

## Carleton University med phys grad student publications and presentations

(July 1, 2023 to October 15<sup>th</sup>, 2024)

Names of Carleton medical physics student authors of publications and presentations from MSc or PhD thesis work are in **bold**. In addition, author names are in ***bold italic*** for biomedical engineering MSc or PhD thesis work done as a graduate student in Physics.

### Journal Publications (alphabetic by first author)

**E. Fletcher**, F. Ballester, L. Beaulieu, H. Morrison, A. Poher, M. Rivard, R. Sloboda, J. Vijande and R.M. Thomson. Generation of 3D dosimetric reference datasets for COMS eye plaque brachytherapy using model-based dose calculations. Med. Phys., 51, 694-706 (2024).  
<https://doi.org/10.1002/mp.16721>

**A. Jabbarpour**, S. Ghassel, J. Lang, E. Leung, G. Le Gal, R. Klein and E. Moulton. The past, present, and future role of artificial intelligence in ventilation/perfusion scintigraphy: a systematic review. Seminars in Nuclear Medicine, 53, 752-765 (2023).  
<https://doi.org/10.1053/j.semnuclmed.2023.03.002>

**I. Mansour** and R.M. Thomson. Haralick texture analysis for microdosimetry: Characterization of Monte Carlo generated 3D specific energy distributions. Phys. Med. Biol., 68, 185003 (15 pages) (2023).  
<https://doi.org/10.1088/1361-6560/acf183>

**S. Ouellet**, Y. Lemarechal, F. Berumen Murillo, M.C. Lavallee, E. Vigneault, A.G. Martin, W. Foster, R.M. Thomson, P. Despres, and L. Beaulieu. A Monte Carlo dose recalculation pipeline for durable datasets: An I-125 LDR prostate brachytherapy use case. Phys. Med. Biol., 68, 235001 (14 pages) (2023).  
<https://doi.org/10.1088/1361-6560/ad058b>

**M. Shiha**, J.E. Cygler, R. MacRae and E. Heath. 4D Monte Carlo dose reconstructions using surface motion measurements. Physica Medica, 114, 103135 (8 pages) (2023).  
<https://doi.org/10.1016/j.ejmp.2023.103135>

Conference Proceedings and Presentations (presenting author underlined)

*17<sup>th</sup> International Conference for Radiation Research: August 27-30, 2023, Montreal.*

**E.M. Fletcher** and R.M. Thomson,

A framework for heterogeneous multiscale Monte Carlo modelling in radiation medicine,  
Oral presentation

**D. Gunasekara**, R. Wilkins and L. Beaton-Green

Monte Carlo Modelling of an X-ray System Combining Multiple Applications in EGSnrc,  
Poster Presentation

**B. Puzantian**, L. A. Beaton-Green and R. C. Wilkins

Simulations and analysis of radiation environments in the International Space Station

*26<sup>th</sup> International Workshop on Radiation Monitoring in the International Space Station: September 5 – 7, 2023, Rome, Italy.*

**B. Puzantian**, L. A. Beaton – Green, and R. C. Wilkins.

Equivalent dose measurements of astronauts for ISS space missions between 2007-2016

*Joint Scientific Meeting of the Canadian Association of Radiation Oncologists and the Canadian Organization of Medical Physicists: September 20-23, 2023. Montreal.*

**S. Ouellet**, Y. Lamarechal, F. Berumen Murillo, M-C. Lavallee, E. Vigneault, A-G. Martin, W. Foster, R.M. Thomson, P. Despres, and L. Beaulieu.

Large-scale retrospective MC dose recalculation for permanent implant prostate brachytherapy,  
Poster presentation

**M. Shiha**, E. Heath and E. Vandervoort

An Investigation into the Benefit of Using a Higher Threshold of Correctible Rotations in Cyberknife Treatments,  
Poster presentation

**E. Fletcher**, F. Ballester, L. Beaulieu, H. Morrison, A. Poher, M. Rivard, R. Sloboda, J. Vijande, and R.M. Thomson,

Development of test cases for comparisons of model-based dose calculations in low-energy brachytherapy,  
Poster presentation.

