Division of

BioMedical Sciences

Faculty of Medicine

Memorial University of Newfoundland

Research

Education

Training

Annual Report

2011

Annual Report 2011

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Annual Report

Calendar Year 2011

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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 32 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

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 Sciences

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

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,
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

Research Support Staff

Abdouni, Hala
Alberto, Christian
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
Walker, Jacqueline
Wells, Christine
Whittle, Nicole
Xiong, Jieying
Yakowiak, 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 ll is a continuation of BSMI, with subject areas including immunology, and genetics.

MED 5650 – Integrated Study of Disease l. 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 Chair, Dr. K. Mearow

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, co-ordinated 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, Cardiovascular/Renal Physiology, Immunology and Neurosciences. The Program Coordinators and the courses offered through each program are noted below.

Cancer

Co-ordinator – 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

Co-ordinator – J. Smeda
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

Co-ordinator – 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

Co-ordinator **– Dr. M. Hirasawa**
Participating Faculty – X. Chen, D. Corbett, M. Hirasawa, J. McLean, K. Mearow,J. Vanderluit

Courses

MED 6193 – Advanced Topics in neuroscience
MED 6196 – Systems neuroscience
MED 6197 – Cellular neuroscience

Post Graduate Education

Visiting Speakers

Mar 2011 – Dr. Paul De Sousa
"Human embryonic stem cell based therapies: basic and translational science to get us there from here"

Apr 2011 – Dr. Daniel McCormick, University of Auckland
"Wireless power enables new physiological measurements"

May 2011 – Dr. Nigel West, University of Saskatchewan
"Cardiovascular-neural integration of the "diving" response – what happens in, and to, the rat brain during underwater swimming"

May 2011 – Dr. Marcus Clark, University of Chicago
"Genetic and epigenic regulation of B lymphopoiesis"

June 2011 – Dr. Nathalie Grandvaux, Université de Montreal
"innate immune antiviral response: new insight from virus detection to antiviral genes function"

June 2011 – Dr. Lothar Hennighausen, NIDDK/NIH, Bethesda, MD
"The biology of cytokines and STAT transcription factors"

June 2011 – Dr. Sylvain Meloche
"Spatial regulation of ERK1/2 MAP kinase signaling in cancer"

Aug 2011 – Dr. Paul Hodgson, University of Saskatchewan
"The international Vaccine Center: Canada's newest major science initiative"

Sept 2011 - Dr. Jean Marshall, Dalhousie University
"Mast cell responses to virus infection and tumours"

Nov 2011 – University of Montreal
"TRAF1-dependent survival signalling in immunity"

Graduate Students

The following Students are 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 2011.

Last Name	First Name	Degree	Program	Supervisor(s) Last Name	Supervisor(s) First Name
Kolypetri	Panayota	MSc	Immunology	Carayanniotis	George
Harding	Megan	MSc	Neuroscience	Chen	Xihua
Pittman	Andrea	MSc	Neuroscience	Chen	Xihua
Ings	Danielle	MSc	Cancer	Dore	Jules
Goodyear	Kylie	MSc	Cancer	Dorward /Kao	Ann / Kenneth
Smith	Kerri	PhD	Cancer	Dorward	Ann
Corkum	Christopher	MSc	Immunology	Drover	Sheila
LeShane	Lisa	MSc	Immunology	Drover	Sheila
Mostafa	Ahmed	PhD	Immunology	Drover	Sheila
Grozinger	Kindra	MSc	Cancer	Gendron/Paradis	Robert/Hélène
Ho	Nhu	MSc	Cancer	Gendron/Paradis	Robert/Hélène
Smith	Kerry	MSc	Cancer	Gendron/Paradis	Robert/ Hélène
Whelan	Maria	MSc	Cancer	Gendron/Paradis	Robert/Hélène
Hand	Aimee	MSc	Cancer	Gillespie	Laura
Li	Shengnan	MSc	Cancer	Gillespie	Laura
Brazil	Aiden	MSc	Immunology	Grant	Michael
Gladney	Krista	MSc	Immunology	Grant	Michael
Holder (Harris)	Kayla	MSc	Immunology	Grant	Michael
Kofahi	Hassan	PhD	Immunology	Grant /Russell	Michael/Rodney
Monajemi	Mahdis	MSc	Immunology	Grant	Michael
Alemzadeh	Arezoo	MSc	Immunology	Hirasawa	Kensuke
Komatsu	Yumiko	MSc	Immunology	Hirasawa	Kensuke
Licursi	Maria	PhD	Immunology	Hirasawa	Kensuke
Zu	Dong	MSc	Immunology	Hirasawa	Kensuke
Briggs	Chantalle	PhD	Neurosci-Dalhousie	Hirasawa	Michiru
Linehan	Victoria	MSc	Neuroscience	Hirasawa	Michiru
Parsons	Matthew	PhD	Neuroscience	Hirasawa	Michiru
Belanger-Willoughby	Natasha	MSc	Neuroscience	Hirasawa	Michiru
Andrews	Philip	MSc/PhD	Cancer	Kao	Ken
Thorne	Karley	MSc	Cancer	Kao	Ken
Tzenov	Youlian	MSc	Cancer	Kao	Ken
Vatani	Maryam	MSc	Cancer	Kao	Ken
Benkaroun	Jessica	MSc	Immunology	Larijani/Grant	Mani/Michael
Dancyger	Alex	MSc	Immunology	Larijani	Mani
Ghorbani	Atefeh	PhD	Immunology	Larijani	Mani
Lucas	Heather	MSc	Immunology	Larijani	Mani
Monajemi	Mahdis	PhD	Immunology	Larijani/Grant	Mani/Michael

