

Dr. Borchers appointed Segal Family Chair in Molecular Oncology

Dr. Christoph Borchers has been appointed as the inaugural Segal Family Chair in Molecular Oncology at McGill University. He will carry out his research on clinical proteomics at the Segal Cancer Centre at the Jewish General Hospital. In partnership with the University of Victoria – Genome BC Proteomics Centre, the JGH has been recognized as one of Genome Canada’s national Genomics Innovation Network nodes.

“After years of effort, the technology to bring proteomics into the clinic with the required sensitivity and precision is finally emerging, and Professor Borchers is among the world’s leaders in making this possible,” said Dr. Gerald Batist, Director of the Segal Cancer Centre and Professor of Oncology at McGill. “It is a major achievement for us to be at the forefront of this field. What is being pioneered here will be a model for other hospitals to emulate in cancer and other diseases.”

Dr. Wainberg wins Murray Award for Career Achievement

Dr. Mark Wainberg, Director of the McGill AIDS Centre, was honoured with the Canadian Society of Microbiologists’ Murray Award for Career Achievement. This is the Society’s premier award for senior researchers. Dr. Wainberg was presented with a plaque at the CSM’s annual general meeting in Regina.



Dr. McInnes wins Award for Excellence in Human Genetics Education

Dr. Roderick McInnes, Director of the LDI, received the 2015 Award for Excellence in Human Genetics Education from the American Society of Human Genetics (ASHG), along with his co-authors of the 6th, 7th, and 8th editions of the seminal textbook, *Human Genetics in Medicine*. Nearly 60 genetics education programs worldwide currently use the textbook. Dr. McInnes has taught genetics at the medical and graduate levels and supervised graduate students and postdoctoral fellows. He is co-author of the [CIHR Guidebook for New Principal Investigators](#).

Dr. Batist re-appointed for third term as Chief of Oncology at JGH

The Jewish General Hospital is pleased to announce that **Dr. Gerald Batist** has been re-appointed Chief of the Department of Oncology for a third term. The Search and Selection Committee noted that the Department has “flourished under Dr. Batist’s tenure,” securing a national and international reputation for clinical care and for fundamental and translational research, concluding that “he is the best person to lead the Department of Oncology going forward.”

Dr. Eisenberg appointed Director of McGill MD/PhD Program

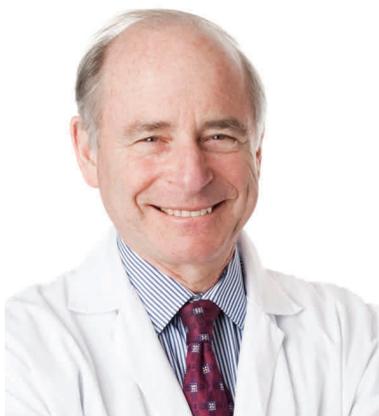
Dr. Mark Eisenberg – Senior Investigator at the Centre for Clinical Epidemiology, cardiologist and Director of the Cardiovascular Health Services Research Group at the JGH, and Professor of Medicine – has been appointed Director of the MD/PhD Program at McGill. Dr. Eisenberg will be responsible for the program’s curriculum and outcomes and for mentoring students to become Canada’s future physician researchers. Dr. Eisenberg is deeply committed to training clinician scientists, and is the author of *The Physician Scientist’s Career Guide* (Springer, 2011).

Four LDI investigators awarded CIHR Foundation Grants

Four LDI scientists received a “Foundation Scheme Grant” from the Canadian Institutes of Health Research (CIHR). This new category of funding is meant to provide larger amounts of long-term operational financing for innovative, high-impact programs of research. It covers a seven-year period for established investigators, and five years for early-career investigators.

The established recipients are:

- **Howard Chertkow** - *Typical and atypical Alzheimer Disease: salivary tau biomarkers, therapy with neuromodulation, and disease subtypes.* \$1,695,053
- **Susan Kahn** - *Improving long term outcomes after venous thromboembolism (VTE).* \$2,050,824
- **Ernesto Schiffrin** (pictured) - *Vascular remodeling in hypertension and cardio-metabolic disease: from mice to humans.* \$3,164,111



The early-career recipient is **Laurent Azoulay** - *Cancer pharmaco-epidemiology: a population-based assessment of the risks of prescription drugs in vulnerable populations.* \$852,701

FRQS salary awards

Drs. **Marie Hudson** (translational research in rheumatology) and **Alexander Thiel** (clinical research on non-invasive therapy for stroke patients) had their Fonds de recherche Québec—Santé (FRQS) Chercheur-boursier senior grants renewed, while Dr. **Sarit Assouline** (clinical research on leukemia and lymphoma) had her Chercheur-boursier junior 2 grant renewed. Dr. **Claudia Kleinman** (computational genomics in cancer and brain development) was awarded Chercheur-boursier junior 1 status.

