



Canadian  
Cancer  
Society



# Cancer Research Atlantic Region

A Look Back at Last Year's Progress and What You Made Possible

IT TAKES A SOCIETY

2023 Atlantic Cancer Research



## Advocating for cancer research: Jennifer's story

Jennifer Roy is a passionate advocate for cancer research, which she relates back to her heartbreaking experience of losing both parents to lung cancer. In 2002, her father passed away from lung cancer 6 months after his diagnosis, and in 2019, her mother passed away a mere 3 weeks following diagnosis. "It just hit me like a ton of bricks. I felt that someone needed to advocate for people with lung cancer," says Jennifer. Originally reluctant to share her story due to the pain it caused her, she ultimately felt the need to do something to raise awareness about this disease, and cancer research in general.

Jennifer began a campaign for early detection with a clear goal: everyone should have access to early lung cancer screening, like breast cancer or colorectal cancer.

"Lung cancer is a death sentence. There is such a stigma attached, due to its connection to smoking, that people almost feel like lung cancer patients brought it upon themselves if they ever smoked."

Working with Dr Robin Urquhart, a Canadian Cancer Society (CCS) Breakthrough Team Grant recipient, Jennifer began learning about the environmental risks of lung cancer, including radon, an odorless, invisible, radioactive gas that can be found in the air we breathe. "Chester, Nova Scotia, where I'm from, has some of the highest radon levels in Canada. So, the fact that both my parents succumbed to lung cancer makes me wonder," says Jennifer.

Today, Jennifer is proud to partner with CCS to shine light on the need for more awareness and cancer research in Canada, to help prevent other families from experiencing the same loss. "It is so important for people to give to the Canadian Cancer Society, because research really makes a difference. Even in the 20 years since my dad passed away, there have been advances, like in Dr Urquhart's work."



## Each of us has a role to play in the face of cancer

“Elizabeth and I have been donors to the Canadian Cancer Society for a very long time. I was a volunteer for a number of years and led the Nova Scotia provincial fundraising campaign for two years.

We were instrumental in the establishment of the Canadian Cancer Society endowed Chair in population research at the QEII Hospital in Nova Scotia. Doctor Robin Urquhart’s research is a vital contribution to determining how to treat and cure an insidious cancer. She is a leader and leads an important collaborative effort. We wish her all success and hope that we can make a significant contribution.”

– Fred Fountain, Great Eastern Corporation



It takes all of us to advance cancer research. In fact, it takes a society. Special thanks to J.D. Irving, Limited who started our campaign in 2021 by creating the **J.D. Irving, Limited – Excellence in Cancer Research Fund**. This fund has allowed us to support nine research projects and twelve scholarships. We are proud to share some of the most intriguing research updates with you.



“Cancer survivors in Atlantic Canada are underserved by clinical trials, particularly in the area of cancer survivorship. Researchers need to ensure that patient priorities and perspectives are given precedence to ensure the greatest impact.”

– Dr Sheila Garland  
Senior Scientist, Beatrice Hunter Cancer Research Institute  
Associate Professor of Psychology and Oncology, Memorial University

## Beatrice Hunter Cancer Research Institute Trainees share what your generosity means to them.



### Kathleen Varty

MSc Student,  
Dr Tony Reiman Lab Department of Biology, UNB Saint John  
Beatrice Hunter Cancer Research Institute CRTP (Cancer Research Training Program) Trainee supported by the J.D. Irving, Limited—  
Excellence in Cancer Research Fund

My passion for health research stems from a deep-rooted belief in its pivotal role in individual well-being and the collective welfare of society. Having witnessed firsthand the profound impact of cancer on individuals, families, and communities, I am driven to contribute to the field. To the generous donors who make this research possible, I extend my heartfelt gratitude. Your contributions not only support the endeavors of current researchers but also pave the way for the next generation of innovators to thrive.

My focus lies in the realm of lung cancer genomics. Specifically, I delve into the genomic data routinely gathered during the diagnosis of non-small cell lung cancer. I analyze this data with the aim of pinpointing mutations that could significantly influence clinical outcomes.

