

Division of
BioMedical Sciences

Faculty of Medicine

Memorial University of Newfoundland

Research

Education

Training

Annual Report
2012

Annual Report 2012

Compiled and edited by
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Annual Report

Calendar Year 2012

April 2013

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Introduction

Mission of the Faculty of Medicine

- to enhance the health of the people of Newfoundland and Labrador by educating physicians and health scientists; by conducting research in clinical and BioMedical sciences and applied health sciences and by promoting the skills and attitudes of lifelong learning

Goals and objectives of the Division of BioMedical Sciences

- To conduct and promote research and associated scholarly activities in the area of biomedical sciences.
- To promote and deliver a high-quality, science-based medical education to undergraduate and post-graduate medical students, and to foster programs of excellence for the training of graduate students in BioMedical Sciences.
- To serve as a primary resource for biomedical sciences for the Faculty of Medicine, other Faculties and Schools, national and international scientific and educational organizations and for the Community at large.

The Division of BioMedical Sciences is the home to many of the basic biomedical researchers and educators within the Faculty of Medicine. Our faculty members have a diversity of interests as illustrated by the contents of this report. While the major focus of many of our members is research, and providing excellent research and training opportunities for our graduate students and promising undergraduate science students, we also have a commitment to education. As part of this commitment, our faculty instruct in the undergraduate medical curriculum with the aim of providing a solid foundation in the BioMedical Sciences for medical students. In addition to the MD program, we also provide instruction at the undergraduate level in the School of Pharmacy and Faculty of Science courses. At the graduate level, many of our faculty are members of research programs which provide the basis for the graduate programs administered by the School of Graduate Studies and the Office of Research and Graduate Studies within the Faculty of Medicine. Each graduate program has courses coordinated and taught by divisional members.

The last few years have been ones of change for the Division. This period has been one of growth and renewal – our new faculty members have provided the Division with obvious energy and enthusiasm, and have quickly become integrated into the Division and the Faculty as a whole.

You can find us at

<http://www.med.mun.ca/biomed>

K.M. Mearow,
Associate Dean

Research Programs

Research Groups

There are 31 full time and 6 jointly-appointed faculty members in the Division of BioMedical Sciences. The majority of faculty in the Division are members of Research Groups. These include the Cancer, Cardiovascular Sciences, Immunology and Neuroscience research groups, which form the basis of the graduate programs in these areas.

Cancer and Development

Key areas of research: angiogenesis, apoptosis, cancer genetics, growth factors, viral oncogenesis

There are currently 9 BioMedical Sciences faculty in the Cancer Research Group. The Cancer Research Group's interests span the breadth of cancer research. These researchers pursue fundamental cell and molecular biological questions, studying viral oncogenesis, growth factors and oncogenes in developmental models, programmed cell death, drug resistance and cancer genetics. Other researchers, including colleagues from the Division of Community Health and clinicians from the Newfoundland Cancer Treatment and Research Foundation (NCTRF) and the clinical disciplines, bring a great deal of clinical experience and interest in clinical trials, pediatric oncology, epidemiology and cancer imaging/screening and diagnosis to the group. Funding for this research comes from external operating and personnel awards from CIHR, NCI and NSERC. One of the faculty members, Dr. Ann Dorward, is the recipient of a Tier 2 Canada Research Chair in Molecular Signaling in Human Health and Disease.

Cardiovascular/Renal Physiology

Key areas of research: Investigation of cardiovascular regulation and pathology in preparations ranging from the conscious animal to isolated tissues.

This is one of the smaller research groups with 6 members, but has a well-funded and active research program. The cardiovascular/renal group is actively involved in a range of research including hypertension, stroke, salt-sensitivity of blood pressure, cerebral blood flow regulation, vascular remodeling, venous circulation, blood pressure variability, role of aldehydes and oxidative stress in hypertension and

hypertensive damage, heart failure; physiology and pharmacology of blood vessels. Funding for this research comes from CIHR, NSERC, Heart and Stroke Foundation, as well as partnerships with pharmaceutical companies.

Immunology and Infectious Diseases

Key areas of research: Hepatitis B and C, HIV, HLA genes and T cell receptors, virus induced cell injury, autoimmunity, tumor immunity

The Immunology research group has 8 members from the Division of BioMedical Sciences involved in studies of the immune system and infectious disease. Research interests include immune regulation in HIV infection, virus induced cell injury and persistence, dietary nutrients in regulation of immune responses and susceptibility to infection, understanding the mechanisms of susceptibility to rheumatoid arthritis, how HLA alleles influence the immune response in breast cancer patients, development of hepatitis vaccines and antivirals. Funding for this research comes from CIHR, Canadian Breast Cancer Alliance and several pharmaceutical partners. One of the faculty members, Dr. Thomas Michalak is the recipient of a CRC Tier 1 Senior Chair in Viral Hepatitis.

Neuroscience

Key areas of research: learning and memory, neural plasticity, neuropharmacology, neuroprotection, stroke, neurotrophins, signal transduction

The Neuroscience group consists of 6 faculty members from the Division of BioMedical Sciences. Research interests include both central and peripheral nervous system with strengths in cerebrovascular disease, neuropharmacology, memory, neural regeneration, autonomic control mechanisms and cellular signal transduction mechanisms. Research models range from in vitro cellular studies to whole animal behavioural studies. Funding for this research comes from CIHR, NSERC, Newfoundland and Labrador Neurotrauma Initiative, Heart and Stroke Foundation. In addition to BioMedical Sciences faculty members, these research groups also include colleagues from various clinical disciplines (Oncology, Genetics, Medicine) and other University departments (Biochemistry, Psychology). This provides for a collaborative approach to research and education. The graduate programs in each of these areas are very active with students at both the M.Sc. and Ph.D. levels.

