

**Appendix 2: FUNDING RECEIVED or CONTINUING between
May, 1 2013 – April 30, 2014**

Olasunkanmi A.J. Adegoke

Funding Received:

NSERC Discovery Grant: “Mechanism of nutritional regulation of protein metabolism in skeletal muscle”

2008/2009

\$100,000.00 over 5 years

York University Faculty of Health Minor Research Grant: “Branched-chain amino acid metabolism and regulation of muscle differentiation”

May 2012.

\$3000

York University Muscle Health Research Centre Faculty Research Grant

October 2013.

\$3000

Angelo N. Belcastro

Funding Received:

Funding Applied for:

Olivier Birot

Funding Received:

NSERC Research Tools and Instruments: “Multi-modal plate reader”

Co-PI with Dr. Tara Haas

2013

\$40,741

Funding Applied For:

CIHR: “New insight in adaptive angiogenesis in peripheral vascular disease: Role of myofibroblast/endothelial cell interactions in human skeletal muscle”

Co-PI with Dr. Grenier (U. Sherbrooke)

March 2014

Under review

Rolando B. Ceddia

Funding Received:

NSERC Discovery Grant: “Regulation of whole-body energy metabolism”

2011–2016

\$200,000 over 5 years

Michael K. Connor

Funding Received:

York University Faculty of Health Minor Research Grants: “The Paracrine Role of Adipokines in Prostate Cancer”

2013-2015

\$2,850 per year

CFI Infrastructure Operating Funds: “Molecular regulation of muscle development”

2012-2015

\$50,000

Funding Applied for:

Prostate Cancer Canada: “The paracrine/endocrine effects of adipose tissue on prostate cancer”

07/ 2014 - 06/2016

\$190,400 (Principle Investigator, Co-PIs: Neil Fleshner)

William Gage

Funding Received:

Canadian Foundation for Innovation Leading Edge and New Initiatives Funds: “Full field vision and spatial orientation”

Principal Investigator: Laurence Harris

Co-applicants: William Gage, Andrew Hogue; Bill Kapralos; Jennifer Campos; Laurie Wilcox; Robert Alison

Co-investigators: Michael Jenkin

2013/11 - 2018/10

\$790,891

Tara L. Haas

Funding Received:

CIHR: “Microvascular remodeling of the adipose and muscle tissues in diet-induced obesity: regulation by FoxO proteins” (Principal Investigator; 1 Co-applicant: E. Roudier)

2013

\$97,700/yr (4 years)

NSERC Discovery Grant (renewal): “Regulation of capillary sprouting and stabilization in skeletal muscle”

2013

\$33,000/year (5 years)

NSERC Research Tools and Instruments: “Multi-modal plate reader”

2013

\$40,741 (PI; 1 co-applicant: O. Birot)

Mazen J. Hamadeh

Funding Received:

York University Faculty of Health Minor Research Grant: “Molecular mechanisms in the central nervous system following high dose vitamin D supplementation in amyotrophic lateral sclerosis”

May 2013

\$3,000 (PI)

Funding Applied for:

CIHR: “Optimal vitamin D supplementation in mitigating amyotrophic lateral sclerosis”

March 2014

\$404,403 over 3 years (PI)

Results: Awaiting response

NSERC: “Understanding the molecular mechanisms governing the actions of vitamin D on oxidative stress, endoplasmic reticulum stress and apoptosis”

November 2013

\$270,801 over 5 years (PI)

Results: Rejected

David A. Hood

Funding Received:

Mitacs (University-Industry) partnership grant

2014-2017

\$30,000 per year

CIHR Research Grant: "Mitochondria in Aging Skeletal Muscle”

2013-2018

\$117,937 per year

NSERC Research Tools and Instruments Grant: “Ultracentrifuge and rotors”

2013

\$143,438

CIHR Research Grant: "Autophagy in skeletal muscle”

2011-2016

\$103,661 per year

NSERC Discovery Grant: “Mitochondrial Biogenesis in Skeletal Muscle”

2011-2016

\$110,000 per year

Jennifer L. Kuk

Funding Received:

Canadian Institutes of Health Research New Investigator Bridge Funding: “Causes and Implications of Metabolically Healthy Obese”

(2014 - #131594)

\$100,000 (Co-PI)

National, Heart, Lung, and Blood Institute: “Resistance and Cardiorespiratory Time-matched Exercise in Youth: A Randomized Clinical Trial (RCT:RCT)”

2013-2017 - 1R01HL114857-01A1:

\$5,587,453 (Co-Investigator).

York University, Faculty of Health Minor Research Grant: “Importance of BIA assumptions in predicting body fat:

2012-2014

\$2,350 (Principal Investigator).

John C. McDermott

Funding Received:

CIHR Operating Grant: “Regulation of MEF2 in cardiac and skeletal muscle cells”

2013-2018

\$578,000

CIHR Operating Grant: “Role of Smad7 in Cardiac and Skeletal muscle”

2013-2018

\$542,000

Heart and Stroke Foundation of Canada Operating Grant: “Effects of Beta Blockers on Cardiac Gene Expression”

2012-2014

\$160,000

NSERC Discovery grant: “Role of AP-1 in skeletal myogenesis”

2012-2017

\$150,000

CIHR operating grant: “Regulation of MEF2 by signaling pathways”

2010-2013

\$375,000

Heart and Stroke Foundation of Canada Operating Grant: “Regulation of Vascular Smooth Muscle Cells by MEF2 dependent signaling pathways”

2010-2013

\$287,000

Christopher G. R. Perry

Funding Received:

CFI John R. Evans Leaders Fund and Ontario Research Fund: “Integrative mitochondrial bioenergetic facility for the study of muscle wasting diseases”

