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Canadian  
Cancer  
Society

**J.D. IRVING, LIMITED**  
EXCELLENCE IN CANCER RESEARCH FUND



## Atlantic Values. Atlantic Impact.

Your investment has benefited people from Bonavista to Miramichi, and everywhere in between.

Thank you for investing  
in cancer research in  
**Atlantic Canada** through  
the Canadian Cancer Society

We truly appreciate your support of cancer research across Atlantic Canada.

With an estimated 16,000 Atlantic Canadians diagnosed with cancer every year, our region has the highest incidence of cancer per 100,000 people in the country. While we are seeing advances in detecting and treating all types of diseases, cancer continues to be a significant health challenge.

Thank you for your gift to CCS. Through your generous donation, whether to the **J.D. Irving, Limited – Excellence in Cancer Research Fund** or to the national research program at CCS, you are igniting discoveries by giving back to our communities and supporting some of the best cancer researchers across Atlantic Canada.

## You are shining a spotlight on innovative cancer research.

With your gift to the J.D. Irving, Limited – Excellence in Cancer Research Fund, we can now offer resources for scientists in Atlantic Canada to conduct some of the most innovative and leading-edge cancer research in the country.

Every year, our funding applicants must pass a rigorous peer review process to determine which projects will be selected. In 2021, through a special call to researchers specifically based in Atlantic Canada, we provided grants for 10 cancer research projects across 3 provinces, and we funded 6 early career scientists in 4 provinces to participate in the Beatrice Hunter Cancer Research Centre's – Cancer Research Training Program.



### So, what does your support mean?

More Atlantic-based researchers are now acquiring funding in a competitive landscape, enhancing their research skills, contributing to the national cancer research space, and increasing the number of cancer breakthroughs in the long term.

All these amazing researchers share one thing in common: a determination to improve the cancer care experience and change the course of cancer detection and treatments for generations to come. Because of your support, they are doing just that. Those profiled in this report are among many who are working hard to take control of cancer.

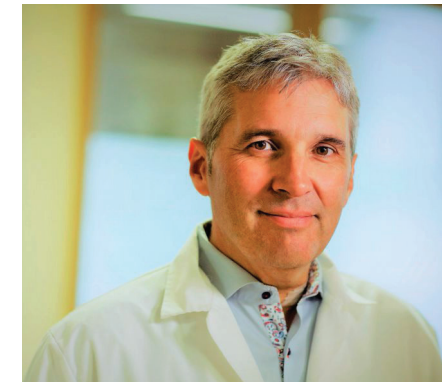
# \$2.5 million

awarded through the J.D. Irving, Limited – Excellence in Cancer Research Fund to build research capacity in Atlantic Canada.



## Can a liquid biopsy predict how lung cancer will respond to immunotherapy?

Principal Investigator: **Dr Rodney Ouellette, University of Moncton**  
Project Supported by J.D. Irving, Limited – Excellence in Cancer Research Fund



Immunotherapy has shown remarkable promise in treating lung cancer, but not all patients respond to these therapies. With funding from an Atlantic Canada Research Grant, Dr Rodney Ouellette is looking at the diverse ways lung cancer tumours evade immunotherapy drugs.

Cancer and immune cells release small particles called extracellular vesicles (EVs) into our blood, which carry messages to the immune system. A team led by Dr Ouellette is studying the messages carried by EVs in the blood of people with lung cancer to better understand why some respond to immunotherapy and some do not. Knowing this answer, they can then find new ways to make the treatment more effective. If successful, the work could lead to a simple blood test (or “liquid biopsy”) to help more people benefit from immunotherapy.

### On starting out in cancer research

“I finished my training in 1996, and most cancer centres in Canada already had really good research centres. When asked to start a lab in Moncton, I found there was no hospital-based research happening. I became the bushwhacker or trailblazer leading us to where we are today at the Atlantic Cancer Research Institute.”

### On the impact of cancer research

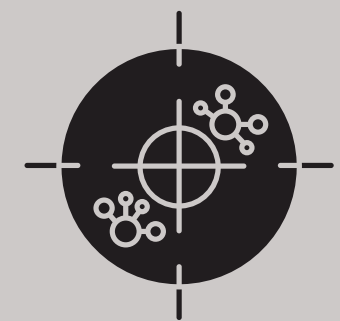
“Sometimes, doing a regular biopsy is difficult. The patient may not be in good health. Or the tumour site may be inaccessible. Being able to draw blood makes it better for the patient. Our technology has also led us into a whole bunch of various diagnoses, trying to determine how someone responds to treatments, and trying to determine a cancer relapse.”