Last Name	First Name	Degree	Program	Supervisor(s) Last Name	Supervisor(s) First Name
Sulliman	Mussa	MSc	Immunology	Larijani	Mani
Dinn	Sarah	MSc	Cancer	MacPhee	Daniel
Elustondo	Pia	PhD	Cancer	MacPhee	Daniel
Kirby	Trina	PhD	Cancer	MacPhee	Daniel
Marsh	Noelle	MSc	Cancer	MacPhee	Daniel
Pater	Justin	MSc	Cancer	MacPhee	Daniel
Peach	Mandy	MSc	Cancer	MacPhee	Daniel
White	Bryan	PhD	Cancer	MacPhee	Daniel
Hennessey	John	MSc	Cardiovascular	McGuire	John
Hughes	Keon	MSc	Cardiovascular	McGuire	John
Grimes	Matthew	PhD	Neuroscience	McLean	John
Strong	Vanessa	MSc	Neuroscience	McLean	John
Nartey	Michaelina	MSc	Neuroscience	McLean	John
Clarke	Joseph	PhD	Neuroscience	Mearow	Karen
Conway	Megan	MSc	Neuroscience	Mearow	Karen
Fudge	Neva	MSc	Neuroscience	Mearow	Karen
Sarhan	Mohamed	PhD	Immunology	Michalak	Thomas
Williams	Bradley	MSc	Immunology	Michalak	Thomas
Skardasi	Georgia	MSc	Immunology	Michalak	Thomas
Derwish	Roya	MSc	Cancer	Paterno	Gary
Derwish	Lena	MSc	Cancer	Paterno	Gary
Rose	Jarrett	MSc	Cancer	Paterno	Gary
Atoom	Ali	PhD	Immunology	Russell	Rodney
Morris	Heidi	MSc	Immunology	Russell	Rodney
Harris	Kayla	MSc	Immunology	Russell/Grant	Rodney/Michael
Davis	Laura	MSc	Cardiovascular	Smeda	John
Cardenas	Adriana	MSc	Cardiovascular	Stuyvers	Bruno
Daniels	Rebecca	MSc	Cardiovascular	Stuyvers	Bruno
Haq	Kazi	PhD	Cardiovascular	Stuyvers	Bruno
Miller	Lawson	MSc	Cardiovascular	Stuyvers	Bruno
Mahajan	Puneet	PhD	Cardiovascular	Tabrizchi	Reza
Duggan	Daniel	MSc	Cardiovascular	Tabrizchi	Reza
Hasan	Mahmudul	MSc	Neuroscience	Vanderluit	Jacqueline
Kelly	Meighan	MSc	Neuroscience	Vanderluit	Jacqueline
Roome	Robert Brian	MSc	Neuroscience	Vanderluit	Jacqueline
Gillingham	Ashley	MSc	Cardiovascular	Van Vliet	Bruce
Lethbridge	Rebecca	MSc	Neuroscience	Yuan	Qi
Shakhawat	Amin	MSc	Neuroscience	Yuan	Qi
Jerome	David	MSc	Neuroscience	Yuan	Qi
Morrison	Gillian	MsC	Neuroscience	Yuan	Qi

The preceding list is of graduate students in medicine who are supervised by Divisional (FT) faculty members. Divisional members also serve on supervisory committees of students in the School of Pharmacy, Departments of Biology and Biochemistry.