2014

\$267,914

The James H. Cummings Foundation Grant: “Acquisition of a PTI Quantamaster 40 spectrofluorometer for the study of mitochondrial bioenergetics in muscular dystrophy”

2013

\$56,000

NSERC Discovery: “A novel paradigm of metabolic regulation: acute and chronic redox-circuitry control of energy homeostasis”

2013-2018

\$145,000 (Principal Investigator)

York University Minor Research Grants and Junior Faculty Fund: “Assessment of mitochondrial Function in Duchenne Muscular Dystrophy

2013-2014

4 awards totalling: \$9,850 (Principal Investigator)

York University Conference Travel Fund

2012-2013

2 awards totalling: \$2,000 (2 x \$1,000)

Centre for Sport Research (Centrum för Idrottsforskning), Stockholm, Sweden: “Optimal performance - molecular methods for individual guidelines for dietary and exercise regimens”

Principal Investigators: Carl Johan Sundberg, Karolinska Institutet.

Co-Investigators: J. Norrbom and C.G.R Perry.

2011-2013

100,000 SEK (~\$15,500 CAD).

Michael C. Riddell

Funding Received:

NSERC Discovery Grant (individual- 3rd renewal): “Examining the mechanisms for the lipolytic and antilipolytic effects of glucocorticoids in adipose tissue.” Grant #261306

2013-2017

\$165,000

CIHR Proof of Principle Program: “Phase I: Pharmaceutical intervention to decrease the threat of hypoglycemia in insulin-treated diabetics” (with M. Vranic).

10/1/2011- 03/31/2014

\$160,000

Corcept Therapeutics contract: “Glucocorticoid Inhibitors in a Rodent Model of Diabetes.”

5/7/2012-5/7/2013

\$22,633.90

MaRS Innovation MSCPoP: “ Round 2b. Prophylactic treatment of hypoglycemia in insulin-treated diabetes” (partners Drs. Herbert Gaisano, Mladen Vranic, MaRS Innovation and the Centre for Drug Research and Development)

11/15/2012- 7/31/2013

\$65,000.

MaRS Innovation MSCPoP: “Program Round 2. Treatment of hypoglycemia in insulin-treated diabetes” (partners Dr Mladen Vranic, MaRS Innovation and the Centre for Drug Research and Development)

2/1/2011- 8/1/2013

\$118,085.

NIH Operating Grant #1DP3DK101075-01: “Control systems for Artificial Pancreas use during and after exercise.”

2013-2017

\$2,478,076 (Subcontract to York= \$364,000.)

CIHR Operating Grant “Metabolic flexibility in obese youth: Exercise as a screening test and a treatment”, Competition 2010/09.

Principal Investigator: Timmons BW

Co-investigators: Morrison KM and Riddell MC

2011-2013

\$225,347

Anthony Scimè

Funding Received:

Centres of Excellence - Stem Cell Network - Stem Cell Drug Discovery "Discovery of compounds that specify mesenchymal stem cells to the brown adipocyte lineage"

August 2013

\$75,000 one-time

Funding Applied for:

CIHR Discovery Grant "Understanding the role of p107 in differentiation pathways that control bioenergetic switching"

March 2014

\$153,100 (4 years)

Robert G. Tsushima

Funding Received:

07.2011 – 06.2014

Role of Endogenous Cholesterol in Beta-Cell Stimulus-Secretion Coupling

Principal Investigator

Canadian Diabetes Association (OG) - \$274,725 (total)

**Appendix 3: AWARDS RECEIVED between May 1, 2013 – April 30,
2014**

David A. Hood

May 2013 Peter A. Rechnitzer Lecturer, Centre for Physical Activity and Aging, Western University
2013 York University Faculty of Health Teaching Award (Established Career)

William Gage

March 2013 York University Research Leader

Jennifer L. Kuk

Sept 2013 CIHR INMD Newsletter - New Investigator

Robert G. Tsushima

August 2009 – Career Investigator Award
June 2014 Heart and Stroke Foundation of Ontario – \$438,750

Appendix 4: Peer-reviewed publications and submitted manuscripts by MHRC Faculty members between May 1, 2013 – April 30, 2014

Olasunkanmi A. J. Adegoke

Accepted:

Kakade D, Islam N, Maeda N, Adegoke OA. Differential effects of PDCD4 depletion on protein synthesis in myoblast and myotubes. *BMC Cell Biol.* 2014 Jan 9;15:2.

In submission/preparation:

Adegoke OA, Bates H, Kiraly M, Vranic M, Riddell MC, and Marliss E. Exercise in ZDF rats does not attenuate weight gain, but prevents hyperglycemia concurrent with modulation of amino acid metabolism and AKT/mTOR activation in skeletal muscle. Submitted to *Eur J Nutrition*. Manuscript number: EJON-D-14-00123. Submitted March 3 2014.

Jeganathan S, Abdullahi A, Zargar S, Maeda N, Riddell MC, and Adegoke OA. Amino acid-induced impairment of insulin sensitivity in healthy and obese rats is reversible. Submitted to *American Journal of Physiology-Endocrinology and Metabolism*, April 4, 2014. Manuscript number E-00169-2014.

Angelo N. Belcastro

In submission/preparation:

Belcastro AN, Booker T, Arthur G and Adelbert D. Response of muscle calpain and myeloperoxidase activities to graded exercise intensity Submission date: Summer/Fall 2014.

Parsons K and Belcastro AN. Physical Activity and Physical Fitness Attributes of School-based Physical Education Programs Submission date: Fall 2014.

Moghaddasazadeh A, Jamnik V, Belcastro AN. Accelerometry (ACC) of Children's Physical Activity During self-paced Games. Submission date: Summer/Fall 2014.

Olivier Birot

Accepted:

Roudier E, Aiken J, Slopack Dara, Gouzi F, Mercier J, Haas TL, Gustaffson T, Hayot M, Birot, O. Novel perspective: Exercise training stimulus triggers the expression of the oncoprotein Human Double Minute-2 in human skeletal muscle. In press in *Physiological Reports* 2013.

