

# Brain Breakthroughs

*It's About Time*



EMILY, BRAIN DISEASE SURVIVOR

Together, we have  
achieved brain  
breakthroughs big  
and small.

2024 CAMPAIGN UPDATE

**BRAINBREAKTHROUGHS.CA**

**VGH+**  
**UBC** hospital  
foundation

WITH GRATITUDE

Thank you for your generous commitment to VGH & UBC Hospital Foundation, and for supporting Vancouver Coastal Health (VCH) in its mission to improve the quality of life for British Columbians impacted by brain injury and disease.

Since the successful conclusion of the *Brain Breakthroughs* Campaign in 2022, your generosity continues to play a pivotal role in advancing critical research and enhancing care for individuals affected by neurological conditions and injuries. Your philanthropic support is building capacity to respond swiftly to increased demand for services across the province by training the next generation of neurologists and advancing medical research and care.

Together, we have achieved brain breakthroughs big and small across a variety of brain conditions and diseases. We are excited to share some of the key highlights from 2023.



A handwritten signature in black ink, consisting of stylized initials 'AC' followed by a horizontal line.

**ANGELA CHAPMAN**

PRESIDENT & CEO, VGH & UBC HOSPITAL FOUNDATION

# Together, we build

## INTRODUCING THE 3T MRI – THE FUTURE OF DIAGNOSTIC IMAGING AT VGH



3T MRI AT VGH, BLACKMORE PAVILION, LIVE SINCE FEBRUARY 2023

Your donation has helped Vancouver General Hospital (VGH) invest in innovative tools and equipment which will help improve accuracy in diagnosis and surgical outcomes. These new tools have empowered our clinicians with state-of-the-art technology, so they can provide world-class care for the body's most complex organ.

One of our feature initiatives and top priorities was to install a new 3T MRI machine at VGH. This new machine was installed in early 2023 and has already greatly impacted patient care and ongoing research. Between February 2023, when the scanner went live, and early 2024 the 3T MRI unit has performed over 4150 scans, with more than half of those being neurology scans.

While the new 3T MRI has many applications across various fields, including abdominal, urology and musculoskeletal medicine, its impact on neurological diseases and injuries - specifically stroke, epilepsy and brain tumors - is immense.

## HOW THE 3T MRI IS SHAPING CARE

Dr. Talia Vertinsky, Neuroradiologist and Clinical Professor of Radiology, has worked at VGH for over 15 years, and has seen first-hand how your generosity has impacted patient care. She shared some of the major impacts this new technology has already had on brain medicine:

1. Stroke specialists now have significantly improved vessel wall imaging, allowing them to determine whether the cause of a stroke is atherosclerosis (plaque buildup in and around arteries) or vasculitis (inflammation of the blood vessels). These causes of stroke have very different treatment plans, and the 3T imaging capabilities allow neurologists to make this determination, which was nearly impossible before with the lower resolution imaging.
2. For patients impacted by brain tumors, the 3T MRI provides improved imaging of their tumors, allowing their care team to better detect and more directly treat the tumor, whether through direct application of cancer therapies, or more precise surgery.
3. The 3T MRI has been groundbreaking for the epilepsy team through the use of Functional MRI – a scan that can show which areas of the brain are most active and allow physicians to “map” brain activity. With a cutting edge technique, EEG-fMRI, they are getting closer to being able to pinpoint the centre of a seizure, which will not only drive advancements in research and care, but will give hope to patients suffering from therapy-resistant epilepsy.

The new 3T MRI allows VGH to develop a Functional MRI (fMRI) program, driving VGH to be at the forefront of imaging medicine and develop new techniques for other centres. An fMRI program at VGH will not only enhance diagnostic capabilities, it will also support research initiatives and contribute to advancements in the understanding and treatment of neurological conditions. It improves patient care, provides valuable tools for clinicians, and positions the hospital as a center for excellence in neuroimaging and neuroscience.



“I’ve been waiting for this 3T MRI for 16 years – my whole career. Donors have done a huge service to this hospital to provide it. And we never would have gotten it without them.”

–Dr. Talia Vertinsky



The addition of the 3T MRI has not only changed the care provided to patients, it has also become a truly innovative diagnostic imaging centre and will provide greater access to new technologies and developments. With an ongoing shortage of skilled labour, the 3T MRI is a draw for technologists who want to develop their skills and knowledge, providing yet another way to attract new talent to VGH.