*IEEE Nuclear Science Symposium and Medical Imaging Conference: Nov 4-11, 2023, Vancouver, BC.*

**T. Clark**, R. Huber, R. Clackdoyle and R.G. Wells,  
Applying Exponential Data Consistency Conditions in SPECT with Multiple Activity Regions,  
Poster presentation

**T. Clark**, R. Clackdoyle and R.G. Wells,  
The Sensitivity of Exponential Data Consistency Condition-based Attenuation Map Alignment to Mismatched Attenuation Maps,  
Poster presentation

**D.J. Malenfant** and R.G. Wells,  
Data-driven respiratory motion correction of cardiac SPECT using a convolutional neural network,  
Poster presentation

*The 5th Geant4 International User Conference at the Physics - Medicine - Biology frontier: March 27-29, 2024, Osaka, Japan.*

**D. Gunasekara**, R.C. Wilkins and L.A. Beaton-Green,  
Modelling of Chromosome Aberrations to Simulate Biodosimetry Dose Calibration Curves,  
Oral presentation

*SPIE 2024 Defense and Commercial Sensing, Anomaly Detection and Imaging with X Rays: April 24-25, 2024, National Harbor, Maryland USA.*

**D.C. Kemdirim** and P.C. Johns,  
Spectrum optimization for x-ray dual-mode imager comprising radiography and coherent scatter,  
Oral presentation

<https://dx.doi.org/10.1117/12.3005049>

*Annual meeting of the Microscopy Society of Canada: June 4-7, Ottawa, ON.*

**T. Buragina**, **J. Gagnon**, H. Allen, N. Nazemof, P. Kumarathasan and S. Murugkar,  
Application of multimodal coherent Raman microscopy for label-free investigation of  
nanoparticle uptake inside cells,  
Oral presentation

*COMP Annual Scientific Meeting: June 5-8, 2024, Regina, SK.*

**V. Howard**, J. Renaud, E. Heath and B. Muir,  
A step toward clinical translation: Developing a robust thermal calibration methodology for  
pyroelectric dosimeters,  
Oral presentation

**A. Haidari**, D. Granville and E. Ali,  
A deep learning pipeline for real-time conformal palliative radiotherapy of spine metastases,  
Oral presentation

**C. McNairn**, **P. Pasricha**, W. Gao, A. Payne, E. Cassol, V. Chauhan, S. Dang, J.L. Andrews, A.  
Jirasek, B. Muir, R.M. Thomson and S. Murugkar,  
Point-scan Raman spectroscopy: A technique for high-spatial resolution radiation dosimetry,  
Oral presentation

**M. Shiha**, E. Heath and E. Vandervoort,  
Modelling intra-fraction motion and delivery errors in spine SBRT using log files,  
Oral presentation

**P. Pasricha**, **C. McNairn**, B. Muir, W. Gao, A. Payne, E. Cassol, V. Chauhan, S. Dang, A. Jirasek,  
J.L. Andrews, S. Murugkar and R.M. Thomson,  
Shining light on microdosimetry: A novel system for micron-scale analysis of energy deposition,  
Oral presentation

*Society of Nuclear Medicine and Molecular Imaging Annual Meeting: June 8-11, 2024, Toronto,  
ON*

**A. Jabbarpour**, R. Klein, R.A. Aghdam, Z.F. Shirazi, N. Hejji, S. AlSulaiman, E. Moulton, W. Zeng,  
Y. Foufa, Y.A. Lucinian and A. Couture,  
A streamlined workflow for crowdsource annotation of medical images,  
Poster presentation

*AAPM Annual Scientific Meeting: July 21-25, 2024, Los Angeles, CA.*

**A.M. Haidari**, E. Ali and D. A. Granville,

A Two-Stage Deep Learning Network For Synthetic CT Generation From Cone-Beam CT Images,  
Poster presentation