Roudier E, Milkiewicz M, Birot O, Slopack D, Paik, Depinho P, Casale G, Pipinos P, Haas TL. FoxO transcription factors are critical regulators of angiogenesis within ischemic skeletal muscle. *Angiogenesis* 16:759-772, 2013.

Gouzi F, Prefaut C, Abdellaoui A, Roudier E, de Rigal P, Molinari N, Laoudj-Chenivresse D, Mercier J, Birot O, Hayot M. Blunted muscle angiogenic training-response in COPD patients versus sedentary controls. *European Respiratory Journal* 41:806-14, 2013).

Rolando B. Ceddia

Accepted:

Masoodi M, Lee E, Eiden M, Bahlo A, Shi Y, Ceddia RB, Baccei C, Prasit P, Spaner DE. A role for oleoylethanolamide in chronic lymphocytic leukemia. *Leukemia*. 2014 Jan 13. [Epub ahead of print]

Vitzel KF, Bikopoulos G, Hung S, Curi R, Ceddia RB. Loss of the anorexic response to systemic 5-aminoimidazole-4-carboxamide-1- β -D-ribofuranoside administration despite reducing hypothalamic AMP-activated protein kinase phosphorylation in insulin-deficient rats. *PLoS One*. 8(8):e71944, 2013.

Trajcevski KE, O'Neill HM, Wang DC, Thomas MM, Al-Sajee D, Steinberg GR, Ceddia RB, Hawke TJ. Enhanced lipid oxidation and maintenance of muscle insulin sensitivity despite glucose intolerance in a diet-induced obesity mouse model. *PLoS One*. 8(8):e71747, 2013.

Vitzel KF, Bikopoulos G, Hung S, Pistor KE, Patterson JD, 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*. 19;8(4):e62190, 2013.

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

Spaner DE, Lee E, Shi Y, Wen F, Li Y, Tung S, McCaw L, Wong K, Gary-Gouy H, Dalloul A, Ceddia RB, Gorczynski R. PPAR-alpha is a therapeutic target for chronic lymphocytic leukemia. *Leukemia*. 27(5):1090-9, 2013.

Michael K. Connor

Accepted:

Thomas MM, Wang DC, D'Souza DM, Krause MP, Layne AS, Criswell DS, O'Neill HM, Connor MK, Anderson JE, Kemp BE, Steinberg GR and Hawke TJ. Muscle-Specific AMPK β 1- β 2-null mice display a myopathy resultant from impairments in blood flow. *FASEB J*. In press, 2014.

McDermott J, Dionyssiou M, Ehyai S, Avrutin E, Connor MK. Glycogen synthase kinase 3 β represses Myogenin function in Alveolar Rhabdomyosarcoma. *Cell Death Dis*. In Press, 2014.

Santa Mina D, Connor MK, Alibhai SMH, Toren P, Guglietti C, Matthew A, Trachtenberg J, Ritvo P. The Effects of Home-Based Exercise on Adipokines and the IGF-1 Axis in Men with Prostate Cancer. Accepted by *Can. Urol. Assoc. J*. 7, E692-E698, 2013.

In submission/preparation:

Duchene B and Connor MK. Electrical stimulation induces AMPK-mediated cell cycle arrest in C2C12 myoblasts by increasing intracellular Ca²⁺. Submitted to *Am. J. Physiol*. April 2014.

Theriau CF, Walker OS, Trivedi DN, Gaidhu MP, Shpilberg Y, Riddell MC, Ceddia RB and Connor MK. Adiponectin Receptor 1 (AdipoR1) Signaling Ameliorates Obesity-Dependent Cell Cycle entry in MCF7 Cells. Submitted to *Am. J. Physiol (Cell Physiol)*. November 2013. In Revision.

Zeppieri J, Trottier G, Fleshner NE and Connor MK. Adipocyte-derived factors affect the proliferation of AR-positive and AR-negative prostate cancer cells via AMPK. Submitted to *Cancer Epi. Biomarker Prev.* December 2013.

Trottier G, Connor MK, Zeppieri JA, Margel D, Fernandes KA, Chadwick K, Finelli A, Evans A, van der Kwast TH, Hersey K, Riddell MC, Fleshner NE. Association of adipokines with prostate cancer and high grade disease depends on body mass index. Submitted to *Eur. J. Urol.* August 2013.

William Gage

Accepted:

Poulos CC, Gallucci J Jr, Gage WH, Baker J, Buitrago S, Macpherson AK. The perceptions of professional soccer players on the risk of injury from competition and training on natural grass and 3rd generation artificial turf. *BMC Sports Sci Med Rehabil.* 2014 Mar 1;6(1):11.

Phadke CP, Ismail F, Boulias C, Gage W, Mochizuki G. The impact of post-stroke spasticity and botulinum toxin on standing balance: a systematic review. *Expert Rev Neurother.* 2014Mar;14(3):319-27.

Street BD, Wong W, Rotondi M, Gage W. Younger patients report greater improvement in self-reported function after knee joint replacement. *J Orthop Sports Phys Ther.* 2013 Sep;43(9):666-72

Street BD, Gage W. The effects of an adopted narrow gait on the external adduction moment at the knee joint during level walking: evidence of asymmetry. *Hum Mov Sci.* 2013 Apr;32(2):301-13.

Tara L. Haas

Accepted:

Milkiewicz M, Kempinska-Podhorodecka A, Haas TL, Bogdanos DP, Elias E, Milkiewicz P, Kopycinska J. Ursodeoxycholic acid influences the expression of p27kip1 but not FoxO1 in patients with non-cirrhotic Primary Biliary Cirrhosis. *J Immunol Res*, vol. 2014, Article ID 921285, 8 pages, 2014. doi:10.1155/2014/921285.

