

IMPACT REPORT



Campaign Towards a World-Renowned Institute of Urologic Sciences



2024



TOGETHER, WE ARE BREAKING RECORDS

Our heartfelt gratitude for your record-shattering support of the Campaign Towards a World-Renowned Institute of Urologic Sciences.

This summer, we celebrated the culmination of our most successful campaign yet. Your contagious, inspired generosity raised over **\$65 million for urologic sciences, surpassing the initial target of \$35 million and setting a new benchmark for fundraising in its field.**

Your overwhelming philanthropy has had an immediate, tangible impact, with the expected approval to establish Canada's first-ever Institute of Urologic Sciences.

This landmark achievement would not have been possible without your collective support and is a testament to the power of philanthropy to effect transformational change.

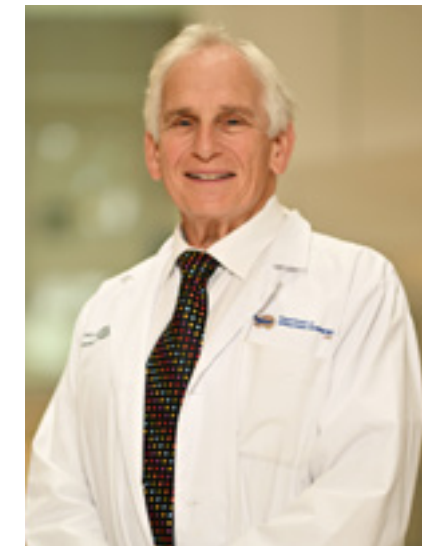
Located within the Vancouver Coastal Health Research Institute (VCHRI), the future Institute of Urologic Sciences will attract top talent to British Columbia, who will discover new diagnostic, preventive and therapeutic interventions across the spectrum of urologic conditions. The collaborative, technologically-advanced environment of the Institute will deliver scientific breakthroughs to patients ever faster, so that people in our hometown and our province are the first to benefit from them before they become global standards of care.

As this report will show, VCHRI's team of superstars is already making seminal discoveries within the six established or envisioned Centres of Excellence at the Institute of Urologic Sciences: Uro-Oncology, Kidney Stones, Female Pelvic Health, Transplantation, Sexual Health and Transitional Urology. We are thrilled to share these successes with you in this report.

With our deepest gratitude,



Angela Chapman
President and CEO,
VGH & UBC Hospital Foundation



Dr. Larry Goldenberg
Campaign Cabinet Co-Chair and
Director, Development, VPC



Rod and Jeannie Senft
Campaign Cabinet Co-Chairs

> TOGETHER, WE DISCOVER NEW THERAPIES TO HELP MORE PATIENTS

Your philanthropy is fueling the nascent Institute’s discovery engine, helping to generate advances in how best to treat urologic diseases and bringing more hope where there was none before to patients across BC and beyond.

Clinical trials are a necessary ingredient to activate discoveries for use at the patient bedside. Patients who do not otherwise respond to standard treatments and enrol in clinical trials opt to receive innovative and emerging new therapies that can save, prolong and improve their lives.

By running clinical trials here in our hometown, the urologic sciences team ensures that BC patients are first to benefit from these innovations and do not have to travel out of province to receive them. And the local economy gets a boost when health care, academia and industry partner to run clinical trials.

Clinical trials in 2023/2024 open doors to new treatments for patients at home and boost the local economy.

15 New trials

833 Patients enrolled in biomarker or data review studies

165 Patients enrolled in therapeutic trials

11 New preclinical Contract Research Agreements*

(=\$846,563.85) + 19 ongoing Contract Research Agreements/clinical trials = \$3.03M+

* Contract Research Agreements are funding agreements with government or industry to sponsor research studies.

> IN THE SPOTLIGHT PROSTATE CANCER

Thanks to your support, the Vancouver Prostate Centre (VPC) is leading a multi-site clinical trial to explore new precision treatments for patients with prostate cancer. This novel genomic-biomarker-selected umbrella neoadjuvant trial (GUNS) is spearheaded by Drs. Lucia Nappi and Martin Gleave and has enrolled 118 people across Canada, including 89 recruited at the VPC.