### On why the lab focuses on liquid biopsies

“About 20 years ago, we did not have good access to tissue samples for research, but we had good access to blood samples. So, we started asking: ‘what information about cancer can we glean from blood?’ That has led our lab to be a leader in liquid biopsies.”

### On his own cancer journey

“In 2016, I was diagnosed with metastatic kidney cancer; then in November 2021, I was diagnosed with high-risk prostate cancer. Having cancer gives me insight about being a patient, but also what it means to live with cancer.”



### What is immunotherapy?

Our immune system has the ability to find and destroy cancer cells. But these cells can sometimes hide and avoid destruction. Immunotherapy strengthens and restores the immune system's ability to detect cancer and attack it.

## Cancer Research Across Atlantic Canada

With the support of the J.D. Irving, Limited – Excellence in Cancer Research Fund as well as research grants from the Canadian Cancer Society, scientists and clinicians from across Atlantic Canada are pushing forward with ground-breaking cancer research. This map illustrates some of the researchers, as well as their work and locations. (Projects listed have received funding as of January 31, 2022. Those noted with an asterisk (\*) are among the recipients of a grant from the J.D. Irving, Limited – Excellence in Cancer Research Fund.)



**Dr Patrick Murphy\***

University of Prince Edward Island

Opening the door to a novel treatments for triple negative breast cancer



**Dr Melanie Keats\***

Dalhousie University

Testing exercise to improve quality of life for people with glioblastoma



**Dr Sheila Garland**

Memorial University

Developing an app to help cancer survivors overcome insomnia



**Dr Marya Ahmed**

University of Prince Edward Island

Using nanoparticles to improve breast cancer treatments



**Dr Shashi Gujar**

Dalhousie University

Boosting the effectiveness of viral therapies for lung cancer



**Dr Nathalie Saint-Jacques\***

Dalhousie University

Identifying opportunities to prevent cancer in Atlantic Canada



**Dr Gilles Robichaud**

Université de Moncton

Studying a new way to stop breast cancer from spreading



**Dr Sandra Turcotte**

Université de Moncton

Developing targeted therapy for kidney cancer



