

Carleton University med phys grad student publications and presentations 2020

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, Tabitha Tse, Angel Arnaout, Jean-Michel Caudrelier, Catriona Czyrnyj, Ron Romain, Linda McLean, Claire Foottit, Jason Bélec, and Eric Vandervoort,
Radiological, dosimetric and mechanical properties of a deformable breast phantom for radiation therapy and surgical applications
Biomedical Phys. Eng. Express **6**(3), 035028 (2020).
doi: [10.1088/2057-1976/ab834a](https://doi.org/10.1088/2057-1976/ab834a)

Ghada Aldosary, Janos Szanto, Oliver Holmes, Bernie Lavigne, Waleed Althobaity, Adnan Sheikh, Claire Foottit, and Eric Vandervoort,
Geometric inaccuracy and co-registration errors for CT, DynaCT and MRI images used in robotic stereotactic radiosurgery treatment planning,
Physica Medica – Eur. J. Med. Phys. **69**, 212-222 (2020).
doi: [10.1016/j.ejmp.2019.12.002](https://doi.org/10.1016/j.ejmp.2019.12.002)

C. Harry Allen, Benjamin Hansson, **Olivia Raiche-Tanner**, and Sangeeta Murugkar,
Coherent anti-Stokes Raman scattering imaging using silicon photomultipliers,
Optics Letters **45**(8), 2299-2302 (2020).
doi: [10.1364/OL.390050](https://doi.org/10.1364/OL.390050)

Alexandra Bourgouin, Andreas Schüller, Thomas Hackel, Rafael Kranzer, Daniela Poppinga, Ralf-Peter Kapsch, and Malcolm McEwen,
Calorimeter for real-time dosimetry of pulsed ultra-high dose rate electron beams,
Frontiers in Physics **8**, 567340 (2020).
doi: [10.3389/fphy.2020.567340](https://doi.org/10.3389/fphy.2020.567340)

Marc J. P. Chamberland, Robert A. deKemp, and Tong Xu,
Motion tracking of low-activity fiducial markers using adaptive region of interest with list-mode positron emission tomography,
Med. Phys. **47**(8), 3402-3414 (2020).
doi: [10.1002/mp.14206](https://doi.org/10.1002/mp.14206)

Sara Gholampourkashi, Joanna E. Cygler, Bernie Lavigne, Miro Vujicic, and Emily Heath,
Validation of 4D Monte Carlo dose calculations using a programmable deformable lung phantom,
Physica Medica – Eur. J. Med. Phys. **76**, 16-27 (2020).
doi: [10.1016/j.ejmp.2020.05.019](https://doi.org/10.1016/j.ejmp.2020.05.019)

Ming Liu, Joanna E. Cygler, and Eric Vandervoort,

Patient-specific PTV margins for liver stereotactic body radiation therapy determined using support vector classification with an early warning system for margin adaptation,

Med. Phys. **47**(10), 5172-5182 (2020).

doi: [10.1002/mp.14419](https://doi.org/10.1002/mp.14419)

Spencer Manwell, Ran Klein, Tong Xu, and Robert A. deKemp,

Clinical comparison of the positron emission tracking (PeTrack) algorithm with the real-time position management system for respiratory gating in cardiac positron emission tomography,

Med. Phys. **47**(4), 1713-1726 (2020).

doi: [10.1002/mp.14052](https://doi.org/10.1002/mp.14052)

Martin P. Martinov and Rowan M. Thomson,

Taking EGSnrc to new lows: Development of egs++ lattice geometry and testing with microscopic geometries (technical note),

Med. Phys. **47**(7), 3225-3232 (2020).

doi: [10.1002/mp.14172](https://doi.org/10.1002/mp.14172)

Keren Mayorov and Elsayed Ali,

Magnitude and dosimetric impact of inter-fractional positional variations of the metal port of tissue expanders on postmastectomy patients treated with radiation,

Phys. Imaging Radiat. Oncol. **16**, 37-42 (2020).

doi: [10.1016/j.phro.2020.09.012](https://doi.org/10.1016/j.phro.2020.09.012)

Curtis W. McCloskey, Brendan S. Kelly, David P Cook, **C. Harry Allen**, Amanda Forsyth, Jer Upham, Katey J. Rayner, Douglas A. Gray, Robert W. Boyd, Sangeeta Murugkar, Bryan Lo, Mary K. Senterman, and Barbara C. Vanderhyden,

Metformin use abrogates age-associated ovarian fibrosis,

Clinical Cancer Research **26**(3), 632-642 (2020).

doi: [10.1158/1078-0432.CCR-19-0603](https://doi.org/10.1158/1078-0432.CCR-19-0603)

Habib Safigholi, Marc J. P. Chamberland, Randle E. P. Taylor, C. Harry Allen, **Martin P. Martinov**, David W. O. Rogers, and Rowan M. Thomson,

Update of the CLRP TG-43 parameter database for low-energy brachytherapy sources,

Med. Phys. **47**(9), 4656-4669 (2020).

doi: [10.1002/mp.14249](https://doi.org/10.1002/mp.14249)