Faculty and Staff

Core Faculty

- *Carayanniotis, George** (Toronto), professor of medicine (endocrinology)
Chandra, Shakti (New Delhi), associate professor of anatomy
***Chen, Xihua** (Cambridge), associate professor of neuroscience (biological psychiatry)
Church, Jon (Toronto), professor of oncology
Dore, Jules (Tennessee), associate professor of cell biology
Dorward, Ann (McMaster), assistant professor of molecular signaling, Tier 2 Canada Research Chair in Molecular Signaling in Human Health and Disease
Drover, Sheila (Memorial), associate professor of immunology
Gendron, Robert (McGill), associate professor of cancer/cardiovascular biology
Gillespie, Laura (Ottawa), professor of oncology
***Grant, Michael** (McMaster), professor of immunology
Harris, June A. (Memorial), professor of anatomy, Director of MedCAREERS
Hirasawa, Kensuke (Tokyo), assistant professor of immunology
Hirasawa, Michiru (Tokyo), associate professor of neurosciences
Kao, Ken (Toronto), professor of oncology
Larijani, Mani (Toronto), assistant professor of immunology and infectious diseases
MacPhee, Daniel (Western Ontario), associate professor of reproductive and cell biology
McGuire, John (Queen's), associate professor of cardiovascular sciences
McKay, Donald W. (Michigan State), professor of physiology, Associate Dean, Undergraduate Medical Education
McLean, John (Dalhousie), professor of anatomy
Mearow, Karen (McMaster), professor of neuro/molecular biology, Associate Dean, Division of BioMedical Sciences
Michalak, Thomas I. (Warsaw), professor of molecular virology and medicine, Tier 1 Canada Research Chair in Viral Hepatitis and Immunology
Paradis, Helene (Montreal), associate professor of vascular molecular biology
Paterno, Gary (Ottawa), professor of oncology – no report received for Dr. Paterno
***Richardson, Vernon** (Sheffield), professor (oncology)
Russell, Rod (McGill), assistant professor of immunology
Smeda, John (McMaster), professor of cardiovascular/renal physiology
Stuyvers, Bruno (Bordeaux, France), associate professor of cardiovascular cellular and molecular physiology
Tabrizchi, Reza (British Columbia), professor of pharmacology (cardiovascular)

Vanderluit, Jacqueline (British Columbia), assistant professor of neurosciences
Van Vliet, Bruce (Saskatchewan), professor of cardiovascular/renal physiology
Yuan, Qi (Memorial) assistant professor of neurosciences

* Joint Appointed

Affiliated Faculty

Adamec, Robert (McGill), professor of psychology
***Brosnan, John** (Oxon), professor of biochemistry
***Brosnan, Margaret** (Toronto), professor of biochemistry
***Cheema, Sukhinder** (PGIMER), associate professor of biochemistry
***Christian, Sherri** (UBC) assistant professor of biochemistry
***Harley, Caroline** (Oregon), professor of physiology (neurosciences)
Hansen, Penny A (Memorial), professor of physiology
***Kovacs, Christopher** (Queen's), associate professor of medicine (endocrinology)
Loomis, Christopher (Queen's), professor of pharmacology, Vice President (Research and International Relations)
Liu, Hu (Alberta), associate professor of pharmacy
Malsbury, Charles (McGill), professor of psychology
Vasdev, Sudesh (Punjab), professor of medicine, director of renal laboratory
***Weber, John** (Virginia), assistant professor of pharmacy
***Young, Terry-Lynn** (Memorial), assistant professor of genetics

* Cross-appointed

Adjunct Faculty

Mandal, Sanat (Calcutta)
Corbett, Dale (Concordia), professor of physiology (neurosciences), Tier 1 Canada Research Chair in Stroke and Neuroplasticity
Moody-Corbett, Penny (McGill), professor of physiology (neurosciences)
Mansour, Atef (Cairo), Scientist, DFO
Ploughman, Michelle (Memorial)

Professors Emeriti

Allderdice, Penelope (Montana)
Bieger, Detlef (Kiel), professor of pharmacology
Orr, James (Glasgow)
Roberts, Kenneth (Oxon)
Tomlinson, J.D.W. (Cambridge)

Post-Doctoral Fellows

Chen, Annie Yang
Cordova, Christopher
Hou, Quinlong
Jones, Daniel
Langdon, Kris
Mulrooney-Cousins, Patricia

Administrative and Secretarial Staff

Hawco, Madonna
Kelly, Sandra
Parrott, Deborah
Petten, Janice
Power, Caitlin

Research Support Staff

Abdouni, Hala
Alberto, Christian
Andrews, Philip
Arora, Simran
Chafe, Linda
Chia, Elizabeth
Churchill, Norma
Codner, Dianne
Conway, Meghan
Corkum, Christopher
Darby-King, Andrea
Davis, Anita
Ducey, Catherine
Dyer, Tracey
Fifield, Heather
Gallant, Maureen

Gardiner, Danielle
Garrett, Nicole
Granter-Button, Shirley
Mercer, Corinne
Miskiewicz, Ewa
Mulrooney-Cousins, Patricia
Nafar, Firoozeh
Pongnopparat, Theerawat
Quinlan, Matthew
Squires, Krista
Stapleton, Staci
Stuckless, Jennifer
Trelegan, Colleen
Wells, Christine
Xiong, Jieying
Yaskowiak, Edward

Educational Responsibilities

Undergraduate Teaching

Faculty in the Division of BioMedical Sciences contributed to teaching in a variety of undergraduate courses in the Faculty of Medicine, the School of Pharmacy and the Faculty of Science.