Uchida C, Haas TL. Endothelial TIMP1 is upregulated by shear stress via Sp1 and the TGF β 1 signaling pathways. *Biochem Cell Biol.* 2014; 92:1-7.

Gorman JL, Liu STK, Slopach D, Shariati K, Hasanee A, Olenich S, Olfert IM and Haas TL. Angiotensin II evokes angiogenic signals within skeletal muscle through co-ordinated effects on skeletal myocytes and endothelial cells. *PLoS One.* 2014 Jan 9;9(1):e85537. doi: 10.1371/journal.pone.0085537

Haas TL. Shaping and Remodeling of the Fetoplacental Circulation: Aspects of Health and Disease. *Microcirculation* 2014 Jan;21(1):1-3. doi: 10.1111/micc.12084

Roudier E, Aiken J, Slopach D, Gouzi F, Mercier J, Haas TL, Gustafsson T, Hayot M, Birot O. Novel Perspective: Exercise training stimulus triggers the expression of the oncoprotein Human Double Minute-2 in human skeletal muscle. *Physiol.Rep.* 2013 1:e00028; DOI: 10.1002/phy2.28

Mandel E, Uchida C, Haas TL. Chapter 16. Regulation of proteolysis in vascular remodeling. In "Roles of Proteolysis in Cellular Dysfunction". S. Chakraborti and N. Dhalla (Eds). Advances in Biochemistry in Health and Disease 8, DOI 10.1007/978-1-4614-9099-9_16, © Springer Science+Business Media New York 2014

Roudier E, Milkiewicz M, Birot O, Slopock D, Montelius A, Gustafsson T, Paik JH, DePinho RA, Casale GP, Pipinos II, Haas TL. Endothelial FoxO1 is an intrinsic regulator of thrombospondin1 expression that restrains angiogenesis in ischemic muscle. *Angiogenesis* 2013 16(4):759-772, DOI: 10.1007/s10456-013-9353-x

Mazen J. Hamadeh

Accepted:

Gianforcaro A, Hamadeh MJ. Vitamin D as a potential therapy in amyotrophic lateral sclerosis. *CNS Neurosci Ther* 2014;20(2):101-11. doi: 10.1111/cns.12204
<http://onlinelibrary.wiley.com/doi/10.1111/cns.12204/abstract>

Devries MC, Samjoo IA, Hamadeh MJ, McCreedy C, Sischek S, Raha S, Watt MJ, Steinberg GR, Tarnopolsky MA. Endurance training modulates intramyocellular lipid compartmentalization and morphology in skeletal muscle of lean and obese women. *J Clin Endocrinol Metab* 2013;98(12):4852. doi: <http://dx.doi.org/10.1210/jc.2013-2044> <http://jcem.endojournals.org/content/98/12/4852.abstract>

Samjoo IA, Safdar A, Hamadeh MJ, Raha S, Tarnopolsky MA. The effect of endurance exercise on both skeletal muscle and systemic oxidative stress in previously sedentary obese men. *Nutr Diabetes* 2013;3:e88. doi:10.1038/nutd.2013.30
<http://www.nature.com/nutd/journal/v3/n9/full/nutd201330a.html>

Samjoo IA, Safdar A, Hamadeh MJ, Glover AW, Mocellin NJ, Santana J, Little JP, Steinberg GR, Raha S, Tarnopolsky MA. Markers of skeletal muscle mitochondrial function and lipid accumulation are moderately associated with the homeostasis model assessment index of insulin resistance in obese men. *PLoS One* 2013;8: e66322. doi:10.1371/journal.pone.0066322
<http://dx.plos.org/10.1371/journal.pone.0066322>

In submission/preparation:

Parikh S, Hamadeh MJ, Kuk JL. Serving size estimation for healthier and unhealthier versions of food. *Appl Physiol Nutr Metab* 2014 (submitted on March 2014).

Alabdulkader S, Solomon JA, Hamadeh MJ. Moderate improvement in vitamin D status reduces T2DM sequelae in non-white, ethnically diverse, postmenopausal women. *J Nutr* 2014 (submitted on February 11, 2014; ms# NUTRITION/2014/192450).

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* 2014 (in revision; ms# PONE-D-11-12506R1).

David A. Hood

Accepted:

Saleem A, Carter HN and Hood DA. p53 is necessary for the adaptive changes in cellular milieu subsequent to an acute bout of endurance exercise. *Am. J. Physiol. Cell Physiol.* 306: C241-C249, 2014.

Zhang Y, Iqbal S, O'Leary MF, Menzies KJ, Saleem A, Ding S and Hood DA. Altered mitochondrial morphology and defective protein import reveals novel roles for Bax and/or Bak in skeletal muscle. *Am J Physiol Cell Physiol.* 305: C502-C511, 2013.

Saleem A, and Hood DA. Acute Exercise induces p53 translocation to the mitochondria and promotes a p53-Tfam-mtDNA complex in skeletal muscle. *J Physiol (Lond).* 591: 3625-36, 2013.

Iqbal S, Ostojic O, Singh K, Joseph AM, and Hood DA. Expression of mitochondrial fission and fusion regulatory proteins in skeletal muscle during chronic use and disuse. *Muscle Nerve* 48: 963-70, 2013.

Pastore S and Hood DA. Endurance training ameliorates the metabolic and performance characteristics of circadian Clock mutant mice. *J. Appl. Physiol.* 114: 1076-84, 2013.

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

Ostojic O, O'Leary MF, Singh K, Menzies KJ, Vainshtein A and Hood DA. The effects of chronic muscle use and disuse on cardioplipin metabolism. *J. Appl. Physiol.* 114: 444-452, 2013.