**Dr. Morgan Langille**

Dalhousie University

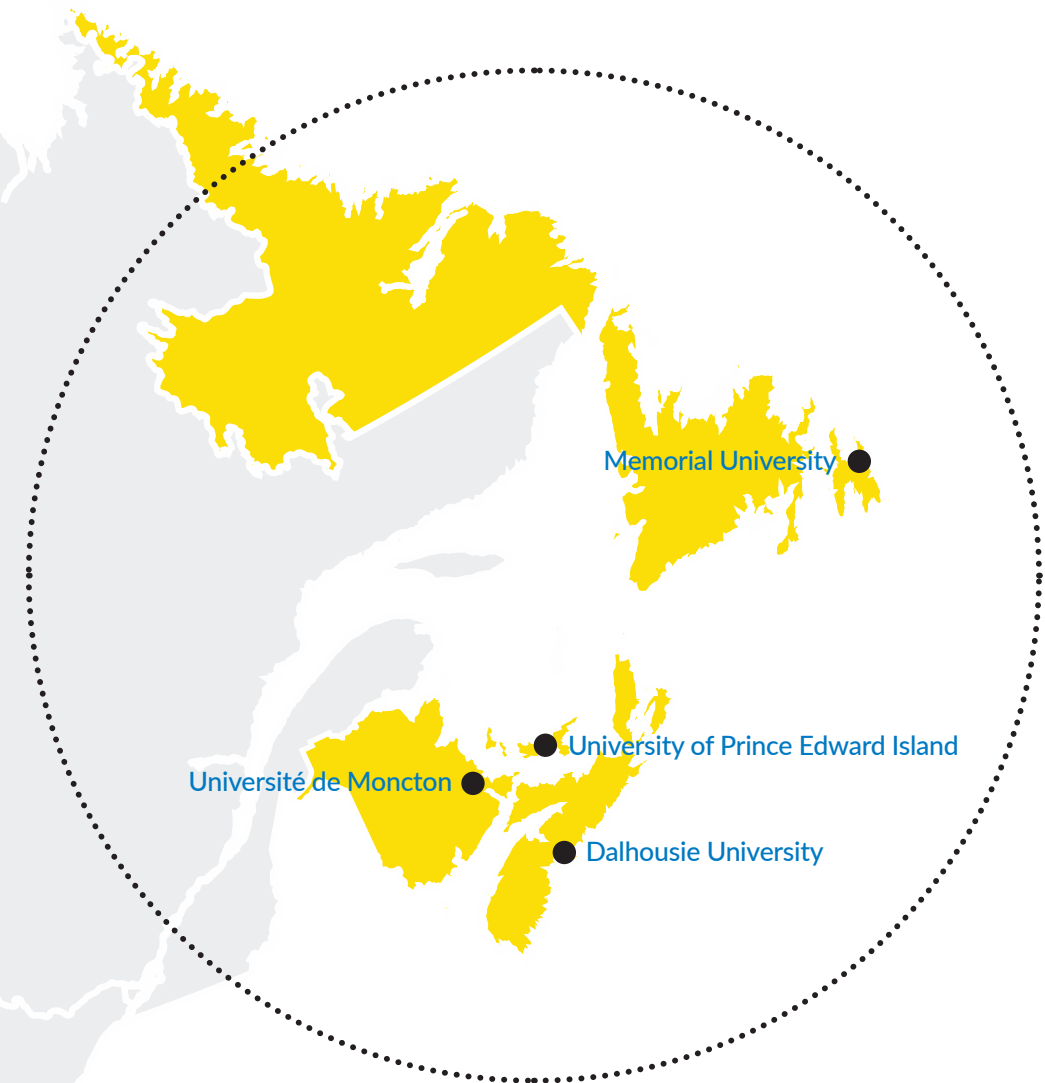
Clarifying the links between cancer and the blood microbiome (Supported by CCS through a partnership with the Hecht Foundation)

## When philanthropy makes it all possible

This call represents a 3-year investment in unique and innovative cancer research, right here in Atlantic Canada.

Our peer review panel received 51 applications from 4 provinces, and awarded funding to 10 projects (8 of which received grants from the J.D. Irving, Limited – Excellence in Cancer Research Fund, and 2 received funding from CCS). This represents a 3-year investment of \$2.5 million in unique and innovative cancer research right here in Atlantic Canada.

We are tremendously grateful to J.D. Irving, Limited for their generous support and strong belief in the ingenuity of cancer researchers in Atlantic Canada. Also, we thank all the donors who contributed towards the Atlantic Canada Research Grants. Your gifts are the start of something big in your own backyard.



## Atlantic Canada's hub for cancer research

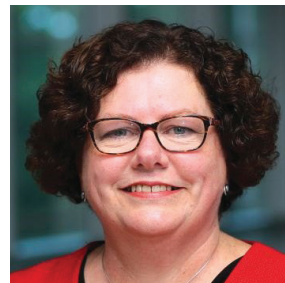
As the regional centre for cancer care in the Atlantic provinces, Halifax draws clinicians and scientists to Dalhousie University. These four researchers (all based at Dalhousie) received 2021 Atlantic Canada Research Grants to support their work of transforming cancer knowledge, right here on the East Coast of Canada. Those noted with an asterisk (\*) are among the recipients of a grant from the J.D. Irving, Limited – Excellence in Cancer Research Fund.



### Dr David Waisman\*

#### Targeting a novel protein to stop the spread of cancer

The spread of cancer, known as metastasis, is responsible for 90% of cancer deaths. A team led by Dr Waisman have identified a protein found on the surface of connective tissue cells called calreticulin (CRT). They are seeing if CRT is essential in enabling cancer to spread.



### Dr Jean Marshall\*

#### Developing a new approach to ovarian cancer immunotherapy

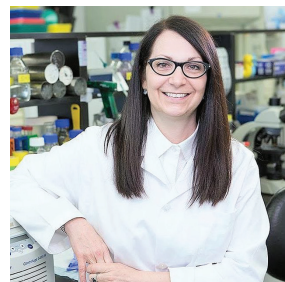
Dr Marshall is exploring a new form of immunotherapy for ovarian cancer. Her lab is developing an immunotherapy treatment based on mast cells, a type of immune cell that populates the abdominal area where ovarian cancer often starts to spread.