M.D. Curriculum

MED 5600 – Basic Science of Medicine I. This is an integrated course with components including anatomy, biochemistry, physiology, cell biology, pathology. The course is intended to provide an introduction to the basic science of medicine.

MED 6600 – Basic Science of Medicine II; BSM II is a continuation of BSM I, with subject areas including immunology, and genetics.

MED 5650 – Integrated Study of Disease I. This course provides an introduction to the clinical science and pathology of major organ systems. Major components taught by Basic Science faculty include Cardiovascular physiology.

MED 6650 – Integrated Study of Disease II. This is a continuation of ISD I and components taught by faculty in BioMedical Sciences include Neurosciences/Neurology, Endocrinology, Women's Health.

MED 7280 – Integrated Basic, Community Health and Clinical Sciences. This course is also known as "Back to Basics".

Courses offered for non-medical students

MED 310A, 310B (BIOC 311A/B) – Human Physiology, Course Chairs, Dr. B. Stuyvers (Fall Semester) and Dr. Chris Cordova (Winter Semester)

MED 4300 – Introduction to General and Autonomic Pharmacology, Course Chairs, Drs. J. Church and R/. Tabrizchi

PHARM 4105/BIOCH4105 – Immunology, Course Chair – T. Michalak

Graduate Teaching

Graduate teaching and courses in the Faculty of Medicine are administered by the School of Graduate Studies, coordinated through the Office of Research and Graduate Studies. Four of the graduate programs in the Faculty of Medicine are primarily associated with the research programs in the Division of BioMedical Sciences. These programs are Cancer and Development, Cardiovascular/Renal Physiology, Immunology

and Infectious Diseases, and Neurosciences. The Program Coordinators and the courses offered through each program are noted below.

Cancer and Development

Coordinator – A. Dorward

Participating Faculty – J. Church, J. Dore, A. Dorward, R. Gendron, L. Gillespie, K. Kao, D. MacPhee, H. Paradis, G. Paterno

Courses

MED 6580 – Molecular biology of cancer

MED 6590 – Molecular biology I

MED 6591 – Molecular biology II

MED 6400 – Cancer seminars

Cardiovascular/Renal Physiology

Coordinator – J. Smeda; J McGuire (effective June)

Participating Faculty – J. Smeda, J. McGuire, B. Stuyvers, R. Tabrizchi, B. Van Vliet, S. Vasdev

Courses

MED 6140 – Basic cardiovascular and renal physiology

MED 6141 – Cardiovascular/Renal techniques

MED 6142 – Special Topics in cardiovascular/renal physiology

Immunology and Infectious Diseases

Coordinator – Dr. S. Drover

Participating Faculty – G. Carayanniotis, S. Drover, M. Grant, K. Hirasawa, M. Larijani, T. Michalak, V. Richardson, R. Russell

Courses

MED 6127 – Immunology I

MED 6128 – Immunology II

MED 6130 – Advanced Immunological Methods

MED 6100-6114 – Immunology Seminars

Neurosciences

Coordinator – Dr. M. Hirasawa

Participating Faculty – X. Chen, M. Hirasawa, J. McLean, K. Mearow, J. Vanderluit, Q. Yuan

Courses

MED 6193 – Advanced Topics in neuroscience

MED 6196 – Systems neuroscience

MED 6197 – Cellular neuroscience

Post Graduate Education

Visiting Speakers

May 11, 2012

Neuroscience visiting speaker – Dr. Peter Brunjes, University of Virginia, presented “Adventures in the higher olfactory pathway” (hosted by Dr. John McLean)

June 8, 2012

Neuroscience visiting speaker - Dr. William F. Colmers, University of Alberta, presented "Neural mechanisms of energy homeostasis" (hosted by Dr. Michiru Hirasawa)

June 14, 2012

Immunology and Infectious Diseases visiting speaker - Dr. S.M. Mansour Haeryfar, University of Western Ontario, presented "Natural killer T (NKT) cell activation: means, modes and more" (Hosted by Dr. Mani Larijani)

June 15, 2012

Cancer and Development visiting speaker - Dr. Philippe Gros, McGill University, presented "Genetic control of susceptibility to colorectal cancer in mice" (graduate research symposium presentation)

June 15, 2012

Cancer and Development visiting speaker - Dr. Pamela Goodwin, University of Toronto, presented "Obesity, insulin resistance and breast cancer" (graduate research symposium presentation)

June 18, 2012

Division of BioMedical Sciences and Discipline of Medicine visiting speaker - Dr. Tony Lam, University of Toronto, presented "Nutrient sensing in the gut and its relevance to gastric bypass surgery" (hosted by Dr. Michiru Hirasawa and Dr. Guang Sun)

June 19, 2012

Immunology and Infectious visiting speaker - Dr. Alberto Martin, University of Toronto, presented “The gut microbiota and colon cancer” (hosted by Dr. Mani Larijani)

July 10, 2012

Cancer and Development visiting speaker - Mark Wilkes, Mayo Clinic, presented "Novel signalling molecules in TGF-beta mediated promotion of glioblastoma" (hosted by Dr. Jules Dore)