Thanks to funding from CCS, I am afforded the opportunity to dedicate myself fully to research. This support not only enables me to immerse myself in my work but also facilitates my participation in conferences and networking with fellow researchers. The best advice I've received in my early research career is to stay engaged in your community. This practice keeps me balanced and reminds me of the bigger picture and the profound impacts health research can have. It makes the long hours and late nights worth it.





## Rachel Lee

Research Coordinator,

Sleep, Health & Wellness Lab Memorial University

Beatrice Hunter Cancer Research Institute CRTP (Cancer Research Training Program) Trainee supported by the J.D. Irving, Limited—  
Excellence in Cancer Research Fund

In October 2023, I graduated with an MSc in Experimental Psychology from Memorial University of Newfoundland. As a member of the Sleep, Health, and Wellness Lab, my research was the first to examine cannabis use as a sleep aid among Canadian cancer survivors. While my initial interest was in sleep research, my supervisor's (Dr Sheila Garland) passion for psycho-oncology led me to the impactful, diverse field of cancer research.

Poor sleep is one of the most prevalent, most disruptive, and yet least treated consequences of cancer treatment. I want to contribute to research aiming to help people with cancer sleep well and live better. We may be able to better understand how to improve access to safer, evidence-based treatments for insomnia. Further, our findings into the patterns of cannabis use and its perceived effects will help inform future research examining its effectiveness in improving sleep in cancer survivors.

I have several loved ones who have had cancer, including my grandfather who passed away from lung cancer, my lifelong friend's mother who passed away from melanoma, and my father who had lymphoma but has now been cancer-free for over 10 years. Regardless of who, what, or why, the physical and emotional burden of cancer is evident.

The CCS funding meant so much to me. It showed they believed in the importance of my work, motivating and empowering me. The support of donors does not only provide financial support for research projects like mine; their generosity fosters a ripple effect of positive change. Their support facilitates learning, shapes policies, enhances healthcare, and impacts the lives of those affected by cancer in profound ways.

# World-Leading Research in Atlantic Canada

Thanks to funders like **J.D. Irving, Limited** and others like you, these cancer researchers can engage with and learn from other changemakers who share their passion.



## Dalhousie University

Dr Jeanette Boudreau\*  
Dr Melanie Keats\*  
Dr Andrew Makrigiannis\*  
Dr Jean Marshall\*  
Dr Nathalie Saint-Jacques\*  
Dr Robin Urquhart\*  
Dr David Waisman\*  
Dr Morgan Langille  
Dr Paola Marignani  
Ms Vlora Riberdy\*\*  
Dr Raj Pranap Arun\*\*  
Dr Naeimeh Jafari\*\*  
Dr Stefan Heinze-Milne\*\*  
Ms Emily Drake  
Ms Safyha Bryan  
Dr Graham Dellaire  
Dr Geoffrey Maksym  
Dr Victor Martinez  
Dr Allison Wallace  
Dr Shashi Gujar



## Memorial University of Newfoundland

Dr Sheila Garland\*  
Mr Samlau Kutana\*\*  
Ms Rachel Lee\*\*  
Mr Patrick Pearson\*\*  
Mr Kazeem Adefemi\*\*  
Ms Krista Greeley  
Dr Michiru Hirasawa  
Ms Theresa Vo\*\*



## Newfoundland Cancer Clinic Dr Jeff Dowden



## St Francis Xavier University Dr Arlinda Ruco



## Université de Moncton

Dr Rodney Ouellette\*  
Dr Gilles Robichaud  
Dr Sandra Turcotte



## University of New Brunswick

Dr Anthony Reiman  
Ms. Kathleen Varty\*\*  
Dr David Busolo



## University of Prince Edward Island

Dr J Patrick Murphy\*  
Dr Marya Ahmed  
Mr Olivier Philips\*\*  
Ms Miranda Steeves\*\*

\*J.D. Irving, Limited – Excellence in Cancer Research Fund grant recipients

\*\*J.D. Irving Limited – Excellence in Cancer Research Fund scholarship recipients

## Your support is funding pancreatic cancer research



### Dr Jeanette Boudreau

Dalhousie Medical Research Foundation Cameron  
Cancer Scientist

Assistant Professor, Faculty of Medicine; Departments  
of Microbiology & Immunology, and Pathology