### Dr Jeanette Boudreau\*

#### Determining the missing link in pancreatic cancer immunotherapy

A team led by Dr Boudreau is seeking a more effective way to treat pancreatic cancer. This study will test the effectiveness of a new immunotherapy treatment based on natural killer (NK) cells. If successful, it may improve outcomes for those with pancreatic cancer.



### Dr. Paola Marignani

#### Identification of new breast cancer biomarkers in Black women

Tapping into advanced laboratory technologies and artificial intelligence (Supported by CCS National Research)

#### Lung Cancer Heterogeneity - One cell at a time

Understanding how unique tumour cell heterogeneity can be leveraged for the development of precision medicines. (Supported by the Diane Campbell Designated Research Fund)

\*Recipients of an Atlantic Canada Research Grant from the J.D. Irving, Limited – Excellence in Cancer Research Fund.

“Our work in adapting a simple-to-use urine test to detect cervical cancer might be a real game changer for rural and remote communities in Canada, as well as places like India, Nepal and sub-Saharan Africa.”

Dr James Bentley, Nova Scotia Health Authority

## Developing more personalized care after cancer treatment

Principal Investigator: **Dr Robin Urquhart, Dalhousie University**

Project Supported by J.D. Irving, Limited – Excellence in Cancer Research Fund



People who finish cancer treatment may need support to manage the late and ongoing side effects. For example, a person may require ongoing care for lymphedema after breast surgery, or for incontinence after treatment for rectal cancer. In Canada, oncologists typically lead this follow-up cancer care. Yet, evidence shows that this practice does not work well for many patients and is inefficient for our healthcare system. How can post-cancer-treatment care be improved?

At 2 cancer centres in Atlantic Canada, a team led by Dr Urquhart is testing a more personalized approach to follow-up care to better match to address person's needs. With input from breast, colorectal and melanoma cancer survivors and their healthcare providers, the team will explore the feasibility of personalized care. If successful, this project could improve the quality of life for people adapting to post-treatment care, and identify treatments or services suitable to each person.

### On starting out in cancer research

“I have always been interested in cancer research. In fact, in my high school yearbook, I said that I was going to be a cancer researcher. Both of my parents died of pancreatic cancer in their 30s, so there was a lot of cancer in my life growing up.”

### On the impact of cancer research in Atlantic Canada

“We don't always have the same resources as major centres, but our researchers here are brilliant. We also have a lot of unique circumstances that provide excellent opportunities to understand cancer. For example, there is no better place in the world to research the genetics of colorectal cancer, because of the unique access to multiple generations in a family.”

### On why the lab focuses on post-cancer care

“I wanted to be a researcher, but not in a traditional lab, which comes from the big challenges and gaps I saw when my parents were dealing with cancer. For many people, one of those challenges is, unfortunately, access to care. When my dad was diagnosed, he did not have access to a local doctor, and my mom just didn't have access to pain management when she needed it.”

### On her own cancer care experience

“Losing my parents when I was a teenager was really hard for me and my brother. A gap in post-cancer care that I've seen firsthand is access to mental health services for patients, families and caregivers. This enormous strain on families is why I am doing what I do.”

## Future-focused investment

With support from the J.D. Irving, Limited – Excellence in Cancer Research Fund, several graduate students and trainees from the Beatrice Hunter Cancer Research Institute (Cancer Research Training Program) received scholarships to advance their research studies. For 2021-2022, the scholarship recipients are:

- **Mr. Samlau Kutana**, Psychology  
Memorial University
- **Mr. Kazeem Adefemi**, Community Health & Humanities  
Memorial University
- **Mr. Patrick Pearson**, Cancer and Development  
Memorial University
- **Dr. Raj Pranap Arun**, Pathology  
Dalhousie University
- **Mr. Olivier Phillips**, Biology  
University of Prince Edward Island
- **Dr. Naeimeh Jafari**, Applied Oral Sciences  
Dalhousie University

**Your incredible generosity is changing the future of cancer – and making a profound impact on families and communities in Atlantic Canada. Thank you.**

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“Support from CCS is essential to our research, which is ultimately focused on improving patient outcomes like longevity and quality of life. Without this support, much of our work would simply not be possible.”

**Dr Anthony Reiman**

University of New Brunswick, Research Chair

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