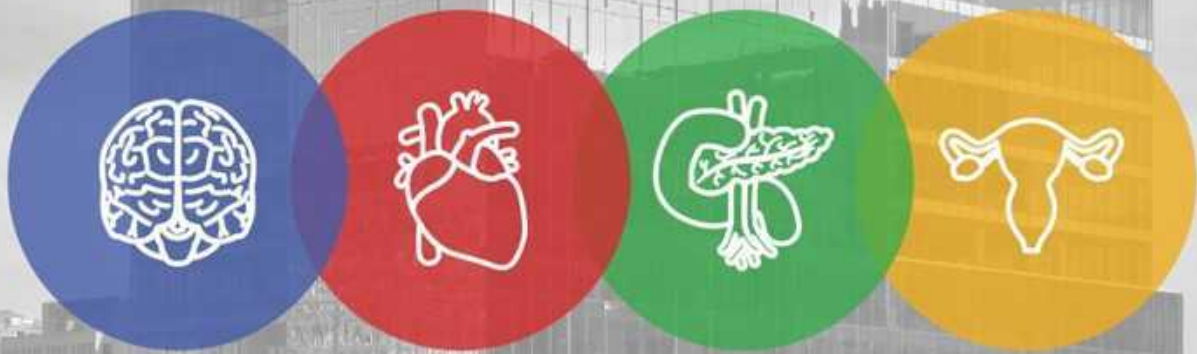


MAY 4TH 2018 | UNIVERSITY OF TORONTO

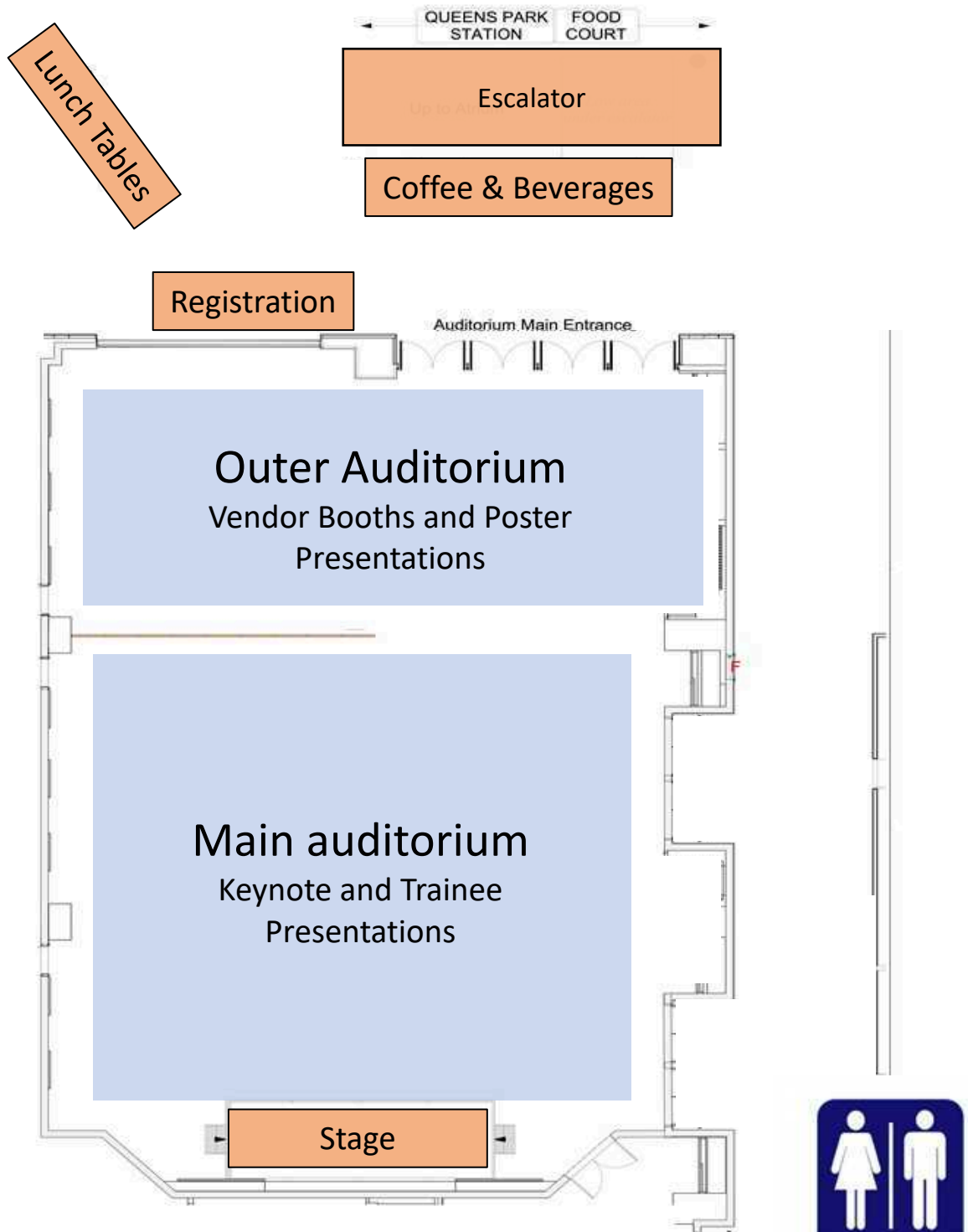


FRONTIERS IN PHYSIOLOGY

38TH ANNUAL

CONFERENCE MAP

MaRS Discovery District – Lower Level



CONFERENCE PROGRAM

FRONTIERS IN PHYSIOLOGY

FRIDAY MAY 4TH, 2018
MaRS Discovery District

Time		Location
8:00 – 8:50 AM	Registration & Light Breakfast	Lower concourse
8:50– 9:00 AM	Opening Remarks	Auditorium
9:00 – 10:05 AM	Oral Presentation Session 1	Auditorium
10:05 – 10:10 AM	Refreshments Break	Lower concourse
10:10 – 11:00 AM	Posters Session 1	Auditorium
11:00 – 11:10 AM	Dr. Nemer Welcome	Auditorium
11:10 AM – 12:10 PM	<i>A Journey From Discovery Science To Science Policy</i> Keynote Lecture by Dr. Mona Nemer	Auditorium
12:10 – 12:25 PM	Departmental Photo	Lobby
12:25 – 1:00 PM	Lunch & Vendor Fair	Lower concourse
1:00 – 2:00 PM	Poster Session 2	Auditorium
2:00 – 3:15 PM	Oral Presentation Session 2	Auditorium
3:15 – 3:25 PM	Refreshments Break	Lower concourse
3:25 – 4:20 PM	Oral Presentation Session 3	Auditorium
4:20– 4:30 PM	Closing Remarks	Lower concourse
4:30 – 6:00 PM	Reception & Awards	MSB Stone Lobby