Undergraduate Students

Last Name	First Name	Program	Supervisor(s) Last Name	Supervisor(s) First Name
Lewis	Clare	MUCEP	Dorward	Ann
Mercier	Sinead	Honours	Dorward	Ann
Petten	Katiellen	Honours	Dorward	Ann
Stanford	Kaitlyn	Honours	Dorward	Ann
Cooke Hubley	Sarah	SURA	Drover	Sheila
Dyer	Tracy	Honours	Drover	Sheila
Dyer	Tracy	SURA	Drover	Sheila
Greene	Jillian	SURA	Drover	Sheila
Banfield	Susan	SWASP	Hirasawa	Michiru
Burt	Julia	Honours/NSERC	Hirasawa	Michiru
Cranford	Amanda	Honours	Hirasawa	Michiru
Hamodat	Farah	NSERC	Hirasawa	Michiru
Linehan	Victoria	Summer	Hirasawa	Michiru
Muram	Sandeep	Honours/NSERC	Hirasawa	Michiru
Armstrong	Elizabeth	Honours/Summer	Gendron/Paradis/Michalak	Robert/Hélène/Thomas
Davis	Michael	NSERC	Hirasawa	Kensuke
Frey	Verna	German exchange	Hirasawa	Kensuke
Hopley	Joy	Summer	Hirasawa	Kensuke
Sekhom	Avineet	MUCEP	Hirasawa	Kensuke
Wakeham	Susan	Summer	Hirasawa	Kensuke
Abdouni	Hala	Honours	Larijani	Mani
King	Justin	Summer	Larijani	Mani
Marshall	Ryan	Summer	Larijani	Mani
Quinlan	Matthew	Summer	Larijani	Mani
Raber	Susanne	Summer	Larijani	Mani
Woodworth	Claire	Summer	Larijani	Mani
Delaney	Joanne	SURA	MacPhee	Daniel
Dinn	Sarah	Honours/NSERC/URSA	MacPhee	Daniel
Hamilton	Gina	Honours/SURA	MacPhee	Daniel
Marsh	Noelle	Honours/NSERC/URSA	MacPhee	Daniel
Powell	Maria	Honours/Summer	McLean	John
Sloan	Mike	Summer	McLean	John
Byrne	Marchs	Honours	Michalak	Thomas
Khorochkov	Eugenia	SURA	Russell	Rodney
Li	Juliet	SURA	Stuyvers	Bruno
Miller	Lawson	Summer	Stuyvers	Bruno
Assarzadegan	Naziheh	Volunteer	Stuyvers	Bruno
McRae	Samanthaa	MUCEP	Tabrizchi	Reza
Jenkins	Kari	Honours	Van Vliet	Bruce
Martin	Hiliary	Volunteer	Vanderluit	Jacqueline
Courtney	Moriah	MUCEP	Vanderluit	Jacqueline
Adams	John	Summer	Yuan	Qi
Fontaine	Christine	MUCEP	Yuan	Qi

Publications

Alberto CO, Trask RB, and **Hirasawa M** (2011). Dopamine acts as a partial agonist for 2A adrenoceptor in MCH neurons*. J. Neurosci.* 31(29):10671-76

Bieger D, Ford CA, and **Tabrizchi R**. Potassium-induced periodic vasomotion in rat isolated pulmonary artery. *J. Smooth Muscle Res*. 47:21-35, 2011

Burt J, Alberto CO, Parsons MP and **Hirasawa M** (2011). Local network regulation of orexin neurons in the lateral hypothalamus. *Am. J. Physiol*. 301(3):R572-80

Carayanniotis G (2011). Molecular parameters linking thyroglobulin iodination with autoimmune thyroiditis. *Hormones* 10:27-35