Dr. **Claudia Kleinman** has been awarded a \$60,000 grant from the Canadian Foundation for Innovation for her project on “Computational approaches towards cancer targeted therapies.”

Canadian Cancer Society Research Institute Innovation Grants

The following members of the Cancer Axis received \$200,000 CCSRI Innovation grants:

- **Wilson Miller** for “Targeting c-Kit mutated melanomas with inhibitors of Mnk1/2” (3 years);
- **Ivan Topisirovic** for “Defining metabolic vulnerabilities in colorectal cancer” (2 years);
- **Josie Ursini-Siegel** for “p66ShcA as a prognostic biomarker for responsiveness to PARP inhibitors in poor outcome breast cancers” (2 years).

Dr. **Ana Velly** is the principal investigator on a CIHR-funded project to investigate the risk of community-acquired pneumonia among immuno-suppressive opioid users. She is the lead epidemiologist on a National Institutes of Health project to assess the management of temporomandibular joint disorder (TMJD) pain patients.

CIHR Operating Grants

LDI researchers who were successful in the most recent competition for CIHR transitional operating grants included:

- **Melissa Henry** for a randomized controlled trial of the meaning-making intervention in patients newly diagnosed with advanced cancer.
- **Stephanie Lehoux** for “The effects of shear stress on atherosclerotic plaque regression.”
- **Chen Liang** to study MxB mediated restriction of HIV-1.
- **Koren Mann** for “Bone as a target for tungsten-induced toxicities.”
- **Wilson Miller** to understand the role of the MNK-eIF4E axis in the response and resistance to BRAF inhibitors.
- **Christel Renoux** for “Éfficacité des nouveaux anticoagulants oraux dans la fibrillation auriculaire : Étude de cohorte en population générale.”
- **Brent Richards** for “Mendelian randomization: Testing the causality of clinically-relevant biomarkers.”
- **Josie Ursini-Siegel** to define the mechanisms and therapeutic potential of ShcA-mediated angiogenesis and metabolism that fuel breast tumorigenesis.

Anne Gatignol received CIHR bridge funding for “HIV-induced modifications of the RNA interference pathway.”

Movember prostate cancer grants

Two LDI researchers received Movember Discovery Grants worth \$200,000 each from the Movember Foundation and Prostate Cancer Canada:

- **Dr. Jian Hui Wu** proposes to develop new chemical compounds to stimulate the immune system to fight prostate cancer cells. STING is a protein structure that has already proven to bring about an aggressive anti-tumor response. Currently, compounds that activate STING in mice cannot activate human STING. Dr. Wu and his team will work to develop compounds to activate human STING.
- **Dr. Ivan Topisirovic**, in collaboration with a team of international experts, has designed an “artificial prostate” to help understand how cells located in two compartments of the prostate – the epithelium and the stroma – communicate. The resulting information could reveal how to block the communication to improve existing treatments in cases of advanced prostate cancer.

2015 CiPP award winners

Three initiatives are being funded under the LDI’s Clinical Research Pilot Project (CiPP) grants program:

- **Dr. Thomas Jagoe** to answer the question, “Does the gut microbiome determine response to dietary intervention in cancer cachexia?”
- **Dr. Jonathan Afilalo** for “Randomized Trial of Protein Supplementation to Prevent Loss of Muscle Mass and Strength in Older Adults After Cardiac Surgery.”
- **Dr. Mark Eisenberg** for “Bright Light Therapy Efficacy for Depressive Symptoms Following Cardiac Surgery (BEAM): A Pilot Study.”

The aim of this initiative is to provide operating funds to enable researchers to obtain preliminary data that will increase their ability to attract external peer-reviewed funding for clinical research.

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To submit information or for media enquiries, contact: Tod Hoffman at: thoffman@jgh.mcgill.ca; 514-340-8222, ext. 8661.

Lawrence Kleiman retires

Dr. Lawrence Kleiman began his career at the LDI in 1975 researching transfer RNA (tRNA) and its role in protein synthesis. He became interested in AIDS because a specific RNA, tRNA^{Lys3}, is involved in the replication cycle of HIV, through its ability to prime reverse transcription.

Studying how tRNA^{Lys3} is concentrated into the virus, and how it finds the binding site within the viral genomic RNA, was the beginning of a 23 year study that led to over 130 papers. “It has been a very exciting time, and since nobody else was exploring this subject from the point of view of viral tRNA, our work was continuously providing us with novel insights into HIV-1 assembly,” he said of the work that made him the world’s leading expert on the role of tRNA in HIV-1 replication.