For more information and a complete list of abstracts, please visit the official FIP 2018 website: [https:// uoftfip.github.io/](https://uoftfip.github.io/) or google UofT FIP 2018

¹ Oral Presentation Sessions 1 and 3 will feature 4 presentations while session 2 will feature 5 presentations.

² Vendor booths will be on display 10AM-3:30PM

TRANSLATIONAL BIOLOGY AND ENGINEERING PROGRAM

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Principle Investigators

Michelle Bendeck, BSC, PHD
Steffen-Sebastian Bolz, MD, PHD
Hai-Ling Margaret Cheng, PHD, PENG
Rodrigo Fernandez-Gonzalez, PHD
Anthony Gramolini, PHD
Scott Heximer, PHD
Paul Senterre, FAAAS, FAIMBE, FBSE, PENG
Craig Simmons (Director), PHD, FCSME, PENG
+ 120 researchers and trainees

Research Foci

1 DISCOVERY

Cardiovascular development, disease initiation and repair

2 DIAGNOSIS

Molecular signatures, biomarkers or early detection & management of cardiovascular disease

3 THERAPY

Regeneration of cardiovascular tissues using molecules, cells and materials



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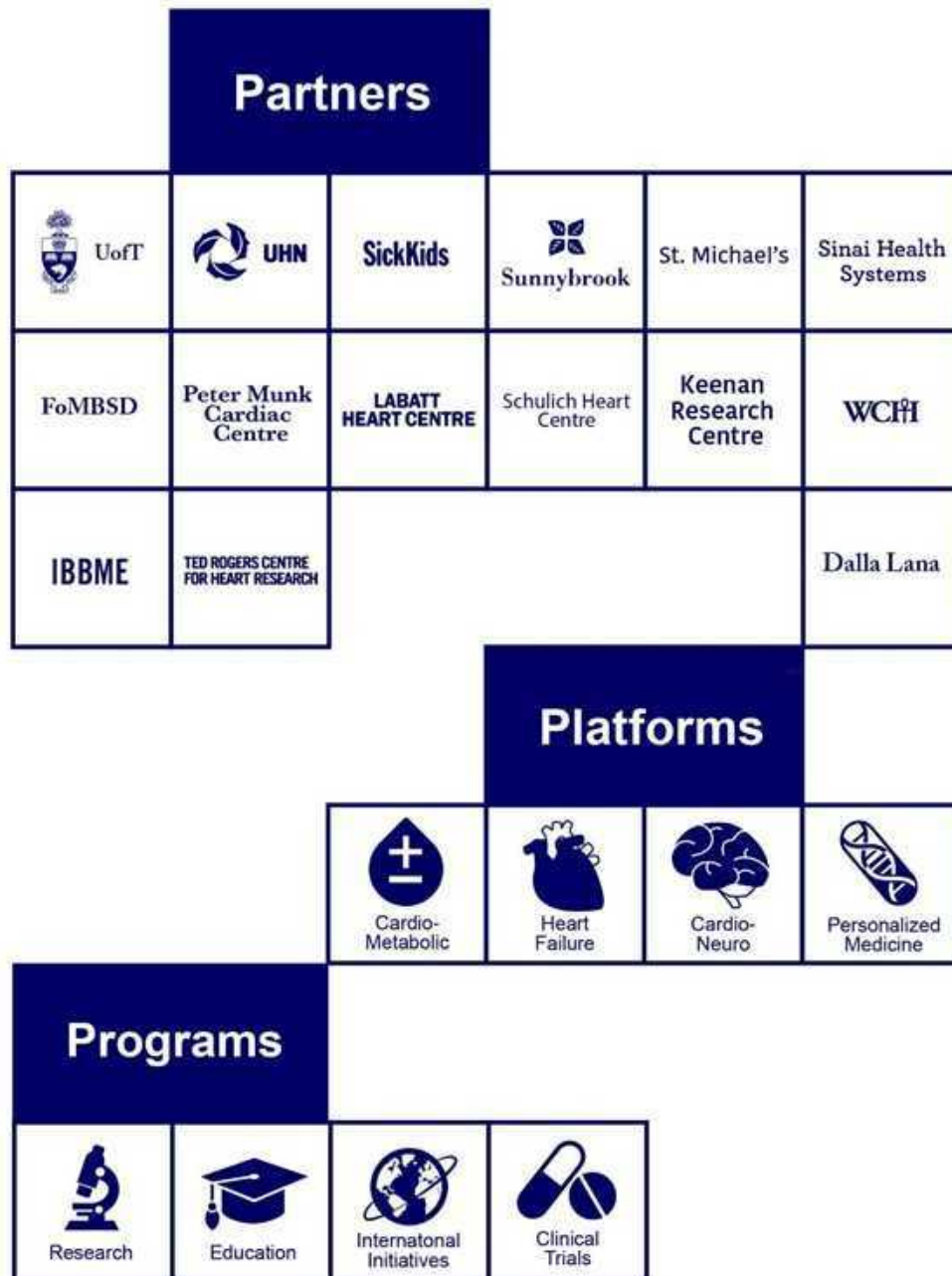
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OUR VISION

