

APPENDIX X

PUBLISHED ABSTRACTS

by members of the Medical Physics Unit : 2017 calendar year (x 55)
(names of MPU staff members are underlined, students are indicated by †)

1. P. Watson†, M. Popovic, J. Seuntjens, *Measurement of absorbed dose to water for a low-energy miniature x-ray source with and ionization chamber*, 25th Annual Meeting of the Council on Ionizing Radiation Measurements & Standards (CIRMS) “Past, Present, and Future”, NIST, Gaithersburg, MD, March 27-29, 2017. Poster presentation.
2. J. Renaud†, A. Sarfehnia, J. Bancheri†, J. Seuntjens, *Aerrow: A probe-format graphite calorimeter for use as a local absorbed dose standard for high-energy photon beams in the clinical environment*, 25th Annual Meeting of the Council on Ionizing Radiation Measurements & Standards (CIRMS), NIST, Gaithersburg, MD, March 27-29, 2017. Student Travel Grant Awards Presentation.
3. S. Hickling†, H. Lei, M. Hobson, I. El Naqa, *Measuring radiation dose through the detection of radiation-induced acoustic waves*, 25th Annual Meeting of the Council on Ionizing Radiation Measurements & Standards (CIRMS), NIST, Gaithersburg, MD, March 27-29, 2017. Student Travel Grant Awards Presentation.
4. G. Famulari†, J.J. Munro, S. Enger, *Retrospective evaluation of prostate cancer treatment plan quality obtained from intermediate-energy sources for high-dose rate brachytherapy*, Brachytherapy **16**(3), Suppl S22; Annual Meeting of the American Brachytherapy Society (ABS), Boston, MA, April 20-22, 2017. Oral presentation, abstract.
5. G. Famulari†, S. Enger, *A novel delivery system for high dose rate intensity modulated brachytherapy with intermediate energy radiation sources such as ¹⁶⁹Yb*, Brachytherapy **16**(3), Suppl S23; Annual Meeting of the American Brachytherapy Society (ABS), Boston, MA, April 20-22, 2017. Oral presentation, abstract.
6. S. Devic, J. Schneider†, T. Vuong, N. Tomic, R. Lisbona, M. Hickeson, G. Chausse, F. DeBlois, J. Seuntjens, G. Battist, *Differential uptake volume histograms as a predictor of response in rectal adenocarcinoma patients treated with preoperative endorectal brachytherapy*, Brachytherapy **16**(3), Suppl S24-S25; Annual Meeting of the American Brachytherapy Society (ABS), Boston, MA, April 20-22, 2017. Oral presentation, abstract.
7. J. DeCunha†, S. Enger, *Investigation of a new device to improve dosimetric outcomes in intravascular brachytherapy*, Brachytherapy **16**(3), Suppl S80; Annual Meeting of the American Brachytherapy Society (ABS), Boston, MA, April 20-22, 2017. Poster presentation, abstract.
8. P. Truong†, N. Ybarra, M. Evans, S. Enger, *Nuclei size distribution as a predictor for radiosensitivity with ¹⁹²Ir brachytherapy*, Brachytherapy **16**(3), Suppl S83; Annual Meeting of the American Brachytherapy Society (ABS), Boston, MA, April 20-22, 2017. Poster presentation, abstract.
9. S. Aldelaijan†, H. Bekerat, I. Buzurovic, P. Devlin, F. DeBlois, J. Seuntjens, D.L. Collins, S. Devic, *Improving dose accuracy of HDR brachytherapy treatment of skin lesions using Freiburg flap applicator based on reference radiochromic film dose measurements*, Brachytherapy **16**(3), Suppl S99; Annual Meeting of the American Brachytherapy Society (ABS), Boston, MA, April 20-22, 2017. Oral presentation, abstract.
10. S. Aldelaijan†, S. Wadi-Ramahi, A. Nobah, B. Mofteh, S. Devic, N. Jastaniyah, *Commissioning of HDR brachytherapy combined with an application-guided SBRT boost for advanced cervical cancer*, Brachytherapy **16**(3) Suppl S103; Annual Meeting of the American Brachytherapy Society (ABS), Boston, MA, April 20-22, 2017. Oral presentation, abstract.
11. Z. Ahmed†, I. Levesque, *Robust reference-region DCE-MRI analysis with a vascular component and two-fit analysis*, 25th Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), Honolulu, Hawaii, USA, April 22-27, 2017. ePoster, p.1906.
12. Z. Ahmed†, I. Levesque, *Quantitative DCE-MRI analysis using a reference tissue and AIF tail*, 25th Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), Honolulu, Hawaii, USA, April 22-27, 2017. ePoster, p.1907.

