain tumour.

Years later, Jessica knew something was wrong when she found herself vomiting at the smell of popcorn. She was then diagnosed with clear cell odontogenic carcinoma (CCOC) in her jaw and the cancer eventually spread to her thyroid. After having her thyroid removed along with 32 lymph nodes, doctors thought she was out of the woods. However, a follow-up appointment found a concerning shadow on her lungs. While everyone hoped it was merely scar tissue, the biopsy revealed something truly unprecedented—an extremely rare case of CCOC found in the lungs.

Due to Jessica's complicated situation, she was given only one option: experimental radiation treatment at the Gerald C. Baines Centre for Translational Cancer Research (Baines Centre). There she met Dr. Pencilla Lang, a Radiation Oncologist who would help tailor the radiation plan to Jessica's unique case.



"There are no trials or research projects anywhere else in the world for this specific cancer," Jessica says. "If it wasn't for the Baines Centre at LHSC, I would not be here today."

Last October, Jessica became the first patient to receive radiation for CCOC in the lungs and her treatment was a resounding success. The nodules shrunk significantly, paving the way for future patients to receive radiation for this type of cancer. Jessica is committed to increasing awareness of the life-changing research occurring at the Baines Centre. She hopes her advocacy will improve outcomes for people like herself who are faced with no other recourse.

"Donor funding is extremely important because I could not have received the experimental radiation without it," Jessica exclaims. "I can now experience life the way I've dreamed about since I was a kid."

With less time now spent in the hospital, Jessica enjoys exploring her passion for photography and makes sure to cherish every moment she can with her nieces. She is also dedicated to helping other people with similar experiences by running a support group for adult survivors of childhood cancer.

Today she is 39 years old and wears her age proudly.

"It's a badge of honour to get old," she says. "Each day is a gift. Tomorrow is never guaranteed."

Jessica never stashes her boxing gloves too far. She is always ready to step back in the ring and face whatever life may throw at her. She knows with every round fought, every shot taken or dodged, she comes back stronger, more resilient and more determined to survive.

VERSPEETEN FAMILY CANCER CENTRE

In November, 2023, Archie Verspeeten, on behalf of himself and his late wife, Irene, donated $20 million toward improving cancer research and care at London Health Sciences Centre (LHSC). But sadly, Archie passed away before he had the chance to see his gift put into action.

What is, so far, the largest donation ever received by a health-care foundation in Southwestern Ontario, Archie's vision was to turn the tide in our fight against cancer. This transformative investment will enable LHSC to expand and enhance cancer care, providing state-of-the-art facilities and personalized treatments to more patients than ever before.

Stay tuned for more exciting updates coming out of the Verspeeten Family Cancer Centre!

Click to view the Verspeeten Unveiling

YOU MAKE A DIFFERENCE: TRANSFORMING LIVES WITH THE RENISHAW ROBOT

A PATH TO RELIEF

Imagine facing the debilitating impact of epileptic seizures, the constant fear of when the next one might strike, and the prospect of undergoing invasive brain surgery to find relief. For many patients, this was the reality until London Health Sciences Centre (LHSC) took a pioneering step forward.

The challenge? To find a less invasive, more effective way to treat seizures caused by epilepsy and restore hope to those living with it. Since 2017, LHSC neurosurgeons, Dr. Jonathan Lau, Dr. David Steven and Dr. Greydon Gilmore, have been bringing much-needed relief to patients, marking a turning point in treatment-resistant movement and affective disorders.

CHANGING LIVES, ONE PATIENT AT A TIME

Deep brain stimulation (DBS) can provide remarkable therapeutic benefits for otherwise treatment-resistant movement and affective disorders such as Parkinson's disease, essential tremor, dystonia, chronic pain, obsessive-compulsive disorders and major depression.

Thanks to generous donor support, the Renishaw neuromate robot provides a transformative solution, revolutionizing treatment possibilities and rekindling hope for those who previously had limited options. This innovative approach offers a new path towards improved quality of life and well-being.

> *"Traditional approaches often fall short in providing relief, but the Renishaw robot's extremely effective treatment has led to a significant reduction in seizures for many patients. We are grateful to our donors who were inspired to invest in this life-saving equipment."*
>
> *Dr. David Steven, Neurosurgeon, LHSC*

DEEP BRAIN STIMULATION SURGERY: A GAME-CHANGING APPROACH

DBS surgery involves the precise placement of electrodes in the brain, connected to a pacemaker that provides stimulation to alter brain activity, effectively alleviating or reducing patients' symptoms. Dr. Lau and his team harnessed the power of the neuromate to facilitate accurate and safe electrode placement in hard-to-reach areas of the brain. This cutting-edge technology enables individualized trajectories with minimal manual intervention, revolutionizing the field of neurosurgery.

Dr. Lau was the first surgeon in Canada to use a robot to perform DBS surgery to treat epileptic seizures

CONTINUING THE LEGACY OF CUTTING-EDGE CARE

This achievement is not merely a milestone, it is a commitment to advancing medical care and improving patient outcomes. By harnessing the potential of the Renishaw robot and embracing innovation, neurosurgeons strive to help more patients and make a profound impact on their lives. LHSC plans include extending the robot's use to support patients living with dystonia, Huntington's disease and essential tremor.