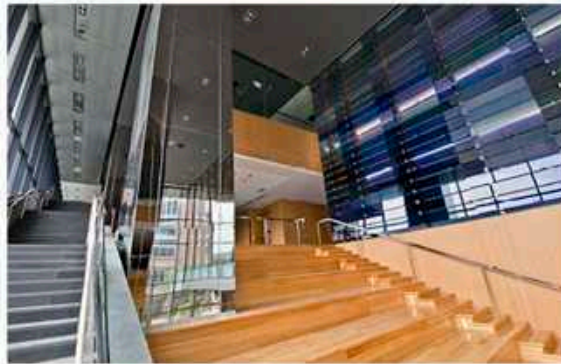
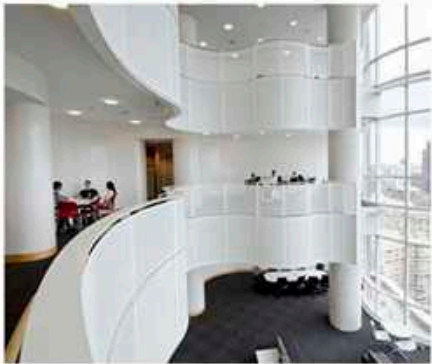
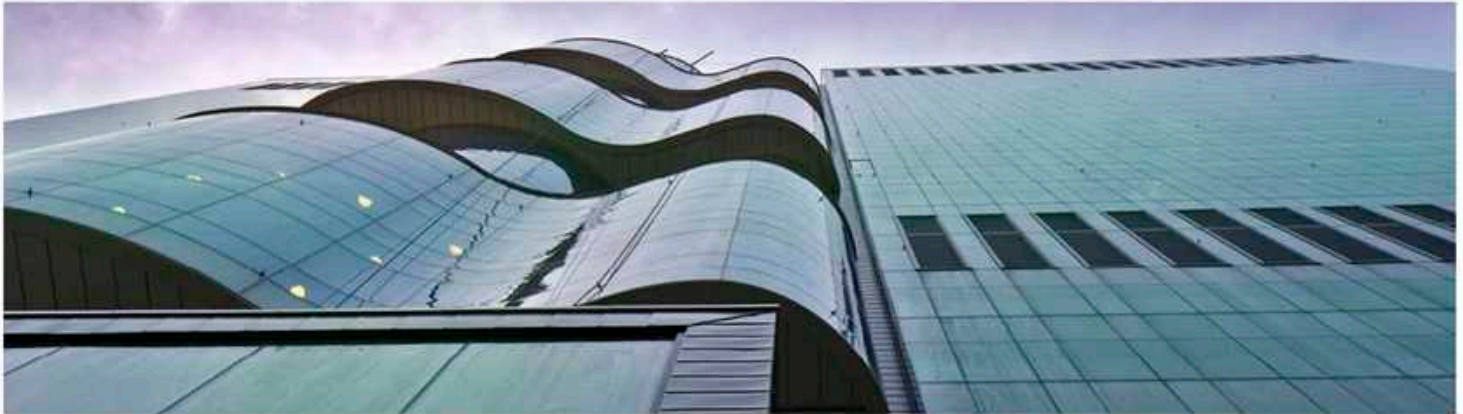
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** May vary during startup; 2.5 min for system calibration is the longest activity

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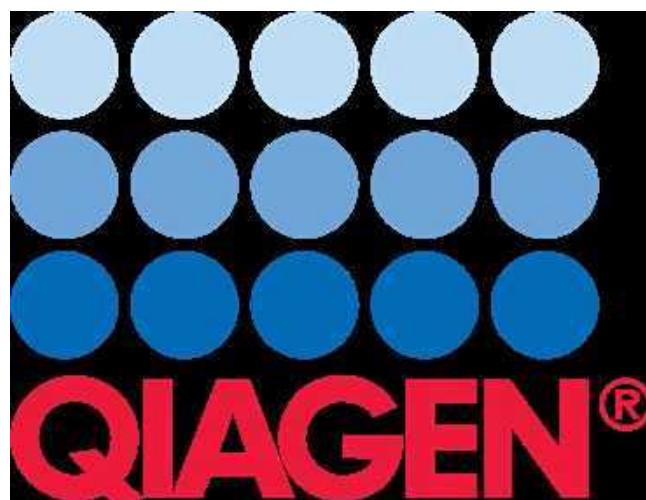
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DR. MONA NEMER

KEYNOTE SPEAKER



Dr. Mona Nemer was only recently appointed as Canada's Chief Science Advisor, but she has been advocating for free and equal access to science since she was a teenager.