August 7, 2012

Cancer and Development visiting speaker - Dr. Janine Post, University of Twente, The Netherlands, presented "3D articular cartilage tissue engineering and novel strategies for the treatment of osteoarthritis" (hosted by Dr. Gary Paterno)

October 1, 2012

Neuroscience and Cancer and Development visiting speaker - Dr. Michel Cayouette, Institute de recherches cliniques de Montreal (IRCM), presented "Dare to be different: Regulating the production of terminal asymmetric cell divisions in the developing mouse retina" (hosted by Dr. Jacqueline Vanderluit)

October 22, 2012

Neuroscience visiting speaker - Dr. Vincent Tropepe, University of Toronto, presented "Retinal neurogenesis in zebrafish" (hosted by Dr. Jacqueline Vanderluit)

November 29, 2012

Immunology and Infectious Diseases visiting speaker - Dr. Luis Schang, University of Alberta, presented "Locking all the doors: innovative approaches to broad spectrum antivirals" (hosted by Dr. Kensuke Hirasawa)

Graduate Students

The following Students were supervised by BioMedical Sciences faculty members and were enrolled in the Faculty of Medicine graduate programs associated with the Division of BioMedical Sciences research groups in 2012.

Last Name	First Name	Degree	Program	Supervisor	Co-Supervisor
Pittman	Andrea Nicole	MSc	Neuroscience	Chen, X	
Ma	Yue	MSc	Cancer	Carayanniotis, G	
Kolypetri	Pangiota	PhD	Immunology	Carayanniotis, G	
Briggs	Chantelle	PhD	Neuroscience	Dalhousie U.	Hirasawa M
Ings	Danielle	MSc	Cancer	Dore, J	
Lewis	Clare	MSc	Cancer	Dorward, A	Dore, J
Smith	Kerri Nicole	PhD	Cancer	Dorward, A	
Goodyear	Kylie	MSc	Cancer	Dorward, A	Kao, K
Corkum	Christopher	MSc	Immunology	Drover, S	
LeShane	Lisa	MSc	Immunology	Drover, S	

Last Name	First Name	Degree	Program	Supervisor	Co-Supervisor
Mostafa	Ahmed	PhD	Immunology	Drover, S	
Morrissey	Karla Anne	MSc	Cancer	Gendron, R	Paradis, H
Grozinger	Kindra	MSc	Cancer	Gendron, R	Paradis, H
Ho	Nhu	MSc	Cancer	Gendron, R	Paradis, H, Michalak, T
Ferguson	Julia	MSc	Cancer	Gillespie, L	
Hand	Aimee	MSc	Cancer	Gillespie, L	
Li	Shengnan	MSc	Cancer	Gillespie, L	
Adegoke	Adeolu	MSc	Immunology	Grant, M	
Holder (Harris)	Kayla	MSc	Immunology	Grant, M	Russell, R
Kofahi	Hassan	PhD	Immunology	Grant, M	Russell, R
Gladney	Krista	MSc	Immunology	Grant, M	
Monajemi	Mahdis	MSc	Immunology	Grant, M	
Benkaroun	Jessica	PhD	Immunology	Grant, M	Larijani, M
Abusara	Nader	PhD	Cancer	Hirasawa, K	
Komatsu	Yumiko	PhD	Cancer	Hirasawa, K	
Licursi	Maria	PhD	Cancer	Hirasawa, K	
Zu	Dong	MSc	Cancer	Hirasawa, K	
Alemzadeh	Arezoo	MSc	Immunology	Hirasawa, K	Dorward, A
Belanger-Willoughby	Natasha	MSc	Neuroscience	Hirasawa, M	
Dias	Alexander	MSc	Neuroscience	Hirasawa, M	Hirasawa, K
Linehan	Victoria	PhD	Neuroscience	Hirasawa, M	
Andrews	Phillip	PhD	Cancer	Kao, K	
Hasan	Tahrim	MSc	Cancer	Kao, K	
Thorne	Karley	MSc	Cancer	Kao, K	
Tzenov	Youlian	PhD	Cancer	Kao, K	
Vatani	Maryam	PhD	Cancer	Kao, K	
Dancyger	Alex	MSc	Immunology	Larijani, M	
Ghorbani	Atefeh	MSc	Immunology	Larijani, M	
King	Justin	PhD	Immunology	Larijani, M	
Lucas	Heather	MSc	Immunology	Larijani, M	
Monajemi	Mahdis	MSc	Immunology	Larijani, M	
Suliman	Mussa	MSc	Immunology	Larijani, M	
Dinn	Sarah	MSc	Cancer	MacPhee, D	Mearow, K
Elustondo	Pia	PhD	Cancer	MacPhee, D	
Kirby	Trina	PhD	Cancer	MacPhee, D	
White	Bryan	PhD	Cancer	MacPhee, D	
Marsh	Noelle	MSc	Cancer	MacPhee, D	Dorward, A
Hennessey	John	MSc	Cardiovascular	McGuire, J	Stuyvers, B
Grimes	Matthew	PhD	Neuroscience	McLean, J	
Nartey	Michaelina	MSc	Neuroscience	McLean, J	