13. E. Alonso-Ortiz†, I. Levesque, *Comparison of myelin water fractions from multi-echo spin-echo and multi-gradient echo techniques*, 25th Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), Honolulu, Hawaii, USA, April 22-27, 2017. ePoster, p.1366.
14. V. Fortier†, I. Levesque, *Phase processing for quantitative susceptibility mapping of regions with large susceptibility and lack of signal*, 25th Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), Honolulu, Hawaii, USA, April 22-27, 2017. ePoster, p.3678.
15. S. Xing†, I. Levesque, *A probabilistic approach to automated classification of distinct pathological regions in soft tissue sarcoma using diffusion and T2 relaxation*, 25th Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), Honolulu, Hawaii, USA, April 22-27, 2017. ePoster, p.4507.
16. G. Famulari†, P. Pater, S. Enger, *Microdosimetric evaluation of intermediate-energy brachytherapy sources using Geant4-DNA*, J. Eur. Soc. Radiother. Oncol. **123**(1), S192; 36th annual meeting of the European Society for Radiotherapy & Oncology (ESTRO), Vienna, Austria, May 4-9, 2017. Oral presentation, abstract OC-0359.
17. T. Vuong, A. Garant, S. Devic, A. Kezouth, *Bowel dysfunction resulting from different treatment strategies in patients with rectal cancer*, J. Eur. Soc. Radiother. Oncol. **123**(1), S368 (2017).
18. M-A. Renaud†, M. Serban, C. Lambert, J. Seuntjens, *On mixed-modality radiation therapy optimization using the column generation approach*, J. Eur. Soc. Radiother. Oncol. **123**, Suppl 1, S831; 36th annual meeting of the European Society for Radiotherapy & Oncology (ESTRO), Vienna, Austria, May 4-9, 2017. ePoster, abstract EP-1545.
19. J. Schneider†, N. Tomic, T. Vuong, R. Lisbona, M. Hickeson, G. Chausse, F. DeBlois, J. Seuntjens, S. Devic, *FDG-PET background definition in rectal cancer patients using differential uptake volume*, J. Eur. Soc. Radiother. Oncol. **123**, Suppl 1, S930-931; 36th annual meeting of the European Society for Radiotherapy & Oncology (ESTRO), Vienna, Austria, May 4-9, 2017. ePoster, abstract EP-1701.
20. N. Tomic, P. Papaconstadopoulos, J. Seuntjens, F. DeBlois, S. Devic, *Image quality comparison between two radiotherapy simulators*, J. Eur. Soc. Radiother. Oncol. **123**, Suppl 1, S941-S942; 36th annual meeting of the European Society for Radiotherapy & Oncology (ESTRO), Vienna, Austria, May 4-9, 2017. ePoster, abstract EP-1717.
21. J. Kildea, L. Hendren, D. Hererra, A. Joseph†, R. Maglieri, T. Hijal, *Opal: The oncology portal and application*, J. Eur. Soc. Radiother. Oncol. **123**, Suppl 1, S950-S951; 36th annual meeting of the European Society for Radiotherapy & Oncology (ESTRO), Vienna, Austria, May 4-9, 2017. Abstract EP-1730.
22. S. Devic, U. Mwidu, A. Alkafi, B. Mofteh, S. Shakir, H. Hijazi, C. Yeung, T. Vuong, *Highly conformal external beam modalities vs brachytherapy boost for rectal cancer patients*, J. Eur. Soc. Radiother. Oncol. **123**(1), S987-988 (2017).
23. P. Watson†, M. Popovic, J. Seuntjens, *Uncertainties in measuring absorbed dose from a low-energy miniature X-ray source*, International Conference on Advances in Radiation Oncology (ICARO-2), AAPM Organization, Vienna, Austria, June 20-23, 2017.
24. A. Diamant†, JJ. Seuntjens, *Large scale comparison between AAA and MC-recalculated lung SBRT cases*, 63rd Annual Meeting of the Canadian Organization of Medical Physicists, Ottawa, ON, July 12-15, 2017.
25. Y. Zlateva†, J. Seuntjens, *Cherenkov dosimetry via directional Cherenkov-to-dose conversion factors: Monte Carlo protocol and experimental feasibility*, 63rd Annual Meeting of the Canadian Organization of Medical Physicists, Ottawa, ON, July 12-15, 2017.
26. S Hickling†, M. Hobson, M-A. Renaud†, I. El-Naqa, *In vivo detection of radiation-induced acoustic waves for treatment delivery verification: A simulation study*, Med. Phys. **44**(6), 2760; 59th Annual Meeting & Exhibition - American Association of Physicists in Medicine (AAPM), Denver, Colorado, July 30-August 3, 2017. Oral presentation SU-F-708-01.
27. A. Toltz†, M. Hoesl, J. Schuemann, J. Seuntjens, H. Lu, H. Paganetti, *In vivo proton therapy range verification using time-resolved diode dosimetry: Validation through numerical modeling*, Med. Phys. **44**(6), 2767; 59th Annual Meeting & Exhibition - American Association of Physicists in Medicine, Denver, Colorado, July 30-August 3, 2017. Oral presentation SU-H1-GePD-T-04.
28. G. Famulari†, S. Enger, *Cluster pattern analysis for alternative high dose rate brachytherapy sources ⁷⁵Se, ¹⁶⁹Yb, and ¹⁵³Gd*, Med. Phys. **44**(6), 2827; 59th Annual Meeting & Exhibition American Association of Physicists in Medicine (AAPM), Denver, Colorado, July 30-August 3, 2017. ePoster presentation SU-I-GPD-T-06.