In 1970's Lebanon, Mona Nemer was among the first generation of female students to enroll in her all-girls high school's inaugural science curriculum. To do that, she had to fight, along with her fellow students, with the school's administration to open a science stream. At the time, the school didn't think girls would be interested in the sciences or in pursuing a scientific career. Dr. Nemer proved them wrong.

After high school, Dr. Nemer decided to continue her education at the American University of Beirut, however her time there was cut short due to the civil war that broke out in 1975. Dedicated to completing her university education, Dr. Nemer immigrated to the United States and graduated from Wichita State University in Kansas. It was then that Dr. Nemer fell in love with the city of Montreal and went on to complete her doctorate degree in Organic Chemistry at McGill University. She stayed at McGill to complete a post-doctoral fellowship and pursued a second post-doc at Columbia University in molecular biology.

Dr. Nemer began her professional career as an educator at the University of Montreal as an Assistant Professor in Pharmacology. In the meantime, she opened a lab at Clinical Research Institute. Working at the lab, Dr. Nemer isolated a gene responsible for producing the ANP hormone which assists the heart in controlling blood pressure, thus proving that the heart is an endocrine organ. Her work has contributed to developing diagnostic tests for heart failure and cardiac stress. More recently her lab has discovered the GATA4 gene, which regulates heart development, and is currently involved in stem cell research.

Dr. Nemer's appointment as Director of Academic Affairs and later as the Executive Director of Planning and Development at Montreal Clinical Research Institute were only the beginning of filling high-profile roles. In 2006, Dr. Nemer became the Vice-President Research at the University of Ottawa – an appointment she held for over a decade. As VP Research, Dr. Nemer spearheaded the development of the Advanced Research Complex, a collaborative research facility for photonics research and developing faster data transfer. Additionally, Dr. Nemer encouraged student participation in research through various initiatives and championed more female students to pursue careers in STEM fields.

As Canada's Chief Science Advisor, Dr. Nemer will be filling a role that has been vacant for almost 10 years. Knowledge and the dissemination of true and accurate information is more important than ever, and Dr. Nemer will be a champion of science and ensuring that government decisions are informed and evidence-based. Dr. Nemer's job duties include advising Prime Minister Justin Trudeau and Science Minister Kirsty Duncan, as well as the entire cabinet, on science policy and any science issues that arise.

Dr. Nemer has published over 200 scientific articles and has trained over 100 students. She is a Member of the Order of Canada and has earned honorary doctorates from France and Finland. The Department of Physiology and the Graduate Association of Students in Physiology at the University of Toronto are honored to welcome Dr. Mona Nemer as the keynote lecturer for the 38th Annual Frontiers in Physiology Symposium.

MESSAGE FROM FIP CHAIRS

On behalf of Graduate Association for Students in Physiology (GASP) and the Frontiers in Physiology Planning Committee (FIP Comm), we are very excited to present the 38th annual Frontiers in Physiology (FIP) Research Symposium. Today, trainees from all four Physiology platforms come together to showcase their cutting-edge research and celebrate the diverse research achievements of the Department of Physiology. We hope that this research symposium increases interdepartmental awareness of the innovative work being done in our various platforms and that all attendees benefit from the exchange of scientific ideas as well as the development of new collaborations.

This year, we are honoured to welcome Dr. Mona Nemer as the FIP keynote lecturer. Dr. Nemer is Canada's Chief Science Advisor, former Professor and Vice-President of Research at the University of Ottawa and past Director of the Molecular Genetics and Cardiac Regeneration Laboratory. She is world renowned for her work in the molecular and genetic mechanisms of heart development and function, heart failure, and congenital heart disease. In her new role, Dr. Nemer is heavily involved in public dissemination of research, the development of science policy and acts in an advisory role within the federal government. We are very excited to learn about her scientific work, as well as her involvement in scientific policy. On behalf of the Department of Physiology, we would like to take this opportunity to thank Dr. Nemer for accepting our invitation and welcome her to the University of Toronto.

In addition to our esteemed keynote speaker, the success of FIP 2018 is dependent on the combined efforts and contributions of several individuals and groups behind the scenes. We would like to extend our gratitude to everyone involved in the planning, organizing and running of FIP. We are especially grateful to everyone on FIP Comm for their hard work and dedication in planning FIP as well as to everyone on GASP for their support and encouragement. Special thanks to Drs. Anthony Gramolini and Scott Heximer for their help and guidance in planning FIP and securing our new venue at MaRS Discovery District. We are also thankful for the support of the Department of Physiology, our Chair, Dr. Graham Collingridge, the Graduate Coordinators, Drs. Zhong-Ping Feng and Douglas Tweed, and administrative staff Paula Smellie, Jenny Katsoulakos, Rosalie Pang and Colleen Shea. Thank you to all of those involved in judging, from the trainees who helped with judging abstracts, to faculty and postdoctoral fellows who generously volunteered their time to judge oral and poster presentations. We appreciate all of the trainees involved in FIP, from attendees to presenters, thank you for sharing your work and contributing to the success of FIP. Last but certainly not least, thank you to all of our institutional and commercial sponsors for their support. Without such support of research and training, FIP 2018 would not be possible.

