# Muscle Health Research Centre Annual Report
## May 1, 2012 - April 30, 2013

### 1. Contact Information

| | |
|---|---|
| Director: | David A. Hood |
| Admin Contact: | Heather Carter |
| Address: | 302 Farquharson |
| Tel: | Ext 66640 |
| Fax: | Ext 55728 |
| E-Mail: | dhood@yorku.ca or mhrc@yorku.ca |
| Website: | http://www.yorku.ca/mhrc/ |

2. **List Faculties that supplied active members to the ORU, indicating the number of active members from each**.

Faculty of Health (13), Faculty of Science and Engineering (2)

3. **Charter date**: July 1 2008

### 4. Mandate

The mandate of the MHRC is to provide a centralized and focused research emphasis on the importance of "muscle health" for the overall health and well-being of Canadians. The MHRC became York University's first organized research unit (ORU) in the Faculty of Health dedicated to Biomedical Sciences, and it continues to increase the University's visibility in this important area of research. The MHRC consists of a strong cohort of very well-funded and highly productive scholars (including a Canada Research Chair) and graduate students from the Faculty of Health and the Faculty of Science & Engineering. Its intent is to become a renowned centre for muscle health research in North America.

### 5. Membership and Governance

Active members (York faculty): 15; a complete list of active and adjunct members of the MHRC and their departmental affiliations is provided below.

Other members: Adjunct faculty members: 4; Graduate and UG student members (York): 63; Graduate and UG student members (non-York, other Universities): 79

Executive Committee members: Drs. David Hood (Director), Olivier Birot, Mike Connor, Robert Tsushima, and Ms. Sobia Iqbal (Graduate Student Member)

Executive Committee Subcommittee (name and members)(if any): N/A

| Faculty Member | Rank | Research Area | Office Number/ E-Mail | Office Location |
|---|---|---|---|---|
| **School of Kinesiology and Health Science** | | | | |
| **Hood, David** | Professor, Canada Research Chair, Director of the Muscle Health Research Center | Molecular basis of Mitochondrial Biogenesis in health and disease | dhood@yorku.ca<br><br>(416)736-2100 x 66640 | Farquharson Building, 302 |
| **Adegoke, Olasunkanmi** | Assistant Professor | Protein and amino acid nutrition and metabolism | oadegoke@yorku.ca<br><br>(416)736-2100 x 20887 | Norman Bethune College, 362 |
| **Belcastro, Angelo** | Professor, Chair, School of Kinesiology and Health Science | Muscle injury and damage in health and disease | anbelcas@yorku.ca<br><br>(416)736-2100 x 21088 | Norman Bethune College, 333B |
| **Birot, Olivier** | Assistant Professor | Vascular plasticity in striated muscle (angiogenesis vs. capillary regression) | birot@yorku.ca<br><br>(416)736-2100 x 44043 | Norman Bethune College, 353 |
| **Ceddia, Rolando** | Associate Professor | Glucose and fat metabolism in muscle and adipose tissue | roceddia@yorku.ca<br><br>(416)736-2100 x 77204 | Lumbers Building, 225A |
| **Connor, Michael** | Associate Professor | Muscle Development and Cancer | mconnor@yorku.ca<br><br>(416)736-2100 x 77206 | Lumbers Building, 224 |
| **Gage, William** | Associate Professor | Biomechanics of postural control and of joint stability | whgage@yorku.ca<br><br>(416)736-2100 x 33027 | Sherman Health Science Research Centre, 2022 |
| **Haas, Tara** | Associate Professor | Angiogenesis in Muscle | thaas@yorku.ca<br><br>(416)736-2100 x 77313 | Farquharson Building, 341 |
| **Hamadeh, Mazen** | Associate Professor | Human Nutrition and Exercise Physiology, Diabetes and ALS | hamadeh@yorku.ca<br><br>(416)736-2100 x 33552 | Norman Bethune College, 365 |
| **Kuk, Jennifer L.** | Assistant Professor | Obesity, CVD, Type 2 diabetes and exercise interventions | jennkuk@yorku.ca<br><br>(416)736-2100 x 20080 | Sherman Health Science Research Centre, 2002 |
| **Perry, Christopher G.R.** | Assistant Professor | Redox Metabolism, Skeletal Muscle, Diet and Exercise | cperry@yorku.ca<br><br>(416)736-2100 x 33232 | Norman Bethune College, 324 |
| **Riddell, Michael** | Associate Professor, KAHS Graduate Program Director | Exercise Physiology, Stress and Diabetes Metabolism | mriddell@yorku.ca<br><br>(416)736-2100 x 40493 | Norman Bethune College, 347 |
| **Scime, Anthony** | Assistant Professor | Stem Cell Biology; Muscle Regeneration; Adipose Differentiation | ascime@yorku.ca<br><br>(416) 736-2100 | Norman Bethune College, 327C |