29. G. Almakdessi†, J. Kildea, A. Licea, *Secondary neutrons from clinical electron beams*, Med.Phys **44**(6), 2881; 59th Annual Meeting & Exhibition - American Association of Physicists in Medicine (AAPM), Denver, Colorado, July 30-August 3, 2017. ePoster presentation SU-I-GPD-T-235.
30. E. Osunkwor†, K. Singh, J. Seuntjens, S. Davis, *Characterization of optically stimulated luminescence dosimeter supralinearity with respect to prior dose history*, Med. Phys. **44**(6), 2987; 59th Annual Meeting & Exhibition - American Association of Physicists in Medicine (AAPM), Denver, Colorado, July 30-August 3, 2017. Oral presentation SU-K-205-04.
31. Y. Zlateva†, J. Seuntjens, I. El Naqa, *Cherenkov dosimetry via stopping-to-Cherenkov power ratios: Protocol and experimental feasibility*, Med. Phys. **44**(6), 2996-2997; 59th Annual Meeting & Exhibition - American Association of Physicists in Medicine (AAPM), Denver, Colorado, July 30-August 3, 2017. Oral presentation SU-K-FS2-08.
32. P. Papaconstadopoulos, N. Tomic, H. Bekerat, P. Watson, E. Mainegra-Hing, F. DeBlois, J. Seuntjens, S. Devic, *Beam quality variations within a CTDI phantom for the energy range 100 to 140 KVP*, Med. Phys. **44**(6), 3036; 59th Annual Meeting & Exhibition - American Association of Physicists in Medicine (AAPM), Denver, Colorado, July 30-August 3, 2017. Oral presentation MO-RAM-GePD-I-02.
33. A. Diamant-Boustead†, I. El-Naqa, S. Faria, J. Seuntjens, *Does the omission of a CTV for NSCLC SBRT patients result in increased risk of distant metastases?*, Med. Phys. **44**(6), 3107; 59th Annual Meeting & Exhibition - American Association of Physicists in Medicine (AAPM), Denver, Colorado, July 30-August 3, 2017. Poster presentation TU-C1-GePD-T-03.
34. N. Tomic, P. Papaconstadopoulos, J. Seuntjens, F. DeBlois, S. Devic, *Comparison of image quality between RT CT simulators*, Med. Phys. **44**(6), 3112; 59th Annual Meeting & Exhibition - American Association of Physicists in Medicine (AAPM), Denver, Colorado, July 30-August 3, 2017. ePoster presentation TU-C2-GePD-I-02.
35. A. Chatterjee†, M. Vallières, A. Dohan, I. Levesque, Y. Ueno, V. Bist, S. Saif, C. Reinhold, J. Seuntjens, *Keys to avoiding statistical pitfalls of small datasets in radiomics*, Med. Phys. **44**(6), 3114; 59th Annual Meeting & Exhibition American Association of Physicists in Medicine, Denver, Colorado, July 30-August 3, 2017. ePoster presentation TU-C2-GePD-J(A)-04.
36. S. Hickling†, M. Hobson, I. El Naqa, *Experimental sensitivity analysis of x-ray acoustic computed tomography for radiotherapy dosimetry applications*, Med. Phys. **44**(6), 3209-3210; 59th Annual Meeting & Exhibition - American Association of Physicists in Medicine (AAPM), Denver, Colorado, July 30-August 3, 2017. Therapy ePoster yheater presentation WE-RAM1-GePD-TT-02.
37. J. Schneider†, R. Lisbona, M. Hickeson, G. Chausse, N. Tomic, T. Vuong, F. DeBlois, J. Seuntjens, S. Devic, *FDG-PET background definition with the use of differential uptake volume histograms for rectal cancer patients*, Med. Phys. **44**(6), 3279; 59th Annual Meeting & Exhibition - American Association of Physicists in Medicine (AAPM), Denver, Colorado, July 30-August 3, 2017. TH-AB-FS4-03.
38. M-A. Renaud†, M. Serban, J. Seuntjens, *Mixed-modality radiation therapy optimisation using the column generation method*, Med. Phys. **44**(6), 3304; 59th Annual Meeting & Exhibition - American Association of Physicists in Medicine (AAPM), Denver, Colorado, July 30-August 3, 2017. Oral presentation TH-CD-708-07.
39. G. Famulari†*, M-A. Renaud†, S. Enger, *An intensity modulated delivery system for prostate brachytherapy using intermediate energy sources*, 63rd Annual Meeting of the Canadian Organization of Medical Physicists, Ottawa, ON, July 12-15, 2017, **Young Investigators' Symposium – oral presentation**; Med. Phys. **44**(8), 4370.
40. A. Chatterjee†*, M. Vallières†, A. Dohan, I. Levesque, Y. Ueno, V. Bist, S. Saif, C. Reinhold, J. Seuntjens, *Novel methodology for applying radiomics to small datasets*, 63rd Annual Meeting of the Canadian Organization of Medical Physicists, Ottawa, ON, July 12-15, 2017. General proffered papers - oral presentation; Med. Phys. **44**(8), 4371.
41. M. Evans, R. Ruo, C. Hudon, C. Maietta, A. Molineu, H. Mehrens, H. Patrocinio, W. Parker, S. Rossel, *Verification of photon total body irradiation using the IROC-Houston anthropomorphic phantom*, Med. Phys. **44**(8), 4379 (2017).
42. E. Osunkwor†*, K. Singh, J. Seuntjens, S. Davis, *Characterization of OSLD reproducibility with number of repeated read*, 63rd Annual Meeting of the Canadian Organization of Medical Physicists, Ottawa, ON, July 12-15, 2017. General proffered papers - poster presentation; Med. Phys. **44**(8), 4385.