Sincerely,



Vivian Szeto & Scott Frendo-Cumbo,
Vice-Presidents, Graduate Students Association for Students in Physiology
Co-Chairs, Frontiers in Physiology 2018

MESSAGE FROM THE CHAIR

On behalf of the Department of Physiology, it gives me great pleasure to welcome everyone to the annual “**Frontiers in Physiology Research Day**”. This Symposium, which celebrates the research achievements of our trainees, has been organized by our graduate students for the past 38 years. Today will showcase the exciting and innovative work conducted by our trainees, who represent the future of Physiology in Canada, and around the world. We are extremely proud of their accomplishments and dedication to science and research, and look forward to an outstanding day of presentations.

It is an immense pleasure to welcome **Dr. Mona Nemer**, Canada’s Chief Science Advisor, to the Department of Physiology. Since her appointment as Chief Science Advisory in September 2017, Dr. Nemer has been working tirelessly promoting science and its real benefits for Canadians. Before becoming Canada’s Chief Science Advisor, Dr. Nemer was Professor and Vice-President, Research, at the University of Ottawa and Director of the Molecular Genetics and Cardiac Regeneration Laboratory. Her research focused on the heart, particularly on the mechanisms of heart failure and congenital heart diseases. She is the author of over 200 highly cited publications that have appeared in prestigious scientific journals. Her work has contributed to the development of diagnostic tests for heart failure and the genetics of cardiac birth defects. She has trained over 100 students from various countries.

Special thanks and acknowledgement is due today to **Ms. Vivian Szeto and Mr. Scott Frendo-Cumbo**, FIP co-Chairs and Vice-Presidents of the Graduate Association of Students in Physiology (GASP). Vivian, Scott and their team have done a brilliant job in spearheading the process to ensure the success of this day. A special thank you also to **Ms. Melanie Markovic**, President of GASP, and to everyone who helped make this year’s research day possible.

We hope you enjoy the day. Take full advantage of this opportunity for cross-platform interaction and collaboration amongst the scientific community within our department.

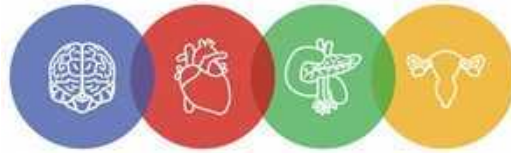
Thank you for your support and enthusiasm!

Best regards,



Graham L. Collingridge, FRS, FMedSci, FSB, FBPhS
Ernest B. and Leonard B. Smith Chair, Department of Physiology
Faculty of Medicine
University of Toronto

ORAL PRESENTATIONS



Session 1

- 1.1. Nanoscale imaging of essential sarcoplasmic reticulum proteins in pressure overload cardiomyocytes**
Sina Hadipour-Lakmehsari, Amine Driouchi, Shin-Haw Lee, Uros Kuzmanov, Neal I. Callaghan, Craig A. Simmons, Chris M. Yip, Anthony O. Gramolini
- 1.2. SIRT3 – Sex Specific Role in Behaviour?**
Elena Sidorova, Richard Logan, James Eubanks
- 1.3. Modeling pancreatic development using hESC and patient specific iPSC**
Emily McGaugh, Simon Kelley, April Craft, Maria Cristina Nostro
- 1.4. Developing a Novel Screening Tool for Preterm Birth: Detecting Changes of the Extracellular Matrix in the Murine Cervix by Biochemical Analyses & Magnetic Resonance Imaging (MRI) During Term and Preterm Labor**
Antara Chatterjee, Kartik Jhaveri, John Sled, Wendy Whittle, Stephen Lye, Oksana Shynlova

Session 2

- 2.1. Modelling the impact of new learning and neurogenesis on memory stability in the hippocampus.**
Lina M. Tran, Sheena A. Josselyn, Blake A. Richards, Paul W. Frankland
- 2.2. The cystic fibrosis transmembrane conductance regulator (CFTR) as a potential link between the molecular clock and myogenic responsiveness in cerebral arteries**
Chloe Ng, Jeffrey T. Kroetsch, Darcy Lidington, Steffen-Sebastian Bolz
- 2.3. Acute Exposure to Fish Oil Supplements Protect High Fat Diet Impaired Pancreatic Beta Cell Function**
Dana Al Rijjal, Ying Liu, Michael Wheeler
- 2.4. Single-Cell Transcriptomic Assessment of Stem Cells Re-isolated from Murine Embryos to Determine the Influence of Microenvironments on Stem Cell Developmental Trajectories**
Ursula Nosi, Fredrik Lanner, Brian Cox
- 2.5. THE role of Neuroligin 2 and inhibitory transmission in the function of thalamic circuitry epilepsy**
Feng Cao, Jia Liu, Zhengping Jia

Session 3

3.1. REEP5 depletion causes sarcoplasmic reticulum vacuolization and cardiac functional defects

Shin-Haw Lee, Sina Hadipour-Lakmehsari, Natalie Gibb, Allen C.T. Teng, Tetsuaki Miyake, Jake Cosme, Jessica C. Yu, Peter Liu, Filio Billia, Rodrigo Fernandez-Gonzalez, Igor Stajlar, Parveen Sharma, Thomas Kislinger, Ian C. Scott, Anthony O. Gramolini