His goal has been to use the virus’s interaction with the cell to uncover the complex and mysterious processes required to produce a living cell.

“We’re learning a great deal about the structure and regulation of genes, but it is still a mystery how specific molecules produced by these genes move through the cell in order to undergo specific interactions with each other. We have been examining this broad, fundamental problem in cell biology by examining how cellular tRNA^{Lys3} finds the binding site in the HIV-1 RNA genome in order to promote viral replication.”

“Larry Kleiman was the first scientist in the world to identify tRNA^{Lys3} as an essential factor in the replication of HIV. Others have since identified cellular factors that are also involved in HIV replication, but Larry was the first.”

- Dr. Mark Wainberg, Director, McGill AIDS Centre

“While we would all like to find a cure for AIDS, I don’t believe that the end goal of every research program in the field must be to seek a direct cure using the knowledge at hand,” he said. “It may be necessary to first learn more about how HIV-1 replicates, and I am hopeful that the basic research on HIV-1 assembly we have done may eventually aid other workers in finding new targets for drugs that can inhibit HIV replication.”

Marie Hudson new Associate Director—Clinical Research

As of September 1, **Dr. Marie Hudson** assumed the position of Associate Director for Clinical Research at the LDI. She replaces **Dr. Susan Kahn**, who is going on sabbatical, after serving in the position for nearly ten years.

“I am very grateful to Dr. Kahn for the excellence and professionalism of her attention to this important position,” said Dr. Roderick McInnes, Director of the LDI, “and I am delighted that Dr. Hudson has agreed to succeed her.”

Dr. Hudson is a clinical rheumatologist at the JGH and member of the Centre for Clinical Epidemiology. She is a founding member of the CIHR-funded Canadian Scleroderma Research Group, and is co-investigator on a Canada Foundation for Innovation-funded study to develop an integrated database and biospecimen tracking system for systemic autoimmune rheumatic diseases.

After supervising a project that yielded the surprising conclusion that mortality in scleroderma seems to have increased since the 1970s, Dr. Hudson did an about-face in her research.

“This finding convinced me that it wasn’t enough to describe outcomes, but that I had to do something to actually change those outcomes,” she reports. With the support of an LDI Clinical Research Pilot Project (CiPP) grant, she launched an epigenetic study to begin identifying mechanistic links between genetics and environmental factors that trigger autoimmune diseases. She gathered together a trans-disciplinary group that includes clinicians, geneticists, environmental health scientists, and lab based experts.

“In my opinion, we should all be building teams in order to extract the most possible information from our data,” she said. “The problems we are trying to solve are too complex for one expert; we need complementary expertise working in concert.

“I think clinicians and scientists need to be more aware of one another’s efforts. Working with patients, clinicians know what could be most relevant in a treatment environment, and can help formulate research questions that require the know-how of basic scientists. Integration of the two ends of translational research can be very useful so that scientists focus their work to maximize their contribution to patient health.”



Dr. Andréa LeBlanc of the Aging Axis had her James McGill Professorship renewed for a further seven year term. She was first appointed in 2003. The award recognizes the valued contribution of a senior scholar as an outstanding and original researcher of world-class caliber in their field.

Missing link discovered in mRNA machinery

Tamiko Nishimura, Zoya Padamsi and others in **Dr. Marc Fabian’s** lab have generated new insight into a biological process that controls the stability of genetic material (messenger RNA), which in turn serves as the template for the synthesis of proteins in mammals. [The findings were published in *Cell Reports*.](#)

They show that a previously identified protein (4E-T) that interacts with the mRNA cap-binding protein (eIF4E) is actually a component of the mRNA decay machinery. 4E-T interacts with multiple RNA decay factors and is recruited to the 3’-termini of mRNAs targeted by various gene silencing platforms, including microRNAs. The 3’-bound mRNA decay machinery must recognize the 5’-terminus of targeted mRNAs in order to engender their decay. Their data support a model where 4E-T acts as a molecular bridge linking the 3’-bound mRNA decay machinery with the 5’-end of target mRNAs via its interaction with eIF4E. This marks the discovery of a missing link between mRNA translation and decay machineries and provides new insight into post-transcriptional control mechanisms.



CommDesign and the Lady Davis Institute are proud to have won a 2015 Gold Hermes Creative Award for the production and design of the LDI’s Annual Report. The Hermes Creative Awards are an international competition administered by the Association of Marketing and Communications Professionals.