

MARCH 30, 2015

7:00 – 8:00 REGISTRATION (BALLROOM 2367 FOYER)

8:00 – 8:10 OPENING REMARKS (BALLROOM 2367)

8:10 – 9:50 *INSERTABLE, IMPLANTABLE AND WEARABLE MICRO-OPTICAL DEVICES FOR DETECTION OF EARLY CANCER*

Christopher H. Contag, Stanford University School of Medicine

RADIO(GENO)MICS

Robert Gillies, Moffitt Cancer Center

9:50 – 10:35 POSTER VIEWING & BREAK (BALLROOM 5)

10:35 - 12:05 SESSION 1 (BALLROOM 2367)

PERFUSION, METABOLIC AND HYPOXIA IMAGING

Chair: Frank Prato

Lawson Health Research Institute

10:35 Quantitative functional and molecular imaging in cardiac and cancer studies

Ting Lee, Robarts Research Institute

10:50 Simultaneous Measurement of Perfusion and Hypoxia in Pancreatic Cancers

Ivan Yeung, Princess Margaret Cancer Centre

11:05 Evaluation of CT Perfusion as an Imaging Biomarker of Tumor Hypoxia

Qi Qi, Western University

11:20 Comparison of small (~800 Da) and large (65,000 Da) contrast agent CT perfusion to quantify blood-tumor-barrier permeability following focused ultrasound and microbubble treatment in a C6 rat glioma model.

Hassaan Ahmed, Robarts Research Institute

11:35 Visualizing Ipsilateral Activation in patients with Cervical Myelopathy using Functional Magnetic Resonance Imaging

Kayla Ryan, Robarts Research Institute

11:50 Non-invasive quantification of coronary (fractional) flow reserve to direct optimal therapies

Rob deKemp, University of Ottawa Heart Institute

10:35 - 12:05 SESSION 2 (BALLROOM 4)

IMAGE-GUIDED INTERVENTION

Chair: Terry Peters

Western University

10:35 Towards integrated image guidance for endoscopic sinus and skull-base surgery

David Adair, University of Calgary

10:50 Visual feedback mounted on surgical tool

Kaci Carter, Queen's University

11:05 Open source software for intracranial blood clot measurement

Maggie Hess, Queen's University

11:20 Respiratory motion model based correction for MRI-guided intracardiac electrophysiology procedures

Robert Xu, University of Toronto

11:35 Positron Detector for Intra-Operative Surgical Margin Evaluation in Breast Cancer

John Dillon, Odette Cancer Centre

11:50 Taking advantage of artifacts: Coherent half field of view replication passive tracking technique for controllable susceptibility devices for magnetic resonance imaging in the presence of motion

Justin Lau, University of Toronto

12:05 – 1:05 LUNCH (BALLROOM 5)

MARCH 30, 2015 CONTINUED**1:05 – 2:35 SESSION 3 (BALLROOM 2367)****PRECLINICAL IMAGING HIGHLIGHT REEL**

Chair: Stuart Foster

Sunnybrook Research Institute

1:05 OPIC and the Development of a Commercialized Photoacoustic Imaging Platform

Stuart Foster, Sunnybrook Research Institute

1:20 Mouse Models of Human Diseases

Mark Henkelman, Toronto Centre for Phengenomics

1:35 Anatomical, Functional and Metabolic MRI of Lung Injury using Hyperpolarized Nuclei

Giles Santyr, Hospital for Sick Children

1:50 Pre-Clinical Imaging for Models of Musculoskeletal Disease

David Holdsworth, Robarts Research Institute

2:05 Hyperpolarized ¹³C Imaging: from Rats to Humans

Chuck Cunningham, Sunnybrook Research Institute

2:20 Micro-MRI Techniques for Cellular and Metabolic Imaging at 3 Tesla

Paula Foster, Robarts Research Institute

1:05 - 2:35 SESSION 4 (BALLROOM 4)**QUANTITATIVE IMAGING**

Chair: Grace Parraga

Robarts Research Institute

1:05 Comparison of Functional Lung Imaging using Inert Fluorinated Gas and Hyperpolarized ³He MRI

Marcus Couch, Lakehead University

1:20 Generation of high-contrast single-slice susceptibility weighted images in the brain at 7T

Zahra Hosseini, Robarts Research Institute

1:35 Next-generation MRI of the human spinal cord: Translating measures of microarchitecture and function to clinical utilization