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|---|---|---|---|---|
| | | | x33559 | |
| **Department of Biology** | | | | |
| | | | | |
| **McDermott, John** | Professor and Biology Graduate Program Director | Muscle Development | jmcderm@yorku.ca<br><br>(416)736-2100 x 30389 | Farquharson Building, 327 |
| **Tsushima, Robert** | Associate Professor | Cardiac Muscle Physiology and Disease | tsushima@yorku.ca<br><br>(416)736-2100 x 20996 | Farquharson Building, 344 |
| **Adjunct Members** | | | | |
| **Cafarelli, Enzo (Emeritus)** | Professor Emeritus | Neuromuscular Physiology | ecaf@yorku.ca | |
| **Coe, Imogen** | Professor, Dean, Faculty of Science | Cardiac Muscle Biochemistry | imogen.coe@ryerson.ca | Ryerson University |
| **Hawke, Thomas** | Associate Professor | Muscle Development and Regeneration | hawke@mcmaster.ca | McMaster University |
| **Jacobs, Ira** | Dean, Faculty of Physical Education | Muscle Metabolism, Applied Physiology and Pharmacology | ira.jacobs@utoronto.ca | University of Toronto |
| **MHRC Coordinator** | | | | |
| **Carter, Heather** (July 2012 onwards) | Graduate Student | | heathery@yorku.ca<br>X 77832 | Farqhuarson Bldg, 342<br>X 22999<br><br>Fax: 416-650-8483 |

## 6. Annual Progress in Fulfilling Mandate

The MHRC continues to expand its activities every year within its limited budget, consistent with the goal of uniting muscle health researchers and graduate students and providing a platform which will serve to increase the visibility of York University, and the MHRC, in Canada and around the world. Despite the achievements of our goals over the past year, we have a continuing list of impressive plans for the future (see Section 8, below). Our accomplishments are listed in Appendix 2, including the funding obtained, awards received and most significant publications in peer-reviewed journals. This appendix contains a truncated version of the vast list of accomplishments of our faculty members (a complete list is provided on the MHRC website). Nonetheless, it is very clear from this Appendix that the MHRC is fulfilling its mandate in promoting muscle research for the health and well-being of Canadians. We are very successful at obtaining NSERC, CIHR, Heart and Stroke Foundation and Canadian Diabetes Association research funding, and at publishing our findings.

a) Funding proposals: Perhaps because of the many individual successes noted above, there is less emphasis or necessity within the MHRC to develop large-scale collaborative grants to help support trainees and graduate students. In addition, graduate students are largely funded by departmental teaching assistantships. Nonetheless, several collaborations do exist among MHRC faculty members,

and among faculty at other institutions, and a large scale CREATE grant application is planned for submission in the coming year;

b) Events organized: We held 3 types of events in the last year: 1) Colloquia, featuring internal speakers discussing their work in an informal interactive research presentation, 2) Seminars, in which external speakers from other Universities were invited, presented their work, and interacted with faculty members and graduate students, and 3) the Annual Muscle Health Awareness Day (MHAD), which attracted 10 external speakers, 40-50 posters presented by graduate students, and a total registration of 120-130 people. This was our third Annual MHAD, and the event grows progressively every year. Indeed all events were extremely successful;

