

APPENDIX X.

PUBLISHED ABSTRACTS

by members of the Medical Physics Unit : 2019 calendar year (x 57)
(names of MPU staff members are underlined, students are indicated by †)

1. J. Coates, A. Jeyaseelan, N. Ybarra, J. Tao, M. David, S. Faria, L. Souhami, F. Cury, M. Duclos, I. El Naqa, *Unified radiogenomic prediction of late radiotherapy toxicities*, ESTRO 38th Annual Meeting: Targeting optimal care, Milan, Italy, April 26-30, 2019. Oral presentation SP-0641 SP-0011; J. Eur. Soc. Radiother. Oncol. **133**(1), S4 (2019).
2. M. Serban, C. Kirisits, A. De Leeuw, R. Pötter, I.M. Jürgenliemk-Schulz, N. Nesvacil, J. Swamidas, R. Hudej, G. Lowe, T.P. Hellebust, G. Menon, A. Oinam, P. Bownes, B. Oosterveld, M. De Brabandere, K. Koedooder, A.B.L. Marthinsen, D. Whitney, J. Lindegaard, K. Tanderup, *Performance of ring vs ovoids and intracavitary vs intracavitary-interstitial in the EMBRACE study*, ESTRO 38th Annual Meeting: Targeting optimal care, Milan, Italy, April 26-30, 2019. Oral presentation OC-0172; J. Eur. Soc. Radiother. Oncol. **133**(1), S87 (2019).
3. Y. Zlateva†, B. Muir, I. El Naqa, *Cherenkov emission-based dosimetry is a promising perturbation-free technique*, ESTRO 38th Annual Meeting: Targeting optimal care, Milan, Italy, April 26-30, 2019. Oral presentation OC-0293; J. Eur. Soc. Radiother. Oncol. **133**(1), S146 (2019).
4. N. Ybarra, J. Seuntjens, *Radio-selective effects of natural occurring muscle-derived dipeptide in A549 and normal cell lines*, ESTRO 38th Annual Meeting: Targeting optimal care, Milan, Italy, April 26-30, 2019. Oral presentation OC-0376; J. Eur. Soc. Radiother. Oncol. **133**(1), S187 (2019).
5. G. Famulari†, S. Enger, *Intensity modulated brachytherapy for prostate cancer: Plan quality, robustness and delivery time*, ESTRO 38th Annual Meeting: Targeting optimal care, Milan, Italy, April 26-30, 2019. Oral presentation SP-0641 OC-0397; J. Eur. Soc. Radiother. Oncol. **133**(1), S201 (2019).
6. A. Garant, S. Magnan, S. Devic, A. Martin, M. Boutros, C. Vasilevsky, S. Ferland, A. Bujold, S. Desgroseilliers, H. Sebahang, C. Richard, T. Vuong, *Organ preservation with image guided and adaptive brachytherapy for patients with rectal cancer*, Radiother. Oncol. **133**(1), S266 (2019).
7. J. Seuntjens, E. Lartigau, *Implementation and practice of SRS and SBRT: Consensus guidelines and protocols*, ESTRO 38th Annual Meeting: Targeting optimal care, Milan, Italy, April 26-30, 2019. Oral presentation SP-0641; J. Eur. Soc. Radiother. Oncol. **133**(1), S341 (2019).
8. N. Tomic, L. Liang, M. Lecavalier, J. Seuntjens, R. Apardian, S. Devic, *Radiochromic film-based output measurement for radio-biological experiments at low energy photons*, ESTRO 38th Annual Meeting: Targeting optimal care, Milan, Italy, April 26-30, 2019. Poster presentation PO-0891; J. Eur. Soc. Radiother. Oncol. **133**(1), S471 (2019).
9. A. Chatterjee†, M. Vallières†, A. Dohan, I. Levesque, Y. Ueno, S. Saif, C. Reinhold, J. Seuntjens, *Improved external validation performance of predictive radiomics models using statistical methods*, ESTRO 38th Annual Meeting: Targeting optimal care, Milan, Italy, April 26-30, 2019. Poster presentation PO-0949; J. Eur. Soc. Radiother. Oncol. **133**(1), S513 (2019).