Last Name	First Name	Degree	Program	Supervisor	Co-Supervisor
Strong	Vanessa	MSc	Neuroscience	McLean, J	
Hewlett	Krista	PhD	Neuroscience	McLean, J	
Clarke	Joseph	PhD	Neuroscience	Mearow, K	
Conway	Megan	MSc	Neuroscience	Mearow, K	
Fudge	Neva	PhD	Neuroscience	Mearow, K	
Sarhan	Mohammed	PhD	Immunology	Michalak, T	
Skardasi	Georgia	MSc	Immunology	Michalak, T	
Williams	John	MSc	Immunology	Michalak, T	
Arora	Simran	MSc	Cancer	Paradis, H	
Derwish	Leena	MSc	Cancer	Paterno, G	
Derwish	Roya	PhD	Cancer	Paterno, G	
Rose	Jarratt	MSc	Cancer	Paterno, G	
Atoom	Ali	PhD	Immunology	Russell, R	
Morris	Heidi	MSc	Immunology	Russell, R	
Taylor	Nathan	MSc	Immunology	Russell, R	
Cardenas	Adriana	MSc	Cardiovascular	Stuyvers, B	
Daniels	Rebecca	MSc	Cardiovascular	Stuyvers, B	
Haq	Kazi	PhD	Cardiovascular	Stuyvers, B	
Miller	Lawson	MSc	Cardiovascular	Stuyvers, B	
Pellow	Sarita	MSc	Cardiovascular	Stuyvers, B	Gamperl, OS
Mahajan	Puneet	PhD	Cardiovascular	Tabrizchi, R	
Duggan	Daniel	MSc	Cardiovascular	Tabrizchi, R	
Gillingham	Ashley	MSc	Cardiovascular	Van Vliet, B	
Hopley	Joy	MSc	Cardiovascular	Van Vliet, B	
Bartlett	Robert	MSc	Neuroscience	Vanderluit, J	
Fogarty	Lauren	MSc	Neuroscience	Vanderluit, J	
Kelly	Meighan	MSc	Neuroscience	Vanderluit, J	
Roome	Robert	MSc	Neuroscience	Vanderluit, J	
Jerome	David	MSc	Neuroscience	Yuan, Q	
Ibrahim	Khadija	MSc	Neuroscience	Yuan, Q	Harley, C
Morrison	Gillian	MSc	Neuroscience	Yuan, Q	
Shakawat	Amin	PhD	Neuroscience	Yuan, Q	

Undergraduate Students

Last Name	First Name	Program	Supervisor	Co-Supervisor
Banfield	Susan	SURA summer	Dore, J	
Engelbrecht	Zame	MUCEP	Dorward, A	
Walsh	Melissa	MUCEP	Dorward, A	
Young	Matthew	NSERC Summer student	Drover, S	

Last Name	First Name	Program	Supervisor	Co-Supervisor
Young	Matthew	Honours	Drover, S	
Boone	Hannah	High school	Drover, S	
Evans	Daniel	SURA	Gendron, R	Paradis, H
Kennedy	Sean	Summer volunteer	Gendron, R	Paradis, H
Davis	Michael	SURA	Hirasawa, K	
Wakeham	Susan	-	Hirasawa, K	
Kalsi	Rahul	USRA-NSERC	Hirasawa, K	
Bacque	Ann	USRA-NSERC	Hirasawa, K	
Young	Matthew	USRA-NSERC	Hirasawa, K	
Frey	Verena	Foreign exchange	Hirasawa, K	
Cranford	Amanda	Honours	Hirasawa, M	
Cranford	Amanda	Summer	Hirasawa, M	
Dobre	Ioana	High school	Hirasawa, M	
Fitzgerald	Erica	Honours	Larijani, M	
Bacque	Lisa	Summer	Larijani, M	
Barrett	Crystal	Honours	Larijani, M	
Abdouni	Hala	GTEP	Larijani, M	
Quinlan	Matthew	GTEP	Larijani, M	
King	Justin	Honours	Larijani, M	
Woodworth	Claire	Summer	Larijani, M	
Marshall	Ryan	Summer	Larijani, M	
Raber	Suzanne	Summer	Larijani, M	
Mukhopadhyay	Amarnath	SWASP	McGuire, J	
Fisher	Skye	Honours	Mearow, K	
Byrne	Marcus	Honours	Michalak, T	
Frenchville	William	Honours	Michalak, T	
Sawicki	Pauline	Summer, U of T	Michalak, T	
Pitts	Paul	Summer	Paradis, H	Gendron, R
Brown	Katie-Marie	Summer volunteer	Paradis, H	
Ash	Chelsea	Honours/NCRTP Summer	Russell, R	
Elliott	Jen	MUCEP	Tabrizchi, R	
Martin	Hiliary	Honours / Summer volunteer	Vanderluit, J	
Song	Beibei	Summer volunteer	Vanderluit, J	
Suppiah	Yegappan	Summer	Vanderluit, J	
Courtney	Moriah	MUCEP	Vanderluit, J	
Sanjay	Kamra	Summer	Van Vliet, B	
Fontaine	Christine	Honours	Yuan, Qi	
Fry	Hiliary	WISE	Yuan, Qi	

Publications

Amini M, Ma C, Farazifard R, Zhu Q, Zhang Y, and **Vanderluit J** Zoltewicz JS, Hage F, Savitt J, Lagace D, Slack R, Beique J-C, Baudry M, Greer P, Bergeron R, Park D. Conditional disruption of calpain in the CNS alters dendrite morphology, impairs LTP, and promotes neuronal survival following injury. *Journal of Neuroscience*. (in press)

Barrett L, Fowke K, and **Grant M**. Aging, Cytomegalovirus and Human Immunodeficient Virus Infection: A Perfect Storm. *AIDS Reviews*, 14:159-167, 2012.

