

BREAKTHROUGH

BC
CANCER
FOUNDATION

FALL 2020



CHANGING THE STORY FOR WOMEN'S CANCERS

*"I am thriving today
because of my team
at BC Cancer and an
innovative clinical trial."*

—NATALIE MATKO JACKSON,
BREAST CANCER PATIENT

**EMBRACING
CREATIVITY** during
uncertain times

**YOUNG MOTHER
DONATES TISSUE
SAMPLES** to change
gynecologic cancer
outcomes

BC Cancer patient Natalie Matko Jackson
(centre) with Drs. Stephen Chia and Janice Kwon

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About the BC Cancer Foundation

The BC Cancer Foundation is the fundraising partner of BC Cancer. Together with our donors, we are changing the outcome for people affected by cancer in B.C. and beyond by connecting personalized care, innovative research and opportunities to give back. We are the largest charitable funder of cancer research in B.C. and every dollar raised stays right here at BC Cancer to advance research, innovate care and break down cancer.

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OPENING THOUGHTS

STRONGER, TOGETHER.

In the face of COVID-19, we are experiencing uncertain and challenging times. Thanks to your unwavering support, we continue to forge ahead with strength, committed to our mission to break down cancer.

As we navigate unprecedented territory ahead, we know that cancer does not stop and neither will we. Patients and families need our support now more than ever.

One of our strengths as a Foundation is partnering with donors like you to bridge funding gaps in research. We are proud to be stepping up to help our scientists maintain life-saving momentum and I urge you to look at our insert for more information about our fall match.

We've also collaborated with our community of supporters to launch a COVID-19 mask initiative to profile beautiful patient artwork and help raise funds to support urgent needs at BC Cancer. You can read more on page 4.

As an organization we've had to be nimble yet laser focused on our fundraising priorities. This includes breaking down women's cancers, which you can read more about on page 7.

We've transformed our signature events into unique virtual experiences, including a *Ride to Conquer Cancer* personal challenge: *We Ride On; Hope from Home (Hope Couture)*; and our virtual *Inspiration Gala*.

I'm continuously inspired by you, our donors, taking on your own initiatives to raise awareness and funds. In July, I was in awe of Vancouver's Bianca Hayes, who rode across Canada to become the world's fastest woman to cycle this incredible distance, raising funds for ovarian cancer research in honour of her sister.

You may have noticed this issue of *Breakthrough* looks different. To focus more funds on where they're needed, we've reduced our standard magazine but commit to packing each upcoming issue with inspiring stories and research updates for you, our BC Cancer family.

Sarah Roth, *President & CEO, BC Cancer Foundation*



HEALTHY INSIGHTS

EMBRACING CREATIVITY DURING UNCERTAIN TIMES



Carmen Hou and her daughter, Evelyn

Our new reality presents risks and challenges that deeply impact members of the cancer community. Thankfully, BC Cancer offers an art therapy program providing an outlet for comfort and improving quality of life.

As described by Sara Hankinson, BC Cancer art therapist, “There are many benefits of art therapy, including improved mood, ability to cope with challenges, relaxation, and stress reduction; and there is no need to have artistic talent to participate.”

While many of the art therapy classes have temporarily moved to a virtual format, patients are encouraged to take part in different forms of art, including: keeping art journals, going for photography walks, trying their hand at knitting or crocheting, or even publicly displaying messages of cheer.

For breast cancer patient Carmen Hou, participating in art therapy has been a continual source of healing and self-care. “I was especially drawn to the classes as a way of connecting with other young adults on their cancer journeys, often in a similar stage of life,” says Carmen. “Art therapy has given me an outlet

to process the emotions that came after my diagnosis and has been a constant source of joy in a difficult time.”

Now, as part of our “masked heroes” initiative, Carmen’s artwork has been selected to appear on reusable face masks to protect one another from COVID-19 while raising funds for vital cancer research.



The mask designs celebrate the resiliency and creativity of patients by proudly featuring their artwork and are available for sale at www.bccancerfoundation.com/maskedheroes.

To learn more supporting art therapy programs at BC Cancer, please contact Becky Yost at becky.yost@bccancer.bc.ca or 587.897.7008.

INSIDE THE LAB

MEET DR. JANICE KWON



“Innovation and challenging the norm continues to drive prevention and change outcomes for more patients across our province.”