10. L.M. Wang†, A. Chatterjee†, A. Semionov, J. Tsui, S. Lee, I. Yang, Y. Al Bulushi, J. Seuntjens, N. Ybarra, *Determining the radiodensity range for data-driven quantification of radiation-induced lung fibrosis*, ESTRO 38th Annual Meeting: Targeting optimal care, Milan, Italy, April 26-30, 2019. Poster presentation PO-0950; J. Eur. Soc. Radiother. Oncol. **133**(1), S513 (2019).
11. L. Mirzakhanian†, R. Bassalow, D. Zaks, C. Huntzinger, J. Seuntjens, *Calibration of the new RefleXion biology-guided radiotherapy unit in the context of the TRS-483 CoP*, ESTRO 38th Annual Meeting: Targeting optimal care, Milan, Italy, April 26-30, 2019. Electronic poster EP-1798; J. Eur. Soc. Radiother. Oncol. **133**(1), S973 (2019).
12. T. Shoemaker†, T. Vuong, H. Glickman†, S. Kaifi, G. Famulari†, S. Enger, *The effect of material heterogeneity in endorectal brachytherapy with 192Ir, 75Se and 169Yb Sources*, ESTRO 38th Annual Meeting: Targeting optimal care, Milan, Italy, April 26-30, 2019. Electronic poster EP-1805; J. Eur. Soc. Radiother. Oncol. **133**(1), S977 (2019).
13. K. Asiev, S. Devic, B. Bahoric, *Brachytherapy study between patients treated with HDR Ir-192 and Xofig 50kVp source for uterus cancer*, Radiother. Oncol. **133**(1), S1181 (2019).
14. J. Mégrourèche†, J. Sankey, L. Childress, S. Enger, *Development of an in vivo radiation dosimeter for radiotherapy*, Radiother. Oncol. **139**(S1), S19 (2019). Doi: org/10.1016/S0167-8140(19)33323-7.
15. P.J. van Houdt, K. Tanderup, J.F. Kallehauge, R.A. Nout, R. Hudej, S. Chopra, A. Swamidas, Z.J. van Kesteren, C.A.T. van den Berg, M. Daniel, D. Georg, E. Malinen, J-C. Côté, I. Levesque, U.A. van der Heide, *Quality assurance of quantitative MRI for biomarker discovery in locally advanced cervical cancer*, Proc. ISMRM 27th Scientific Meeting, Montreal, QC, May 11-16, 2019, p.2376.
16. S. Xing†, I. Levesque, *Modeling the microstructure of tissue with two cell populations of different sizes using diffusion-weighted MRI*, Proc. ISMRM 27th Scientific Meeting, Montreal, QC, May 11-16, 2019, p.3540.

17. G. Famulari†, S. Enger, *Urethra sparing with intensity modulated brachytherapy for prostate cancer*, Curiethérapies, Montreal, QC, May 17, 2019. Oral presentation.
18. M.D.C. Evans, J. Kildea, W. Parker, G. Almkaddesi†, C. Pacher, L. Montgomery†, *Cradle-to-grave radiation safety management of neutrons produced linear accelerators in the Radiation Oncology department*, CRPA Annual Meeting, Ottawa, ON, May 27-30, 2019.
19. G. Famulari†, S. Enger, *Dosimetric characterization of a new 169Yb source for high dose rate brachytherapy*, ABS Annual Meeting, Miami, FL, June 08, 2019. Snap oral presentation.
20. G. Famulari†, S. Enger, *Monte Carlo dosimetry of a custom-made 169Yb source for intensity modulated brachytherapy*, ICCR-MCMA, Montreal, QC, June 17-21, 2019. Oral presentation.
21. L.M. Wang†, A. Semionov, A. Chatterjee†, S. Lee, J. Tsui, I. Yang, Y. Al Bulushi, J. Seuntjens, N. Ybarra, *Comparing the efficacy of SBRT and IMRT in reducing radiation-induced pulmonary fibrosis*, ICCR-MCMA, Montreal, QC, June 17-21, 2019. Oral presentation.
22. L.M. Wang†, N. Ybarra, S. Jung, M. Serban, A. Chatterjee†, J. Seuntjens, *Comparison of automated and pathologist assessment of radiation-induced pulmonary fibrosis for Masson's trichome*, ICCR-MCMA, Montreal, QC, June 17-21, 2019. Oral presentation.
