

# Lady Davis Institute Research Newsletter

# 🐯 McGill

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# Stephen Robbins appointed Director of the Lady Davis Institute

Dr. Lawrence Rosenberg, President and CEO of CIUSSS West - Central Montreal, announced the appointment of **Dr. Stephen Robbins** as Director of the Lady Davis Institute at the Jewish General Hospital (JGH) effective January 2021. Dr. Robbins also becomes a Professor in McGill University's Gerald Bronfman Department of Oncology, as well as an Associate Member in McGill's Department of Medicine. He will also hold the Glaxo Smith Kline Chair in Pharmacology at McGill.

"Dr. Robbins is a proven strategic leader and a renowned scientist with an established national and international reputation, and we are confident that he will enhance the LDI's already strong position as a leading Canadian biomedical research centre," said Dr. Rosenberg, who chaired the search committee.

"His career has spanned several interests, including immunology, genetics and cancer, which is particularly relevant, given that the LDI is home to more than 200 diverse scientists operating under four axes: cancer, epidemiology, molecular and regenerative medicine, and psychosocial aspects of disease."

Since 2013, Dr. Robbins has served as the Scientific Director of the Institute of Cancer Research at the Canadian Institutes of Health Research. He has been at the University of Calgary since 1996, where he is Professor in the Departments of Oncology and Biochemistry & Molecular Biology at the Cummings School of Medicine. He currently leads a research program that focuses on pre-clinical testing for brain tumours, inflammation and metastasis.

"I look forward to joining the great research community at the Lady Davis Institute," said Dr. Robbins. "I am very honored and humbled by the opportunity to lead this internationally recognized research institute with its strong history of research accomplishments, accolades



and contributions to improving the health and well-being of people across Canada and beyond."

Dr. Robbins earned his Bachelor's degree in biology at York University in Toronto (1985) and his PhD in microbiology and immunology from the University of British Columbia (1991). He pursued

his post-doctoral work at the University of California at San Francisco (1991-1996) under Nobel laureate Dr. J. Michael Bishop. His previous leadership roles include Vice-Director (2007-2008) and Director (2009-2013) of the Southern Alberta Cancer Research Institute, and Associate Director, Research, of Alberta Health Services Cancer Care (2010-2013).

"We are so pleased that Dr. Robbins is joining our faculty," said Dr. David Eidelman, Vice-Principal (Health Affairs) and Dean of the Faculty of Medicine at McGill. "His research will flourish at McGill, and he is a welcome addition to our strong roster of oncology specialists."

Dr. Roderick McInnes, who has served with distinction as Director of the LDI since 2009, will continue in that role until the end of the year.

"Dr. McInnes has done an exceptional job over the past decade in reinvigorating scientific output at the LDI, recruiting a corps of dynamic young investigators, and streamlining the focus of the Institute's intellectual interests," said Dr. Rosenberg. "We are very grateful for his contributions, upon which we will continue to build for many years to come."

## LDI researchers bring expertise to bear against COVID-19

The following researchers have recently been awarded funding as part of the national effort against the COVID-19 pandemic:

- Ivan Brukner to develop a 20 minute molecular diagnostic of COVID-19 within a "swab" - from the Réseau Des Centre D'Excellence Fédéral.
- Justin Cross to fund artificial intelligence to predict where the coronavirus will hit and warn those at-risk Vicky Tagalakis, for antithrombotic therapy to - from Sophie Desmarais via the JGH Foundation.
- Anne Gatignol to develop small interfering RNAs (siRNAs) for the treatment of SARS-CoV-2 - from the CIHR.

### Christina Greenaway has two projects:

- A randomized open-label trial of CONvalescent Plasma for hospitalized adults with acute COVID-19 respiratory illness (CONCOR-1) - from Hamilton Health Sciences.
- Clinical studies that will provide insights into interventions to prevent severe COVID or to support A living systematic review of mental health burden, studies of the most promising COVID therapies from the JGH Foundation.
- Kristian Filion to study anticoagulant treatment and the risk of adverse outcomes among hospitalized COVID-19 patients - from McGill University.
- Susan Kahn for research into COVID-19 conducted by the CanVECTOR (Canadian Venous Thromboembolism Clinical Trials and Outcomes Research) Network - from the CIHR.
- Ling Kong for using whole genome sequencing to enhance clinical control of COVID-19 - from the JGH Foundation.

