Program

Day 1 - Thursday, March 28, 2019

7:15	**Registration**		Grand Ballroom Foyer
7:15 – 8:30	**Poster Set-Up**		Grand Ballroom West
8:30 – 8:40	**Opening Remarks**		Grand Ballroom Centre and East
	Ali Khan, Charles McKenzie & Tamie Poepping, ImNO 2019 Scientific Committee Chairs		
	Keynote Session		Grand Ballroom Centre and East
	Chair: Anne Martel, Sunnybrook Research Institute		
8:40 – 9:25	**Separating the Hype from the Hope in Medical Imaging AI** Amber Simpson, PhD, Memorial Sloan Kettering		
9:25 – 10:25	**Poster Session & Nutrition Break**		Grand Ballroom West
	Grand Ballroom Centre		Grand Ballroom East
	1 - Instrumentation and Technology Development		**2 - Machine Learning**
	Chairs: Christine Démoré, Sunnybrook Research Institute & Tim Scholl, Robarts Research Institute		**Chairs:** Michael Hardisty, Sunnybrook Research Institute & Amber Simpson, Memorial Sloan Kettering
10:25 – 10:39	1-1 **Designing a Spine-Specific Ultrasound Phased Array** Rui Xu, University of Toronto	2-1	**Texture-Based Prostate Cancer Classification on MRI: How Does Inter-Class Size Mismatch Affect Measured System Performance?** Ryan M Alfano, Western University
10:39 – 10:53	1-2 **Comparing Vibrometer and Accelerometer Measurements of Gradient Field Induced Vibration in an MRI** Idan Nemirovsky, Western University	2-2	**Ventricular and Total Intracranial Vault Segmentations for Brains with Extensive Atrophy UsingThree-Dimensional Convolutional Neural Networks** Emmanuel Edward Ntiri, Sunnybrook Research Institute
10:53 – 11:07	1-3 **Varying Microstructural Properties of a 3D Printed Phantom for Diffusion MRI Validation** Farah N Mushtaha, Robarts Research Institute	2-3	**Automatic High-Grade Prostate Cancer Detection on Digital Histopathology Imaging** Wenchao Han, Western University
11:07 – 11:21	1-4 **Hypoxia Standardization Phantom to Quantify Variation in Hypoxia Measurement with Positron Emission Tomography across Multiple Centres** Brandon Driscoll, QIPCM, TECHNA Institute, UHN	2-4	**Multi-Contrast Carotid Lumen-wall Segmentation using Deep Learning** Anna Danko, University of Calgary
11:21 – 11:35	1-5 **Selective Laser Melted 2D Focused Anti-Scatter Grids for Cone-beam CT** Santiago F Cobos, Robarts Research Institute	2-5	**Tissue Segmentation in Multi-Weighted Breast MRI using a Deep Learning Unet** Grey C Kuling, University of Toronto
11:35 – 11:49	1-6 **A Novel Microfluidic Device for Real-time Microscopic Imaging of Endothelial Cell Responses to Laminar and Ddisturbed Fluid Flow** Daniel Lorusso, Robarts Research Institute	2-6	**Vertebral Body Segmentation in CT Images using V-Net** Geoff Klein, University of Toronto
11:49 – 13:00	**Lunch**		Grand Ballroom Foyer

Day 1 - Thursday, March 28, 2019

Grand Ballroom Centre

3 - Cellular and Molecular Imaging

Chairs: Jean Gariepy, Sunnybrook Research Institute & Amanda Hamilton, Robarts Research Institute

13:00 – 13:14 **3-1 Gas Vesicle Nanoparticles for the Photodynamic Treatment of Tumors**
Ann Fernando, University of Toronto

13:14 – 13:28 **3-2 Monitoring Two Cell Populations using Iron Oxides and Perfluorocarbons with Dual 1H and 19F Magnetic Resonance Imaging at 3 Tesla**
Olivia C Sehl, Robarts Research Institute

13:28 – 13:42 **3-3 Molecular Imaging of Hypoxia: Kinetic Analysis of Dynamic PET Data from Pancreatic Cancer**
Fiona Li, Western University

13:42 – 13:56 **3-4 Tumour-Activatable Minicircles Expressing Prodrug-Suicide Gene Systems for Prostate Cancer Therapy**
TianDuo Wang, Robarts Research Institute

