

Oral Program

Sunday, July 12, 2015

11:00-13:30 **Registration**

13:30-13:35 **Welcome and introduction- St John's**

13:35-14:20 **Setting the stage:** The integrative biology of exercise: The defense of cellular homeostasis
John Hawley, *Australian Catholic University, Australia* [INV01]

14:20-15:05 **Keynote:** Molecular approaches to exercise and a novel thermogenic pathway in beige fat
Bruce Spiegelman, *Harvard University, USA* [K01]

15:05-18:00 **Session 1: Exercise, stem cells and epigenetics- St. John's**
Session Chair:

15:05-15:35 Amy Wagers, *Harvard University, USA* [INV02]

15:35-16:05 **Refreshments- Grand Ballroom**

16:05-16:20 Cross-talk between skeletal muscle and adipose tissue affects miRNA processing machinery and oxidative capacity after exercise training
S. Madsen*, J. Brandauer, S. Risis, R. Kjøbsted, J. Wojtaszewski, J.R. Zierath, J.T. Treebak, S.G. Vienberg
University of Copenhagen, Denmark [ST01]

16:20-16:50 The epigenetic language of the circadian clock
Paolo Sassone-Corsi, *University of California, Irvine, USA* [INV03]

16:50-17:05 Metabolomics and fluxomics reveal altered fatty acid and branched chain amino acid metabolism in rats bred for high and low intrinsic exercise capacity
N.R. Qi, K.A. Overmyer, S.L. Britton, L.G. Koch, C.F. Burant, C.R. Evans*, *University of Michigan, USA* [ST02]

17:05-17:15 Session summary

17:15-18:00 Q&A with the editors

18:30-19:30 **Walking Tour or Canal Tour**

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08:30-11:55 **Session 2: Adaptive physiology and the exercise response- St. John's**
Session Chair:

08:30-09:00 Skeletal muscle as a secretory organ: Implications for health & disease
Mark Febbraio, *Baker IDI Heart and Diabetes Institute, Australia* [INV04]

09:00-09:30 Mitochondria as a target for exercise mimetics: The good, the bad and the ugly
Deb Muoio, *University of North Carolina, USA* [INV05]

09:30-09:45 Impaired exercise performance in atrial natriuretic peptide knockout mice
M. Coue^{1,2}, M. Pujo-Menjouet^{1,2}, C. Laurens^{1,2}, K. Louche^{1,2}, G. Tavernier^{1,2}, D. Langin^{1,2}, C. Moro^{*1,2}
¹*Institute of Metabolic and Cardiovascular Diseases, France,* ²*Paul Sabatier University, France* [ST03]

09:45- 10:15 **Refreshments- Grand Ballroom**

10:15-10:45 Muscle and alpha-cell derived IL-6 enhances insulin secretion via modulation of incretin hormones
Marc Donath, *University of Basel, USA* [INV06]

10:45-11:15 Artificial selection for low and high endurance exercise capacity in rats
Steve Britton, *University of Michigan, USA,* [INV07]

11:15-11:30 Regulation of skeletal muscle function by the indigenous gut microbiome
S. Lahiri^{*1,2}, A. Pigram³, A.J. Tett³, J. Selkrig⁴, H. Kim⁴, A. Narbad³, S. Pettersson^{1,4}, W. Wahli^{2,4}
¹*Karolinska Institutet, Sweden,* ²*University of Lausanne, Switzerland,* ³*Institute of Food Research, UK,* ⁴*Nanyang Technological University, Singapore* [ST04]

11:30-11:45 Exercise improves muscle mitochondrial respiration, lipid partitioning and insulin sensitivity following gastric bypass surgery
P.M. Coen^{*1}, G. DiStefano², C.J. Tanner³, N.L. Helbling², G.S. Dubis³, F.G.S. Toledo², H. Xie¹, J.A. Houmard³, B.H. Goodpaster¹, ¹*Florida Hospital Translational Research Institute for Metabolism and Diabetes, USA,* ²*University of Pittsburgh, USA,* ³*East Carolina University, USA* [ST05]

11:45-11:55 Session summary

11:55-13:40 **Speed Networking Lunch- Winter Garden**

13:40-15:30 **Poster Session I- Grand Ballroom**

15:30-17:45 **Session 3: Exercise and aging- St. John's**
Session Chair:

15:30-16:00 Exercise regulation white and brown adipose tissue
Laurie Goodyear, *Harvard Medical School, USA* [INV08]

16:00-16:30 Shingo Kajimura, *University of California, USA* [INV09]

16:30-17:00 **Refreshments- Grand Ballroom**

17:00-17:15 Adaptations of energy metabolism in subcutaneous fat from the marathon mouse model DUhTP improve fat mobilization during mild voluntary exercise
J. Brenmoehl^{*1}, D. Ohde¹, C. Walz¹, J. Schulz², A. Tuchscherer¹, M. Langhammer¹, E. Albrecht¹, S. Maak¹, A. Hoeflich¹, ¹*Leibniz Institute for Farm Animal Biology, Germany*, ²*University of Rostock, Germany* [ST06]

17:15-17:45 Plasticity of adaptive thermogenesis in humans
Francesco Celi, *Virginia Commonwealth University, USA* [INV10]

18:30-22:00 **Meet the Speakers Dinner**

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08:30-12:00 **Session 4: Brain, heart, muscle & mitochondria- St. John's**
Session Chair:

08:30-09:00 Exercise, adult hippocampal neurogenesis and spatial memory: From muscle to brain
Henriette van Praag, *National Institutes of Health, USA* [INV11]

09:00-09:30 Exosomes as mediators of the systemic adaptations to exercise and vehicles for mRNA based gene therapy
Mark Tarnopolsky, *McMaster University, Canada* [INV12]

09:30-09:45 Exercise-induced hippocampus neurogenesis and antidepressant effects are mediated by adiponectin
S.Y. Yau^{1,3}, A. Li^{1,2}, A. Xu¹, K-F. So^{*1,2}, ¹*The University of Hong Kong, Hong Kong*, ²*Jinan University, China*, ³*University of Victoria, Canada* [ST07]

09:45-10:00 Regulation of muscle metabolism by a novel hormone encoded in the mitochondrial genome
C.D. Lee^{*1}, P. Cohen¹, A.L. Hevener¹, ¹*University of Southern California, USA*, ²*University of California, USA* [ST08]

10:00-10:30 **Refreshments- Grand Ballroom**

10:30-11:00 Exercise impact on mitochondrial efficiency and insulin sensitivity
K. Sreekumaran Nair, *Mayo Clinic, USA* [INV13]

11:00-11:30 Mining the blood for novel cardiometabolic hormones
Rob Gerszten, *Massachusetts General Hospital, USA* [INV14]

11:30-11:45 Exercise repairs high-fat diet induced adipose tissue vascular dysfunction
S.M. Craige^{*}, S-Y. Min, O. Gealekman, J.F. Keaney, S. Corvera, *University of Massachusetts Medical School, USA* [ST09]

11:45-12:00 Session summary

12:00-13:00 **Lunch- Winter Garden**

13:00-14:30 **Poster Session II- Grand Ballroom**

14:30-18:15 **Session 5: Exercise in a pill?- St. John's**
Session Chair:

14:30-15:00 Exercise-regulated phosphoproteome reveals new AMPK substrates and signaling pathways
David James, *University of Sydney, Australia* [INV15]

15:00-15:30 AMPK regulation of glucose and fatty acid metabolism
Greg Steinberg, *McMaster University, Canada* [INV16]

15:30-15:45 EXERsomes induces systemic mitochondrial rejuvenation and reverses diet-induced obesity
A. Safdar^{*}, M. Akhtar, A. Saleem, A. Nazli, M. Goodwin, R. Suri, B. McPherrin, M. Haikalis, M.A. Tarnopolsky, *McMaster University, Canada* [ST10]

15:45-16:15 **Refreshments- Grand Ballroom**

- 16:15-16:45 Boosting mitochondrial function by exercise and non-exercise means as a target for the treatment of type 2 diabetes: Insight from human intervention studies
Patrick Schrauwen, *Maastricht University, Netherlands* [INV17]
- 16:45-17:30 **Keynote:** Exercise, metabolism and insulin sensitivity
Erik Richter, *University of Copenhagen, Denmark* [K02]
- 17:30-18:15 Exercise biology: Where will the future take us?
Juleen Zierath, *Karolinska Institutet, Sweden* [INV18]
- 18:15-19:15 **Closing drinks reception- Grand Ballroom**