3.2. Treatment of Glucagon-like Peptide-2 and Epidermal Growth Factor Simultaneously Increases Small Intestine Growth Synergistically in Mice

Zivit Fesler, Patricia L Brubaker

3.3. Using pluripotent stem cell-derived kidney organoids to model kidney injury

Theresa Chow, Jennifer Whiteley, Ian Rogers

3.4. How an asymmetric L1 motor circuit generates symmetrical motor output

Yangning Lu, Asuka Guan, Daniel Witvliet, Ben Mulcahy, Jin Meng, Jun Meng, Quan Wen, Aravinthan Samuel, Mei Zhen

B.R.A.I.N RESEARCH GROUP

POSTER PRESENTATIONS



B1. The role of endogenous cellular prion protein in brain synaptic function

Aeen Ebrahim Amini, John Georgiou, Changiz Taghibiglou, Graham L. Collingridge

B2. Measurement and modulation of the excitability of a brainstem motoneuron pool in-vivo

Jasmin A. Aggarwal, Hattie Liu, Gaspard Montandon, Richard L. Horner

B3. Neural activity of the subthalamic nucleus in a preference-based decision-making task.

Tameem M. Alozzi, Luis F. Botero Posada, Adriana L. Lopez Rios, William D. Hutchison

B4. The central role of the descending interneuron AVA in the C. elegans motor circuit

Jun Meng, Wesley Hung, Sonia El Mouridi, Marine Mercier, Thomas Boulin, Shangbang Gao, Mei Zhen

B5. It's about time: PKA-dependent LTP integrates the timing of stimuli via LIMK1

Sammy Cai, Graham L. Collingridge, Zhengping Jia

B6. Genome-wide association study for variants associated with reading abilities

Kaitlyn Price, Karen G Wigg, Virginia Misener, Kirsten Blokland, Elizabeth Kerr, Sharon Guger, Maureen W Lovett, Cathy L Barr

B7. The role of the nicotinic $\alpha 5$ subunit in key midbrain structures implicated in nicotine response

Sanghavy Sivakumaran, Daniel W. Sparks, Evelyn K. Lambe

B8. Synaptic plasticity in Alzheimer's disease

Dalya Cohen, Zheng-Ping Jia, Graham Collingridge

B9. The Effects of Viral Mimics on Pro-Inflammatory Response Genes Expression in Astrocytes

Andrada Naghi, Güinever Eustáquio Do Império, Stephen G Matthews

B10. Investigating the function of the complement cascade in hippocampal synaptic plasticity

Eric W Salter, Sun-Lim Choi, John Georgiou, Graham L Collingridge

B11. The adult mammalian digit tip blastema consists of pre-existing mesenchymal cells that are recruited for regeneration

Neemat Mahmud, Mekayla A. Storer, Scott A. Yuzwa, Michael J. Borrett, Dina Karamboulas, David R. Kaplan, Freda D. Miller

B12. Neuropathic pain caused by Cl⁻ dysregulation in both sexes; overcoming degenerate regulation by targeting KCC2

Josiane C.S. Mapplebeck, Louis-Etienne Lorenzo, Kwan Lee, Yves De Koninck, Steve A. Prescott, Michael W. Salter

B13. Investigating the role of COG5 and SRD5A3 gene mutations in inducing ER stress and causing retinal degeneration

Sami Tabbarah, Jason Charish, Shuning Li, Yui Yin, Erika Tavares, Ajoy Vincent, Elise Heon, Philippe Monnier

B14. Novel Approach to developing Undergraduate Research Skills in First-year

Riya George, Michelle French

B15. Pre-existing inflammation exacerbates cognitive dysfunction after anesthesia in mice

Shahin Khodaei, Yu-Feng Xie, Dian-Shi Wang, Beverley Orser

B16. Prefrontal responses to optogenetic release of endogenous acetylcholine depend on expression of alpha5 nicotinic receptors

Sridevi Venkatesan, Daniel W. Sparks, Evelyn K. Lambe

B17. Multiplexed Coding Using Differentially Synchronized Spikes

Dhekra Al-Basha, Milad Lankarany, Stephanie Ratté, Steven A. Prescott

B18. Involvement of synaptic vesicle and receptor trafficking system in multiple sclerosis

Anlong Jiang, Fang Liu

B19. Deciphering the contributions of Oriens-Lacunosum/Moleculaire (OLM) cells during Local Field Potential (LFP) theta rhythms in CA1 hippocampus

Alexandra Chatzikalymniou, Frances Skinner

B20. Anesthetic activation of GABAA receptors in astrocytes causes persistent GABAA receptor hyperactivity in neurons in mice

Arsène Pinguelo, Sean C. Haffey, Irene Lecker, Yu-Feng Xie, Dian-Shi Wang, Beverley A. Orser

B21. Immunogenic analysis of a CaV2.1 calcium channel C-terminal synaptic vesicle binding site

H. K.-H. MAH, C. SNIDAL, R. H.-C. CHEN, Q. LI, E. F. STANLEY

B22. Simulating In Vivo-Like States for Hippocampal CA1 Interneuron Specific 3 Cells

Alexandre Guet-McCreight, Lisa Topolnik, Frances K. Skinner

B23. Zebrafish Reverse Translation Models for Major Depressive Disorders (MDD)

Vijay Narasimhan, Jane Foster, Sidney Kennedy, Xiao-Yan Wen

B24. The time course of behavioural impairment in mice following mild traumatic brain injury

Miranda Mellerup, Lisa Gazdzinski, John Sled, Anne Wheeler

B25. The Effect of Traumatic Brain Injury on Superficial White Matter in Youth: Towards a Personalized Injury Profile.

