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For supporting gynecologic cancer research and care

IMPACT REPORT
Prepared for donors to the Lee Curell Gynecologic Cancer Research Fund

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BC CANCER FOUNDATION

STRENGTHENING GYNECOLOGIC CANCER CARE AND RESEARCH ACROSS THE PROVINCE

In 2024, four new gynecologic oncologists joined the BC Cancer team (three in Kelowna and one in Victoria) leading to a dramatic reduction in surgery wait times. As surgery often precedes radiation or chemotherapy, this means patients are now receiving critical treatment faster and closer to home, improving outcomes and easing the burden on families.

This expansion is also fueling research growth in Kelowna and Victoria – with more specialists on site, teams across the province are leading new research initiatives and clinical trials, accelerating the pace of discovery and increasing access for patients who urgently need innovative treatment options.

REFINING PRECISION ONCOLOGY USING ARTIFICIAL INTELLIGENCE (AI)

Ovarian Cancer Research Program (OVCARE) Director of Data Science and Informatics Dr. Aline Talhouk and OVCARE Director of AI Research Dr. Ali Bashashati are leading BC Cancer in the use of AI to improve how gynecologic cancers are diagnosed and treated.

PERSONALIZING TREATMENT FOR RECURRENT OVARIAN CANCER

Nearly 80% of ovarian cancer patients experience relapse and their cancer becomes resistant to standard platinum-based chemotherapy. Predicting which therapies will work at this stage is a significant challenge for clinicians. To address this, Dr. Talhouk and her team are developing an **advanced language-based AI system to analyze vast medical data and suggest personalized treatment options for this high-risk group.** It will create virtual models called **'digital twins'** that use genetic, clinical and molecular data to simulate disease progression. This will enable scientists to test different "what-if" treatment scenarios, helping to optimize treatment sequencing and guide future AI-driven clinical trials.

ADVANCING ENDOMETRIAL CANCER DIAGNOSIS

An AI tool developed by Dr. Bashashati can detect subtle patterns in cancer cells invisible to the human eye and traditional diagnostics. The tool enabled scientists to identify a previously unrecognized high-risk subgroup of endometrial cancer with significantly poorer survival. Because the tool uses standard pathology images, it is cost-effective and easily scalable across diverse healthcare settings. Dr. Bashashati explains, **"What is compelling is the opportunity for greater equity and access, whether you live in a large urban centre or a rural community. Our hope is that this could truly transform how we diagnose and provide personalized care for patients everywhere."** The team is working to integrate this tool into clinical practice alongside existing diagnostics.

DR. ALINE TALHOUK

Ovarian cancer patient Nancy McKinstry (left) established the **Nancy McKinstry Endowment Fund for Ovarian Cancer Research**, which inspired a network of 169 donors to collectively raise over $1 million. In 2024, the fund provided awards for trainees that show great promise in their field of research.

Vanessa Chan (right) was one of the 2024 award winners, who gained funding for her immunotherapy research for ovarian cancer. She says, "I'd like to extend my gratitude to the donors who made this award possible. While it has improved, funding for women's health and diseases that affect people with female reproductive organs is still limited relative to other research fields. This means a lot to me..."

ADDRESSING HEALTH DISPARITIES AND IMPROVING ACCESS FOR GYNECOLOGIC CANCER CARE

Many British Columbians face challenges accessing cancer care due to geographic location, language barriers, education levels and cultural differences. To ensure equitable, world-class care for all patients across the province, BC Cancer gynecologic cancer experts are:

- **collecting demographic information on every new gynecologic cancer patient** in order to develop tailored tools and processes for groups and individuals that require a more personalized care approach.

- **leading Canadian advancements in cervical cancer screening.** In a recent *Globe and Mail* article, B.C. was recognized as one of only two provinces where cervical self-screening is available for free, providing British Columbians with a more equitable, comfortable and convenient way to test for cancer.