O'Leary MF, Vainshtein A, Iqbal S, Ostojic O and Hood DA. Adaptive plasticity of autophagic proteins to denervation in aging skeletal muscle. *Am J Physiol Cell Physiol.* 304: C422-30, 2013.

Hood DA and Iqbal S. Muscle mitochondrial ultrastructure: new insights into morphological divergences. *J. Appl. Physiol.* 114:159-60, 2013.

In submission/preparation:

[Book Chapter] Hood DA, Saleem A, Carter HN, Vainshtein A, Ostojic O, and Iqbal S. Molecular basis of exercise training adaptations in skeletal muscle. In: MacIntosh, B.M. (Ed.). *Exercise Physiology in Canada*. Toronto: McGraw-Hill, Chpt. 14 (in review).

Jennifer L. Kuk

Accepted:

Brown RE, Kuk JL: Consequences of obesity in the elderly. (*Healthy Aging & Clinical Care in the Elderly – In Press*).

Brown RE, Kuk JL, Lee SJ: Measurement site influences abdominal subcutaneous and visceral adipose tissue in obese adolescents before and after exercise. (*Pediatric Obesity – In Press*).

Prince R, Kuk JL, Ambler KA, Dhaliwal J, Ball GDC: Predictors of metabolically healthy obesity in children and youth (*Diab Care – In Press*).

Blake CE, Hébert JR, Lee DC, Adams SA, Steck SE, Sui X, Kuk JL, Baruth M, Blair SN: Adults with greater weight satisfaction report more positive health behaviors and have better health status regardless of BMI (J of Obesity – In Press).

Lee SJ, Kim Y, Kuk JL, Boada FE and Arslanian SA: Whole-body MRI and ethnic differences in adipose tissue and skeletal muscle distribution in overweight black and white adolescent boys (J Obesity – In Press).

Canning KL, Brown RE, Jamnik RE, Kuk JL: The Relationship between Obesity and Obesity-Related Morbidities Weakens with Ageing (J Gerontology – Jan;69(1):87-92, 2014).

Kuk JL and Ardern CI: The influence of ethnicity and sex on self-rated overweight physical activity and health status (Perspectives in Public Health – Perspect Public Health. Jan;134(1):38-4, 2014).

Lee SJ, Deldin A, White D, Libman I, Rivera-Vega M, Kuk JL, Sandoval S, Boesch C, Arslanian SA: Aerobic exercise but not resistance exercise reduces intrahepatic lipid content and visceral fat and improves insulin resistance in obese adolescent girls: A randomized controlled trial (AJP - Endocrinology and Metabolism – Nov 15;305(10):E1222-9, 2013.)

Lee SJ, Kuk JL: Changes in fat and skeletal muscle with exercise training in obese adolescents: comparison of whole-body MRI and dual energy X-ray absorptiometry (Obesity – Oct;21(10):2063-71, 2013).

Brown RE, Riddell MC, MacPherson AK, Canning KL, Kuk JL: The Association between Frequency of Physical Activity and Mortality Risk Across the Adult Age Span. (J of Aging and Health – Aug;25(5):803-14, 2013)

Brown RE, Riddell MC, MacPherson AK, Canning KL, Kuk JL: The influence of physical activity, pharmacological treatment, and control on mortality risk for hypertension in U.S. adults (Am J Hypertension Aug;26(8):1005-10, 2013).

Liu RH, Wharton S, Sharma AM, Ardern CI, Kuk JL: Influence of a Lifestyle-Based Weight Loss on the Metabolic Risk Profile of Metabolically Normal and Abnormal Obese Adults (Obesity – Aug;21(8):1533-9, 2013)

Brown RE, Riddell MC, MacPherson AK, Canning KL, Kuk JL: Type II diabetes mortality risk in U.S. adults: Influence of physical activity, pharmacological treatment and control (J of Diabetes and Its Complications – Jul 22: 2013).

Lee SJ, Burns SF, White D, Kuk JL, Arslanian S: Effects of acute exercise on postprandial triglyceride response after a high fat meal in overweight black and white adolescents (IJO Jul;37(7):966-71, 2013. doi: 10.1038/ijo.2013.29. Epub 2013 Mar 19).

Liu RH, Wharton S, Ardern CI, Kuk JL: A multidisciplinary lifestyle intervention from a publicly funded weight management clinic for overweight and obese adults: 1 year results. (Clinical Obesity – Volume 3, Issue 1-2, pages 21–31, February-April 2013)

Moonsammy SH, Guglietti CL, Santa Mina D, Ferguson C, Kuk JL, Urowitz S, Wiljer D and Ritvo P: A pilot study of an exercise & cognitive behavioral therapy intervention for epithelial ovarian cancer patients. *J Ovarian Res*, 6(1), 21, 2013.

In submission/preparation:

Heinzle S, Ball GDC, Kuk JL: Prevalence and Predictors of Metabolically Healthy Obese Adolescents (Submitted to *Ped Obesity*).

Ranjbar M, Rotondi MA, Ardern CI, Kuk JL: The Influence of Urinary Concentrations of Organophosphate Metabolites on the Relationship between BMI and Cardiometabolic Health Risk. (Submitted to).

Parikh S, Hamadeh MJ, Kuk JL: Serving Size Estimation for 'Healthier' and 'Unhealthier' Versions of Food (Submitted to *APMN*).

Brown RE, Kuk JL, Lee SJ: Joint associations between visceral fat and liver fat with insulin sensitivity in obese adolescents. (Submitted to *Pediatric Diabetes*).

Canning KL, Brown RE, Jamnik RE, Art Salmon, Chris I Ardern, Kuk JL: Can Canadians properly use Canada's Physical Activity Guide to select light, moderate and vigorous intensity physical activity? (Revision submitted to *PLoS*).