—DR. JANICE KWON

For over ten years, BC Cancer researchers have been at the forefront of a surgical protocol that recommends the removal of women’s Fallopian tubes to reduce their risk of ovarian cancer. Since this recommendation was made in 2010, the procedure has seen a swift adoption across B.C. and many jurisdictions across the world.

One of the BC Cancer leaders at the helm is Dr. Janice Kwon, gynecologic surgical oncologist.

1. What exciting updates can you share with us?

JANICE: Since 2010, we have seen a significant increase in women undergoing this procedure across B.C. We are confident that this procedure is the best line of preventative defense for this often-lethal cancer.

2. What role do you play in this area of work?

JANICE: In addition to being part of the educational campaign that encourages uptake of this procedure, I am involved in analyzing the prevalence of ovarian cancer between women who have and have not undergone this procedure. My work also focuses on exploring the long-term cost savings of avoiding these diagnoses.

3. What excites you about the future of this surgical protocol?

JANICE: I look forward to seeing where the results will lead in the future and how we will change outcomes for more women. We are confident that it’s a feasible and cost-effective method of prevention for a cancer that still has no viable screening tests.

YOUNG MOTHER DONATES TISSUE SAMPLES TO BREAK DOWN RARE WOMEN'S CANCERS

Justin Mattioli and his late wife Eileen



For Justin Mattioli, describing his wife Eileen brings about fond memories of her caring nature both as a mother and Emergency Nurse. Taking care of others was second nature to her.

“She was just an awesome person all around,” says Justin. “She loved being a mom most of all.”

Eileen began experiencing abdominal pain and was initially diagnosed with an ovarian cyst. It grew exponentially, causing even more pain, and was eventually removed through surgery and sent for a biopsy.

Three days after her surgery, Eileen found herself in pain once again. It was around that time she also received the results of her biopsy. It was a diagnosis she and Justin never expected: small cell carcinoma of the ovary, hypercalcemic type (SCCOHT).

In May 2019, at 34 years old, Eileen sadly passed away from this rare and highly aggressive type of cancer.

Prior to her passing Eileen generously made the decision to donate her tissue samples to help advance

research and find new treatments for other women facing the disease.

“We would hate to see someone else going through what Eileen did,” says Justin. “And there is a good possibility that this may help advance further research into other types of cancers as well.”

Justin has also generously fundraised for the cause, having had t-shirts made with a special message in Eileen’s honour, which were sold to family and friends to support SCCOHT research.



“Eileen was a ‘powder hound’—she loved being outside up in the mountains,” he says. “We had t-shirts made that said *‘I’d rather be in the mountains’* to honour her love of the outdoors. We knew she’d rather be in the mountains than in a hospital bed.”

DISCOVERY OFFERS NEW POSSIBILITIES FOR YOUNG WOMEN DIAGNOSED WITH RARE FORM OF OVARIAN CANCER

A finding by BC Cancer researchers offers possibilities for a new treatment for young women who are diagnosed with SCCOHT, which is a particularly devastating cancer that has no effective treatments.

In a recent study published in *Clinical Cancer Research*, the team described finding a metabolic vulnerability present in cells from this particular cancer, preventing them from getting the nutrients they need to survive.

“Finding this metabolic vulnerability and identifying a way to exploit it could have a huge impact on women diagnosed with this rare disease,” said Jennifer Ji, MD/PhD candidate at UBC’s faculty of medicine and trainee at the BC Cancer Research Institute and the study’s first author.

The team has validated this treatment in pre-clinical studies and now want to test their findings in clinical trials.

This discovery is welcome news to Justin Mattioli as Eileen’s tissue samples were used to create a model that could be used for the combination drug testing to see what is most effective, bringing immense hope to young women who may face the disease.

To support ovarian cancer research today, please contact Alyson Killam at 604.877.6160 or akillam@bccancer.bc.ca



facing

**BREAST CANCER
IN HER THIRTIES WITH STRENGTH:**

natalie's story

*Natalie Matko Jackson,
BC Cancer patient*

*“At only 30,
cancer wasn’t even
on my radar.”*

Natalie Matko Jackson moved to Vancouver in 2010 from Chicago for her dream job as a fashion buyer in the athletic apparel industry.

Her life took a drastic turn after she discovered a lump in her breast in 2012.

“I had originally assumed that the lump was from doing pushups in a fitness challenge I had participated in,” says Natalie. “At only 30, cancer wasn’t even on my radar.”