Chia E, Kagota S, Wijekoon EP, **McGuire JJ**. Protection of PAR2 mediated vasodilation against angiotensin II-induced vascular dysfunction in mice*. BMC Pharmacology*. 11(1):10, 2011

Cloutier L, Leblanc M-E, **McKay DW**, McLean D (2011). Home blood pressure measurement: lessons to be learned and shared when educating patients. Accepted pending revisions. *Canadian Journal of Cardiovascular Nursing*

Coffin CS, Mulrooney-Cousins PM, Peters MG, Van Marle G, Roberts JP, **Michalak TI** & Terrault NA (2011). Molecular characterization of intrahepatic and extrahepatic hepatitis B virus (HBV) reservoirs in patients on suppressive antiviral therapy*. J. Viral Hepatitis* 18:415-423

Coffin CS, Mulrooney-Cousins PM, Van Marle G, Roberts JP, **Michalak TI** & Terrault NA (2011). Hepatitis B virus quasispecies in hepatic and extrahepatic viral reservoirs in liver transplant recipients on prophylactic therapy. *Liver Transplantation 17:955-962*

Cui,W, Darby-King A, Grimes MT, Howland JG, Wang YT, **McLean JH**, and Harley CW (2011). Odor preference learning and memory modify GluA1 phosphorylation and GluA1 distribution in the neonate rat olfactory bulb: Testing the AMPA receptor hypothesis in an appetitive learning model. *Learn. Mem.* 18:283-291

Dancyger A, King J, Quinlan M, Fifield H, Tucker S, Saunders H, Berru M, Magor B, Martin A, **Larijani M**. 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* 2011. Dec 23

Duggan DJ, **Bieger D**, and **Tabrizchi R**. Neurogenic responses in rat and porcine large pulmonary arteries. *Pulm. Cric.* 1**:**419-424, 2011

Duvvuri B, Duvvuri, VR, Grigull J, Martin, Pan-Hammerstrom Q, Wu GE, **Larijani M**. Altered spectrum of somatic hypermutation in Common Variable Immunodeficiency Disease characteristic of defective repair of mutations. *Immunogenetics* 2011. 63(1):1-11

Fritz JH, Rojas O, Simard N, McCarthy D, Hapfelmeier S, Rubino S, Robertson S, **Larijani M**, Gosselin J, Ivanov I, Martin A, Casellas R, Philpott D, Girardin SE, McCoy KD, Macpherson AJ, Paige CJ, and. Gommerman JL. Acquisition of a multifunctional TNFa/iNOS-producing IgA+ plasma cell phenotype in the gut. *Nature.* 2011 481(7380):199-203

Gendron RL, Armstrong E, **Paradis H**, Haines L, Desjardins M, Short CE, Clow KA, Driedzic W. Osmotic pressure-adaptive responses in eye tissues of the rainbow smelt (*Osmerus mordax*). *Molecular Vision*, 2011;17:2596-604.

Gendron RL, Armstrong E, **Paradis H**, Haines L, Desjardins M, Short CE, Clow KA, Driedzic W (2011). Osmotic pressure-adaptive responses in eye tissues of the rainbow smelt (Osmerus mordax). *Molecular Vision* 17, 2596-2604. Peer reviewed

Gendron RL, Kumar RM, **Paradis H**, Martin D, Ho N, Gardiner D, Merschrod S EF, Poduska KM. Controlled cell proliferation on an electrochemically engineered collagen scaffold. *Macromol Biosci.* 2011, Dec 30. doi: 10.1002/mabi.201100341.

Gendron RL, Kumar RM, **Paradis H**, Martin D, Ho N, Gardiner D, Merschrod S EF, Poduska KM. Controlled cell proliferation on an electrochemically engineered collagen scaffold. Macromol Biosci, 2011 Dec 30. doi:10.1002/mabi.201100341. [Epub ahead of print]. Peer reviewed

Germain M, Nguyen AP, Le Grand JN, Arbour N, **Vanderluit JL**, Park DS, Opferman JT, Slack RS (2011) Mcl-1 is a stress sensor that regulates autophagy in a developmentally regulated manner. *EMBO Journal*. 30(2):395-407.