Canning KL, Brown RE, Wharton S, Arya AM, Kuk JL: Edmonton Obesity Staging System Prevalence and Association with Weight Loss in a Community Obesity Clinic (Submitted to *Clinical Obesity*).

Carlton K, Rotondi M, Ardern CI, Kuk JL: Antidepressant usage influences the association between BMI and health risk factors (Submitted to *Clin Obesity*).

Babiolakis C, Kuk JL, Drake JDM: Differences in lumbopelvic control and occupational behaviours in female nurses with and without a recent history of low back pain due to back injury (Submitted to *Ergonomics*).

Brown RE, Sharma AM, Ardern CI, Mirdamadi P, Mirdamadi P, Kuk JL: Secular trends in the relationship between caloric intake, carbohydrate intake, and physical activity with obesity (Submitted to *PLoS*).

John C. McDermott

Accepted:

Belozerov VE, Ratkovic S, McNeill H, Hilliker AJ, McDermott JC. In Vivo Interaction Proteomics Reveal a Novel p38 Mitogen-Activated Protein Kinase/Rack1 Pathway Regulating Proteostasis in *Drosophila* Muscle. *Mol Cell Biol*. 2014 Feb;34 (3):474-84.

Alli NS, Yang EC, Miyake T, Aziz A, Collins-Hooper H, Patel K, McDermott JC. Signal-dependent Fra-2 regulation in skeletal muscle reserve and satellite cells. *Cell Death Dis*. 2013 Jun 27;4:e692. doi: 10.1038/cddis.2013.221.

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. *Skeletal Muscle*. 2013 Apr 2;3(1):7.

Dionyssiou MG, Nowacki NB, Hashemi S, Zhao J, Kerr A, Tsushima RG, McDermott JC. Cross-talk between glycogen synthase kinase 3 β (GSK3 β) and p38MAPK regulates myocyte enhancer factor 2 (MEF2) activity in skeletal and cardiac muscle. *J Mol Cell Cardiol*. 2013 Jan;54:35-44.

Christopher G. R. Perry

Accepted:

Debalsi KL, Wong KE, Koves TR, Slentz DH, Seiler SE, Wittmann AH, Ilkayeva OR, Stevens RD, Perry CGR, Lark DS, Hui ST, Szweda L, Neuffer PD, Muoio DM. Targeted metabolomics connects TXNIP to mitochondrial fuel selection and regulation of specific oxidoreductase enzymes in skeletal muscle. *J Biol Chem*. 2014 Jan 30 (Epub). PMID: 24482226

De Sousa M, Porras DP, Perry CGR, Seale P, Scime A. p107 is a crucial regulator for determining the adipocyte lineage fate choices of stem cells. *Stem Cells*. 2014 Jan 21 (Epub). Doi: 10.1002/stem.1637. PMID: 24449206

Smith BK, Perry CGR, Herbst EA, Ritchie IR, Beaudoin MS, Smith JC, Neuffer PD, Wright DC, Holloway GP. Submaximal ADP-stimulated respiration is impaired in ZDF rats and recovered by resveratrol. *J Physiol*. 591: 6089-101, 2013. PMID: 24081154

Perry CGR, Kane DA, Lanza I, Neuffer PD. Methods for assessing mitochondrial function in Diabetes. Invited Review, *Diabetes*. 62(4): 1041-1053, 2013. PMID: 23520284

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. *PLoS One*. 8(1): e55660, 2013. PMID: 23383258

In submission/preparation:

Williams CB, Hughes MC, Edgett BA, Scribbans TD, Simpson CA, Perry CGR, Gurd BJ. An examination of Resveratrol's mechanisms of action in human tissue: Impact of a single dose in vivo and dose responses in skeletal muscle ex vivo. *PLoS ONE*. EMID:c67efb3f548afabb

Ydfors M, Hughes M, Laham R, Norrbom J, Schlattner U, Tarnopolsky M, Perry CGR. Regulation of mitochondrial ATP transport and free radical production in human muscle.

Ydfors M, Hughes M, Laham R, Norrbom J, Perry CGR. Regulation of mitochondrial biogenesis during exercise in human skeletal muscle.

Perry CGR, Brophy P, Lin CT, Kane DA, Kane CL, Gavin T, Hickner R, Kwak HB, Cortright RN, Neuffer PD. Acute influence of dietary fat versus carbohydrate intake on mitochondrial H₂O₂ emission, cellular redox state, and insulin sensitivity in humans.

Kang L, Lustig ME, Anderson EJ, Lin CT, Perry CGR, Neuffer PD, Wasserman DH. Oxidative stress limits insulin-stimulated muscle glucose uptake in conscious, chow-fed C57BL/6J mice.

Lin CT, Kane DA, Kane CL, Perry CGR, Lark DS, Kozy R, Zheng D, Tapscott EB, Fisher-Welman KH, Kwon OS, Gordon SE, Anderson EJ, Neuffer PD. The effects of chronic β -GPA feeding on insulin sensitivity and H_2O_2 emission in rodents.

Lin CT, Zheng D, Perry CGR, Lark DS, Kozy R, Fisher-Welman KH, Neuffer PD. The acute effects of exercise prior to lipid ingestion on insulin sensitivity, H_2O_2 emission and intracellular redox environment in rodents.

Castellani L, Perry CGR, Root-McCaig J, Wright DC. Exercise induces insulin resistance in white adipose tissue.

Lin CT, Lark DS, Kane DA, Anderson EJ, Kane CL, Perry CGR, Fisher-Welman KF, Neuffer PD. The effects of metformin on calcium-induced opening of the mitochondrial permeability transition pore in skeletal muscle of obese Zucker rats.