Christian S, Dong Z, Licursi M, Komatsu Y, Pongnopparat T, Codner D, and **Hirasawa K** (2012). Global impairment of interferon inducible genes in Ras/MEK underlies viral oncolysis in human cancer cells. *PLoS ONE* 7(9): e4467

Clements J, Mercer F, **Paterno G**, and **Gillespie L** (2012). Differential splicing affects subcellular localization of the alpha but not the beta isoform of the MIER1 transcriptional regulator in breast carcinoma cells. *PLoS ONE* 7(2):e32499. doi:10.1371/journal.pone.0032499

Clements, J, Mercer F, Paterno G, and **Gillespie L** (2012). Differential Splicing Affects Subcellular Localization of the Alpha but not the Beta Isoform of the MIER1 Transcriptional Regulator in Breast Carcinoma Cells. *PLoS ONE* 7(2): e32499. doi:10.1371/journal.pone.0032499

Dancyger A, King J, Quinlan M, Fifield H, Tucker S, Saunders H, Berru M, Magor B, Martin A, and **Larijani M**. (2012). Differences in the enzymatic efficiency of bony fish and human AID are mediated by a single residue in the C-terminus that modulates single-stranded DNA binding. *FASEB J*. Apr;26(4):1517-25

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Research Funding in the Division of BioMedical Sciences

Carayanniotis G

CIHR – Immunoregulation of experimental autoimmune thyroiditis. (operating; total \$126,786; 2008-2013)

Chen X

NSERC – Contribution of L-type Ca²⁺ channel subtypes to burst firing of dopaminergic cells in the mouse tegmental area. (operating; total \$114,574; 2013-2015)

Dorward A

Regional Partnership Program/CIHR and CIHR - Genetics and epigenetic determinants for juvenile-type granulosa cell tumourigenesis. (operating; total \$359,542; 2012-2015)

Medical Research Foundation - Accelerating cancer gene discovery: Next generation sequencing technology applied to an ovarian tumour model. (operating; total \$20,000; 2012-2015)

Government Contract awarded to co-applicant Dr. Edward Kendall - Carboxylase deficient mice. (operating; total \$59,000; 2011-2015)

Drover S

Canadian Breast Cancer Foundation - Investigation of molecular mechanisms that regulate antigen presentation pathways in breast carcinoma. (operating; total \$60,000; 2011-2012)

Gendron R, Paradis H

CIHR-Regional partnership - Role of tubedown in endothelial permeability in healthy vision. (operating; total \$287,919; 2009-2012)

2008 CIHR (MOP-178356) - Tubedown in vision loss during aging and age-related retinopathies. (operating; total \$505,880; 2008-2012)

Foundation Fighting Blindness-Canada - Tubedown signaling pathway regulating retinal endothelial permeability. (operating; total \$210,000; 2012-2015)

CIHR - Tubedown signaling pathway as a therapeutic target for age-related retinopathies. (NL-RPP-operating; total \$472,074; 2012-2015)

MRF Award - A novel electrochemically engineered collagen scaffold for tissue regeneration. (co-applicant Merschrod S EF, Poduska KM; award; total \$20,000; 2012-2013)

Gendron R, Paradis H, MacPhee D, Doré J

2006 Canada Foundation for Innovation - Cellular signaling mechanisms in growth development and disease. (infrastructure operating award; total \$150,000; 2006-2012)

Gillespie L, Paterno G

CIHR - Investigation into the role of MIER1 α , a novel ER co-regulator. (operating; total \$541,770; 2009-2014)

CBCF - Investigation of an alternatively spliced isoform of MIER1 alpha and its role in DCIS progression. (total \$119,580; 2010-2012)

CIHR - MIER1 α , a novel PPAR γ co-regulator and its role in adipogenesis. (operating; total \$278,436; 2010-2013)

Grant M

CIHR - The influence of killer cell immunoglobulin-like receptors and their ligands on HIV-specific CD8 T cell function. (operating; total \$282,000; 2009-2011)

CIHR - Heteroclitic stimulation and CD5 modulation as strategies to expand human immunodeficiency virus-specific CD8⁺ T cell recognition breadth. (operating; total \$304,000; 2011-2014)

CIHR - Cytomegalovirus, immunosenescence and immune risk profile in human immunodeficiency virus infection. (\$100,000)

NLHARP - Cytomegalovirus immune risk phenotype and cognitive functioning in the oldest old. (operating; total \$40,000; 2012-2014)

Hirasawa K

CIHR-Regional Partnership Program - Downregulation of IFN-inducible genes by Ras/Raf/MEK. (operating; total \$242,456; 2010-2012)

CIHR-Regional Partnership Program - Mechanism of Ras-dependent oncolysis. (operating; total \$334,658; 2012-2015)

NSERC - IRES-mediated translation during cellular stress. (discovery; total \$150,000 2011-2016)

Canadian Breast Cancer Foundation - Restoration of antitumor function of IRF1 by Ras/MEK inhibition in breast cancer cells. (operating; total \$150,000; 2012-2015)

Hirasawa M

CIHR - Central control of energy balance and food reinforcement. (operating; \$540,073; 2007-2012)

CIHR - (co-investigator) Basal forebrain regulation of sleep-wake state. (operating; total \$721,560; 2009-2014)

NSERC - Plasticity of spontaneous synaptic transmission in the hypothalamus. (discovery; total \$320,000; 2011-2016)