Dr. Vertinsky’s enthusiasm for the new addition was palpable as she shared that this was the most significant contribution to the hospital in her time here. “I’ve been waiting for this 3T MRI for 16 years – my whole career. Donors have done a huge service to this hospital to provide it. And we never would have gotten it without them.”

# Together, we discover

## NEW WAYS TO TREAT PATIENTS



Your generous support is not only a driving force behind groundbreaking medical research at VCH, it is an investment in the pursuit of understanding the complexities of the human brain and finding innovative solutions to neurological challenges. Your contribution enables clinicians and scientists here to conduct pioneering research that has the potential to transform the landscape of neurological medicine.

The impact of your support extends far beyond the laboratory. It reaches individuals and families facing the often daunting challenges of neurological disorders such as stroke, concussion and Alzheimer's. Your belief in the power of research gives hope to those seeking answers, treatments and ultimately, a better quality of life. We are pleased to share updates on the team's advancements in research over the past year.



**DR. SAM YIP**

The team is leading the development and implementation of protocols that expand best practices in acute stroke care from VGH to other sites, including St. Paul’s Hospital, Lions Gate Hospital and Richmond Hospital.

In other hospitals, door to treatment time can be 60 minutes or longer. At VGH, as a result of Dr. Yip’s Quality Improvement Initiatives, the team has brought that time to 45 minutes. The team is working to reduce this time even further, with a goal and desire to bring it down to 30 minutes – this saves more lives and prevents more disability.



**DR. ALYSON PLECASH**

Dr. Alyson Plecash completed her neurology residency at UBC and was a stroke fellow with the team from April to December 2022. She has returned from a six-month stroke fellowship in Toronto to the Vancouver Stroke Program to help develop a new clinic focused on stroke and cerebrovascular disease in pregnancy. This goal aligns with her particular interest in neurological issues in women and pregnancy.



**DR. LILY ZHOU**

Dr. Zhou, stroke neurologist at VGH, is leading research to understand how medicine can overcome disparities in cerebrovascular health related to race, ethnicity, gender and socioeconomic status. In 2023, Dr. Zhou was the recipient of a Vancouver Coastal Health Research Institute (VCHRI) Investigator Award for her study predicting stroke mortality using artificial intelligence and machine learning.

Using national and provincial data to examine a population-based group of patients, Dr. Zhou and her team aim to compare trends in short- and long-term stroke fatality in people living in rural and urban areas. For patients receiving neurosurgical procedures, the team will be using machine learning techniques (a form of artificial intelligence) to predict mortality. This updated data could help to reduce health disparities among vulnerable populations and identify the impact of advances in acute stroke care.



**DR. MYP SEKHON**

Dr. Myp Sekhon is an intensive care physician and clinician-scientist at VGH, treating patients with stroke, cardiac arrest and traumatic brain injuries. This past year, he and his research team have discovered that blood biomarkers can be used to identify oxygen levels in the brain in real time. With just a simple blood test, clinicians can determine the severity of a cardiac arrest or stroke on the brain within 15 minutes, which is vital information when choosing the best course of treatment.

This research breakthrough, made possible with the donor-funded Brain Bolt, has played a significant role in the creation of an international guideline for treating cardiac arrest. The guideline’s recommendation is to move beyond the current model of a one-size fits all approach to resuscitation, and to take a personalized approach based on an patient’s unique pathological differences. This guideline statement will transform the development of groundbreaking cardiac arrest treatment and care at a global level, leading to improved recovery outcomes and saving more lives impacted by stroke, cardiac arrest and traumatic brain injuries.



**DR. NOAH SILVERBERG**

Dr. Noah Silverberg is working in partnership with other researchers around the world to establish a more effective way to diagnose concussion. They designed new criteria that can be applicable across age groups, health systems and injury circumstances.

“These new criteria will help pave the way for standardized care and research in this crucial area of health.”

–Dr. Noah Silverberg





**DR. HAAKON NYGAARD**

Through extensive research, clinicians and researchers now know that amyloid plaque build-up in the brain is related to Alzheimer's and Dr. Nygaard has observed that some patients seem to be immune to Alzheimer's. With the recent success he's had in building the world's first brain lab model using a 3D bio-printer that mimics the real-life brain cells, he believes that he can answer the question of how some people are immune to this plaque build-up. He hopes that this research could identify future prevention and treatment strategies for those at risk of Alzheimer's.