Michael C. Riddell

Accepted:

JL Beaudry, EC Dunford, DP Zaharieva, T Teich, H Hunt, J Belanoff, MC Riddell. Effects of Selective and Non-Selective Glucocorticoid Receptor II Antagonists on Rapid-onset Diabetes in Young Rats. Submitted to PLOS ONE. Sept 24th, 2013, PONE-D-13-38335.

Rowan CP, Riddell MC, Jamnik VK. The Prediabetes Detection and Physical Activity Intervention Delivery (PRE-PAID) Program. *Can J Diabetes*. 2013 Dec;37(6):415-9. doi: 10.1016/j.cjcd.2013.09.003. PubMed PMID: 24321723.

J Beaudry and MC Riddell. Response to 'Letter to the Editor' by Dr. Rafacho. *Diabetes/Metabolism Research and Reviews* –Accepted Sept 10th, 2013, Manuscript # DMRR-13-LET-265 (in press).

JE. Yardley, RJ Sigal, MC Riddell, BA Perkins and GP Kenny. Performing resistance exercise before versus after aerobic exercise influences growth hormone secretion in type 1 diabetes. *Applied Physiology, Nutrition & Metabolism*, Accepted Sept 13th, 2013. Manuscript ID apmn-2013-00329.R1 (in press).

Chu L, Riddell MC, Schneiderman JE, McCrindle BW, Hamilton JK. The effect of puberty on fat oxidation rates during exercise in overweight and normal-weight girls. *J Appl Physiol* (1985). 2014 Jan;116(1):76-82. doi: 10.1152/jappphysiol.00888.2013. Epub 2013 Nov 14. PubMed PMID: 24235101.

E Leclair, M de Kerdanet, M Riddell and E Heyman E. Type 1 diabetes and physical activity in children and adolescents. *Diabetes Metab* 2013, S10-004. doi: 10.4172/2155-6156.S10-S20.

P Galassetti and MC Riddell. Exercise and Type 1 Diabetes (T1DM). *American Physiological Society. Compr Physiol* 2013 Jul;3(3):1309-36. PMID:23897688.

- JE Yardley, RJ Sigal, BA Perkins, MC Riddell and G Kenny. Resistance Exercise in Type 1 Diabetes. *Can J Diabetes*. 2013 Dec;37(6):420-6. doi: 10.1016/j.jcjd.2013.07.020. PubMed PMID: 24321724.
- Krause MP, Al-Sajee D, D'Souza DM, Rebalka IA, Moradi J, Riddell MC, Hawke TJ. Impaired macrophage and satellite cell infiltration occurs in a muscle-specific fashion following injury in diabetic skeletal muscle. *PLoS One*. 2013;8(8):e70971. PubMed PMID: 23951058.
- Brown RE, Riddell MC, Macpherson AK, Canning KL, Kuk JL. The association between frequency of physical activity and mortality risk across the adult age span. *J Aging Health*. 2013 Aug;25(5):803-14. PubMed PMID: 23836844.
- RE Brown, MC Riddell, AK Macpherson, J L Kuk. All-cause and cause-specific mortality risk in U.S. adults with and without type 2 diabetes: Influence of physical activity, pharmacological treatment and glycemic control. *Journal of Diabetes and its Complications*. 2013 Jul 22. doi:pii: S1056-8727(13)00146-3. 10.1016/j.jdiacomp.2013.06.005. [Epub ahead of print] PubMed PMID: 23886620.
- JL Beaudry, A D'Souza, T Teich, R Tsushima and MC Riddell. Short-term elevations in glucocorticoids and a high-fat diet limit islet adaptive capacity, thereby inducing severe hyperglycemia in rats. *Endocrinology*. 2013 Sep;154(9):3197-208. PMID: 23766132.
- RE. Brown, MC. Riddell, AK. Macpherson, KL. Canning, and JL. Kuk. The Joint Association of Physical Activity, Blood-Pressure Control, and Pharmacologic Treatment of Hypertension for All-Cause Mortality Risk . *Am J Hypertens*. 2013 Aug;26(8):1005-10. PMID:23690165.
- Zaharieva, MC Riddell. Caffeine and Glucose Homeostasis During Rest and Exercise in Diabetes Mellitus. *Appl Physiol Nutr Metab*. 2013 Aug;38(8):813-22. PubMed PMID: 23855268.
- N Karimian, T Qin, T Liang, M Osundiji, Y Huang, T Teich, M Riddell, MS. Cattral, DH. Coy, M Vranic, HY. Gaisano. Somatostatin Receptor Type 2 Antagonism Improves Glucagon Counter-regulation In BioBreeding Diabetic Rats. *Diabetes*. 2013 Aug;62(8):2968-77. PMID:23630299.
- JT Yue, MC Riddell, E Burdett, DH Coy, S Efendic and M Vranic. Amelioration of Hypoglycemia via Somatostatin Receptor Type 2 Antagonism in Recurrently Hypoglycemic Diabetic Rats. *Diabetes*. Jul;62(7):2215-22. PMID:23434929.
- R.J. Sigal, M.J. Armstrong, P. Colby, G.P. Kenny, R.C. Plotnikoff, S.M. Reichert and MC. Riddell. Canadian Diabetes Association 2013 Clinical Practice Guidelines. Physical Activity and Diabetes. *Can J Diabetes* 2103 April;37(Suppl 1); S40-S44.
- C. Panagiotopoulos, M.C. Riddell and E.A.C. Sellers. Clinical Practice Guidelines. Type 2 diabetes in children and adolescents. *Can J Diabetes* 2103 April;37(Suppl 1); S163-S167

[Book chapter] M.C. Riddell, S. Pollack, H. Shojaei, J. Kalish and H. Zisser. Advances in exercise, physical activity, and diabetes mellitus. *Advanced Technology and Treatments in Diabetes (ATTD) 2013 Yearbook*, Wiley Press, in press.