“We are incredibly excited about the potential for GUNS to enhance patient outcomes through a deeper understanding of prostate cancer drivers and treatment effectiveness,” says Dr. Gleave.

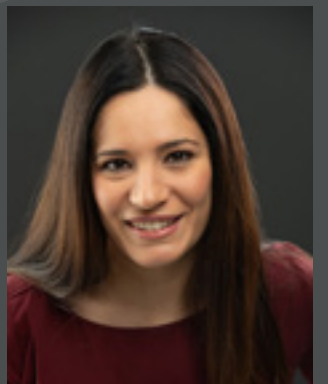
GUNS is deploying a very sophisticated method of genomic and molecular profiling to identify unique gene changes in individuals and cancer tumours. The high image resolution afforded by this technique allows researchers to view prostate cancer cells at a level of detail not possible before.

“Our approach will help inform why some treatments work and others do not; what molecular pathways lead to treatment resistance and possible opportunities to enhance treatment effectiveness,” says Dr. Nappi.

In the coming years, the GUNS research study is expected to extend into the United States, with the potential for global expansion.



Dr. Martin Gleave



Dr. Lucia Nappi



Dr. Ben Chew and team

KIDNEY STONES

Philanthropy has helped build the human capital needed to support clinical trials into new devices that improve patient care for those suffering from intractable kidney stones.

- *Break Wave* lithotripsy is a new and non-invasive procedure currently undergoing clinical trials at Vancouver General Hospital (VGH). This new technology aims to provide just-in-time treatment for those suffering from kidney stone disease. Compared to current standard-of-care treatments, the new procedure allows for the treatment of patients in specialist offices, or upon patient presentation in the Emergency Department without the need for anesthesia or sedation. Results thus far for this clinical trial have been excellent, and research findings have been accepted for publication to the *Journal of Urology*.
- The team is the leading research site in evaluating the safety and effectiveness of the transformative *SOLTIVE Thulium Fiber Laser* technology, which can dust stones in half the time of current technologies and dramatically improve patient outcomes.

- In a world first, the VGH Stone Centre leveraged your philanthropy to test new ureteroscopes that treat kidney stones while also measuring pressure inside the kidney during the operation. Increased kidney pressure during surgery has been linked to more pain and infections following the operation. The new ureteroscope was first tested and used at VGH to minimize those risks, after the team helped establish the range of safe kidney pressure during ureteroscopy. The tool is now commercially available and being used around the world, and the team continues to improve scopes and test new technologies to benefit all patients receiving the procedure wherever they live across the world.

This is how your giving helps establish new and improved standards of care for patients at home and across the world.



Dr. Dirk Lange

INFECTION CONTROL

Dr. Dirk Lange of the VGH Stone Centre received the 2024 Vancouver Coastal Health Research Institute Innovation and Translational Research Award for the development of a novel coating for catheters to prevent urinary tract infections (UTIs). This new coating will reduce the risk of UTIs in patients with catheters, especially for those most vulnerable, such as patients with spinal cord injuries. Dr. Lange is now looking to acquire FDA/Health Canada approval to provide these stents to patients enrolled in a future clinical trial. The goal of the trial is to find more effective ways to reduce the risk of acquiring infections.

Together with Dr. Ben Chew, Dr. Lange also assisted with developing the coating for the new Tria Stents that are better tolerated in patients, providing reductions in pain and improved quality of life compared to previous stents. Tria Stents is now standard of care at VGH.

Additionally, the team is looking to perform clinical trials for a new type of biodegradable urinary stents, which dissolve over time and can reduce follow-up procedures while improving patient comfort. Initial development and evaluation of this stent was conducted by Drs. Lange and Chew. The new stent means patients will not have to come to the hospital to have them removed or can remove them in the comfort of their own home, improving their quality of life.