c) Knowledge Mobilization / Outreach: All MHRC faculty members are involved in promoting knowledge mobilization of their research via the MHRC website. Newly published papers-of-the-month are summarized in easy to read language for public dissemination. In addition, many members have had their work featured in Y-file, and some members spend considerable time promoting muscle health, metabolism and diabetes education to the public. Several MHRC members have had media interviews in the past year to promote muscle health in their field;

d) Mentorship: MHRC faculty members are extremely active in the training and development of graduate students. One of the reasons that MHRC members are so successful individually with NSERC is that we are very active in the training of Highly Qualified Personnel (HQP), a major criterion for success with NSERC. MHRC faculty members directly trained and mentored 57 MSc and PhD students, 56 undergraduate students, and 4 post-doctoral fellows over the past year alone;

e) Continuing Education: Over the past year the Director, in collaboration with faculty of Health staff, began to investigate the possibility of providing continuing education programs in "Muscle Health", "Exercise" and "Muscle Physiology" for the Board of Education (Teacher training), as well as the fields of Nursing and Message Therapy. Discussion are ongoing;

f) Other leadership activities: The MHRC sponsored one Faculty Research Award ($3000) and one MHRC Student Fellowship directed against the Graduate Student's fees.

## 7. Financial Accountability

The attached Excel spreadsheet provides the 3 year rolling budget and line-by-line explanation. At the moment, there are no research grants or contracts that are administered by the MHRC. In addition, the MHRC is surviving on the financial surplus acquired in previous years. The faculties of Health and Science have made no commitment to provide supportive funding for the Centre beyond 2013-14. Thus, the MHRC will continue to investigate the possibility of acquiring financial support through other initiatives, such as Continuing Education programs (see above), fundraising, or industry or granting agency contract overhead contributions.

## 8. Objectives for Upcoming Year

a) Continue to try to develop Continuing Education initiatives with Teachers, Nurses, Massage Therapists in an effort to bring in revenue to support the MHRC;

b) Develop more relationships with industry to initiate contractual agreements which will bring in revenue for the MHRC;

c) Develop more Knowledge mobilization initiatives to increase the exposure of the MHRC to the public for educational purposes, as well as to encourage the involvement of potential donors;
d) Consider having a grant crafting workshop, one or twice a year;
e) Organize a workshop related to clinical/human research, involving dialogue between individuals who are already participating;
f) Generate interest and ideas to formulate a CREATE grant for submission next Winter, 2014;
g) Organize a 1-day Professional development presentation for trainees to critique and video tape student presentations. Involve the career Centre or industry representative in this initiative;
h) Develop more collaborations between laboratories within the MHRC.

**9. Other relevant items the Director wishes to report**

(None)

10. **Appendix 1** – Additional Information about Progress in Fulfilling Mandate (that does not appear elsewhere in the Report). (N/A; not included)

11. **Appendix 2** – Individual Member Contributions (up to five most notable items only for each member)

Appendix 2 is attached. Please note that this represents only a small sampling of the publications and achievements of our MHRC faculty members, as requested for this Annual Report template. A more complete list is available at **yorku.ca/mhrc/**