In submission/preparation:

O Adegoke, HE Bates, M Kiraly, M Vranic, M C Riddell, E Marliss. Exercise in obese ZDF rats prevents hyperglycemia concurrent with modulation of amino acid metabolism and AKT/mTOR activation in skeletal muscle. Submitted to *Metabolism* (Dec 23rd, 2013).

C Theriau, O Walker, D Trivedi, M Gaidhu, Y Shpilberg, M Riddell, R Ceddia, and M Connor. Adiponectin Receptor 1 (AdipoR1) Signaling Ameliorates Obesity-Dependent Cell Cycle entry in MCF7 Cells". Submitted to the *American Journal of Physiology - Cell Physiology* Sept 23rd, 2013. manuscript #: C-00298-2013.

G Trottier, M Connor, J Zeppieri, D Margel, B Bhindi, KA Fernandes, K Chadwick, A Finelli, MC Riddell, A Evans, TH van der Kwast, K Hersey and NE. Fleshner. Association of adipokines with prostate cancer grade depends on body-mass index. *Journal of Urology* (submitted Sept 2011, current status unknown).

Anthony Scimè

Accepted:

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.

Robert G. Tsushima

Accepted:

Beaudry JL, D'souza AM, Teich T, **Tsushima R**, Riddell MC. Exogenous glucocorticoids and a high-fat diet cause severe hyperglycemia and hyperinsulinemia and limit islet glucose responsiveness in young male Sprague-Dawley rats. *Endocrinology* 154(9):3197-3208, 2013.

In preparation/submission:

Yamakawa T, Saith S, Butt B, Backx A, Gao X, Gaisano HY, **Tsushima RG**. Interaction of MiRP1 with the KCHIP2 binding site to regulate Kv4.2 channel gating. In preparation

Rodness J, Ni N, Cooper AJ, Singh K, Patel S, Woodgett JR, Hood DA, **Tsushima RG**. The mitochondrial permeability transition pore and mitochondrial ATP-sensitive potassium channel are not downstream targets of the PI3K- GSK3 β pathway in protecting the heart from ischemia-reperfusion injury. In preparation

Freud A, Xia F, Gonzalez R, Gao X, Sahine G, Nave A, Unniappan S, **Tsushima RG**. Beta-cell deletion of squalene synthase impairs insulin secretion: importance of cellular cholesterol. In preparation

Mihic A, Gao X, D'Avanzo N, Gaisano HY, Shrier A, **Tsushima RG**. Pharmacological rescue of syntaxin 1A-dependent impairment of hERG channel trafficking. In preparation.

Kerr A, Polidovitch N, Korogyi A, Backx A, Gao X, Tsushima RG. Selective inhibition of phosphatidylinositol 3-kinase isoforms abolishes myocardial ischemic preconditioning. In preparation

Appendix 5: – List of Specialized Equipment

Olivier Birot

- Harvard Isoflurane anesthesia station
- Tissue lyser Retsch MM400 using stainless steel beads.
- Imaging station Kodak 4000MM Pro.

Rolando Ceddia

- Scintillation counter (Beckman Coulter LS 6500)
- Plate reader (Biotek Synergy HT)
- Temperature controlled spectrophotometer (Ultrospec 4300 Pro)
- Real Time - PCR (Biorad CFX96)

Mike Connor

- Kodak In Vivo FX Pro imaging station
- Hunter apparatus
- Cell culture electrical stimulator
- Ultracentrifuge
- Nanodrop spectrophotometer

Will Gage

- 7 camera optoelectronic motion capture system (Vicon)
- Six 6-degree of freedom force plates (AMTI)
- Wireless, 16 channel EMG data collection system (Noraxon)
- XY gantry for perturbing postural control and balance
- Wireless three-dimensional accelerometers for measuring movement "in the field"
- HUMAC isokinetic muscle strength testing system

Tara Haas

- Heraeus Table top centrifuge (up to 100 mL volumes)
- UV Crosslinker
- Hybridization Oven
- Shaking Water Bath
- Bacterial Incubator with shaking platform
- Bioptechs closed Flow Chamber for cultured cells
- FlexCell Fx4000 Cell Stretch Apparatus
- Gel Dryer
- Homogenizer
- MilliQ water purification
- Arcturus PixCell II Laser Capture Microdissection system
- Zeiss M200 Inverted Fluorescence microscope with Quantix57 Digital Cooled CCD imaging system and Metamorph image analysis software.

Mazen Hamadeh

- Microcentrifuge
- Mettler balance
- Equipment to run Western blots
- Electrophoresis apparatus
- PCR machine (Bio-Rad MyCycler)
- Spectrophotometer
- HPLC with -ve conductivity detector

David Hood

- Electroporation
- Real-time PCR system (Applied Biosystems)
- Kodak In Vivo Fx Pro Imaging System
- Cell culture facility
- Ultracentrifuge (Beckman)
- Flow Cytometer (non-sorting, BD)
- Small animal surgical facility
- Mitochondrial respirometer (Strathkelvin)
- Muscle contractile activity equipment
- Fluorescent plate reader
- Upright and inverted fluorescent microscopes
- Cryostat for muscle sectioning
- Rodent treadmills and activity wheels

Christopher Perry

- Muscle biopsy bed
- Biopsy needles

Michael Riddell

- Rodent voluntary activity wheels and forced activity wheels
- Muscle stimulator and Power lab in situ muscle stimulation equipment
- Luminex multiplex
- Cryostat
- Metabolic cart-human
- Metabolic cages
- Tissue freeze dryer
- Paediatric cycle ergometer
- RT-PCR
- Spectrophotometer
- Plate reader
- Imaging station for in situ hybridization

Robert Tsushima

- 2 patch-clamp electrophysiology setups

- 2 isolated perfused heart systems
- Low speed tabletop centrifuge
- Beckman spectrophotometer
- Mitochondria respirometer (Strathkelvin)