Kao KR

CIHR – Pygopus and axis formation. (operating; total \$462,140; 2009-2014)

Motorcycle Ride for Dad Foundation-H. Bliss Murphy Cancer Research Foundation. Role of Pygopus in prostate cancer. (grant-in-aid for Prostate Cancer Research; total \$55,876; 2011-2013)

RDC-IRIF – Role of Pygopus in prostate cancer. (match support; total \$90,247; 2011-2013)

Larijani M

Terra Nova Young Innovator Award - Understanding the molecular pathways of antibody production by the Atlantic cod immune system. (operating; \$50,000; 2012-2013)

President's Award for Outstanding Research. (operating; \$5,000; 2012-2013)

Canadian Foundation for AIDS Research - Evaluating the role of APOBEC3G in anti-HIV adaptive immunity: implications for the development of APOBEC-based therapies. (operating; \$25,000; 2012-2013)

Canadian Foundation for Innovation Leaders Opportunity Fund - Mechanisms of genome mutators governing adaptive immunity and lymphomagenesis. (equipment; \$191,000; 2012-2013)

CIHR - Mechanisms of genome mutators governing adaptive immunity and lymphomagenesis. (operating; total \$575,000; 2010-2015)

CIHR New Investigator Award - Mechanisms of genome mutators governing innate and adaptive immunity. (salary; total \$150,000; 2010-2015)

McGuire J

CIHR and Research & Development Corporation NL - Chronic and acute effects of PAR2 in endothelial dysfunction. (operating-RPP; total \$295,000; 2012-2015)

MacPhee D

NSERC. (operating grant; total \$160,000; 2007-2012)

CIHR / Regional Partnership. (total \$357,000; 2010-2013)

McKay D

CIHR - MEthods of ASsessing blood pressUre: identifying thReshold and target valuEs (MeasureBP). (co-investigator with principal investigators: DASKALOPOULOU, Styliani *et al* at The Research Institute of the McGill University Health Centre; knowledge synthesis grant; total \$99,872; 2012-2013)

McLean J

CIHR - A window on promoting memory. (operating; total 456,431; 2009-2013)

Mearow K

CIHR - Interaction of growth factor and integrin signalling pathways (operating; total \$501,055; 2006-2012)

NSERC- Mechanisms of action of Hsp27 and stress activated signalling (operating; total \$162,500; 2008-2013)

CIHR/RPP (RDC) - Protection of CNS neurons by heat shock proteins (operating; total \$327,354; 2011-2014)

Michalak T

Novarits Institutes of Biomedical Research - Interferon responder test from circulating immune cells. (operating and equipment; total \$984,380; 2010-2012)

PTC Therapeutics Inc - Testing PTC compounds against Hepatitis C virus in lymphoid cell culture model. (research contract; total \$43,500; 2011-2012)

MedVir AB, Sweden - Pharmacokinetic evaluation of a proprietary nucleoside analogue in woodchucks. (research contract; total \$18,000; 2011-2012)

CIHR-VVP Committee - Hepatitis C virus lymphotropism and persistence. (operating; total \$635,575; 2005-2012)

CIHR-VVP Committee - Hepadnavirus pathogenicity in woodchuck model of Hepatitis B. (operating; total \$812,265; 2009-2014)

MedVir AB, Sweden - Anti-hepadnaviral properties of a proprietary nucleoside analogue in woodchucks. (research contract; including in-kind contribution; total \$251,910; 2012-2014)

Paradis H, Gendron R

CIHR - Tubedown in vision loss during aging and age-related neovascular retinopathies. (operating; total \$505,880 2008-2012)

Richardson V

Wallace Ingram Award - Development of instructional learning units (ILU) to fill gaps in immunology knowledge identified in postgraduate medical trainee curricula. (award; total \$16,000; 2010-2012)

Medical Research Foundation - *In Vitro* comparison of triptolide and JPK-101: A possible alternative to anti-cytokines for use in the treatment of rheumatoid arthritis and other inflammatory diseases. (operating; total \$10,000; 2008-2012)

Russell R

CIHR - Viral determinants of infectious hepatitis C virus production. (includes \$30,000/yr research funding in kind from Faculty of Medicine; total \$510,000; 2009-2014)

RDC - Viral and cellular determinants of hepatitis C virus assembly. (operating; total \$150,000; 2010-2015)

CIHR - HCV genetic variability and resistance to antiviral drugs. (co-applicant with Matthias Gotte at McGill; operating; total \$136,666; 2011-2014)

Smeda J

CIHR/Regional Partnership - Cerebrovascular alterations associated with stroke development. (operating; total \$352,000; 2011-2013)

Stuyvers B

NSERC - Research tools and instruments. Equipment for measurement of sarcomere dynamics (equipment; total \$35,000; 2011-2012)

CIHR/RDC. - Origin of the arrhythmogenic calcium in cardiac Purkinje fibers after myocardial infraction. (operating; total \$315,000; 2010-2013)

CFI – A high-performance live cell imaging setup to understand the development of lethal arrhythmias associated with heart attacks. (infrastructure operating; \$16,000; 2009-2013)

Vanderluit J

CIHR/Regional Partnership - CIHR Neurosciences B RPP-NL. The role of cell survival genes in neurogenesis and neural regeneration. (operating; total \$391,558; 2011-2013)

CIHR New Investigator Award - The role of cell survival genes in promoting neural regeneration. (operating; total \$300,000; 2008-2012)

Canadian Foundation for Innovation : Leadership Opportunity Fund (equipment; total \$250,000; 2008-2013)

Van Vliet B

CIHR – Effects of parental sodium intake on offspring. (operating; total \$430,446; 2012-2015)

Yuan Q

CIHR – A beta-adrenoceptor mediated memory circuitry in neonatal rats. (operating; total \$490,305; 2010-2015))

CIHR New Investigator award – A beta-adrenoceptor mediated memory circuitry in neonatal rats. (operating; total \$300,000; 2010-2015)

University and Community Service

University Service

Faculty members from the Division of BioMedical Sciences had significant administrative duties in 2012 in terms of membership on numerous Divisional, Faculty, and University committees.