Gillespie LL, **Paterno GD** (2011). MIER1 (mesoderm induction early response 1 homolog (Xenopus laevis)). Atlas Genet Cytogenet Oncol Haematol. URL : http://AtlasGeneticsOncology.org/Genes/MIER1ID50389ch1p31.html

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Yuan Q and Harley CW (2011). What a nostril knows: Olfactory nerve-evoked AMPA responses increase while NMDA responses decrease at 24 h post-training for lateralized odor preference memory in neonate rat. *Learn Mem*. 2012 Jan 12;19(2):50-3

Yuan Q, Harley CW, and **McLean JH** (2011). Converging methodologies in a mammalian 'simple system' focused on the biology of memory: Conditioned odor preference in the neonate rat. In: Nguyen PV (ed.) Multidisciplinary Tools for Investigating Synaptic Plasticity. *Springer-Verlag, New York. (in press)*

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Research Funding in the Division of BioMedical Sciences

Carayanniotis G
CIHR – Immunoregulation of experimental autoimmune thyroiditis. Operating grant ($126,786 2008-2013)

Chen X
NSERC – Contribution of L-type channel subtypes to burst firing of dopaminergic cells in the mouse ventral tegmental area. Discovery grant ($57,287 2009-2013)

Dorward A
Canada Research Chair (Tier II). Molecular signaling in human health and disease. Salary award ($500,000 2007-2012)

Canada Foundation for Innovation. Molecular signaling in human health and disease. Infrastructure award ($125,000 2007-2012)

Regional Partnership Program/CIHR and CIHR-IHDCYH. Genetics determinants for juvenille-type granulosa cell tumourigenesis. ($219,520 2008-2011)

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

Drover S
Canadian Breast Cancer Foundation. Investigation of molecular mechanisms that regulate antigen presentation pathways in breast carcinoma. Operating grant ($60,000 2011)

Gendron R, Paradis H, MacPhee D, Dore J
Canada Foundation for Innovation – Cellular Signaling Mechanisms in Growth Development and Disease. Infrastructure Operating Fund ($150,000 2006-2011)

Gendron R, Paradis H
CIHR / Regional partnership. Role of Tubedown in endothelial permeability in healthy vision. Operating grant ($287,919 2009-2012)

Gillespie L, Paterno G
CIHR – Investigation into the role of MIER1α, a novel ER co-regulator. Operating grant ($541,770 2009-2014)

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

CIHR – MIER1α, a novel PPARγ co-regulator and its role in adipogenesis. Operating grant ($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. ($282,000 2009-2011)

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

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

Hirasawa K
CIHR / Regional Partnership Program – Downregulation of IFN-inducible genes by Ras/Raf/MEK ($242,456 2010-2012).

NSERC – Viral IRES-mediated translation under stress conditions. Discovery grant ($170,000 2006-2011)

NSERC – IRES-mediated translation during cellular stress. Discovery grant ($150,000 2011-2016)

Hirasawa M
CIHR – Central control of energy balance and food reinforcement. Operating grant ($540,073 2007-2012)

CIHR – (co-investigator) Basal forebrain regulation of sleep-wake state. Operating grant ($721,560 2009-2014)

NSERC – Plasticity of spontaneous synaptic transmission in the hypothalamus. Discovery grant ($120,000 2011-2014)

Kao KR
CIHR – The role of the Pygopus/BCL9 complex in primary axis formation. Operating grant ($462,140 2009-2014)

H. Bliss Murphy Cancer Research Foundation. Motorcycle Ride for Dad Foundation. Role of Pygopus in Prostate Cancer. Grant-in-aid for Prostate Cancer Research ($55,876 2011-2013)

RDC-IRIF match support – Matching funding for MRFD/H. Bliss Murphy CRF($90,247 2011-2013)

Larijani M
CIHR – Mechanisms of genome mutators governing adaptive immunity and lymphomagenes. Operating grant ($580,000 2010-2015)

CIHR new investigator. Mechanisms of genome mutators governing adaptive immunity and lymphomagenes RPP salary award ($300,000 2010-2015)

McGuire J
CIHR / Newfoundland Dept. of Innovation – Mechanisms to offset endothelial dysfunction in hypertension. Operating grant ($284,767 2008-2011)