# Cumulative Financial Statement

| ORU: MUSCLE HEALTH RESEARCH CENTRE (MHRC) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Cost Centre: 157001** | | | | | | | |
| | | | | | **3 Year Rolling Budget** | | |
| **Account Description** | **2010-11 Budget** | **2011-12 Budget** | **2012-13 Budget** | **Comments** | **2013-14** | **2014-15** | **2015-16** |
| **Revenue:** | | | | | | | |
| Base Allocation from Central | | | | | | | |
| VPRI support | | | | | | | |
| Faculty support | 35240 | 13500 | 13500 | Contributions from Health and Science. (Director's course release not in included - this is funded directly by Health) | 13500 | | |
| Endowment Revenue | | | | | | | |
| Indirect Costs (Overhead) | | | | | | | |
| Support from Grants and Contracts | | | | | | | |
| Other Internal Revenue | 3250 | | | Faculty membership fees are no longer charged | | | |
| Other External Revenue | 8488 | 1630 | 1720 | conference (MHAD) fees | 2000 | 2000 | 2000 |
| **TOTAL REVENUE** | **46978** | **15130** | **15220** | | **15500** | **2000** | **2000** |
| | | | | | | | |
| **Expenses:** | | | | | | | |
| Total Faculty Administrators | 6427.2 | 6427.2 | 6427.2 | Director's stipend | 7200 | 7200 | 7200 |
| Total Research Staff | 2331.5 | 850 | 9361.95 | RA, honoraria | 3000 | 3000 | 3000 |
| Total Support Staff | | | | Centre Coordinator supported directly via Director's CRC | | | |
| Total Scholarships and Awards | | 3850 | 4000 | Faculty Research Award, Student Awards | 5000 | 5000 | 5000 |
| Total Miscellaneous expenses | 13266.94 | 7707.18 | 9397.51 | travel, events, maintenance, phone, supplies | 10000 | 10000 | 10000 |
| **TOTAL EXPENSES** | **22025.64** | **18834.38** | **29186.66** | | **25200** | **25200** | **25200** |
| Total Revenue Less Total Expenses | 24952.36 | -3704.38 | -13966.66 | | -9700 | -23200 | -23200 |
| Carryforward from Previous Year | 30649.11 | 55601.47 | 51897.09 | | 37930.43 | 28230.43 | 5030.43 |
| Carryforward to Next Year | 55601.47 | 51897.09 | 37930.43 | | 28230.43 | 5030.43 | -18169.57 |

# Appendix 2: Individual Member Contributions
# (Five most notable contributions)
# May, 1 2012 – April 30, 2013

## O. Adegoke

**1. Funding Received:**

- NSERC Discovery Grant, 2008/2009 Competition: $100000.00 over 5 years to study 'Mechanism of nutritional regulation of protein metabolism in skeletal muscle'.

**2.** - Minor Research: Branched-chain amino acid metabolism and regulation of muscle differentiation.
Amount awarded: $3000;
Organization: Faculty of Health, York University. May 2012.

**3. Funding Applied for:**

- Title: Liquid Chromatography System
Co-investigators: Riddell MC, Hamadeh M
Amount requested: $149,000.00
Organization and program: NSERC; Research Tools and Instruments, Fall 2012

**4. Olasunkanmi A.J. Adegoke**, Abdikarim Abdullahi, Pegah Tavajohi-Fini. mTORC1 and the regulation of skeletal muscle anabolism and mass. Applied Physiology, Nutrition, and Metabolism, 2012 Jun, 37(3): 395-406, 10.1139/h2012-009

**5. In submission:**

Dhanshri Kakade**, Nushaba Islam**, and **Olasunkanmi A.J. Adegoke**. Regulation of PDCD4 by amino acids and growth factors in L6 myotubes is sensitive to mTORC1 and the proteasome. Submitted to PLoS ONE, April 2013.

## A. Belcastro

**1. Fundng Applied for:**

- Community-Driven Solution for Active Healthy Kids. (Submitted – not received) SunLife Community Foundation ($74,100)

**2. Angelo N. Belcastro**, Katherine S. Morrison, Emma Hicks, and Helin Matta. (2012) Cardiorespiratory and metabolic responses associated with children's physical activity during self-paced games. Canadian Journal of Physiology and Pharmacology, 90: 1269–1276.

## O. Birot

**Funding Received:**

**1.** - NSERC Research Tool Infrastructure, 2013, **Co**-PI with Dr. Haas, $40,741, Awarded.

**2.** - NSERC Discovery Grant, 2011-2016, PI, $120,000, Awarded.

**3.** 2012 Nomination by the School of Kinesiology and Health Science for the award of International recognition in research.