Beatrice Hunter Cancer Research Institute Associate Member  
Dalhousie University – Halifax Nova Scotia

Current research project supported by the J.D. Irving,  
Limited—Excellence in Cancer Research Fund

Immunologist Dr Jeanette Boudreau was inspired to work in cancer research thinking of friends and family whose lives were affected by the disease. Today, she is working to develop new and accessible cellular immunotherapies for hard-to-treat cancers, such as pancreatic cancer. Immunotherapies – treatments that leverage the immune system to target cancer – have changed the outcomes for many types of cancers. Unfortunately, some cancers remain resistant to current treatments. Dr Boudreau and her team believe this is because the tumors fight back against the immune system, by changing how they look, and building walls around themselves. She says this is especially true in pancreatic cancer.

In order for immunotherapies to work in hard-to-treat tumors and be affordable and accessible in a publicly funded health care system, they have to find ways to make them both versatile and able to be expanded upon. Dr Boudreau and her team are investigating a particular type of cells called Natural Killer (NK) cells, that they liken to “Swiss Army Knives,” meaning “they have lots of tools that they can use to recognize and kill damaged cells. Using them effectively means understanding which tools exist and how to use them in combination”.

Dr Boudreau says that “more and more, we are understanding that even what we thought was the same type of tumor – like pancreatic adenocarcinoma, for example – can differ at the genetic level. Any combination of changes that allows a cell to proliferate out of control can lead to cancer, but the types of mutations that a tumor contains seem to impact how the NK cell ‘sees’ it. In this project, we are examining the relationships between the immunologic landscapes and the genetic features of pancreatic cancer, because if we can understand how genetic changes promote (or inhibit) NK cell function, we will be able to make cellular NK cell immunotherapies that target tumors effectively.”

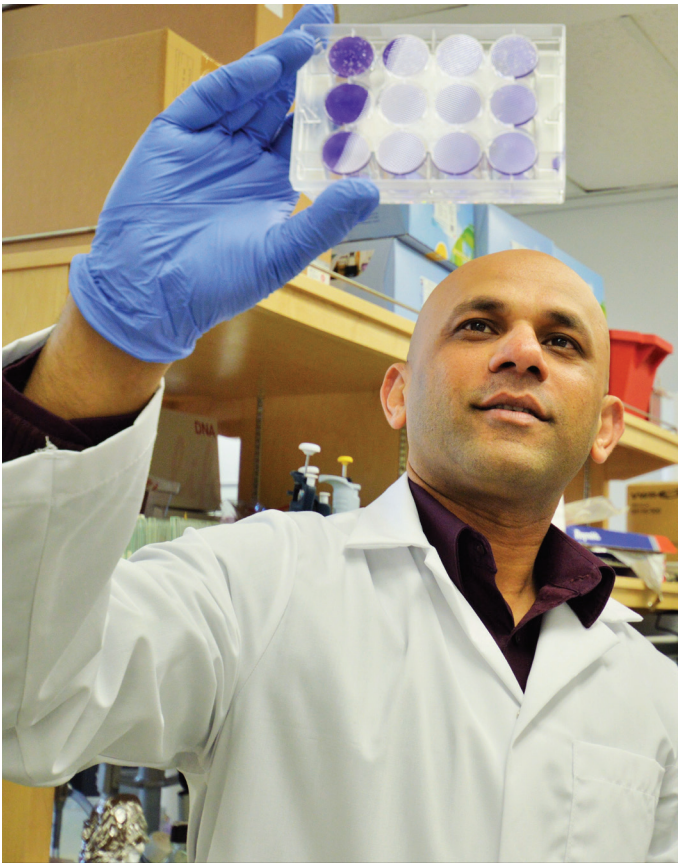
Dr Boudreau’s team has conducted immunological assessments on over 100 patients so far and has analyzed 47 patients. Presently, they are curating a library of known and unknown mutations and are grateful for the generosity of our donors, which allows them to conduct this research.