Committees include

Academic Council, Nominating Committee (SGS)
Academic Council, School of Graduate Studies
Academic Program Review Graduate Studies in Medicine Committee
Accreditation, Steering Committee (Medicine)
Advisory Committee to the Associate Dean of BioMedical Sciences
Advisory Committee, Regional Partnership Program, CIHR
Anatomy Subcommittee
Anatomy Subject Committee
Animal Care Committee

Animal Care Planning Committee for New Facility
Biosafety Management Committee
BMS Website Coordinator
BMS-II Phase Development Expert Working Group
BSM-I Phase Development Experts Working Group
Cancer and Development Graduate Research Symposium Organizer
Cancer and Development program, Graduate Coordinator
Cardiovascular Group Faculty Search Committee
CREAIT Network, Review Committee
Expert Committee for New Curriculum (Medicine)
Galbraith Lecture Selection Panel MUN
Graduate Studies & Research (Pharmacy)
Graduate Studies Awards Committee
Graduate Studies Committee
Graduate Studies Committee, Medicine
Health Sciences Library Committee
Immunology and Infectious Diseases Summer Retreat
Institutional Animal Care Committee
Institutional Review Committee of MD Program (Self-Study)
Internal Medicine Research Committee
LCME, Institutional Self-Study Subcommittee Working Group on Admissions
Medical Admissions Committee
Medical Education Scholarship Council
Medical Research Endowment Fund Board
Medical Research Foundation
Medical Research Foundation
Medical Research Foundation Grants Review Committee
Medical Research Foundation Grants Reviewing Committee
Medical School Accreditation Subcommittees, Self-Study Working Group-Academic
Environment
Medical School Admissions Committee
Medical School Admissions Interview Panel
Medical School Interview Sub-Committee
Memorial University Heads Council (for Department Chairs and Divisional Heads;
Executive Member)
MRF Committee
MUN Research Council
MUNFA Academic Freedom and Grievance Committee
MUNFA Executive Committee
MUNFA Joint Association/University Relations Committee
MUNFA Nominating and Balloting Committee
MUNFA Pension Committee
MUNFA Proposals Committee
MUNFA Scholarship Committee
MUNFA Vice-President
Neuroscience Graduate Program Course Coordinator

New Curriculum Development Committee (Phase 1 and 2 Development Group)
Pre-accreditation Committee on Curriculum Oversight
Pre-accreditation Self-study, Educational Objectives Working Group
Program Evaluation Sub-Committee (Medicine)
Promotion and Tenure Committee
Research and Graduate Studies Academic Program Review Committee-BMS Programs
Research and Graduate Studies Sub-Committee for Funding Priorities
Review Committee, Assistant Dean for Admissions (Medicine)
Search Committee, Chair, Discipline of Genetics
Search Committee, Assistant Dean, Research and Graduate Studies (Medicine)
Search Committee, Associate Dean, Research and Graduate Studies (Medicine)
Search Committee, Cardiovascular Scientist Faculty Member
Search Committee, CRC in Brain Repair/Stroke Recovery
Search Committee, CRC in Neuroplasticity
Search Committee, Neuroscience Canada Research Chair
Search Committee, Tier 2 CRC in Physical Medicine and Neurological Rehabilitation
Senate Committee on Research (SCOR)
Senator, Faculty of Medicine Representative
Senator, Memorial University
Senior Management Committee (Medicine)
Space Committee (Medicine)
SPOR Working Committee (Medicine)
Student Assessment Subcommittee (Medicine)
Student Wellness Committee
Undergraduate Medical Education Program, Self-Study Working Group
Undergraduate Medical Studies Committee
University Orator
University Radiation Safety Committee
University Safety Committee MUN

Community Service

Canadian Liver Foundation
Cardiovascular Awareness and Research Education Day
Facebook Page (Russell Lab)
First Responder/Advanced First Aid, CPR, AED, oxygen administration
Health Sciences Research Showcase for Heart and Stroke Foundation of NL Board
Heart & Stroke Foundation of Newfoundland and Labrador, Canvassing Volunteer
Heart and Stroke Foundation Council on Mission: Priorities, Advice, Science, and Policy
MedCAREERS across Canada
Media Relations, NTV live interview and VOXM interview for prostate cancer
Medical Students Research Forum
Newfoundland BrainStorm Competition
Ovarian Cancer Canada, The Walk of Hope
Ride for Sight, Foundation Fighting Blindness Canada

Sanofi-Aventis BioTalent Challenge Program for Young Adults
St. John's Bilingual Postsecondary and Career Fair
Stem Cell Network Trainees
The Works, Fitness Instructor
Thrombosis, Blood and Immune Disorders Education and Research Project
Torbay Volunteer Fire Department
WISE (Women in Science and Engineering)
Workshop for Discovery Day in Health Sciences CMHR
Workshop for Shad Valley Program
Workshop for Ski Patrollers