After a couple of months, Natalie started to worry that something wasn’t right.

While in for a routine test, Natalie’s doctor checked the lump and immediately referred her to the hospital.

Within two weeks, Natalie received three mammograms, three ultrasounds and a biopsy before it was confirmed that she had Stage IIB breast cancer.

“The immediate healthcare I received was fantastic; I felt zero need to go back home to the U.S.,” says Natalie.

Soon after her diagnosis, Natalie started a treatment plan including eight rounds of chemo, two lumpectomies and 20 sessions of radiation.

Then in 2017, just a month shy of her five-year remission celebration, Natalie returned to BC Cancer because she was feeling off. She received the devastating news that her cancer had returned as Stage IV metastatic breast cancer that had spread to her lungs.

Today, Natalie’s cancer is stable thanks to an innovative clinical trial at BC Cancer, which she has been on for more than two years. Her most recent scans have shown a recession in her disease and she is feeling well.

“Thanks to my incredible community, my husband Steve and my team at BC Cancer, I know I am right where I need to be. I am receiving the best care possible.”

BREAKING DOWN WOMEN'S CANCERS

This year, more than 5,500 women in B.C. will be newly diagnosed with a women's cancer, such as a breast or gynecologic cancer (ovarian, uterine or cervical cancer).

The teams at BC Cancer are world-renowned and, with donor support, will break down cancer through clinical trials and precision medicine, saving more lives, like Natalie Matko Jackson's.



Dr. Stephen Chia, chair, Provincial Breast Tumour Group and medical oncologist

OVARIAN CANCER RESEARCH (OVCARE) TEAM

Clinical trials are essential for developing new methods of cancer prevention, detection, diagnosis and treatment. There is an urgent need to expand essential infrastructure for gynecologic clinical trials at BC Cancer.

OVCARE has partnered with clinicians and researchers across the province to reduce incidence, mortality and suffering from all gynecologic cancers by 50 per cent by 2034.

AGGRESSIVE GYNECOLOGIC CANCERS

There are currently no effective treatments for most aggressive gynecologic cancers, such as low-grade serous ovarian cancer. There is an urgent need to grow the gynecologic research program in

order to test new drugs, quickly, to guide the focus of clinical trials.

With donor support, the team is ready to expand their program to encompass more aggressive gynecologic cancers, leading to life-saving treatment solutions.

BREAST CANCERS: B-PRECISE

Since 2017, all newly-diagnosed breast cancer patients have been invited to participate in a study to understand the evolution of their cancer over time. This initiative, called B-PRECISE, collects tumour tissue and blood from every breast cancer at the time of diagnosis.

Led by BC Cancer's team of expert scientists and clinicians, B-PRECISE is transforming treatment and care strategies for all breast cancer patients in British Columbia.

"The B-Precise program has the potential to allow all newly diagnosed breast cancer patients in British Columbia to participate in a provincial research program," says Dr. Stephen Chia, chair, Provincial Breast Tumour Group and medical oncologist, BC Cancer. "This program aims to bring cutting edge genomic research to attempt to identify those patients at higher risk of a breast cancer event and understand the molecular drivers for that individual's breast cancer."

YOU CAN HELP CHANGE THE STORY FOR WOMEN ACROSS THE PROVINCE.

To learn more please contact Alyson Killam at 604.877.6160 or akillam@bccancer.bc.ca

THE CASCADIA DATA ALLIANCE:

ADVANCING CANCER RESEARCH THROUGH COLLABORATION

BC Cancer experts are applying radical new techniques to analyze the millions of individual cells that make up cancer. This begins with understanding cancer as a "big data" system.

Data-intensive cancer research includes a wide spectrum of projects, from complex imaging studies and immunotherapy to investigations into cancer's microbiome and single-cell genomics, which can capture cancer mutations at the highest resolution.

This level of detail is essential to the development of new combinations of treatments for cancer, based on each person's unique genomic characteristics. It also generates an unprecedented amount of data which requires massive storage.

ENTER CASCADIA DATA ALLIANCE (CDA)

The Cascadia region of North America is home to some of the world's leading technology, research and medical organizations, generating huge amounts of biomedical research data. The development of a robust data-sharing ecosystem within this region will drive innovation in healthcare like never before, impacting patients in the Pacific Northwest and beyond.

BC Cancer has joined the CDA with other leading research institutions to facilitate data-sharing and accelerate research and innovation in health sciences.