### Chen Liang has two projects:

- Sex as a biological variable supplement to understand the high pathogenicity and zoonotic transmission of the COVID-19 virus: evasion of host innate immune responses - from the CIHR.
- Developing the right drugs to combat COVID-19 from Sophie Desmarais via the JGH Foundation.
- Carmen Loiselle for nurse-led telehealth monitoring for COVID-19 positive oncology patients - from Hoffman La Roche Ltd.

- Koren Mann to develop an animal model to test the effects of vaping on the heart, lung, and immune system, and to test whether vaping can alter COVID-19 infection - from the CIHR.
- Leighanne Parkes for a randomized trial of medical masks versus N95 respirators to prevent COVID-19 in healthcare workers - from CIHR.
- Brent Richards to build a biobank that will make predicting optimal treatment for COVID patients possible - from Sophie Desmarais via the JGH Foundation.
- ameliorate complications of COVID-19 (ATTACC) from the University of Manitoba.
- **Brett Thombs** has four projects, three of which deal with mental health during the pandemic:
- A longitudinal study of risk factors and outcomes, and an embedded trial of an activity, education, and support intervention - from McGill University.
- A living systematic review of symptom levels, factors associated with symptoms, and intervention effectiveness - from McGill University.
- factors associated with mental health outcomes, and intervention effectiveness in the general population and vulnerable populations - from the CIHR. and
- A partially nested randomized controlled trial to evaluate the effectiveness of Scleroderma Patient / Centered Intervention (SPIN) network COVID home

isolation activities - from the CIHR.

Mark Trifiro to develop a faster COVID-19 diagnostic tool - from the JGH Foundation.

Dr. Brent Richards has been named a William Dawson Scholar by McGill University. The award recognizes a scholar developing into an outstanding and original researcher of world-class calibre who is poised to become a leader in their field. The award is for a five-year term, renewable once upon performance review.

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### International consortium reports on impact of COVID-19 on cancer patients

People with cancer sickened by COVID-19 have a crude death rate of 13%, more than twice that reported for all patients with COVID-19 (by the Johns Hopkins Center for Systems Science and Engineering). This according to data on more than 900 patients <u>published in *The Lancet*</u>, which also revealed cancer-specific factors associated with increased mortality. The information is the first report from an ongoing international initiative by the COVID-19 and Cancer Consortium (CCC19) to track outcomes within this vulnerable population. The Jewish General Hospital is one of more than 100 institutions participating in the CCC19 registry.

These early data showed no statistical association between 30-day mortality and cancer treatments, suggesting that surgery, adjuvant chemotherapy and maintenance chemotherapy could continue during the pandemic with "extreme caution." The study reports that, while older patients and those with major comorbidities are at substantially increased risk of dying from COVID-19, early findings are encouraging for patients without major medical conditions who receive their cancer therapy within four weeks of their infection. However, more data are needed to reliably assess individual higher risk therapies.

One factor associated with increased mortality was an active cancer status, particularly progressive cancer. The mortality risk also increased with the number of comorbidities, such as hypertension or diabetes, particularly with two or more. As is the case with the noncancer population, mortality increased with age.

"We joined the Consortium in early March, contributing data on our cancer patients who have contracted COVID-19 infection, and this collaboration continues as the CCC19 grows rapidly and is taking on projects that interrogate the entire database," said **Dr. Gerald Batist**, Director of the Segal Cancer Centre. "We have a dual mission: firstly to protect cancer patients from their clearly very increased risk from this infection, and secondly to protect them from the pressures imposed by the coronavirus on the healthcare system, so that their necessary anti-cancer therapies can continue, and cancer screenings remain active. It is a challenge that we address with our colleagues and government authorities while carefully balancing risks and benefits with our patients." **Dr. Ernesto Schiffrin** has been named a Distinguished James McGill Professor for late-career researchers – McGill's highest honour. DJMPs have held James McGill Professorships for two seven-year terms while maintaining an outstanding research record, or have held a Canada Research Chair (Tier 1) for two sevenyear terms. DJMP awardees



hold the distinction until retirement.

The McGill Regenerative Medicine Network is pleased to announce the results of the Fall 2019 MRM Internal Funding Competition.

**MRM Internal Funding** supports research that seeks novel forward-looking insights and discovery into a basic understanding of stem cells biology, which ultimately translate into novel technologies and regenerative medicine. It aims at facilitating the use of the numerous quality platforms built across McGill University by funding pilot research projects using these MRM-affiliated core facilities. Among the awardees was **Dr. Nicoletta Eliopoulos** for her project: Orthotopic Model of Kidney Cancer for Testing Gene-Modified Adipose Tissue Stem Cells, involving the LDI Small Animal Research Core.