**4.** Roudier E, Forn P, Perry ME, **Birot O**. Murine Double Minute-2 is required for capillary maintenance and exercise-induced angiogenesis in skeletal muscle. FASEB Journal 26: 4530-4539, 2012 - (IF 5,712)

**5.** Gouzi F, Prefaut C, Abdellaoui A, Roudier E, de Rigal P, Molinari N, Laoudj-Chenivesse D, Mercier J, **Birot O**, Hayot M. Blunted muscle angiogenic training-response in COPD patients versus sedentary controls. European Respiratory Journal, In press 2012 (IF 5,895)

## R. Ceddia

**1. Funding Received:**
NSERC *Discovery Grant*
**Project Title**: Regulation of whole-body energy metabolism
**Funding period**: 5 years (2011 – 2016) **Amount awarded**: $200,000.00

**2. Funding Applied for:**

- Operating grant – CIHR – Amount requested: $437,100.00

**3.** Vitzel KF, Bikopoulos G, Hung S, Pistor KE, Patterson J, Curi R, **Ceddia RB**. Chronic treatment with the AMP-kinase activator AICAR increases glycogen storage and fatty acid oxidation in skeletal muscles but does not reduce hyperglucagonemia and hyperglycemia in insulin deficient rats. Plos One 2013 (Ms # PONE-D-13-06759 – *In Press*)

**4.** **Ceddia RB**. The role of AMP-activated protein kinase in regulating white adipose tissue metabolism. Mol Cell Endocrinol. 25;366(2):194-203, 2013.

**5.** Gaidhu MP, Bikopoulos G, **Ceddia RB**. Chronic AICAR-induced AMP-kinase activation regulates adipocyte lipolysis in a time-dependent and fat depot-specific manner in rats. Am J Physiol Cell Physiol. 1;303(11):C1192-7, 2012.

## M. Connor

**Funding Received:**

**1.** York University Faculty of Health Minor Research Grants. *The Paracrine Role of Adipokines in Prostate Cancer.* This project will look at the paracrine role of adipose tissue obtained from prostate cancer patients on prostate cancer cell cycle regulation. This project uses a co-culture model (primary adipose tissue and prostate cancer cells). Value: $2,850 over 2 years (2013-2015).

**2.** Canada Foundation for Innovation Infrastucture Operating Funds. *Molecular regulation of muscle development.* This project will look at the role of electrical activity in the molecular regulation of muscle development/differentiation. Value: $50,000 over 3 years (2012-2015).

**3. Funding Applied for:**
Title: *The paracrine/endocrine effects of adipose tissue on prostate cancer.*
Source: Prostate Cancer Canada

Dollars Requested: $190,400
Dates of Project: 07/ 2013 - 06/2015
PI: **Michael Connor**
Co-PIs: Fleshner N,
Major Goal of project: Investigate whether metformin and statin administration alter the serum adipokine profile in obese prostate cancer patients from one that promotes disease progression to one that prevents progression.

**4.** Title: *The interaction between stress hormones and adipokines.*
Source: N.S.E.R.C. Discovery Grant
Dollars Requested: $265,050
Dates of Project: 04/ 2013 - 03/2018
PI: **Michael Connor**
This project is designed to evaluate the effects of stress hormones (cortisol) and their effects on skeletal muscle cell cycle regulation and differentiation. In addition, cortisol has been shown to affect adipocyte adipokine secretion patterns and these adipokines can have affects skeletal muscle cell cycle regulation. Thus, we will look at the combinatory effects of cortisol and adipocyte effects on cell cycle control in skeletal muscle.

**5.** Walker, O.S., D.N. Trivedi, C.F. Theriau, M.P. Gaidhu, R.B. Ceddia and **Connor, M.K**. Adipokines Create a Growth Microenvironment in Breast Cancer That Depends on the Adiponectin:Leptin Ratio and Involves AMPK. Submitted to J. Biol. Chem. August 2012. Currently in revision.