23. J. DeCunha†, F. Villegas-Navarro, N. Vallières, S. Camilleri-Broët, S. Enger, *Towards patient specific microdosimetry*, MCMA, Montreal, QC, June 21, 2019. Oral presentation.
24. L. Mirzakhania†, R. Bassalow, D. Zaks, C. Huntzinger, J. Seuntjens, *Reference dosimetry of a new biology-guided radiotherapy (BgRT) system following the IAEA TRS-483 CoP*, IDOS, Vienna, Austria, June 18-21 2019, organized by IAEA. Paper/oral presentation, book of Extended Synopses: 20-22.
25. X.J. Wang†, B. Miguel, J. Seuntjens, J.M. Fernandez-Varea, *Impact of different theoretical models in the calculation of Compton mass energy-transfer coefficients*, IDOS, Vienna, Austria, June 18-21 2019, organized by IAEA. Paper/oral presentation, book of Extended Synopses: 33-34.
26. B. Côté†, J. Seuntjens, A. Sarfehnia, J. Renaud, *Aerrow-mini: A probe-format graphite calorimeter for absolute dosimetry of small high-energy photon fields*, IDOS, Vienna, Austria, June 18-21 2019, organized by IAEA. Paper/oral presentation, book of Extended Synopses: 59-61.
27. J. Bancher†, S. Ketelhut, L. Buermann, J. Seuntjens, *Monte Carlo determination of chamber correction factors for medium energy X-ray beams between 50 and 300kV*, IDOS, Vienna, Austria, June 18-21 2019, organized by IAEA. Paper/oral presentation, book of Extended Synopses: 166-167.
28. S. Ketelhut, L. Buermann, J. Bancher†, J. Seuntjens, *Measurement of chamber correction factors Kch for medium-energy therapeutic X-rays between 70 kV and 300 kV generating voltage*, IDOS, Vienna, Austria, June 18-21 2019, organized by IAEA. Paper/oral presentation, book of Extended Synopses: 170-171.
29. J. Renaud, A. Sarfehnia, J. Bancher†, J. Seuntjens, *Calorimetry-based clinical reference dosimetry of a 1.5 T MRI-linac in water and solid phantoms using Aerrow*, IDOS, Vienna, Austria, June 18-21 2019, organized by IAEA. Paper/oral presentation, book of Extended Synopses: 234-235.
30. L. Carroll†, E. Croteau, G. Kertzscher, O. Sarrhini, R. Lecomte, S. Enger, *Cross-validation of a non-invasive positron detector to measure the arterial input function for pharmacokinetic modelling in dynamic PET imaging*, SNMMI, San Diego, CA, June 24, 2019. Oral presentation.
31. A. Chatterjee†, M. Vallières†, A. Dohan, I. Levesque, Y. Ueno, S. Saif, C. Reinhold, J. Seuntjens, *Using dataset-specific feature standardization to improve predictive performance of radiomic models*, AAPM 61st Annual Meeting & Exhibition, San Antonio, TX, July 14-18, 2019. Oral presentation SU-J400-CAMPUS-F2-5; Med. Phys. **46**(6), e174 (2019).
32. L. Carroll†, G. Kertzscher, E. Croteau, O. Sarrhini, R. Lecomte, S. Enger, *Validation of a non-invasive position detector for use with dynamic PET under clinical conditions*, AAPM 61st Annual Meeting & Exhibition, San Antonio, TX, July 14-18, 2019. Oral presentation SU-KL-304-09; Med. Phys. **46**(6), e194 (2019).
33. Y. Xu, S. Aldelaijan†, I. Buzurovic, M. Czerminska, *Electron backscatter from internal lead shielding for superficial facial electron treatments*, AAPM 61st Annual Meeting & Exhibition, San Antonio, TX, July 14-18, 2019. Oral presentation MO-C930-GePD-F3-03; Med. Phys. **46**(6), e230 (2019).
34. A. Chatterjee†, M. Vallières†, G. Romero-Sanchez, A. Perez-Lara, R. Forghani, J. Seuntjens, *Multi-energy study of impact of CT Hounsfield unit range in gray level discretization on radiomic feature stability*, AAPM 61st Annual Meeting & Exhibition, San Antonio, TX, July 14-18, 2019. Oral presentation MO-C930-GePD-F5-4; Med. Phys. **46**(6), e233 (2019).