Allan Martin, Institute of Medical Science, University of Toronto

1:50 Quantitative Functional Imaging of Prostate Cancer with Improved Kinetics Modeling of Hybrid ¹⁸F-Fluorocholine PET-CT Imaging

Adam Blais, Western University

2:05 Principal Component Analysis of the CT Density Histogram to Generate Parametric Response Maps of COPD

Nanxi Zha, Western University

2:20 Ventilation Defect Clusters: MRI Measurements of Regional Ventilation Heterogeneity

Dante Capaldi, Robarts Research Institute

2:35 – 3:20 POSTER VIEWING & BREAK (BALLROOM 5)

MARCH 30, 2015 CONTINUED**3:20 – 5:05 SESSION 5 (BALLROOM 2367)****TARGETED PROBE DEVELOPMENT**

Chair: Martin Yaffe & Len Luyt
Sunnybrook Research Institute/Centre for Imaging Technology
Commercialization & Western University

*3:20 New Approaches for Functionalizing and Targeting
Ultrasound Microbubbles*
John Valliant, McMaster University

*3:35 Panitumumab modified with metal chelating polymers
(MCPs) for dual labeling with ^{111}In and ^{177}Lu as a potential
theranostic for pancreatic cancer*
Sadaf Aghevlian, University of Toronto

*3:50 Molecular Modeling Studies for Rational Design of GHSR-
1a Agonist for Prostate Cancer Diagnosis Using PET*
Jinqiang Hou, London Health Sciences Center

*4:05 In Vivo Whole-Body Spin-Lattice Relaxation Dispersion at
1.5 Tesla using Delta Relaxation Enhanced Magnetic
Resonance (dreMR) Imaging*
Yonathan Araya, Western University, Robarts Research
Institute

*4:20 Influence of MagA Expression on MRI Relaxation Rates in
Different Cell Types*
Donna Goldhawk, Lawson Health Research Institute / Western
University

*4:35 Development of Bipyridine-Containing Peptide Imaging
Probes for SPECT Imaging*
William Turnbull, Western University

3:20 – 5:05 SESSION 6 (BALLROOM 4)**VISUALIZATION AND IMAGE ANALYSIS**

Chair: Aaron Ward
Western University

*3:20 Automated segmentation of whole-slide histology for vessel
morphology comparison*
Yiwen Xu, Western University

*3:35 Image-based Personalized Analysis and Modeling of Cardiac
Structure and Function: A Robust Method for Automatic Left-
Ventricular Infarct Segmentation*
Eranga Ukwatta, University of Toronto

*3:50 Three-Dimensional Pulmonary 1H MRI Multi-Region
Segmentation Using Convex Optimization*
Fumin Guo, Robarts Research Institute

*4:05 Deep Neural Network Based Segmentation of Lesions in
Breast DCE-MRI*
Hongbo Wu, University of Toronto

*4:20 Three dimensional retrospective motion correction in MRI
using spherical navigator echoes (SNAV)*
Patricia Johnson, Robarts Research Institute

*4:35 Optical CT scanning for skeletal imaging in an optically
cleared mouse*
Kurtis Dekker, Department of Medical Biophysics, Western
University

4:45 – 7:00 POSTER SESSION & RECEPTION (BALLROOM 5)

MARCH 31, 2015

7:00 – 8:00 **REGISTRATION (BALLROOM 2367 FOYER)**

8:00 – 8:10 **OPENING REMARKS (BALLROOM 2367)**

8:10 – 9:00 ***BRIDGING ACADEMIA AND INDUSTRY WITH OPEN SOURCE***

Stephen Aylward, Kitware Inc.

9:00 – 9:50 ***CARDIOVASCULAR MOLECULAR IMAGING: PAST, PRESENT, FUTURE***

Frank Bengel, Hannover Medical School

9:50 – 10:35 **POSTER VIEWING & BREAK (BALLROOM 5)**

10:30 – 12:00 (BALLROOM 2367)

COMMERCIALIZATION SESSION

Chair: Lisa Cechetto, WORLDiscoveries

SPEAKERS

Ian Haase, Propel - *An overview of the services and programs available through the Ontario Network of Entrepreneurs (ONE)*

Deniz Temelli, TechAlliance - *Medical Technology Commercialization*

John Pollock, Southwestern Ontario Angel Group - *Seeking Angel Investment*

12:05 – 1:05 **Lunch (BALLROOM 5)**

MARCH 31, 2015 CONTINUED**1:05 – 2:35 SESSION 8 (BALLROOM 2367)****CLINICAL IMAGING**

Chair: Richard Frayne
Seaman Family MR Centre

1:05 Precise and Rapid assessment of collaterals using multi-phase CTA in the triage of patients with acute ischemic stroke for Intra-Arterial Therapy (PROVE-IT)

Christopher d'Esterre, University of Calgary

1:20 Carotid atherosclerosis and cerebral small vessel disease.