- **widening access to opportunistic salpingectomy (OS), a safe and highly effective BC Cancer-developed ovarian cancer prevention strategy** via removal of the fallopian tubes. OVCARE researcher Dr. Gillian Hanley's team is studying barriers to OS uptake in rural and remote communities, with the goal of creating culturally safe tools for ovarian cancer prevention for Indigenous people. She is also exploring how to expand access more broadly by offering OS during colorectal surgeries, an option that is currently only offered during hysterectomies and tubal ligations.

EXPANDING TREATMENT OPTIONS FOR A COMMON ENDOMETRIAL CANCER SUBTYPE

Dr. McAlpine led the development of a practice-changing molecular classification tool for endometrial cancer, connecting patients with precision treatment matched to their unique tumour. It is already the standard of care for all patients in B.C., but now her team is working to widen its impact by **guiding the rollout of molecular testing in other parts of Canada and the United Kingdom.**

LEE CURELL

One area of focus for Dr. McAlpine and Medical Oncologist Dr. Yvette Drew is **mismatch repair deficient (MMRd) tumours**, a subtype that makes up a third of endometrial cancers. While about half of patients respond well to chemotherapy and/or immunotherapies, one third of patients will have no response to these treatments. Using molecular analysis, bioinformatics and AI, Dr. McAlpine and Dr. Drew are investigating why this is and searching for new treatment options to test in clinical trials.

This work is made possible by the generosity of nearly 100 donors who support the **Lee Curell Gynecologic Cancer Research Fund**, a powerful legacy honouring a wife, mother and friend, and renewing hope for future patients and families.

Generous donors support the seed2STEM program, which offers paid internships for Indigenous youth in grades nine to 12, to engage in STEM (Science, Technology, Engineering, Mathematics) projects in the healthcare field. In 2024, seed2STEM partnered with the Gynecologic Cancer Initiative (GCI), placing six high school students and one undergraduate student in their labs.

One student shared, **"I feel it's important to have Indigenous faces working in research, or on their way to becoming doctors, as we can show other Indigenous people that we are here to help them, we see them and we are breaking barriers."**

GROUNDBREAKING CLINICAL TRIALS FOR OVARIAN CANCER

Dr. Drew is leading the recently launched NEOCATS trial, which is examining a new triple combination targeted drug treatment for advanced ovarian cancer. The study will assess the effectiveness of the treatment compared to chemotherapy, which is the current standard first-line treatment and can be accompanied by challenging side effects.

"This trial has the potential to fundamentally shift the paradigm of how we treat ovarian cancer," emphasizes Dr. Drew. The NEOCATS trial is run out of BC Cancer – Vancouver and is recruiting patients across B.C. and nationally.