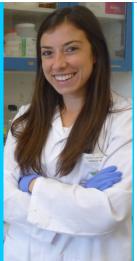
# The 2019-20 honourees for best trainee seminar presentations in the **Cancer Axis** are:

- MSc candidate: Melina Russo (Basik lab) for "Multidimensional Integrative Prognostic Signatures in Plasma from Triple-Negative Breast Cancer Patients."
- PhD candidate: Sathyen Prabhu (Miller and del Rincon labs) for "Identifying novel functions and targets of MNK1."
- Post-doctoral candidate: Marie Coutelier (Kleinman lab) for "When the silent genome gets loud: transcription of repeat genomic elements at single-cell resolution."

Thanks are extended to the judges, who attended all the seminars: Adriana Aguilar, Margarita Bartish, Vincent Richard, Andreas Papadakis, and Maud Marques.

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Marisa Cressatti, a PhD candidate in Dr. Hyman Schipper's neurology lab, received the Relève étoile Jacques-Genest award from the Fonds de recherche du Québec – Santé (FRQS) for Salivary microR-153 and microR-223 Levels as **Potential Diagnostic Biomarkers** of Idiopathic Parkinson's Disease, published in Move*ment Disorders.* This study found that salivary microR-153 and microR-223 levels were significantly lower in patients diagnosed with early-stage



Parkinson's disease than in healthy individuals. These promising results will support upcoming large-scale clinical tests in response to a key clinical imperative.

**Dr. Robert Platt**, of the Centre for Clinical Epidemiology, was appointed Interim Chair, Department of Epidemiology, Biostatistics and Occupational Health, School of Population and Global Health, Faculty of Medicine, by McGill University effective September 1. As Interim Chair, Dr. Platt will lead the Department in its research and education missions and provide mentoring to faculty members. He will make recommendations on recruitment, academic appointments, promotion and tenure, and lead strategic planning, as well as advising on academic matters pertaining to the Department.

# **Dr. Mark Basik** has been appointed President of the Scientific Advisory Committee (SAC) by the Cancer

Research Society. Dr. Basik, a surgical oncologist at the Segal Cancer Centre and Herbert Black Professor of Surgical Oncology at McGill University, has served on the SAC since 2015. His medical practice and research are focused on treating breast cancer, especially hard-to-treat breast cancer subtypes.



## Genetic mutation that causes entirely new syndrome identified

Upon being introduced to a Montreal family with a strange confluence of multinodular goiter (MNG) and schwannomatosis across three generations, a team led by **Dr. William Foulkes** investigated and discovered a brand-new syndrome brought about by a rare genetic mutation. The results are published in <u>The Journal of</u> <u>Clinical Investigation</u>.

"The finding is really interesting because it shines a light on unknown biology," Dr. Foulkes points out. The link between inherited multinodular goiter and the development of schwannomatosis had never been observed before. "Because we had access to three generations with the same unusual conditions, we had the opportunity to conduct whole-exome sequencing in order to find out whether we could isolate the causal mutation."

Goiter is a fairly common thyroid disorder that is often asymptomatic, but which has been associated with an increased risk of thyroid cancer. Schwannomatosis is an inherited disease of the peripheral nervous system that can bring about chronic pain.

Following painstaking analysis, the gene known as "Di George Critical Region 8" (DGCR8) was identified as the culprit in what the authors of the paper dubbed *Familial MNG with schwannomatosis*. "A single mutation that slightly alters the protein results in deficient production of microRNAs, bringing about this rare syndrome," Dr. Foulkes goes on.

This study represents an impressive scientific exercise, where a dedicated group of scientists from around the world worked to solve a problem that the team at the JGH were the first to recognize as a new syndrome. "Because it seems most of the associated clinical features are rather benign," Dr. Foulkes said, "this isn't going to have a huge medical impact, but it does resolve a question when we observe this syndrome in other patients going forward. Our finding provides a novel genetic insight that represents a unique piece of the biological puzzle."

While this was an international effort, the other leaders of this study - Drs. Barbara Rivera, Javad Nadaf and Marc Fabian are all based at McGill and the Lady Davis Institute.

### Selected Bibliography of Papers from the Lady Davis Institute (June—August 2020):

### Cancer

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