Sonja Stojanovski, Arash Nazeri, Christian Lepage, Aristotle Voineskos, Anne L Wheeler

CARDIOVASCULAR AND RESPIRATORY RESEARCH GROUP

POSTER PRESENTATIONS



C1. Global proteomic and post-translational modification analysis of human ischemic cardiomyopathy

Da Hye Kim, Uros Kuzmanov, Hadipour-Lakmehsari, Gavin Y. Oudit, Anthony O. Gramolini

C2. Alpha 11 integrin a mediator of myofibroblastic transformation and fibrosis formation in the failing heart.

Patrick Meagher BSc (Honours), Robert Civitarese MSc, Jean-Francois Desjardin MSc, Golam Kabir Msc MD, Kim Connelly MBBS PhD

C3. The role of fibroblasts in cardiac fibrosis

Haisam Shah, Shafkat Choudhury, Hangjun Zhang, Meghan McFadden, Yuqing Zhou, Anthony Gramolini, Scott Heximer

C4. Degradation of Phospholamban mutants in cardiac muscle cells

Xavier Lee, Allen C.T. Teng, Anthony Gramolini

C5. The requirement of B-cells for blood pressure homeostasis

Luke S Dingwell, Eric A Shikatani, Rickvinder Besla, Andrew S Levy, Danny Dinh, Abdul Momen, Hangjun Zhang, Talat Afroze, Michelle B Chen, Nicholas Maksimowski, Craig A Simmons, Filio Billia, Jennifer L Gommerman, Rohan John, Scott Heximer, James Scholey, Steffen-Sebastian Bolz, Clinton Robbins, Mansoor Husain

C6. Determining the Role of Gαi3 in Ischemia-Reperfusion Injury

Dylan Langburt 1, Scott Heximer 1

C7. Role of somitic mesoderm-derived aortic Sca-1+ progenitor cells in vascular disease

Sarah K. Steinbach, Tao Wang, Martha H. Carruthers, Angela Li, Rickvinder Besla, Adam P. Johnston, Clinton S. Robbins, Mansoor Husain

C8. Cardioprotective benefits of combined treatment with glucagon-like peptide-1 receptor agonist and sodium glucose transporter 2 inhibitor in mice

Dorriin Zarrin Khat, Abdul Momen, Muhammad A. Siraj, Sina Hadipour-Lakmehsari, Mark J. Chandy, Mansoor Husain

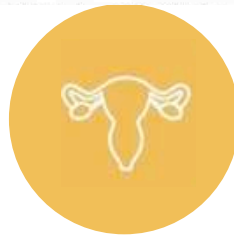
C9. Preliminary investigation of the utility of MRI for measuring the hematocrit in fetal anemia

Jiawei Xu, An Qi Duan, Johannes Keunen, Sharon Portnoy, John Sled, John Kingdom, Christopher K. Macgowan, Mike Seed

C10. Preclinical development of a small molecule identified from a zebrafish screen as a novel candidate drug for sepsis targeting vascular leakage

Anju M Philip, Patricia Gali, Yuexin Shan, Claudia dosSantos, Xiao-Yan Wen

REPRODUCTION AND DEVELOPMENT RESEARCH GROUP POSTER PRESENTATIONS



R1. Placental subtypes of small-for-gestational-age pregnancies

Katherine Leavey, Isaac Gibbs, Samantha Benton, David Grynspan, Shannon Bainbridge, Brian Cox

R2. Gene regulation of phoenixin by bisphenol A, palmitate and oleate in hypothalamic neurons

Emma McIlwraith, Neruja Loganathan, Denise D. Belsham

R3. Exploring the impact of coQ and Pdss2 deficiency on preimplantation embryo development and maternal-zygotic transition

Kyunga Kim, Andrea Jurisicova

R4. Meta analysis of microarray data of BMP4 treated human embryonic stem cells shows poor evidence for trophoblast cell types.

Frances Wong, Brian Cox

R5. Acid sphingomyelinase deficiency results in abnormal placental development and a growth restricted fetus that cannot be rescued in a WT uterine environment

Isidora Rovic, Han Li, Katherine Szlag, Andrea Jurisicova

R6. The role of BRCA1 on infertility and mitochondrial function

Rosanne McQuaid, Kyunga Kim, Elina Kadriu, Nicole Zhang, Taline Naranian, Razqallah Hakem, Andrea Jurisicova

R7. Characterizing Endometrial Receptivity of Primary Human Endometrial Cells In Vitro from Women with Implantation Failure

Tina Tu-Thu Ngoc Nguyen, Stewart J. Russell, Clifford Librach

R8. Progesterone Receptor Isoforms PRA and PRB Differentially Regulate Connexin 43 Expression and Intracellular Distribution in Breast Cancer Cells

Justin Rondeau, Lubna Nadeem, Stephen Lye

R9. Differential effects of decidual cytokines responsible for the infiltration of maternal peripheral leukocytes during human labour

Tali Farine, Oksana Shynlova, Stephen Lye

R10. Antenatal synthetic glucocorticoid exposure modifies gene expression at the post-natal blood-testes barrier

Margaret E. Eng, Alice Kostaki, Stephen G. Matthews

R11. Optimizing pancreatic decellularization for examining the role of the extracellular matrix in islet maintenance and maturation in vitro