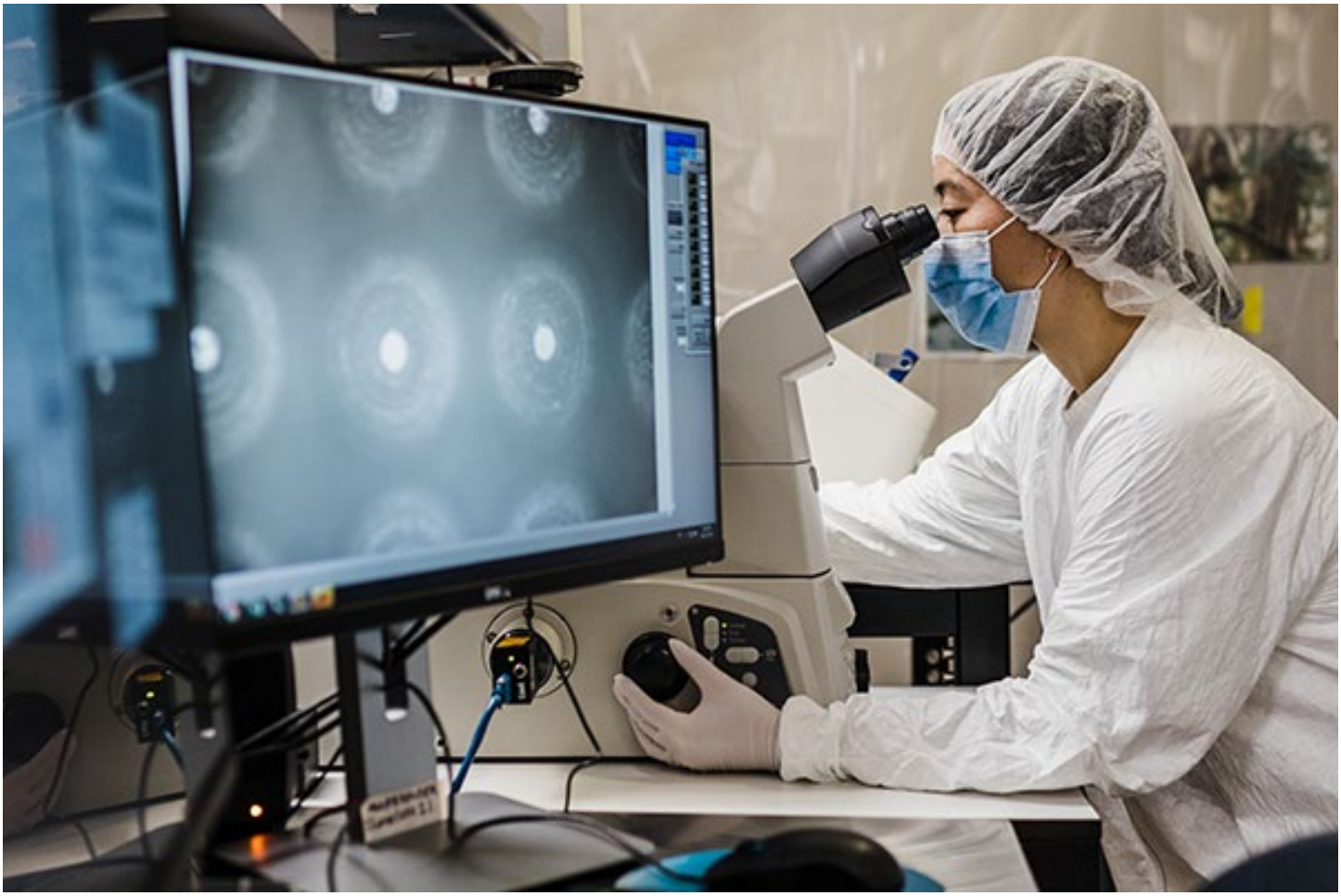
DR. YVETTE DREW

Dr. Drew is also the clinical lead on a **new ovarian cancer immunotherapy research initiative** in partnership with Scientific Director of BC Cancer's Deeley Research Centre Dr. Brad Nelson (see Chelsea's story below).

CHELSEA'S STORY

Chelsea Madrick (below) was diagnosed with ovarian cancer in her early 20s. She had her ovaries and fallopian tubes removed and underwent intensive chemotherapy. While Chelsea is grateful to be cancer-free today and was supported by her care team to fulfill her lifelong dream of becoming a mother, she faces lasting side effects that impact her quality of life. For this reason, she is passionate about advocating for less toxic immunotherapy research for ovarian cancer patients.

Following the success of a phase I clinical trial using Chimeric Antigen Receptor (CAR) T-cell therapy to treat patients with advanced blood cancer — in which over 67% of participants achieved complete regression — scientists are now studying how to use the groundbreaking treatment on ovarian cancer. A clinical trial, co-led by Dr. Drew and Dr. Nelson, is in the early stages of development and could open by 2027.



THANK YOU FOR YOUR OUTSTANDING COMMITMENT TO CANCER RESEARCH AND CARE.

Once again, thank you for helping BC Cancer achieve greater heights of excellence for people facing a gynecologic cancer in our province.

Together, we are finding solutions to keep families together and give them hope for the future.

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