Navneet Singh, CAIN (Canadian Atherosclerosis Imaging Network): Sunnybrook

1:35 Carotid plaque texture: toward a biological meaning of mathematical algorithms in 3D carotid ultrasound

David Spence, Stroke Prevention & Atherosclerosis Research Centre, Robarts Research Institute

1:50 Reproducibility of Quantitative Susceptibility Mapping in Healthy Brains

Armin Eilaghi, University of Calgary

2: Site qualification standards for Tc-99m-SPECT perfusion imaging in a multi-centre study of MITNEC (Medical Imaging Trials Network of Canada)

Jennifer Renaud, University of Ottawa Heart Institute

2:20 Predicting the Impact of Surgery on Quality of Life and Risk Management in Patients Afflicted with Glioblastoma Multiforme

Luca Li, University of Calgary

1:05 – 2:35 SESSION 9 (BALLROOM 4)**INSTRUMENTATION/DEVICES**

Chair: Aaron Fenster
Western University/Centre for Imaging Technology
Commercialization

1:05 Development of fast 3D photoacoustic imaging

Jeffrey Carson, Lawson Health Research Institute

1:20 A Novel Nasopharyngeal Method for Rapid Selective Brain Cooling in a Rabbit Model

Mohammad Fazel, Robarts Research Institute

1:35 Current sensing for navigated electrosurgery

Kaci Carter, Queen's University

1:50 The effect of matching layers as an acoustic lens in a staring transducer array in photo acoustic imaging

Madeleine Van de Kleut, Lawson Health Research Institute

2:05 Phase-matched 4DCT for AC in 4D gated PET

Julia Publicover, Techna Institute, University Health Network

2:20 Design, Development and in vivo Evaluation of a Remote Catheter Navigation System with 3-Degrees-of-Freedom

Mohammad Tavallaei, Robarts Research Institute

2:35 – 2:50 Afternoon Break (BALLROOM 5)

MARCH 31, 2015 CONTINUED

2:50 – 4:20 SESSION 10 (BALLROOM 2367)

IMAGING/SIMULATION FOR THERAPY PLANNING AND RESPONSE

Chair: Gabor Fichtinger
Queens University

2:50 Dosimetric Analysis of Respiratory-Induced Cardiac Intrafraction Motion in Left-sided Breast Cancer Radiotherapy
Omar El-Sherif, Western University

3:05 The Effect of the Chemotherapy Agent Methotrexate on the Developing Brain
Leigh Spencer Noakes, The Hospital for Sick Children

3:20 Response Monitoring Using Texton-Based Approach in Locally Advanced Breast Cancer
Mehrdad Gangeh, Sunnybrook Health Sciences Center

3:35 Early prediction of lung cancer recurrence after stereotactic radiotherapy using texture analysis of automatic graph cuts segmentations
Sarah Mattonen, Western University

3:50 Personalized Treatment Selection for Brain Metastases Using MRI Radiomics
Timothy Yeung, Western University

4:05 [19]Fluorine cellular magnetic resonance imaging to monitor in vivo therapeutic cell migration
Corby Fink, Robarts Research Institute, Western University

2:50 – 4:20 SESSION 11 (BALLROOM 4)

IMAGING BIOMARKERS

Chair: Giles Santyr
Hospital for Sick Children

2:50 Gd-Free MRI Contrasts Agents Based on Manganese Porphyrin: a Sensitive and Versatile Platform for Diverse Applications at High Clinical Fields
Xiao-An Zhang, University of Toronto

3:05 In Vivo Sodium MRI of Human Prostate Cancer
Justin Peterson, Western University

3:20 Development of an image based classification method for the interventional treatment of preterm neonates with intraventricular hemorrhage using 3D ultrasound
Jessica Kishimoto, Western University

3:35 How do Exercise Responses Relate to 3He Magnetic Resonance Imaging Apparent Diffusion Coefficients in Older Never-Smokers?
Khadija Sheikh, Robarts Research Institute

3:50 Roemer-Optimal Reconstruction of Hyperpolarized 13C Cardiac Images with an 8 Channel Coil
William Dominquez, Sunnybrook Research Institute

4:20 – 4:45 POSTER AWARDS

4:45 – 5:00 CLOSING REMARKS