Neuromate streamlines the diagnostic process, reducing electrode placement time from hours to a mere 45 minutes

Groundbreaking precision has led to a remarkable 90 per cent reduction in seizure occurrences

STAY STRONG:

ERIN MCDONALD'S STORY

Erin McDonald is sitting on the bus and suddenly she feels a pit growing in her stomach. She senses it slowly moving up, sending waves throughout her body. Her mind starts racing, everything feels like it's moving a thousand miles per second—

Then, it all fades to black.

When she regains consciousness, she is standing in the middle of a road—uncertain how much time has passed or how she got there.

Erin started having seizures at six years old, leading to a diagnosis of epilepsy. Eventually, she reached a point where conventional treatments proved ineffective. Desperate for solutions, her doctor in Hamilton referred her to London Health Sciences Centre (LHSC).

She was brought to the Epilepsy Monitoring Unit (EMU) at University Hospital, for a multi-disciplinary assessment of her epilepsy. While the team noticed abnormal activity on the electroencephalogram (EEG), detecting her seizures proved challenging as they originated deep within her brain. To overcome this challenge, they opted for the insertion of depth electrodes, allowing the EMU to confirm the previous activity observed was seizure spikes.

The team also determined her disease was related to scar tissue in her brain, caused by a meningitis infection she had at 10 months old. Erin underwent surgery to remove the affected tissue from the right side of her brain, including part of her right temporal lobe.

Six months after surgery, she lost consciousness due to a seizure, prompting a return to the EMU.

"Once they hook you up to the machines, you're almost guaranteed to not have a seizure," Erin laughs. "It's Murphy's law."

Her Epileptologist, Dr. Ana Suller-Marti, kept Erin awake for several nights to induce a seizure. Erin became adept at identifying her triggers and she foresaw a seizure would strike once she fell into a deep sleep. Erin also developed a keen sensitivity to the warning signs of an oncoming seizure, recognizing a specific feeling in her stomach. She acknowledges how there are many misconceptions about epilepsy.

"When people think of a seizure, they often think of someone falling and convulsing," Erin describes. "But for me, I blackout and I could do some weird stuff."

To regain control over the disorder, Erin was offered the Vagus Nerve Stimulation (VNS) Therapy. Her VNS sends pulses to the vagus nerve every three minutes. She can request a stronger stimulation if she anticipates an impending seizure. The team can monitor Erin's activity with VNS, and she reports a significant reduction in post-seizure mental fatigue.

Even with VNS, Erin's life continued to be disrupted by epilepsy, leading Dr. Suller-Marti to recommend Deep Brain Stimulation (DBS) implantation. This technique involves placing electrodes to provide stimulation to the brain, reducing the chances of seizure occurrences.

Erin's results were transformative. With this procedure—along with the device and the adjustments made by her medical team—the frequency and severity of her seizures were greatly reduced.

"Before DBS, I was averaging between eight and 20 seizures a month. Today, I am down to two or three visible ones—and these are mostly occurring in my sleep," Erin shares.

Erin wants her story to encourage others to trust their intuition and advocate for themselves. She continues giving hope to other patients through the impressive diamond art she donated to the EMU. In the hallway, a plaque sits adjacent to one of her pieces and delivers a simple yet powerful message: "STAY STRONG."

YOUR DONATIONS BY THE NUMBERS

HERE'S HOW YOU MADE A DIFFERENCE LAST YEAR

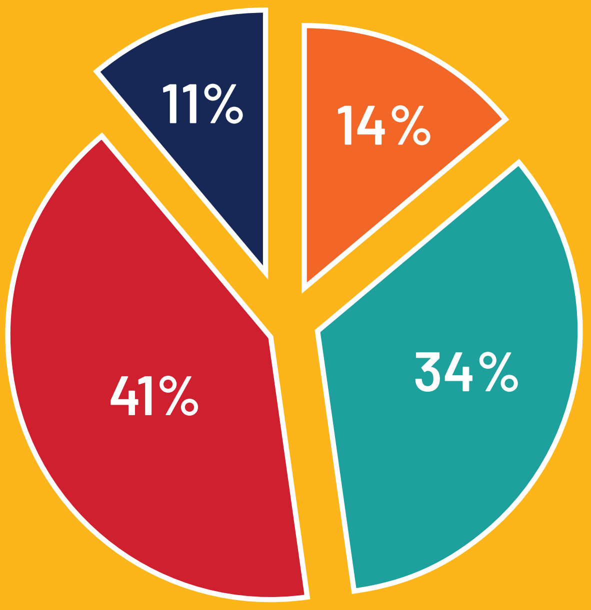
19,218 DONORS

41,469 GIFTS

$64 MILLION TOTAL REVENUE GENERATED

Direct donation designations:

- ■ Education/Fellowship **11%**
- 🟧 Highest Priority Needs **14%**
- 🟦 Research **34%**
- 🟥 Patient Care & Equipment **41%**



View the audited financial report at lhsf.ca/accountability

YOUR
IMPACT

London Health
Sciences Foundation

@lhsfcanada

747 Base Line Road East, London, ON N6C 2R6
519.685.8409 / foundation@lhsc.on.ca / **www.lhsf.ca**

Accredited
IMAGINE CANADA

London Health Sciences Foundation is
a charity accredited by Imagine Canada.

Charitable Registration Number 894781475RR0001