13:56 – 14:10 **3-5 In Vivo Cell Tracking via Multimodality Reporter-Based Fluorescence, Photoacoustic, and Magnetic Resonance Imaging at 3 Tesla**
Nivin N Nyström, Robarts Research Institute

Grand Ballroom East

4 - New MRI Approaches

Chairs: Angus Lau, Sunnybrook Research Institute & Greg Stanisz, Sunnybrook Research Institute

4-1 Clinically-Viable and Robust Measurement of Microscopic Diffusion Anisotropy
Nico JJ Arezza, Robarts Research Institute

4-2 Rapid B1+ Measurement using a Non-Steady-State Progressive Flip Angle Sequence and Parallel Imaging
Nadia Bragagnolo, University of Toronto

4-3 Using Low Resolution Pre-Scans and Singular Value Decomposition Derived Sensitivities to Allow for the Combination of Large Phase Datasets
Olivia W Stanley, Robarts Research Institute

4-4 Validation of Simulated vs Experimentally Acquired B0 Field Maps Surrounding Metal
Gregory Hong, Robarts Research Institute

4-5 Initial Comparison of RF-Induced Heating in the ASTM Phantom and a Cadaver Leg: A Pilot Study
Amgad Louka, Western University

14:10 – 15:15 **Poster Session & Nutrition Break** — Grand Ballroom West

Grand Ballroom Centre

5 - Image Guided Intervention and Augmented Reality

Chairs: Elvis Chen, Robarts Research Institute & Rebecca Fahrig, Siemens Healthineers

15:15 – 15:29 **5-1 Assessment of Intraoperative Neurosurgical Planning with the Microsoft HoloLens**
Zachary Baum, Queen's University

15:29 – 15:43 **5-2 Augmented Reality Guidance in Cerebrovascular Surgery using Microscopic Video Enhancement**
Reid Vassallo, Robarts Research Institute

15:43 – 15:57 **5-3 Navigation of the iKnife for Intra-Operative Tissue Characterization in Neurosurgery**
Mark Asselin, Queen's University

15:57 – 16:11 **5-4 Design and Evaluation of a New Positron Emission Mammography Ultrasound-Guidance Device for Core Needle Biopsy in Breast Tumours**
Claire K Park, Robarts Research Institute

16:11 – 16:25 **5-5 Characterizing the Accuracy and Precision of Micro-Coil Tracking in Ablation Catheters**
Jay B Soni, Sunnybrook Research Institute

16:25 – 16:39 **5-6 Geometrically Variable 3D Ultrasound with Mechanical Assistance for Interventional Liver Cancer Therapies**
Derek J Gillies, Robarts Research Institute

Grand Ballroom East

6 - Bone and Joint Imaging

Chairs: Nikolas Knowles, Western University & Cari Whyne, Sunnybrook Research Institute

6-1 Differentiation of Osteoblastic and Healthy Bone Tissue in Metastatically Involved Vertebrae using Radiomic Features
Allison J Clement, Sunnybrook Research Institute

6-2 Iterative Design of a Small-Animal Hip-Hemiarthroplasty Model for Preclinical Orthopaedic Research
Adam DM Paish, Robarts Research Institute

6-3 Micro-CT of Kangaroo Cervical Spine: Analysis of Bone Mineral Density of C3-C7
Joseph U Umoh, Robarts Research Institute

6-4 Multimodal Image-based Analysis of Ultrafast Burst Mode Laser Ablation on Articular Cartilage
Melissa J Prickaerts, University Health Network

6-5 Three-Dimensional Computed Tomographic Reconstruction in a Natural Weight-Bearing Stance using Ceiling-Mounted X-Ray Fluoroscopy
Rudy Baronette, Robarts Research Institute

6-6 Intra-Operative Verification of the Glenoid Implant Position with Structured Light Imaging in Total Shoulder Arthroplasty
David Burns, Sunnybrook Research Institute

Day 1 - Thursday, March 28, 2019

16:39 – 16:55	**Nutrition Break**	Grand Ballroom Foyer
16:55 – 17:40	**Keynote Session**	Grand Ballroom Centre and East
	Chair: David Holdsworth, Robarts Research Institute	
16:55 – 17:40	**Integration, Intelligence and Multi-Modality Image Guidance for Procedural Therapies** Rebecca Fahrig, PhD, Siemens Healthineers	