"The Cascadia grant has provided a fantastic opportunity for myself and Dr. Gavin Ha, principal investigator, Fred Hutch Computational Biology Program and Public Health Sciences Division, both early career investigators, to start a cross-institutional collaboration," says Dr. Andrew Roth, scientist at BC Cancer. "The unique nature of this grant has given us a chance to connect with senior scientists at both institutions, and to initiate what we hope to be a productive and long-term research partnership. We are excited about the potential to share data, expertise and experience between our groups."

Sponsored by Microsoft's Artificial Intelligence (AI) for Health Initiative, data from each institution will be gathered and stored in a cloud made possible by Microsoft's AI platform and software, Azure.

"With collaboration, there is enormous potential to unlock new insights and bring to life the power of data, resulting in scientific breakthroughs and health innovations," says John Kahan, Microsoft Chief Data Analytics Officer and global AI for Health Lead.



Dr. Andrew Roth, scientist, BC Cancer

SUPPORT CUTTING-EDGE CANCER RESEARCH TODAY.

Please contact Alyson Killam to learn more at 604.877.6160 or akillam@bccancer.bc.ca.

TRANSFORMING CARE IN THE INTERIOR: A NEW ERA OF EXCELLENCE BEGINS



Dr. Ross Halperin

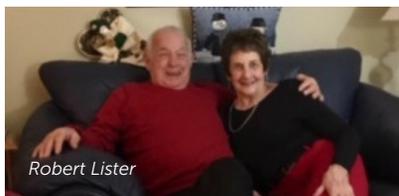
When Robert Lister was diagnosed with prostate cancer, he was admitted to BC Cancer – Kelowna and given a list of treatment options available.

He decided brachytherapy, a form of treatment that delivers a radiation dose directly to a tumour site internally via implanted seeds, was the best fit for him.

When the procedure was over, Robert was convinced he had made the right decision.

“I was pleased to not be experiencing any pain or nausea,” he says. “I felt relieved, confident and very positive that the procedure would be successful.”

Today, BC Cancer – Kelowna is a world-renowned leader in brachytherapy. It is expected that up to 15,000 cancer patients will require brachytherapy over the next decade.



Robert Lister

To ensure patients like Robert continue to have access to world-class precision treatment, the BC Cancer Foundation kicked off a \$3.5 million fundraising campaign to establish a first-ever Chair in Brachytherapy who will be instrumental in optimizing the brachytherapy program and transforming care for people facing cancer in the Interior.

“We want to save absolutely everyone and research is our engine of hope,” says Dr. Ross Halperin, executive medical director, BC Cancer – Kelowna.

TO LEARN MORE AND GIVE TODAY, PLEASE VISIT:
bccancerfoundation.com/BrachytherapyChair

QUARTERLY HIGHLIGHTS

VIRTUAL EVENTS

WORKOUT FOR SMOOTHER CANCER

More than **2,200** participants from B.C. and beyond participated and raised a record-setting **\$650,000** for BC Cancer patients.



COMMUNITY FUNDRAISERS

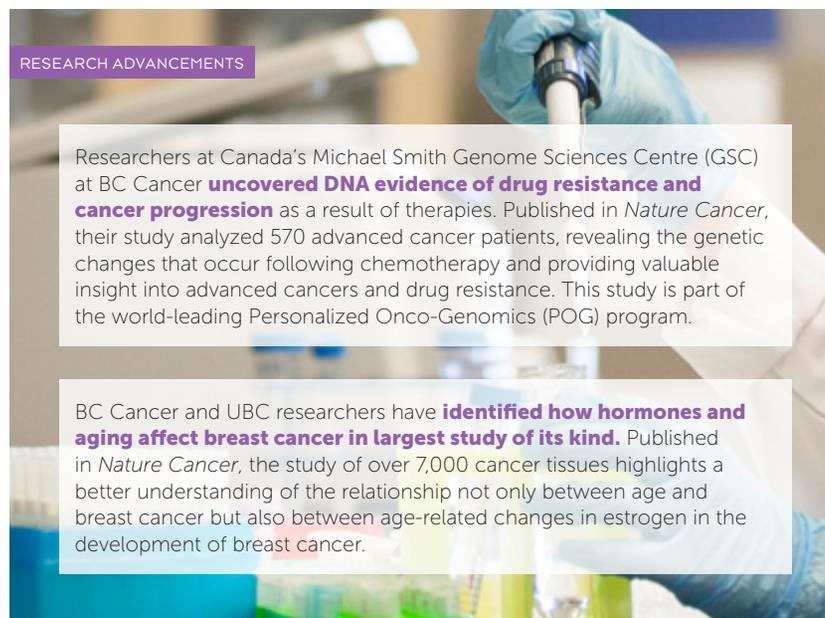
Scotiabank generously donated **\$100,000** to BC Cancer – Prince George’s **GREATEST NEEDS FUND** to support vulnerable patients and families in the community.