Dr. David Harriman

KIDNEY TRANSPLANTATION

Spurred on by your philanthropy, Dr. David Harriman is collaborating with the prestigious Cleveland Clinic Lerner Research Institute to study the diverse community of microorganisms that reside within the urinary tract, called the “urobiome”. Knowledge gained through this research helps determine how to improve outcomes and quality of life for renal transplant patients.

Dr. Harriman has initiated two prospective trials to study the urobiome of both living kidney donors and kidney recipients and engaged two full-time students to coordinate and administer the study, as well as to collect and analyze the data. Three manuscripts are being finalized for publication, and more are yet to come, to ensure results are widely disseminated for use to the larger scientific community. A grant application to enhance the impact of the study is also pending.

When research outputs are shared with the global community, new knowledge becomes readily available to advance standards of care worldwide.

160

Peer-reviewed publications

167

Invited presentations

86

Conference posters & abstracts

33

Popular media exposures (TV, radio, social media)

Commercializing innovation boosts the local economy.

17

Patents

6

Invention disclosures

20

Patents issued

New VPC start-up SnapCyte Solutions Inc. completed development of AI software module to analyze 2D and 3D cell cultures in the lab. It went into real-life testing with >40 global partners and expanded its workforce to 14 people at the VPC, in Europe and Asia.

Another VPC spinoff Sustained Therapeutics raised private financing of \$3.5M US to enable its phase 2 repeat dose chronic scrotal pain program across 8 sites in Canada.

Philanthropy helps leverage additional grant funding to multiply its impact.

37

New grants awarded to VPC Principal Investigators:

\$16,139,070

13

New grants awarded to VPC trainees:

\$265,050

TOGETHER, WE LEAD INNOVATION TOWARDS A HEALTHIER FUTURE

An Institute's key asset is its people and their capacity to work together to lead innovation in research and care.

Philanthropists have provided the funding necessary for the future Institute to continue to attract, recruit and retain top talent here in our hometown. And talent attracts more talent. Other ambitious up-and-coming superstars would want to join them to learn and grow alongside a highly accomplished team. The new Institute is a magnet for budding clinician-scientists keen to leave their mark on health care.

It is also fertile ground for training, educating and mentoring fresh talent. Graduates go on to have thriving careers in the biomedical and clinical sector, fueling the local economy and ensuring that the people of our province will have expert care available well into the future.

In today's competitive labour market, this is how we ensure that our community will have access to innovators for generations to come.

The team leverages its highly accomplished educational program to attract, recruit and retain expert clinicians and scientists to BC.

70 **47**
Undergraduates New Students

21 **13**
MSc New Students

41 **7**
PhD New Students

22 **14**
Post-Doctoral Fellows (includes 3 clinical) New Fellows (includes 2 clinical)

> IN THE SPOTLIGHT

KHOSROWSHAHI FAMILY

CHAIR IN BLADDER CANCER RESEARCH AT VGH AND NEW DIRECTOR OF VPC

Your generosity supports one of the team’s most exceptional leaders: Dr. Peter Black, who has been appointed Director of VPC this June on the heels of his clinical, academic and leadership success. In his capacity as Khosrowshahi Family Chair in Bladder Cancer Research at VGH, Dr. Black is making major strides in understanding the complex signatures of bladder cancer and upper tract urothelial carcinoma at the gene and protein level, and how they relate to response to therapy.

To this end, in collaboration with BC Cancer, his team studied 107 tumours before and after treatment with chemotherapy and identified four distinct subtypes of bladder cancer, each with different biology and variable prognosis. This work was awarded the Best Oncology Abstract at the European Association of Urology annual meeting in Milan in 2023 and is being submitted for publication to *Nature Communications*. The study will be expanded to larger patient cohorts to gain further insights into proteins that predict response to chemotherapy versus those that predict outcome regardless of treatment.