Day 2 - Friday, March 29, 2019

8:00	**Registration**	Grand Ballroom Foyer
8:00 – 8:50	**Poster Set-Up**	Grand Ballroom West
8:50 – 8:55	**Opening Remarks** Ali Khan, Charles McKenzie & Tamie Poepping, ImNO 2019 Scientific Committee Chairs	Grand Ballroom Centre and East
	Keynote Session Chair: Frank Prato, Lawson Health Research Institute	Grand Ballroom Centre and East
8:55 – 9:40	**Tissue Characterization with Cardiac Magnetic Resonance** Rebecca Thornhill, PhD, University of Ottawa	
9:40 – 10:40	**Poster Session & Nutrition Break**	Grand Ballroom West

	Grand Ballroom Centre	Grand Ballroom East
	7 - Cancer Imaging **Chairs:** Kathleen Surry, London Regional Cancer Program & Aaron Ward, Western University	**8 - Fetal, Neonatal and Pediatric Imaging** **Chairs:** Rojan Saghian, The Hospital for Sick Children & Penny Gowland, University of Nottingham
10:40 – 10:54	7-1 **Radiomics for Detecting Recurrence After Stereotactic Ablative Radiotherapy: Sensitivity of Performance to Sample Size** Salma Dammak, Western University	8-1 **Quantifying T1 and T2* Relaxation Times of Fetal Tissues at 1.5 T** Simran Sethi, Western University
10:54 – 11:08	7-2 **Detection and Localization of Dominant Intra-prostatic Nodules with CT Perfusion** Dae-Myoung Yang, Robarts Research Institute	8-2 **Lateral Ventricle Volume Based on Posture of the Neonate Having Intraventricular Hemorrhage** Priyanka Roy, Robarts Research Institute
11:08 – 11:22	7-3 **Prostate MRI Delineated Lesion Boosting through High Dose Rate Brachytherapy Dwell Time Adjustment** Christopher W Smith, Western University	8-3 **User Friendly Fetal fMRI Image Segmentation Pipeline** Estee Goldberg, Western University
11:22 – 11:36	7-4 **Metabolic Imaging of a Renal Cell Carcinoma Patient with Brain Metastasis using Hyperpolarized 13C MRI** Casey Y Lee, University of Toronto	8-4 **NNeMo (Neonatal Neuromonitor): A Non-Invasive Optical Device for Assessing the Coupling of Cerebral Blood Flow and Energy Metabolism in the Developing Brain** Ajay Rajaram, Western University
11:36 – 11:50	7-5 **Dual Bioluminescence Imaging Reveals Remarkable Tumour Self-Seeding of Spontaneous and Experimental Metastases in Mice** Katie M Parkins, Robarts Research Institute	8-5 **Identifying Lesions in Paediatric Epilepsy using Morphometric and Textural Analysis of MRI** Azad Aminpour, University of Ontario Institute of Technology
11:50 – 13:00	**Lunch**	Grand Ballroom Foyer

Day 2 - Friday, March 29, 2019

Grand Ballroom Centre

9 - Lung Imaging

Chairs: Sarah Svenningsen, McMaster University & Alexei Ouriadov, Western University

13:00 – 13:14 **9-1 Novel COPD Multi-parametric Response Map Phenotypes**
Jonathan MacNeil, Robarts Research Institute

13:14 – 13:28 **9-2 Multi-scalar Perfusion and Ventilation Defects in Asthma**
Alexander M Matheson, Robarts Research Institute

13:28 – 13:42 **9-3 Improved Tumor Motion Estimation by Incorporating Patho-physiology in Biomechanical Model of the Lung**
Parya Jafari, Western University

13:42 – 13:56 **9-4 Is Vascular Pruning Related to MRI Ventilation Defects in Bronchiectasis and COPD patients?**
Andrea L Barker, Robarts Research Institute

13:56 – 14:10 **9-5 Can Oscillometry Explain Differences Between 3He and 129Xe Ventilation Heterogeneity?**
Rachel L Eddy, Robarts Research Institute