Amanda Fantin, Jennifer Whiteley, Ian Rogers

R12. Generating and characterizing induced pluripotent stem cells (iPSCs) from umbilical cord mesenchymal stromal cells (UCT-MSCs)

Aisha Mohamed, Theresa Chow, Tonya Bongolan, Amanda Fantin, Jennifer Whiteley, Ian Rogers

R13. Differential DNA Methylation Signatures Following Prenatal Exposure to Single-course Antenatal Glucocorticoids in Humans and Guinea Pigs

Bona Kim, Alisa Kostaki, Stephen Matthews

ENDOCRINE AND DIABETES RESEARCH GROUP

POSTER PRESENTATIONS



E1. Rescuing the bisphenol A mediated dysregulation of the pro-opiomelanocortin gene with anti-inflammatory compounds in hypothalamic neurons

Ashkan Salehi, Denise D. Belsham

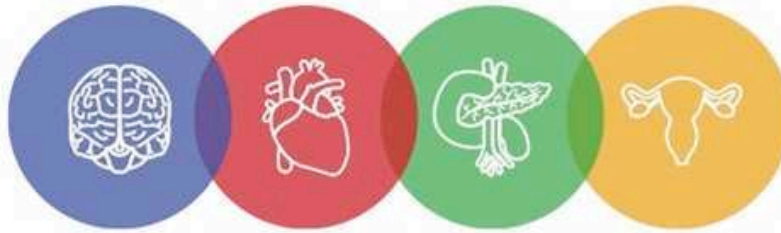
E2. Vulnerability of insulin signal transduction during insulin resistance and its consequences on GLUT4 translocation

Victoria Tokarz, Javier Jaldin-Fincati, Zhi Liu, Amira Klip

E3. Bisphenol A increases AgRP mRNA levels in hypothalamic neurons through MAP kinases, JNK and ERK

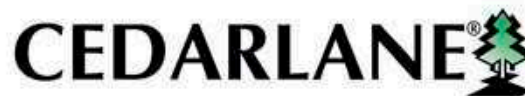
Neruja Loganathan, Emma McIlwraith, Denise Belsham

- E4. BPA, palmitate and nitric oxide induce spexin, GalR2 and GalR3 mRNA expression in hypothalamic neurons**
Andy Tran, Neruja Loganathan, Emma Mcilwraith, Denise D. Belsham
- E5. The Role of Secretagoin in Circadian GLP-1 Secretion**
Andrew Biancolin, Emilia Mitova, Patricia Brubaker
- E6. Hypothalamic BMAL1-knockout cell lines for the study of circadian feeding regulation**
Matthew N. Clemenzi, Erika K. Tse, Jennifer A. Chalmers, Neruja Loganathan, Ashkan Salehi, Alexandre Martchenko, Patricia L. Brubaker, Denise D. Belsham
- E7. Lipid absorption and its connection to the intestinal epithelial insulin-like growth factor-1 receptor**
Melanie A Markovic, Patricia L Brubaker
- E8. Assessing the regulatory role of Munc18-1 in glucagon-like peptide-1 secretion from the intestinal L cell**
Jhenielle Campbell, Patricia Brubaker
- E9. The effect of resveratrol on reducing neointimal growth after femoral artery injury is abolished in AMPK α 2 knock-out mice**
Liwei Zhou, June Guo, Hangjun Zhang, Scott Heximer, Adria Giacca
- E10. Circadian secretion of glucagon-like peptide-1 is essential to maintaining diurnal metabolic homeostasis**
Alexandre Martchenko, Matthew Clemenzi, Patrick, Patricia L. Brubaker
- E11. Autophagy Related Protein 16L1 (Atg16L1) Depletion Induces Insulin Resistance Through Decreased IRS Expression**
Scott Frendo-Cumbo, Javier Jaldin-Finca, John H Brumell, Amira Klip
- E12. NOD1 mediates insulin resistance in response to circulating free fatty acids**
Sydney Rivers, Lucy Shu Nga Yeung, Yusaku Mori, Kenny Chan, Dana Philpott, Amira Klip, and Adria Giacca
- E13. Elucidating pancreatic lineage commitment using hESC directed differentiation**
Frankie Poon, Roman Korytnikov, Cristina Nostro
- E14. GABA: Potential Agent of β -Cell Proliferation**
Hima Gohil, Ashley Untereiner, Alpana Bhattacharjee, Feihan Dai, Ying Liu, and Michael Wheeler
- E15. Lactobacillus gasseri in the upper small intestine impacts an ACSL3-dependent fatty acid sensing pathway that regulates whole-body glucose homeostasis**
Paige V. Bauer, Frank A. Duca, T. M. Zaved Waise, Helen J. Dranse, Brittany A. Rasmussen, Akshita Puri, Mozhgan Rasti, Catherine A. O'Brien, Tony K. T. Lam
- E16. γ -Aminobutyric acid (GABA) promotes beta-cell proliferation in mouse and human islets**
Ashley Untereiner, Shaaban Abdo, Alpana Bhattacharjee, Himaben Gohil, Farzaneh Pourasgari, Neke Ibeh, Mi Lai, Anthony Wong, Nicholas Khuu, Ying Liu, Neil Winegarden, Carl Virtanen, Feihan F. Dai, Michael B. Wheeler



FRONTIERS IN PHYSIOLOGY

Special thanks to:



Vendors:



