Day 1

Canadian Undergraduate Medical Physics Conference
Virtual Conference
Conference program

Time (EDT)	**Wednesday, August 23, 2023**
12:00 – 12:15	**Opening Remarks** Samuel Ouellet – Université Laval
12:15 – 13:15	**Keynote speaker presentation** Dr. Andrea McNiven Director of Medical Physics, Tom Baker Cancer Centre
	Moderators: Jade Fischer – University of Victoria Eva Lee – Dalhousie University
13:15 – 13:30	Break, 15 min
13:30 – 14:15	**Oral presentations 1: Imaging** Moderators: Liz Fletcher – Carleton University Ronan Lefol – Université Laval

1. Slope-based imaging of cerebral hemodynamics with hyperspectral near-infrared spectroscopy
Ann Ping – Western University

2. Correction of problematic DICOM files with 3D automated registration
Jonathan Breton-Aubé – Université Laval

3. Advancing a low-cost, portable, microwave-based breast cancer detection system: incorporating calibrated S21 measurements on a VNA with 3-receiver architecture.
Awab Jelani – University of Manitoba

4. Voxel Based Analysis of the Mouse Corpus Callosum using Diffusion MRI and Oscillating Gradient Spin Echo Pulse Sequences
Emma Friesen – University of Winnipeg

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14:15 – 14:30	Break, 15 min
14:30 – 15:30	**Oral presentations 2: Radiation Therapy**

Moderators: Samuel Ouellet – Université Laval
                  Maryam Rahbaran - McGill University

1. Monte Carlo models for eye plaque brachytherapy treatment of iris melanoma
Marwa Djedouani – Carleton University

2. Accurate Optical Scanning and 3D Printing for Enhanced Customized Lead Shielding in Orthovoltage Radiation Therapy
Laura Dufort-Gagnon – CHU de Montréal

3. Feasibility of Radiation Planning on Three-Dimensional Ultrasound Images for Gynecological Brachytherapy Procedures
Amal Aziz (on behalf of Jamiel Nasser) – University of Waterloo

4. Optimization of Optical Dosimetry in a Water Phantom by Exploiting Cherenkov Radiation Polarization Imaging
Gérémy Michaud – Université Laval

5. Evaluating the clinical performance of an independent verification software used to calculate 3-dimensional conformal radiation therapy plans
Reign Tabafunda – Lakeridge Health Oshawa

15:30 – 15:45	Break, 15 min
15:45 – 17:00	**Early Career Panel**

Moderators: Meghan Koo – Toronto Metropolitan University
                  Eva Lee – Dalhousie University
  - Dr. Stephanie Bennett
    Medical Physics Resident at Harvard Medical School
  - Dr. Chelsea Dunning
    Senior Scientist & CT Collaborations Manager, at Siemens Healthineers
  - Dr. Lee MacDonald
    Medical Physicist and Assistant Professor, Nova Scotia Health and Dalhousie University

17:00 – 17:15	First day's closing remarks

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Time (EDT) **Thursday, August 24, 2023**

12:00 – 12:15 Opening Remarks
Liz Fletcher – Carleton University

12:15 – 13:30 **Career Panel**

Moderators: Meghan Koo – Toronto Metropolitan University
Jade Fisher – University of Victoria
- Dr. Nadia Octave
  Medical Physicist at Centre Régional Intégré de Cancérologie du CISSS
  de Chaudière-Appalaches
- Dr. Wendy Smith
  Director of the Flash Radiotherapy Research Portfolio at Varian, a
  Siemens Healthineers company
- Dr. Carlos Uribe
  Medical Imaging Physicist, Provincial PET Functional Imaging, BC
  Cancer

13:30 – 13:45 Break, 15 min

13:45 – 15:00 **Oral presentations 3: Computational Techniques**
Moderators: Samuel Ouellet – Université Laval
Kaihim Wong – University of Manitoba

1. Probabilistic Deep Learning for Automatic Segmentation of Prostate CT
Images
Raphaël Brodeur – Université Laval

2. CT-Based Radiomics Models for Predicting Early-Stage Esophageal
Adenocarcinoma
Marcus Milantoni – Western University

3. Implementing dynamic geometries, temporal particle tracking and
simulation synchronization in EGSnrc
Alexandre Demelo – Carleton University

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4. Localizing catheter tips in prostate brachytherapy ultrasound images through a deep learning and feature extraction pipeline
Jessica de Kort – University of Winnipeg

5. Towards Explainable Deep Learning Models for Prostate Cancer Prognosis
Félix Desroches – Université Laval

6. Overcoming the challenges of radiation therapy using a combination of gold nanoparticles and novel DNA-repair inhibitor drugs
Reinali Calisin – University of Victoria

7. Monte Carlo dose calculations of reference test cases for intraoperative radiotherapy system
Gaël N'doutoume-Paquet – Université Laval

15:00 – 15:30   Break, 30 min

15:30 – 16:45   **Oral presentations 4: Experimental Techniques**
Moderators: Catherine McKenna - University of Waterloo
Maryam Rahbaran - McGill University

1. A novel "gene on" reporter system for visualizing adenine base editing using bioluminescence imaging
Rajan Leung – Western University

2. An Anatomic Clutter Phantom for Lung-Ventilation-Imaging Studies
Kaitlyn Sims – Toronto Metropolitan University

3. Stereolithography printing of transparent, elastic vascular models for flow measurements using laser-based particle image velocimetry
Rayhan Mohammed Abdul Rahman – Western University

4. Optimizing technique parameters for dual-energy photon-counting peripheral angiography
Jamie Tien – Toronto Metropolitan University

5. Characterization of a new dosimetry gel for external radiotherapy using megavoltage photon and electron beams
Anna-Kim Péron – Université Laval

6. Investigating Muscle Moment Arms in Various Pathological Hips
Siana Shemshedini – Western University

7. Developing short, high power focused ultrasound pulses for transcranial nanodroplet-mediated ablation
Swanee Douglas – University of Toronto

16:45 – 17:15   Break, 30 min

17:15 – 17:30   Closing remarks and award ceremony
Samuel Ouellet – Université Laval
Liz Fletcher – Carleton University

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