## W. Gage

**1. Funding Received:**
Harris L (PI), Gage WH (Investigator), + 7 others. (2012). Full field vision and spatial orientation. Canadian Foundation for Innovation – Leading Edge and New Initiatives Fund. $790,891

**2.** Harris L (PI), Gage WH (Investigator), + 7 others. (2012). Full field vision and spatial orientation. Ontario Research Fund. $790,891

**3.** Tung JY, **Gage WH**, Poupart P, McIlroy WE. (in press). Upper Limb Contributions to Frontal Plane Balance Control in Rollator-Assisted Walking. Assistive Technology.

**4.** Prajapati SK, Mansfield A, **Gage WH**, Brooks D, McIlroy WE. (in press). Cardiovascular responses associated with daily walking in sub-acute stroke. Stroke Research and Treatment.

**5.** Street BD, **Gage WH**. (in press) The effects of an adopted narrow gait on the external adduction moment at the knee joint during level walking: evidence of asymmetry. Human Movement Science.

## T. Haas

**Funding Received:**

**1.** 2013 NSERC Discovery Grant (renewal); $33,000/year (5 years)
"Regulation of capillary sprouting and stabilization in skeletal muscle"

**2.** 2013 NSERC Research Tools and Instrumentation; $40,741 (PI; 1 co-applicant)
"Multi-modal plate reader"

**3.** E.Roudier, M.Milkiewicz, O.Birot, D.Slopack, A.Montelius, T.Gustafsson, J.H. Paik, R.A. DePinho, G.P. Casale, I.I. Pipinos, **T.L. Haas**. Endothelial FoxO1 is an intrinsic regulator of thrombospondin1 expression that restrains angiogenesis in ischemic muscle. Journal of Angiogenesis, 2013

**4.** Kopycinska,J., P. Milkiewicz, A. Kempińska-Podhorecka, **T.L. Haas**, E. Elias, R.A. DePinho, J. Paik, M. Milkiewicz. Activation of FoxO3a/ Bim axis in patients with Primary Biliary Cirrhosis. Liver Int. 2013 Feb;33(2):231-8. doi: 10.1111/liv.12030.

**5.** Shikatani, E.A., A. Trifonova, E.R. Mandel, S.T.K. Liu, E. Roudier, A. Krylova, A. Szigiato, J. Beaudry, M.C. Riddell, and **T.L. Haas**. Inhibition of proliferation, migration and proteolysis contribute to corticosterone-mediated inhibition of angiogenesis. Plos One 2012 Oct, 7: e46625. doi:10.1371/journal.pone.0046625

## M. Hamadeh

**1. Funding Received:**

October 2012 Does vitamin D deficiency influence skeletal muscle pathology in amyotrophic lateral sclerosis?
Muscle Health Research Centre Faculty Research Award, York University, $3,000 (PI).

**2. Funding Applied for:**

March 2013 Optimal vitamin D supplementation in mitigating amyotrophic lateral sclerosis
CIHR – $125,234 over 2 years (PI)
Results: Awaiting response

**3.** 2012 Dean's Service Award (Early Career), Faculty of Health, York University

**4.** **Gianforcaro A, **Hamadeh MJ**. Vitamin D as a potential therapy in amyotrophic lateral sclerosis. CNS Neurosci Ther 2013 (in revision; ms# CNSNT-2012-133.R1).

**5.** **Seevaratnam R, Tarnopolsky MA, **Hamadeh MJ**. Coffee is more effective than caffeine and chlorogenic acid in reducing oxidative stress, inflammation and the pro-apoptotic Bax in male G93A mice. PLoS One 2013 (*in revision;* ms# PONE-D-11-12506R1).

## D.A. Hood

**1. Funding Received:**

Natural Science and Engineering Research Council of Canada Research Tools and Instruments Grant entitled: "Ultracentrifuge and rotors" ($143,438)

**2.** Natural Science and Engineering Research Council of Canada Discovery Grant entitled: "Mitochondrial Biogenesis in Skeletal Muscle" ($110,000 per year; continued).

**3.** Canadian Institutes for Health Research (CIHR) Research Grant entitled "Autophagy in skeletal muscle" (103,661 per year; continued).

**4.** Menzies, K.J., K. Singh, A. Saleem and **D.A. Hood**. Sirtuin 1-mediated effects of exercise and resveratrol on mitochondrial biogenesis. J. Biol. Chem. 288: 6968-79, 2013 (March).

**5.** O'Leary, M.F., A. Vainshtein, S. Iqbal, O. Ostojic and **D.A. Hood**. Adaptive plasticity of autophagic proteins to denervation in aging skeletal muscle. Am J Physiol Cell Physiol. 304: C422-30, 2013 (March).

## J. Kuk

**1. Funding Received:**

Project RADICAL: Race/ethnicity And the perception of Diabetes and cardiovascular disease risk factors In the context of CAnada's Lifestyle and obesity guidelines (2011-2012) - $50,000 (Heart and Stroke Foundation - Principal Investigator)

**2. Funding Applied for:**

Causes and Implications of Metabolically Healthy Obese. Canadian Diabetes Association - $111,780 (PI)

**3.** Spassiani NA, Jeffery-Tosoni S, **Kuk JL** and Fraser-Thomas J: Understanding Youths' Experiences in a Holistic Weight Management Program (Journal of Youth Development – 7(2), 15-26, 2012).

**4.** Abramovitch SL, Reddigan JI, Hamadeh MJ, Jamnik VK, Rowan CP, **Kuk JL**: Estimating serving sizes and food intake using Canada's Food Guide (APNM – Oct;37(5):923-30, 2012).

**5.** Yates EA, MacPherson A, **Kuk JL**: Secular trends in the diagnosis & treatment of obesity among U.S. adults in the primary care setting (Obesity – Sep;20(9):1909-14, 2012).

## J. McDermott

**1.** 2013-2018 CIHR operating grant, $578,000 Regulation of MEF2 in cardiac and skeletal muscle cells (NEW)

**2.** 2013-2018 CIHR operating grant, $542,000 Role of Smad7 in Cardiac and Skeletal muscle (NEW)

**3.** Dionyssiou MG, Salma J, Bevzyuk M, Wales S, L LZ, **McDermott JC.** Kruppel-like factor 6 (KLF6) promotes cell proliferation in skeletal myoblasts in response to TGFbeta/Smad3 signaling. Skelet Muscle. 2013 Apr 2;3(1):7.

**4.** Dionyssiou MG, Nowacki NB, Hashemi S, Zhao J, Kerr A, Tsushima RG, **McDermott JC**. Cross-talk between glycogen synthase kinase β (GSK3β) and p38MAPK regulates myocyte enhancer factor 2 (MEF2) activity in skeletal and cardiac muscle. J Mol Cell Cardiol. 2013 Jan;54:35-44.

**5.** Belozerov VE, Lin ZY, Gingras AC, **McDermott JC**, Michael Siu KW High-resolution protein interaction map of the Drosophila melanogaster p38 mitogen-activated protein kinases reveals limited functional redundancy. Mol Cell Biol. 2012 Sep;32(18):3695-706.

## Christopher Perry

**1. Funding Received:**

NSERC Discovery 2013-2018
Total Award: $145,000

**2. Funding Applied for:**

CFI Notice of Intent – York University internal competition ($349,500)

**3.** **Perry CGR***, Kane DA*, Lanza I, Neufer PD. Methods for assessing mitochondrial function in Diabetes. *Invited Review,* Diabetes. 62: 1041-1053, 2013. (1st publication during faculty position)

**4.** Lally JS, Herbst EA, Matravadia S, Maher AC, **Perry CGR**, Ventura-Clapier R, Holloway GP. Over-expressing mitofusin-2 in healthy mature mammalian skeletal muscle does not alter mitochondrial bioenergetics. *IN PRESS,* PLoS One. 2013.