35. A. Diamant†, A. Chatterjee†, M. Vallières†, G. Shenouda, J. Seuntjens, *Multi-branch convolutional neural network combines unregistered PET and CT Images for head & neck cancer outcome prediction*, AAPM 61st Annual Meeting & Exhibition, San Antonio, TX, July 14-18, 2019. Oral presentation TU-AB-SAN2-4; Med. Phys. **46**(6), e294 (2019).
36. J. Mégrouèche†, J. Sankey, L. Childress, S. Enger, *Development of a hydrated electron dosimeter for radiotherapy applications*, AAPM 61st Annual Meeting & Exhibition, San Antonio, TX, July 14-18, 2019. Oral presentation WE-AB-303-04; Med. Phys. **46**(6), e411 (2019).
37. S. Aldelaijan†, P. Papaconstadopoulos, H. Bekerat, M. Khosravi, M. Bhagwat, J. Seuntjens, S. Devic, I. Buzurovic, *Multichannel normalized pixel value as a response function for radiochromic film dosimetry enables simultaneous dose response linearization and scanner response correction*, AAPM 61st Annual Meeting & Exhibition, San Antonio, TX, July 14-18, 2019. Oral presentation WE-AB-303-9; Med. Phys. **46**(6), e413 (2019).

38. B. Muir, J. Seuntjens, M. McEwen, D. Followill, W. Culberson, S. Davis, *SAM therapy – Educational course: Assembling your detector toolkit – Which types, how many, and why*, AAPM 61st Annual Meeting & Exhibition, San Antonio, TX, July 14-18, 2019. Oral presentation WE-H-SAN4-02; Med. Phys. **46**(6), e471 (2019).
39. G. Famulari†, S. Enger, *Evaluation of the intershield attenuation effect for a new intensity modulated brachytherapy system for prostate cancer*, AAPM 61st Annual Meeting & Exhibition, San Antonio, TX, July 14-18, 2019. Oral presentation TH-A-301-11; Med. Phys. **46**(6), e495 (2019).
40. H. Glickman†, M. Antaki†, S. Enger, *RapidBrachyMCTPS: Addition of contouring tools to the Monte Carlo-based treatment planning system for brachytherapy applications*, AAPM 61st Annual Meeting & Exhibition, San Antonio, TX, July 14-18, 2019. Poster presentation PO-GePV-T-31; Med. Phys. **46**(6), e580 (2019).
41. S. Enger, *Use of artificial intelligence in dosimetry*, COMP-OCPM 65th Annual Scientific Meeting, Kelowna, BC, September 24-27, 2019.
42. J. Mégrourèche†, L. Childress, J. Sankey, A. Bui†, S. Enger, *Development of a hydrated electron dosimeter for in vivo applications in radiotherapy: A proof of concept*, COMP-OCPM 65th Annual Scientific Meeting, Kelowna, BC, September 24-27, 2019. Oral presentation – WINNER: J.R. Cunningham Young Investigators Award; Med. Phys. **46**(11), 5372.
43. A. Diamant†, A. Chatterjee†, M. Vallières†, G. Shenouda, J. Seuntjens, *Multi-modal deep learning framework for head & neck cancer outcome prediction*, COMP-OCPM 65th Annual Scientific Meeting, Kelowna, BC, September 24-27, 2019. Oral presentation; Med. Phys. **46**(11), 5372.
44. Y. Kamio†, M. Bavoux, K. Zerouali Boukhal, J-F. Carrier, F. DeBlois, P. Wong, S. Enger, *Validation of an orthovoltage based high-throughput microfluidic lab-on-a-chip radiobiological platform using EBT3 Gafchromic™ film multichannel dosimetry*, COMP-OCPM 65th Annual Scientific Meeting, Kelowna, BC, September 24-27, 2019. Oral presentation; Med. Phys. **46**(11), 5374.
45. A. Chatterjee†, H. Woodruff, M. Lobbes, M. Vallières†, J. Seuntjens, *Univariate feature selection on imbalanced data*, COMP-OCPM 65th Annual Scientific Meeting, Kelowna, BC, September 24-27, 2019. Oral presentation; Med. Phys. **46**(11), 5375.