Dr. Black also teamed up with Dr. Dirk Lange at the VGH Stone Centre and two other international centres in France and Finland to research the role of the microbiome in the tumours’ response to local immunotherapies. They are making progress on completing recruitment of up to 130 patients for this study and anticipate working on a manuscript.

Other collaborations include one with VPC and a local pharmaceutical company to study future diagnostic tools for high- and low-grade urothelial cancer patients, as well as a major trial with a genomics company based in San Francisco, USA to predict treatment response for patients with non-muscle invasive bladder cancer. Results for this trial have been presented at an annual international symposium and a manuscript is in preparation.



Dr. Peter Black

Through your support, the Khosrowshahi Family Chair in Bladder Cancer Research at VGH is propelling a complete paradigm change in the management of muscle-invasive bladder cancer using innovative molecular stratification and associated clinical trial.

And in his new role as Director of the VPC, Dr. Peter Black will lead a broadened focus at the world-leading facility to strategically grow, expand and establish research on prostate, bladder and kidney cancers, respectively.



Dr. Martin Gleave, Dr. Sandra Kim, Dr. Takeshi Namekawa, Dr. Peter Black

Meet Dr. Sandra Kim, one of the Urology Fellows who is training under Dr. Peter Black

What is your background and research interest?

I am originally from Vancouver, British Columbia. I did my residency training in Halifax, Nova Scotia. I always had a research interest in urologic oncology during my residency training.

What motivated you to join the team?

I was inspired by the prestigious academic accomplishments at the Vancouver Prostate Center to pursue further training here and work with world leaders in the field.

What is a highlight of your fellowship?

Seeing my clinical progression and presenting my research study at various local and international conferences under the guidance of Dr. Peter Black.

“I want to thank the generous donors who gave me this chance to pursue my dream.”

TOGETHER, WE CARE FOR PATIENTS OF ALL GENDERS, AGES AND BACKGROUNDS

One of the goals of the future Institute of Urologic Sciences is to build on the team's successes in treating prostate cancer and to expand these successes across other urologic conditions (ex: bladder, kidney, urinary tract and pelvic floor).

Unlike prostate cancer, these conditions affect people of all genders and ages. Thanks to your generosity, new recruits have launched innovative pilots that expand access to exceptional levels of care to women, youth and patients whose conditions may have gone unnoticed until now. At the same time, existing programs continue to flourish and improve quality of life for patients, families and their loved ones.

IN THE SPOTLIGHT DIAMOND FOUNDATION SURGEON -SCIENTIST IN FEMALE AND FUNCTIONAL UROLOGY



Dr. Kate Anderson

Last year, we reported on the successful recruitment of Dr. Kate Anderson to the team, which was made possible through generous donor support. Dr. Kate Anderson brings a unique skill set and background to her role as Diamond Foundation Surgeon-Scientist in Female and Functional Urology and her work is having a tangible impact on patients across BC.

Under her leadership, Vancouver Coastal Health has begun offering an innovative procedure to treat bladder dysfunction. The procedure is called sacral neuro-modulation (SNM) and works like a pacemaker for the bladder to stimulate the muscle appropriately. The procedure is available to patients of all genders, with the largest impact on women given they are more likely to suffer from the condition. SNM is now piloted at UBC Hospital with a view to make it standard of care and dramatically improve patient quality of life and their pelvic health.

Expanding access to patients since Oct. 2023, with the opening of Dr. Anderson's practice

6 Weeks

Stable wait times for women with functional urology issues referred as "routine"

494 370

Women with urologic issues

are specifically for functional urology (incontinence, fistula, prolapse, neurogenic bladder, interstitial cystitis)

119

Women received surgery, including for emergency and functional urology

Innovative sacral-neuro modulation (SNM) procedure starting April 2024:

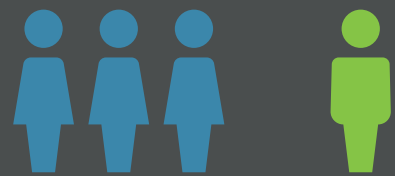
10 Trial implants



Women

Men

Advancing of full implants



Women

Men

Dr. Anderson has also started three active research collaborations, providing her unique and much needed expertise with urodynamic assessment of the bladder in complex patients. She is working with:

- VGH Spine Surgeon and international superstar Dr. Brian Kwon on a prestigious US Department of Defense (DoD) grant to test SNM on spinal cord injury (SCI) models in the lab;
- Physiatrist Dr. Andre Krassioukov to study electrical nerve stimulation on bladder function changes for SCI patients;
- Physiotherapist Tania Lamb to improve bladder function outcomes for women with partial SCI.



Dr. Kate Anderson

Dr. Brian Kwon

Dr. Anderson is starting to collaborate with urogynecologists across VCH towards forming a multidisciplinary clinic.

She holds the first academic cross-appointment in urology and gynecology at the University of British Columbia and is the first woman to serve as Associate Director of the Residency Program for Urology.

She mentors 13 residents in this role, and under her tutelage, residents have already expressed interest in pursuing a career in Female and Functional Urology, which is exciting for the specialty and the growth of the program. **The future is bright thanks to your support of this stellar recruitment!**

> TRANSITIONAL UROLOGY

Vancouver Coastal Health is making great progress towards developing the Centre for Adolescent Transitional Urology. A key piece of the Centre is a new clinic that will be sited at GF Strong Rehabilitation Centre and will care care for youth transitioning from the pediatric to the adult health care system. Under the medical leadership of Drs. Kate Anderson and Thomas de Los Reyes, the clinic will support patients who have undergone extensive reconstructive surgery of their urinary tract due to debilitating conditions such as spina bifida. Work is underway to hire a nurse practitioner to support this aspect of care. Now, thanks to your philanthropy, patients will have “one-stop-shop” access to the sophisticated services they need to manage their condition and improve their quality of life.

PROSTATE CANCER SUPPORTIVE CARE (PCSC) PROGRAM



With twelve years of operation and over 5,700 patients served, the program’s impact continues to grow steadily under the leadership of Dr. Celestia Higano. To broaden their reach, the team are translating their educational sessions into five languages, including Mandarin, Punjabi, Korean, Farsi, and French, catering to diverse patient populations across British Columbia.

The PCSC Program has presented at prestigious conferences last year, advancing knowledge in the field, and has actively participated in several national and international clinical trials, including RADICAL PC, where they are one of the top accruing institutions in Canada. RADICAL PC is seeking to determine the prevalence of cardiovascular risk factors and disease, and the incidence of major cardiovascular events in men with prostate cancer.

The success of PCSC proves an inspiration to others. Dr. Marie-Pierre St. Laurent has graduated from the Urology Fellowship Program supported by donors like you. She is now part of the larger Urologic Sciences team and seeking to adapt the PCSC Program to bladder cancer patients.