Cancer research is a team effort, and Dr Boudreau’s lab brings together some of the brightest minds in research, including Riley Arseneau, a Ph D student, who is leading the charge from the bench; Tom Arnason, a pathologist who ensures that they have access to clinical samples, and correct interpretation and training on the various models; Ravi Ramjeesingh, a medical oncologist who provides expertise on the disease process, on patient histories, and clinical insight; Dan Gaston, a molecular geneticist aiding in the acquisition and interpretation of genetic analysis; Boris Gala-Lopez, a surgeon who provides samples and expertise in to disease processes; and Craig’s Cause Pancreatic Cancer Society, a patient advocate, support, and funding program in Nova Scotia dedicated to changing the outcomes for patients with pancreatic cancer. Without all these people, Dr Boudreau’s research would not be possible. “Funding from CCS is critical. Without it, we wouldn’t be able to do this ambitious project. I am thrilled to be focusing on the Nova Scotian population,” says Dr Boudreau.

**“This is, to our knowledge, the first study of its kind.”**

– Dr Boudreau





### **Dr Shashi Gujar DVM, PhD, MHA**

**Executive Director** - Cancer Immunotherapy, Innovation & Global Partnerships Faculty of Medicine, Dalhousie University

**Associate Professor** - Departments of Pathology, and Microbiology & Immunology, Faculty of Medicine, Dalhousie University

**Emerging Scholar** - Canadian Cancer Society (CCS)

**Scientist** - Beatrice Hunter Cancer Research Institute (BHCRI)

Immunologist Dr Shashi Gujar was inspired to focus on cancer treatment because “all people are touched by cancer, in one way or another.” His research program specializes in harnessing the awesome powers of our immune system to fight cancers. These new anti-cancer options are known as “cancer immunotherapies”.

Dr Gujar and his team’s research thus far has revealed that they can train the immune system to identify, seek, and destroy cancer cells. Interestingly, such training of the immune system against cancers can be done using “cancer killing viruses”. Additionally, virus-trained antitumour attack can be further enhanced by exploiting metabolic vulnerabilities within cancer cells. These new immunotherapy strategies promise to not only eradicate the existing cancer cells, but also establish protection against possible relapse.

Considering the prevalence of lung cancer in Canada, their initial efforts are focused on targeting lung cancer. Nonetheless, Dr Gujar says “the findings from our cancer research can be applied towards diagnosis, prevention and treatment of any type of cancer.”

New cancer treatments must be properly tested to ensure safety and efficacy and multi-year cancer research is required before new treatments can be given to cancer patients. “We hope that our CCS-funded research funded over 5-years will promote the development of clinical avenues promoting lifelong disease-free health.”

Dr Gujar believes that the complex problem of cancer will be solved through highly sophisticated answers based on all the might of humanity. Hence, the cancer research being pursued in their project employs the latest technological advances in multiple science disciplines including physics, chemistry, computer science (including big data and artificial intelligence) and biology. “We are grateful for this critical CCS funding enabling such cutting-edge research.”

They have further expanded the impact of CCS funding by leveraging additional support (CAD\$ 2M) from provincial and federal agencies and recently acquired modern infrastructure at Dalhousie University to empower research enterprise in Atlantic Canada. This leveraged support is enabling highly technical, collaborative cancer research with their partners at local, national, and international locations.

**“Cancer is a global problem, and all of us have lost someone we love to this deadly disease. So, anything we all can do to move the needle in the right direction is going to make a difference. As a scientist, I am thankful to have an opportunity to be part of our cumulative fight against cancer.”**

– Dr Shashi Gujar





“CCS funding allows researchers to conduct world-class clinical trials that could lead to significant cancer advances right here in Atlantic Canada.”

– Dr Anthony Reiman

## 84 Atlantic Canada cancer trials

2 Centres

Dr H. Bliss Murphy Cancer Centre  
Janeway Child Health Centre



2 Centres

QEII Health Sciences Centre  
IWK Health Centre

1 Centre

Queen Elizabeth Hospital



4 Centres

Saint John Regional Hospital  
The Moncton Hospital  
Dr Everett Chalmers Hospital  
Dr Leon Richard Oncology centre



**Thank you for your incredible generosity!**

Thank you for being a source of hope for people with cancer and their loved ones.

Nothing big gets solved by one person or one organization.

To take on cancer, it takes all of us. It takes a society.



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