Laurel E. Sinclair, Andrew McCann, Patrick R. B. Saull, Rodger L. Mantifel, Christian V. O. Ouellet, Pierre-Luc Drouin, Audrey M. L. Macleod, Brian Le Gros, Ian Summerell, Jens H. Hovgaard, Stephen Monkhouse, Flaviu Stanescu, Guy Jonkmans, and **Nathan Murtha**,

End-user experience with the SCoTSS Compton imager and directional survey spectrometer

Nucl. Instr. & Meth. in Phys. Res. A **954**, 161683 (2020).

doi: [10.1016/j.nima.2018.11.142](https://doi.org/10.1016/j.nima.2018.11.142)

Conference Proceedings and Presentations (presenting author underlined)

SPIE Proceedings: from SPIE Anomaly Detection and Imaging with X Rays (ADIX) V, 2020 April 27 – May 8, held virtually.

Christopher Dydula, Tong Xu and Paul C. Johns,
Design and development of a rotating-anode x-ray tube coherent scatter projection imaging system,
Proc. SPIE **11404**, article 08 (13 pages) (2020).
doi: [10.1117/12.2554209](https://doi.org/10.1117/12.2554209)

AAPM/COMP presentations: joint meeting of the American Association of Physicists in Medicine and the Canadian Organization of Medical Physicists, 2020 July 12 – 16, held virtually.

All abstracts of this conference are at doi: [10.1002/mp.14316](https://doi.org/10.1002/mp.14316)

G. Aldosary, Jean-Michel Caudrelier, Tabitha Tse, Angel Arnaout, Claire Foottit, Jason Bélec, and Eric Vandervoort,
Investigation of tumor bed delineation accuracy for targeted breast radiation therapy following oncoplastic surgery,
Presentation TH-A-TRACK 5-4.
Med. Phys. **47**(6), e372-e372 (2020).

Christopher Dydula and Paul C. Johns,
Benchtop coherent x-ray scatter projection imaging: From synchrotrons to x-ray tubes,
Presentation TH-D-TRACK 1-7.
Med. Phys. **47**(6), e383-e383 (2020).

Matthew Efseaff, Miller MacPherson, and Dan La Russa,
Evaluating the accuracy of a novel general cavity theory formalism,
Presentation SU-F-TRACK 3-5.
Med. Phys. **47**(6), e281-e281 (2020).

Islam El Gamal, Bryan Muir, and Malcolm McEwen,
Assessing the accuracy of ion chamber air kerma measurements in synchrotron produced monochromatic x-ray beams,
Poster PO-GeP-T-120.
Med. Phys. **47**(6), e702-e702 (2020).

Elizabeth Fletcher, F Ballester, Luc Beaulieu, Y Ma, H Morrison, M J Rivard, R Sloboda, J Vijande, and Rowan Thomson,
Generation of 3D dosimetric reference datasets using model-based dose calculations for COMS eye plaque brachytherapy
Poster PO-GeP-T-473.
Med. Phys. **47**(6), e788-e788 (2020).

A. Mehan Haidari, Dal Granville, and Elsayed Ali,
Evaluation of synthetic CT generation from CBCT using a deep learning model,
Poster PO-GeP-I-119.
Med. Phys. **47**(6), e535-e535 (2020).

Ming Liu, Joanna E Cygler, J Doody, S Malone, J Pantarotto, D Tiberi, and Eric Vandervoort,
Dosimetric sensitivity to sources of uncertainties for liver cancer and trigeminal neuralgia treated with
ablative radiosurgery,
Poster BReP-SNAP-T-50.
Med. Phys. **47**(6), e457-e457 (2020).

Iymad Mansour and Rowan Thomson,
Deep learning techniques in micro-dosimetry: Using conditional generative adversarial networks to
predict energy deposition on cellular length scales,
Poster BReP-SNAP-M-50.
Med. Phys. **47**(6), e417-e417 (2020).

Keren Mayorov and Elsayed Ali,
Robustness of three treatment modalities against inter-fractional positional variations of the metal port
in breast tissue expanders,
Poster BReP-SNAP-T-122.
Med. Phys. **47**(6), e475-e475 (2020).

Malcolm McEwen, **Alexandra Bourgouin**, and A Schueller,
Investigation of a simple calorimeter design for the dosimetry of ultra-high pulse dose rate (FLASH)
electron beams,
Presentation MO-EF-TRACK 3-3.
Med. Phys. **47**(6), e294-e294 (2020).

Habib Safigholi, **Zachary Parsons**, **Stephen Deering**, and Rowan Thomson,
Update of the Carleton Laboratory for Radiotherapy Physics (CLRP) dosimetric database for eye plaque
brachytherapy with photon-emitting sources,
Poster BReP-SNAP-T-134.
Med. Phys. **47**(6), e478-e479 (2020).

Meaghen Shiha, Joanna Cygler, R MacRae, Sara Gholampourkashi, and Emily Heath,
4D Monte Carlo based patient-specific dose reconstruction incorporating surface motion measurements,
Poster BReP-SNAP-T-3.
Med. Phys. **47**(6), e445-e445 (2020).