**DR. MARTIN MCKEOWN**

Dr. Martin McKeown is continuing to develop a lightweight, wearable and affordable device to prevent falls in patients afflicted by Parkinson's disease. Worn like a headband, the device connects an electronic unit with the bones behind the ears to deliver customized electronic stimuli to the human balance system. This approach is shown to normalize brain rhythms and network connectivity, hence improving balance and motor functions in patients. Since its launch last year, they have increased access to the device from 10 patients to 20 and continue to identify and create optimal stimulators which will improve outcomes for patients.

# Together, we lead

A DREAM TEAM FOR TODAY AND THE FUTURE



Your commitment to investing in the next generation of neuroscientists and medical professionals not only changes outcomes in medical care, but helps keep VGH on the map as a world-class teaching hospital. Your donation goes beyond financial support; it is a powerful endorsement of the potential impact that emerging talent can have on the field of neurology. Thanks to your generosity, aspiring researchers and clinicians have the opportunity to pursue their passion and contribute to the advancements in neurological science. We are pleased to share updates on the newest Fellows and new recruits to the neurology team at VGH.

**Philanthropy continues to play a critical role in attracting, recruiting and retaining the best and brightest in Neurology at VGH.**

This year, your philanthropy has enabled eight medical leaders of tomorrow to receive world-class training in neurologic medical treatment. Your support of these dedicated clinicians is ensuring that patients across the province continue to receive the highest quality of care.

STROKE PROGRAM FELLOWS



**DR. SARVANI CHETTY**

*"I am deeply grateful for your philanthropic support which has enabled me to pursue my passion for advancing stroke knowledge and providing better patient care."*



**DR. ROBERT SARMIENTO**

*"Thank you for believing in the power of education and research. Your donation has paved the way for advancements in stroke, and I am honored to be a beneficiary of your commitment to progress."*



**DR. ALEJANDRO FUERTE**

*"Your kindness and generosity have opened doors, allowing me to focus on advancing medical research and education."*

## EPILEPSY PROGRAM FELLOWS



**DR. SANAZ AHMADI  
KARVIGH**  
PEARSON FAMILY FELLOW

*"I am so grateful for your generosity, which has allowed me to expand my knowledge and experience through a second year of fellowship with the VGH epilepsy team."*



**DR. JITUPAM BAISHYA**  
ROBERT & LISA KING FAMILY  
FELLOW

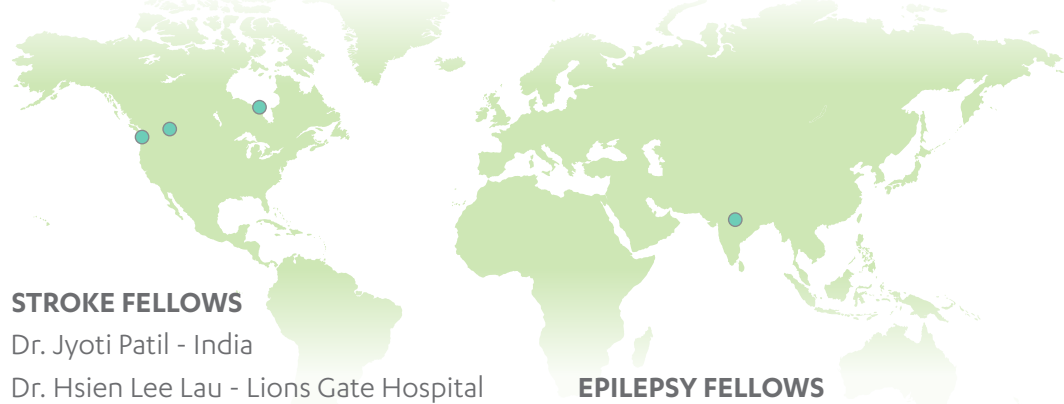
*"Your generosity has provided me with the resources and opportunities to excel in my medical fellowship, and I am truly appreciative."*



**DR. JOEL MOLDER**  
BOSA PROPERTIES FELLOW

*"Thank you for empowering me to explore, innovate and contribute to the future of healthcare through your invaluable support."*

## GRADUATED FELLOWS — WHERE ARE THEY NOW?



### **STROKE FELLOWS**

- Dr. Jyoti Patil - India
- Dr. Hsien Lee Lau - Lions Gate Hospital
- Dr. Mahsa Sadeghi - Victoria, BC
- Dr. Mar Irida Lloret Villas - Edmonton, AB
- Dr. Jonathan Smith - BC Children's Hospital