**5.** Wan Z, **Perry CGR**, MacDonald T, Beaudoin MS, Castellani L, Chan CB, Schertzer J, Holloway GP, Wright DC. IL-6 is not necessary for the regulation of mitochondrial content in mouse adipose tissue. *IN PRESS*, PLoS ONE. 2013

## M. Riddell

**Funding Received:**

New Grants

**1.** NSERC Discovery Grant (individual- 3rd renewal). $165,000 (2013-2017), Project Title: Examining the mechanisms for the lipolytic and antilipolytic effects of glucocorticoids in adipose tissue.

**2.** Corcept Therapeutics contract. $22,633.90 (5/7/2012-5/7/2013). Project Title: Glucocorticoid Inhibitors in a Rodent Model of Diabetes.

**3.** MaRS Innovation MSCPoP Round 2b. Prophylactic treatment of hypoglycemia in insulin-treated diabetes 11/15/2012- 7/31/2013) (partners Drs. Herbert Gaisano, Mladen Vranic, MaRS Innovation and the Centre for Drug Research and Development)- amount $65,000.

**4.** C. Panagiotopoulos, **M. C. Riddell** and E.A. Sellers. Canadian Diabetes Association 2013 Clinical Practice Guidelines. Chapter 35: Type 2 Diabetes in Children and Adolescents. Can J Diabetes 37 (2013) S117-S118.

**5.** Shpilberg Y, Beaudry JL, D'Souza A, Campbell JE, Peckett A, **Riddell MC**. A rodent model of rapid-onset diabetes induced by glucocorticoids and high-fat feeding. Dis Model Mech. 2012 Sep;5(5):671-80. doi: 10.1242/dmm.008912. Epub 2011 Dec 19. PubMed PMID: 22184636; PubMed Central PMCID: PMC3424464.

## A. Scimè

**Funding Received:**

**1.** 2012 NSERC- Discovery Grant $125,000 5 years

**2.** 2012 Canadian Foundation for Innovation (CFI-LOI) $342,288 one time

**3.** 2012 NSERC-RTI $56 138 one time Co-Investigator (not received)

**Funding Applied for:**

**4.** 2013 Stem Cell Network (Stem Cell Drug Discovery) $75 000 one time
Principal Investigator (in Review)

**5.** **Scimè A**, (2012). The heat is on: a new avenue to study brown fat formation in humans. Frontiers in Cellular Endocrinology. Jan. 13: 2:118.

## R. Tsushima

**Funding Received:**

**1.** 07.2009 – 06.2013 *SNARE Protein Regulation of Cardiac Ion Channels and ANF Secretion*
Principal Investigator
Heart and Stroke Foundation of Ontario (T6770) - $409,181 (total)

**2.** 07.2011 – 06.2014 *Role of Endogenous Cholesterol in Beta-Cell Stimulus-Secretion Coupling*
Principal Investigator
Canadian Diabetes Association (OG) - $274,725 (total)

**3.** 01.2012 – 12.2016 *In Vivo Imaging of Cardiovascular Function*
Principal Investigator: Robert Tsushima
Leaders Opportunity Fund
Canadian Foundation for Innovation - $350,720

**Funding Applied for:**

**4.** 2013.07 – 2018.06 *SNARE Protein Regulation of Cardiac Ion Channels and ANF Secretion*
Principal Investigator
CIHR – applied

**5.** Dionyssiou MG, Nowacki NB, Hashemi S, Zhao J, Kerr A, **Tsushima RG**, McDermott JC. Cross-talk between glycogen synthase kinase 3β (GSK3β) and p38MAPK regulates myocyte enhancer factor 2 (MEF2) activity in skeletal and cardiac muscle. Journal of Molecular and Cellular Cardiology 54:35-44, 2013