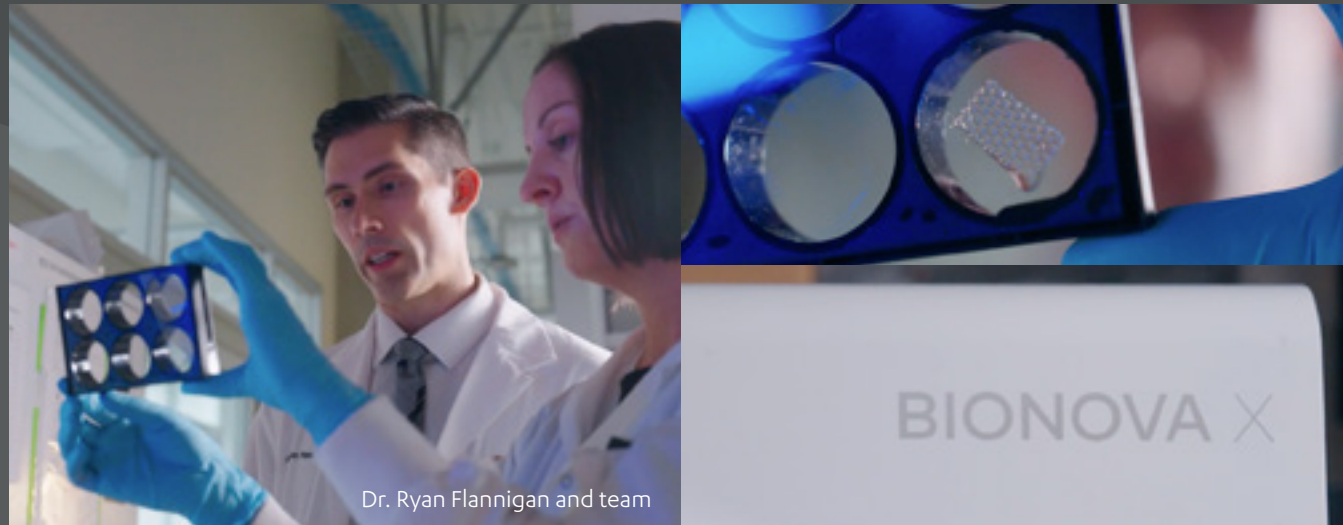
TOGETHER, WE BUILD CUTTING-EDGE PLATFORMS TO ACCELERATE THE PACE OF DISCOVERY

Artificial Intelligence (AI) and high-end software and hardware tools are rewriting the limits of what we once thought possible.

Your generosity has helped bring in state-of-the-art equipment that leverage AI and super computing powers to process large amounts of data at incredible speeds and with unprecedented accuracy. This is how you help build the new Institute’s infrastructure, so that clinician-scientists have access to the most advanced technologies to develop more precise, targeted therapies and turbocharge innovation.

> IN THE SPOTLIGHT

SEXUAL HEALTH, ANDROLOGY AND INFERTILITY



Dr. Ryan Flannigan and team

One of the leaders leveraging your generosity in a technology-rich environment is Dr. Ryan Flannigan. His team is deploying AI and next generation genomic and molecular techniques to develop novel therapies to treat male infertility, erectile dysfunction, low testosterone and Peyronie’s disease.

Galvanized by philanthropy, Dr. Flannigan and his team uses the latest Graphic Processing Unit (GPU) to expedite the development of model designs from days to under an hour for iterative design. These models are then used more efficiently and effectively to find rare and healthy sperm and to perform automated Peyronie’s penile curvature assessment.

They are also deploying a next-generation 3D bioprinter to create multiple new designs to bioprint human testicular cells in his lab. The technique facilitates high-throughput screening of molecules to bolster the lab’s AI-based drug discovery pipeline and expedites the creation of sperm in the lab as a regenerative strategy for patients struggling with infertility. Four other labs are already looking to collaborate with the bioprinter in Dr. Flannigan’s facility, to use it to model their technology developments or model systems in various cancers.

Dr. Flannigan has also leveraged donor funding to secure a Canadian Foundation for Innovation grant to purchase a microfluidic pump. This tool is being used to test organ-on-a-chip designs to support regenerative efforts for sperm production.

A new inverted clinical microscope is also expected to bolster capacity for the lab to continue development of its AI sperm detecting algorithm onto a clinical microscope platform. The goal of this project is to launch a clinical trial and bring a new technology to male infertility care.



THANK YOU

Thank you for your unprecedented support of our Campaign Towards a World-Renowned Institute of Urologic Sciences. Your generosity brought remarkable talent and brand-new technologies to lay the foundations of this new Institute within VCHRI and is helping us lead in investing in health care innovation in BC.

“We had a great cause, inspiring medical professionals and an incredible lift by donors. Collectively, we’ve achieved an extraordinary success and we are all excited to see what the future holds with this gift we’ve created together.”

- ROD SENFT

“Thank you for your incredible support. The best is yet to come.”

- DR. LARRY GOLDENBERG



The leading charity for health care
innovation in BC