### **EPILEPSY FELLOWS**

- Dr. Grace Serrano – Edmonton, AB
- Dr. Maher Arabi (Joseph Chung Fellow) – Montreal, QC

## NEUROMUSCULAR DISEASE UNIT FELLOWS



**DR. LAURA MARULANDA**

*“Your philanthropic spirit has transformed my dreams into reality. I am deeply grateful for your support and the opportunities it has afforded me during my fellowship.”*



**DR. DIYA SHI**

*“Thank you for your philanthropic support in my educational journey as a Neuromuscular and Headache fellow. Your support will allow me to serve the community in a more meaningful way.”*

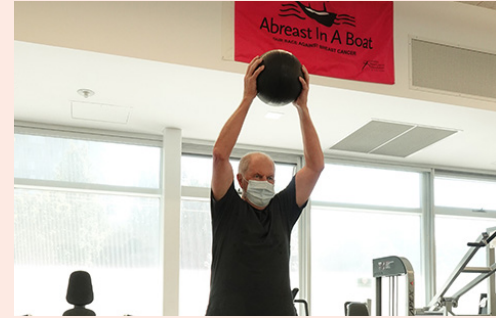


## STROKE NURSE PRACTITIONER

Through your support, VGH has added a new nurse practitioner to support stroke patients. Miriam Salih provides specialized levels of care to patients and helps them navigate their patient journey through the complex healthcare system. This position will help ease ever-growing demands on the doctors, while ensuring that stroke patients and their families receive the care and attention they deserve.

# Together, we care

TO SAVE AND IMPROVE LIVES



PHOTOS COURTESY BC BRAIN WELLNESS PROGRAM

Care programs for brain health play a crucial role in promoting overall well-being and preventing or managing various neurological conditions. The importance of these programs extends to individuals of all ages and backgrounds. Thanks to your generous support of the *Brain Breakthroughs* campaign, vital programs are continuing to provide improved care for patients and ongoing support as patients navigate the complex world of brain disease and injury, from initial diagnosis to ongoing therapy and recovery.



The MS Clinic cares for 80-90% of MS patients in BC.

#### **ENHANCING CARE FOR MS PATIENTS**

Thanks to a transformational gift, the team is implementing a case management service delivery model with patients assigned to nurse/physician teams, for more individualized care and improved accountability. The team has hired Krista Barclay, Clinical Nurse Specialist, who will provide primary leadership and support to this initiative. She is an expert in MS care and will project manage all the initiatives getting under way.

Krista has been continually involved in clinical improvement work in nursing roles at the VGH Emergency Department, as Patient Care Coordinator/Educator at the Djavad Mowafaghian Centre for Brain Health (DMCBH) and as a research manager for the VGH Department of Emergency Medicine Research. She is very excited to be back at DMCBH to support this important quality improvement work at the MS Clinic located on its premises.

## BRAIN WELLNESS

The BC Brain Wellness Program (BWP) is leveraging the collective power of clinical care, lifestyle programs, education and research to deliver a comprehensive and integrated approach to brain wellness for people with chronic brain conditions, care partners and healthy agers.

The BWP is one-hundred percent donor-funded and as a result of your philanthropic support, the program has grown tenfold since its inception in 2019. They now have 25 online classes with 700 active participants, and they have provided more than 3,000 hours of free classes. The team has invested in training 20-30 instructors, website and registration system development and a virtual meeting platform, supporting its continuous growth with over 50% of classes now carrying waitlists.

Their collaborations continue to expand, enriching the next generation of healthcare professionals. They have also expanded their research efforts across four major studies and have presented some of their work at major international conferences.

The BWP provides an innovative and integrated solution and, in its infancy, is building towards a system of change. This successful growth is only possible because of the generosity our donors.

The Brain Wellness Program is 100% donor-funded, and as a result of your philanthropic support has grown tenfold since its inception in 2019.





## JACKSON MOONEY'S STORY



Just over twenty years ago, Jackson Mooney was diagnosed with Cervical Dystonia, a painful condition in which your neck muscles contract involuntarily, causing your head to twist or turn to one side. He was sent to a movement disorders clinic where he received treatment in the form of botox injections. For a while this helped to relieve the issue, but as his muscles became more active, the injections became less effective and his pain increased.

With significantly reduced range of motion in his neck and daily pain, he began to develop depression and anxiety, concerned about what the future might hold.