CIHR and Research & Development Corporation NL – Chronic an acute effects of PAR2 in endothelial dysfunction. Operating grant-RPP ($295,000 2011-2015)

MacPhee D
NSERC – Operating grant ($160,000 2007-2012)

CIHR / Regional Partnership ($357,000 2010-2013)

McKay D
NLCAHR – Entertainment education for adults with type 2 diabetes and uncontrolled high blood pressure. Co-investigator with W. Young (PI), V. Gadag, C.J. Gosine, A. Manuel, J. McFettridge-Durdle. ($10,000)

McLean J
CIHR – A window on promoting memory. Operating grant ($456,431 2009-2013)

Michalak T
Novarits Institutes of Biomedical Research – Interferon responder test from circulating immune cells. Operating and equipment grant ($884,380 2010-2012). Additional $100,000 for research contract 2010-2012)

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

MedVir AB, Sweden – Pharmacokinetic evaluation of a proprietary nucleoside analogue in woodchucks. Research contract ($18,000 2011-2012)

Canada Foundation for Innovation – Infrastructure for studies in viral hepatitis. Operating grant ($46,072)

Paradis H, Gendron R
CIHR – Tubedown in vision loss during aging and age-related neovascular retinopathies. ($505,880 2008-2012)

Richardson V
Wallace Ingram Award ($16,000 2010-2011)

Medical Research Foundation ($10,000 2008-2011)

Russell R
CIHR – Viral determinants of infectious hepatitis C virus production. Operating grant ($510,000 2009-2014)

CIHR – Viral determinants of infectious hepatitis C virus production (includes $30,000/yr research funding-in-kind from Faculty of Medicine) ($300,000 2010-2015)

RDC – Viral and cellular determinants of hepatitis C virus production ($100,000)
This is an RPP grant

CIHR - HCV genetic variability and resistance to antiviral drugs. Collaboration project with 2 McGill University researchers $410,000. Operating grant MUN portion $182,412 2011-2014)

Smeda J
CIHR/Regional Partnership – Cerebrovascular alterations associated with stroke development. Operating grant ($352,000 2010-2013)

Stuyvers B
NSERC-RTI – Equipment for the Measurement of Sarcomere Dynamics. Equipment grant ($39,500 2010-2013)

CIHR/RDC – The origin of the arrhythmogenic calcium in cardiac Purkinje cells. Operating grant ((375,000 2009-2013)

Tabrizchi R
NSERC – Control of vascular smooth muscle tone. Operating grant ($29,100 2006-2011)

MRF – Interaction between nitric oxide and renin-angiotensin system in state of chronic low flow. Operating grant ($10,000 2011)

Vanderluit J
CIHR/Regional Partnership – The role of cell survival genes in neurogenesis and neural regeneration. Operating grant ($391,588 2011-2013)

CIHR/Regional Partnership – The role of survival genes in neurogenesis and neural regeneration. New Investigator award ($300,000 2008-2012)

Canadian Foundation for Innovation – The role of cell survival genes in promoting neural regeneration. Leadership Opportunity Fund ($250,000 2008-2013)

Medical Research Development Fund of Memorial University – The role of Mcl-1 in neural regeneration. Operating grant ($10,000 2011-2012)

Yuan Q
CIHR – A beta-adrenoceptor mediated memory circuitry in rats. Operating grant ($490,305 2010-2015)

CIHR -- A beta-adrenoceptor mediated memory circuitry in rats. New investigator salary award ($300,000 2010-2015)

University and Community Service

University Service

Faculty members from the Division of BioMedical Sciences had significant administrative duties in 2011 in terms of membership on numerous Divisional, Faculty, and University committees.