46. A. Chatterjee†, H. Woodruff, M. Vallières, J. Seuntjens, *Simple data imputation for missing feature values in binary classification*, COMP-OCPM 65th Annual Scientific Meeting, Kelowna, BC, September 24-27, 2019. Poster presentation; Med. Phys. **46**(11), 5378.
47. F. Mathew†, C. Chilian, L. Montgomery†, J. Kildea, *Evaluation of the secondary neutron fluence spectra, during high energy radiation therapy, using a passive nested neutron spectrometer (NNS) with gold activation foil*, COMP-OCPM 65th Annual Scientific Meeting, Kelowna, BC, September 24-27, 2019. Poster presentation; Med. Phys. **46**(11), 5378.
48. H. Patrick†, K. Agnew†, L. Souhami†, M. Kanagalingham†, J. Kildea, *The impact of rectal gas content on rectal dose during prostate cancer radiotherapy*, COMP-OCPM 65th Annual Scientific Meeting, Kelowna, BC, September 24-27, 2019. Poster presentation; Med. Phys. **46**(11), 5381.
49. M.D.C. Evans, L. Montgomery†, J. Kildea, *Neutron activation in the radiotherapy bunker: strategies for managing radiation safety*, COMP-OCPM 65th Annual Scientific Meeting, Kelowna, BC, September 24-27, 2019. Poster presentation; Med. Phys. **46**(11), 5385.
50. L. Mirzakhania†, A. Sarfehnia, J. Seuntjens, *Comparison of the AAPM TG-21, TG-51 and IAEA-AAPM TRS-483 with updated correction factors for calibration of Leksell Gamma Knife*, COMP-OCPM 65th Annual Scientific Meeting, Kelowna, BC, September 24-27, 2019. Poster presentation; Med. Phys. **46**(11), 5387.
51. V.J. Heng†, A. Diamant†, A. Chatterjee†, S. Faria, H. Bahig, R. Doucet, I. El Naqa, J. Seuntjens, *Differences in distant recurrence between coplanar and non-coplanar lung stereotactic body irradiation therapy*, COMP-OCPM 65th Annual Scientific Meeting, Kelowna, BC, September 24-27, 2019. Poster presentation; Med. Phys. **46**(11), 5388.
52. Y. Zlateva†, B. Muir, I. El Naqa, J. Seuntjens, *Recommendations on the step-size artifact of Monte Carlo-calculated photon and electron beam Cherenkov-to-dose conversion factors*, COMP-OCPM 65th Annual Scientific Meeting, Kelowna, BC, September 24-27, 2019. Poster presentation; Med. Phys. **46**(11), 5388.
53. C. Lund†, G. Famulari†, L. Montgomery†, J. Kildea, *An investigation of neutron weighting factors using a Geant4-based microdosimetry pipeline*, COMP-OCPM 65th Annual Scientific Meeting, Kelowna, BC, September 24-27, 2019. Oral presentation; Med. Phys. **46**(11), 5391.
54. J. Mullins†, M-A. Renaud†, M. Serban, J. Seuntjens, *Development of a simultaneous trajectory and volumetric modulated arc therapy optimization algorithm*, COMP-OCPM 65th Annual Scientific Meeting, Kelowna, BC, September 24-27, 2019. Oral presentation; Med. Phys. **46**(11), 5401-5402.
55. J. Kildea, *Neutron activation in the radiotherapy bunker: Strategies for managing radiation safety*, COMP-OCPM 65th Annual Scientific Meeting, Kelowna, BC, September 24-27, 2019. Oral presentation; Med. Phys. **46**(11).
56. J. Mégrourèche†, L. Childress, J. Sankey, A. Bui†, S. Enger, *Development of an in-vivo radiation dosimeter for radiotherapy*, CARO Annual Meeting, Halifax, NS, October 02-05, 2019. Oral presentation – BEST IN PHYSICS AWARD.
57. S. Skamene, M.D.C. Evans, R. Ruo, T. Hijal, C. Freeman, *An elegant and robust approach to TBI delivery using modern technology*, Ped. Blood & Cancer **66**, S4, pp PROS01 SIOP19-1150 (2019).