RESEARCH ADVANCEMENTS

Researchers at Canada’s Michael Smith Genome Sciences Centre (GSC) at BC Cancer **uncovered DNA evidence of drug resistance and cancer progression** as a result of therapies. Published in *Nature Cancer*, their study analyzed 570 advanced cancer patients, revealing the genetic changes that occur following chemotherapy and providing valuable insight into advanced cancers and drug resistance. This study is part of the world-leading Personalized Onco-Genomics (POG) program.

BC Cancer and UBC researchers have **identified how hormones and aging affect breast cancer in largest study of its kind**. Published in *Nature Cancer*, the study of over 7,000 cancer tissues highlights a better understanding of the relationship not only between age and breast cancer but also between age-related changes in estrogen in the development of breast cancer.



FOUR B.C. CHARITIES UNITE TO COMBAT COVID-19

The BC Cancer Foundation, BCCDC Foundation for Public Health, VGH & UBC Hospital Foundation and the University of British Columbia have joined forces to establish the B.C. COVID-19 Combat Collective to raise funds for the province's world-leading research teams.

In the face of crisis, research is the key to curb the current threat and understand COVID-19's long-

term implications, protecting us from future risks.

Funds raised will support B.C.'s leading experts in researching innovative solutions to detect, neutralize and combat COVID-19.

BC CANCER COMBATS COVID-19

Experts at BC Cancer are decoding the disease by developing innovative testing and treatments, including a study that applies the team's expertise in cancer detection to rapidly test for coronavirus by using four innovative technologies. This includes light and breath samples.

"Combating COVID-19 is essential for all of us, especially our vulnerable cancer population. World-leading researchers at BC Cancer are deploying expertise in genomics, disease detection and treatment development to accelerate innovative solutions alongside our provincial colleagues to halt the spread," says Dr. François Bénard, senior executive director, research, BC Cancer.

Together, this powerhouse of scientific experts can help prevent future outbreaks and save the lives of our most vulnerable.

To learn more about how you can support COVID-19 research at BC Cancer, please contact: Lindsay Abbott at lindsay.abbott@bccancer.bc.ca or 604.675.8015.



*Dr. François Bénard,
senior executive
director, research,
BC Cancer*

CENTRE SPOTLIGHT



INVESTING IN INNOVATION ON VANCOUVER ISLAND: ONE YEAR LATER

In July of 2019, BC Cancer opened its third publicly funded PET/CT scanner in Victoria with the generous support of more than 3,500 local donors including Nanaimo resident and former patient, Gordon Heys, and long-standing supporter Thrifty Foods.

One year later, bringing innovative care closer to home has made a huge impact. Since opening, 2,200 patients have received their PET/CT scan at BC Cancer – Victoria.

"Having the PET/CT scanner in Victoria is a huge health care win for the Vancouver Island community," says Jenn Forer, chief PET/CT technologist for BC Cancer – Victoria.

"Every week we hear about the improvement this scanner has made in the lives of our patients and their support systems. Many had to travel long distances, brave stressful traffic, or even stay overnight in Vancouver to have their PET/CT scan. You can sense the relief they feel now that

their many appointments can be completed in a single visit."

The PET/CT campaign is a fantastic example of how donors are making a tangible impact on cancer care in their community.

"It is because of donors that we are able to go above the standard of care and really provide world class health service," says Jenn.



*Jenn Forer,
chief PET/CT
technologist, BC
Cancer – Victoria*

This fall we'll be launching a game-changing campaign to fund the next era in PET/CT care for prostate cancer patients—visit bccancerfoundation.com to learn more.



*Dr. Janice Kwon,
gynecologic surgical
oncologist, BC Cancer*

CANCER DOESN'T STOP AND NEITHER WILL WE.

Cancer diagnoses continue and patients and healthcare heroes, like Dr. Janice Kwon, need our support now, more than ever.

Together, we can save more lives.

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