After years of pain, Jackson decided to try Deep Brain Stimulation (DBS) to help manage the painful symptoms of his dystonia, with the hope that it would mostly cure him. After a twelve-hour surgery to implant the electrodes, and a few weeks of recovery, the system was turned on. Finally there was hope – the dystonia started to disappear, and his pain went away. Unfortunately, these improvements were short-lived, the dystonia came back after just 24 hours and the pain increased. There did not seem to be a cure. Jackson was forced to give up his business of 35 years, as well as driving, and all his favourite recreational sports, including daily walks with his wife, Mady.



JACKSON AND MADY

Then, a few years ago, Jackson was introduced to Dr. Silke Cresswell, a movement disorders neurologist at the Djavad Mowafaghian Centre for Brain Health. He was intrigued by her training in Germany, where they use ultrasound to better pinpoint where the botox should be injected and had renewed hope for finding a remedy for his dystonia.

After working with Dr. Cresswell for a few months, Jackson was able to start turning the DBS system off more often, for longer periods of time, and he slowly built up more strength. Around the same time, Dr. Cresswell introduced him to the Brain Wellness Program, which at the time was just getting started, and he signed up for several classes.

With physical workouts at a minimum of five hours a week and some calming meditation classes, Jackson started to notice changes almost immediately – he was physically stronger, and his mental and emotional state was starting to improve significantly. Even his eyesight got better! He no longer uses the DBS.

Eventually, he was able to start driving again after six years and started walking with Mady again. He even started golfing again after 20 years without.

“There’s no other feeling like it. To regain function that you thought you had lost for the rest of your life, and to be able to participate in your favourite activities again is incredible,” Jackson enthusiastically shares. And he attributes this success to the Brain Wellness Program: “This program not only gave me hope, it gave me my life back.”



DR. SILKE CRESSWELL



JACKSON RIDING AGAIN

“This program not only gave me hope, it gave me my life back.”

– Jackson Mooney

# Thank you



In the dynamic landscape of scientific exploration, the quest to unravel the complexities of the human brain stands at the forefront of our collective aspirations. Your generosity is helping us make strides in research and care for those facing neurological challenges and helping attract the best and brightest young talent to VCH to make these advancements a reality. Thanks to your philanthropy, we are able to fund critical research projects, provide valuable resources to those in need and create a positive impact on the lives of individuals and families affected by neurological disorders. Together, we strive to empower the scientific community, pushing the boundaries of knowledge to improve lives and inspire future breakthroughs.

# Campaign Cabinet

We are grateful to the following volunteer cabinet members who partnered with us to raise awareness and funds to help make *Brain Breakthroughs* possible.

## Community Leaders

**Joseph Segal, Honourary Chair** (d)  
President & Founder, Kingswood Capital Corp

**Dr. Angus Reid, Co-Chair**  
Chair, Angus Reid Institute

**Andrew Reid, Co-Chair**  
Founder & CEO, Rival Technologies

**Rita Andreone**  
Corporate Director

**Hamid Eshghi**  
President, Djavad Mowafaghian Foundation

**Patti Glass**  
Vice President, Corporate Marketing & Communications  
Grosvenor Americas

**Wayne Henderson**  
Managing Director, Henderson Capital Group Inc

**Jane Manning**  
Retired Special Ed Educator

**Ali Pejman\***  
Managing Partner, Fort Capital

**George Richards**  
President, GEMS Management Services Ltd

**John C. Scott**  
Chair & Founder, Scott Construction Group

**Gail Silverberg**  
Senior Manager, Commercial Banking, CIBC

**Hani Zayadi**  
Corporate Director

## Vancouver Coastal Health Leaders

**Dr. Philip Teal**  
Head of Neurology, Vancouver Acute

**Dr. Kristine Chapman**  
Director, Neuromuscular Disease Unit, VGH

**Dr. Silke Cresswell**  
Movement Disorders Neurologist

**Dr. Thalia Field**  
Stroke Neurologist

**Dr. Haakon Nygaard**  
Director, Clinic for Alzheimer Disease and Related  
Disorders, UBC Hospital

**Dr. Jacqueline Quandt**  
Associate Director, UBC Hospital MS Research Program

**Dr. Lynn Raymond**  
Director, Djavad Mowafaghian Centre for Brain Health

**Dr. Gary Redekop\***  
Head, Department of Surgery

**Dr. Jon Stoessl**  
Movement Disorders Neurologist

\* VGH & UBC Hospital Foundation Director

# Thank you for supporting Brain Breakthroughs



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