Committees include

Academic Council SGS
Academic Council, School of Graduate Studies
Academic Freedom and Grievance Committee, MUNFA
Academic Program Review Graduate Studies in Medicine Committee
Accreditation
Accreditation Self-Study Resource Group
Ad Hoc Investigation Committee, School of Graduate Studies (SGS)
Admissions Interview Committee
Advisory Committee on Faculty Recognition MUN
Advisory Committee to the Associate Dean of BioMedical Sciences
American Association for Cancer Research
Anatomy Subcommittee
Anatomy Subject Committee
Animal Care Committee
Animal Care Planning Committee
Animal Resources Committee
Annual Meeting of Canadian Society for Immunology Organizing Committee
Assistant Dean of CME Search Committee
Assistant Director of Animal Care Search Committee
Associate Dean of Research and Graduate Studies (Medicine) Search Committee
Associate Dean, Research and Graduate Studies, Medicine Search Committee,
Autoimmunity Symposium, Annual CSI Meeting
Basic Sciences in Medicine II Phase Development Expert Working Group
BioMedical Sciences Planning Committee
BioMedical Sciences Retreat
Biosafety Management Committee
BSM-1 Phase Experts Group
Cancer & Development Graduate Research Symposium
Cancer & Development program, Program Coordinator
Cancer & Development Research Group Strategic Planning Session
CRC in Brain Repair/Stroke Recovery Search Committee
CREAIT
Dept of Health & Safety Associate Director Search Committee
Discipline of Anesthesia Research Committee
Division of BioMedical Sciences Faculty Retreat
Faculty of Medicine Retreat
Faculty of Medicine Strategic Planning Session
Faculty position in ehealth (Family Medicine) Search Committee

Family Practice, Medicine – Health Informatics Position Search Committee
Galbraith Lecture Selection Panel MUN
Graduate Studies & Research (Pharmacy)
Graduate Studies Awards Committee
Graduate Studies Committee
Graduate Studies Committee, Medicine
Health Sciences Library Committee
Human Investigation Committee/Human Research Ethics Board
Immunology and Infectious Diseases Summer Retreat
Institutional Review Committee of MD Program (Self-Study)
Internal Medicine Research Committee
Learning Environment Review Committee for Accreditation
Medical Education Scholarship Council
Medical Research Foundation Grants Review Board
Medical Research Foundation Review Committee
Medical Research Foundation, Faculty of Medicine
Medical School Accreditation Subcommittees, Self-Study Working Group-Academic Environment
Medical School Admissions Committee
Medical School Admissions Interview Panel
MUNFA AF&G Committee
MUNFA Bargaining Faculty Position, E-Health Research Unit
MUNFA Executive Committee
MUNFA Nominating and Balloting Committee
MUNFA Pension Committee
MUNFA Scholarship Committee
MUNFA Tier I MUN Central Health and Safety Committee
National Meeting of NUCAUT
Neuroscience Graduate Program Course Coordinator
Neuroscience Visiting Speaker Series
New Curriculum Development Committee (Phase 1 Development Group)
Newfoundland and Labrador Federation of Labour Education Committee
Nominating Committee (Academic Council) SGS
Pathology Resident's Research Forum
Pre-accreditation Committee on Curriculum Oversight
Pre-accreditation Subcommittee, Faculty of Medicine
President's Award for Outstanding Research, Review Committee
Program Evaluation Sub-Committee (Medicine)
Promotion and Tenure Committee
Radiation Safety Committees, Tier I and II
Regional Partnership Program, CIHR
Research & Graduate Studies Academic Program Review Committee - BMS Programs
Review Committee, Assistant Dean for Admissions
Review Committee, Associate Dean of BioMedical Sciences
Self-study Working Group, UGME
Senate Committee on Research
Senator
Student Promotions Committee Steering Committee

Student Wellness Committee
Undergraduate Medical Studies Committee
University Orator
University Radiation Safety Committee
University Safety Committee MUN
Vice-President, MUNFA

Community Service

AAMC's Canadian Graduation Questionnaire contact person
Big Brother Program
BrainStorm Competition
Breast Cancer Foundation
Canadian Blood Services Regional Liaison Committee
Canadian Liver Foundation
First Responder/Advanced First Aid, CPR, AED, oxygen administration
Heart & Stroke Foundation of Newfoundland and Labrador
HLA and Bone Marrow Program
Media relations, NTV live interview and VOCM interview for prostate cancer
Medical Research Foundation
Newfoundland BrainStorm Competition
Ovarian Cancer Canada, The Walk of Hope
Princeton Alumni Schools Committee
Sanofi-Aventis BioTalent Challenge Program for Young Adults
Sodium Committee of the Newfoundland and Labrador Community Sector Council
Stem Cell Network Trainees
The Works
Torbay Volunteer Fire Department