Grand Ballroom East

10 - New Contrast Agents

Chairs: Rebecca Sullivan, Lawson Health Research Institute & Donna Goldhawk, Lawson Health Research Institue

10-1 Safe Harbor Targeted CRISPR/Cas9 Tools for Molecular-Genetic Imaging of Cells in Living Subjects
Veronica Dubois, Robarts Research Institute

10-2 Multimodality Organic Contrast Agents for Ultrasound and Photoacoustic Imaging
Yohannes Soenjaya, Sunnybrook Research Institute

10-3 Lanthanide Nanoparticles as Vascular Contrast Agents for In Vivo Dual Energy Microcomputed Tomography
Charmainne Cruje, Robarts Research Institute

10-4 Lymphatic Drainage from the Eye Quantified Non-Invasively by Photoacoustic Imaging using a Near Infrared Tracer
Kirsten Cardinell, Ryerson University

10-5 Ultrafast Three-Dimensional Microbubble Imaging for Monitoring Nonthermal Brain Ablation
Ryan M Jones, Sunnybrook Research Institute

14:10 – 15:00 **Poster Session & Nutrition Break** — Grand Ballroom West

Grand Ballroom Centre

11 - Neuroimaging

Chairs: Aidin Arbabi, Robarts Research Institute
Corey Baron, Robarts Research Institute

15:00 – 15:14 **11-1 Error Analysis of a Non-Invasive Hybrid PET/MRI Method for Imaging CMRO2**
Lucas DL Narciso, Lawson Health Research Institute

15:14 – 15:28 **11-2 Empirical Evaluation of A DTI Tractography Pipeline using Whole-Brain Tractograms from a White Matter Phantom**
Stefan E Poirier, Lawson Health Research Institute

15:28 – 15:42 **11-3 Differentiating the Substantia Nigra Pars Compacta and Ventral Tegmental Area in Early-Stage Parkinson's Disease using Structural Magnetic Resonance Imaging**
Erind Alushaj, Western University

15:42 – 15:56 **11-4 Sub-Millimeter Blood Flow Mapping of Cortical and Hippocampal Gray Matter**
Roy Haast, Western University

15:56 – 16:10 **11-5 Optimization of Phase Contrast for CBF Quantification by the Non-Invasive Hybrid PET/MR-approach**
Tracy Ssali, Lawson Health Research Institute

16:10 – 16:24 **11-6 Assessing the Reliability and Reproducibility of Neurobundle Extraction and Evaluation Resource, an Automated Tool for Clustering Diffusion Tractography**
Jason Kai, Robarts Research Institute

Grand Ballroom East

12 - Cardiac and Vascular Imaging

Chairs: Ali Tavallaei, Sunnybrook Research Institute
Jonathan Thiessen, Lawson Health Research Institute

12-1 Examining the Effect of Hepcidin on Cardiac Inflammation using THP-1 Monocytes and MRI
Praveen Sankajith B Dassanayake, Western University

12-2 Development of an Ex Vivo Porcine Model of Coarctation of the Aorta: Possible Treatment Applications with MR-Guided HIFU using Boiling Histotripsy
Sergio A Vega, The Hospital for Sick Children

12-3 Soft Tissue and Vascular Visualization of Iodine-Enhanced Samples via Dual-Energy Computed Tomography
Justin J Tse, Robarts Research Institute

12-4 Towards Quantifying Tissue Perfusion with Dynamic Contrast-Enhanced Near-Infrared Imaging
Seva Ioussoufovitch, Western University

12-5 Exploring the Effects of Standard and Cooled Hemodialysis on Renal Blood Flow using CT Perfusion
Raanan Marants, Western University

12-6 Effects of the Iron Chelator Deferiprone on Porcine Acute Myocardial Infarction and Cardiac Remodeling
Jill Weyers, Sunnybrook Research Institute

Day 2 - Friday, March 29, 2019

16:24 – 16:40	**Nutrition Break**	Grand Ballroom Foyer
	Keynote Session	Grand Ballroom Centre and East
	Chair: Charles McKenzie, Western University	
16:40 – 17:25	**The Placental Pump** Penny Gowland, PhD, University of Nottingham	
17:25 – 17:45	**Awards and Closing Remarks**	Grand Ballroom Centre and East
17:45 – 18:15	**Poster Take Down**	Grand Ballroom West