

## Carleton University med phys grad student publications and presentations 2021

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 MAsc or PhD thesis work done as a graduate student in Physics.

### Journal Publications (alphabetic by first author)

**Ghada Aldosary**, Jean-Michel Caudrelier, Angel Arnaout, Lynn Chang, Tabitha Tse, Claire Foottit, Jiheon Song, Jason Belec and Eric Vandervoort  
Can we rely on surgical clips placed during oncoplastic breast surgery to accurately delineate the tumor bed for targeted breast radiotherapy?  
Breast Cancer Research and Treatment, **186**(2): 343-352  
[doi.org/10.1007/s10549-020-06086-3](https://doi.org/10.1007/s10549-020-06086-3)

**Christopher Dydula** and Paul C. Johns,  
Development and assessment of an x-ray tube-based multi-beam x-ray scatter projection imaging system,  
Review of Scientific Instruments **92**(11), 115106, 12 pages (2021).  
[doi.org/10.1063/5.0055900](https://doi.org/10.1063/5.0055900)

C. Valdes-Cortez, **I. Mansour**, M. J. Rivard, F. Ballester, E. Mainegra-Hing, R. M. Thomson, and J. Vijande,  
A study of Type B uncertainties associated with the photoelectric effect in low-energy Monte Carlo simulations,  
Physics in Medicine & Biology **66**, 105014,  
[doi.org/10.1088/1361-6560/abebfd](https://doi.org/10.1088/1361-6560/abebfd)

**K. Mayorov**, P. Lacasse and E. Ali  
Robustness of three external beam treatment techniques against inter-fractional positional variations of the metal port in breast tissue expanders,  
Journal of Applied Clinical Medical Physics **23**  
<https://doi.org/10.1002/acm2.13474>

**C. McNairn**, **I. Mansour**, B. Muir, R. M. Thomson, and S. Murugkar,  
High spatial resolution dosimetry with uncertainty analysis using Raman micro-spectroscopy readout of radiochromic films,  
Med. Phys., **48**: 4610-4620,  
[doi.org/10.1002/mp.15000](https://doi.org/10.1002/mp.15000)

**N. J. Murtha**, L. E. Sinclair , P. R. B. Saull, A. McCann, A. M. L. MacLeod,  
Tomographic reconstruction of a spatially-extended source from the perimeter of a restricted-  
access zone using a SCoTSS Compton gamma imager,  
Journal of Environmental Radioactivity, ISSN 0265-931X, Vol 240, page 106758  
[doi.org/10.1016/j.jenvrad.2021.106758](https://doi.org/10.1016/j.jenvrad.2021.106758)

Conference Proceedings and Presentations (presenting author underlined)

*COMP Annual Scientific Meeting*: June 22-25, 2021, held virtually.  
All abstracts of this conference are at: [doi.org/10.1002/mp.15102](https://doi.org/10.1002/mp.15102)

**Christopher Dydula**, Lindsay A. Beaton-Green, Paul C. Johns, and Graeme Wardlaw,  
Radiochromic film dosimetry for x-ray scatter imaging,  
Poster # 15,  
Medical Physics **48**, 4695-4695 (2021).

**Islam El Gamal** and M. McEwen,  
A Novel Calorimeter Design for Synchrotron Produced X-ray Beams,  
Presentation, Session 1D Scintillators and Calorimeters.

**Elizabeth Fletcher**, M. Martinov and R. Thomson,  
Microdosimetry of gold nanoparticle enhanced radiation therapy using multiscale modelling,  
Presentation, Session 2C Microdosimetry and Hydrated Electron Dosimetry

**Iymad Mansour** and R. Thomson,  
Haralick analysis in microdosimetry: characterization of energy deposition in cellular targets,  
Presentation, Session 2C Microdosimetry and Hydrated Electron Dosimetry

**Rodi Surensouy** and B. Muir,  
Validation of the National Research Council alanine dosimetry system for linac electron beam  
measurements  
Presentation, Session 4 Highlights

*CTBT Science and Technology Conference 2021*, June 28 – July 2 (hybrid Vienna, and virtual)

Laurel Sinclair, Andrew McCann, Patrick Saull, **Nathan Murtha**, Audrey Macleod,  
Unfolding Directional Aerial Radiation Survey Maps to enable Extrapolation and Improved  
Precision  
Abstract ID: 619, Track: T2.2 – 2.2 – Challenges of On-Site Inspection

*AAPM Annual Scientific Meeting: July 25-29, 2021, held virtually.*

**Ghada Aldosary**, Claire Foottit, Jason Belec and Eric Vandervoort  
Dosimetric considerations of moldable silicones for radiotherapy boluses and phantoms  
Poster PO-GePV-T-218

**Elizabeth Fletcher**, F. Ballester, L. Beaulieu, Y. Ma, H. Morrison, M.J. Rivard, R. Sloboda, J. Vijande and R. Thomson,  
Generation of 3D Dosimetric Reference Datasets Using Model-Based Dose Calculations for COMS Eye Plaque Brachytherapy  
Presentation TH-E-TRACK 5-7

**Ming Liu**, Joanna E Cygler and Eric Vandervoort,  
Modeling Dosimetric Impact of Treatment Delivery Errors in Robotic Radiosurgery:  
Experimental Validation and Applications  
Presentation TH-F-TRACK 6-7

**Meaghen Shiha**, Joanna E Cygler, Robert Macrae and Emily Heath,  
4D Monte Carlo Assessment of the Impact of Inter-and Intra-Fractional Respiratory Motion  
Variation On Delivered Dose  
Poster PO-GePV-T-168

*Canadian Association of Radiation Oncology (CARO) Annual Scientific Meeting: September 29 – October 1, 2021, held virtually.*

**E. Orton**, E. Ali, **Keren Mayorov**, K. Dennis,  
A contouring guideline for the full abdominopelvic bowel bag on treatment planning and cone beam CT images  
Poster #94