43. D. Breitzkreutz, M-A. Renaud†, M. Weil, J. Seuntjens, M. Bazalova-Carter, *Inverse optimization of low-cost kilovoltage arc therapy plans for breast and lung patients*, 63rd Annual Meeting of the Canadian Organization of Medical Physicists, Ottawa, ON, July 12-15, 2017. General proffered papers - poster presentation; Med. Phys. **44**(8), 4387.
44. L. Mirzakhani†*, H. Benmakhlouf, J. Seuntjens, *Predicting correction factors for reference dosimetry in any phantom material for Leksell gamma knife*, 63rd Annual Meeting of the Canadian Organization of Medical Physicists, Ottawa, ON, July 12-15, 2017. General proffered papers - poster presentation; Med. Phys. **44**(8), 4387.
45. M-A. Renaud†*, M. Serban, J. Seuntjens, *Mixed modality radiation therapy optimisation using the column generation method*, 63rd Annual Meeting of the Canadian Organization of Medical Physicists, Ottawa, ON, July 12-15, 2017. General proffered papers - poster presentation; Med. Phys. **44**(8), 4395.
46. J. Mullins†*, F. DeBlois, J. Seuntjens, *VMAT treatment plan optimization using a noncoplanar class solution trajectory applied to cranial targets*, 63rd Annual Meeting of the Canadian Organization of Medical Physicists, Ottawa, ON, July 12-15, 2017. General proffered papers - poster presentation; Med. Phys. **44**(8), 4396.
47. J. DeCunha†, S. Enger, *Resolving dosimetric issues in intravascular brachytherapy*, Med. Phys. **44**(8), 32; 63rd Annual Meeting of the Canadian Organization of Medical Physicists, Ottawa, ON, July 12-15, 2017. Oral presentation.
48. G. Famulari†, P. Pater, S. Enger, *Microdosimetry calculations for monoenergetic electrons using Geant4-DNA combined with a weighted track sampling algorithm*, Physica Medica **42**(8); International Conference on Monte Carlo Techniques for Medical Applications (MCMA), Naples, Italy; October 15-18, 2017.
49. G. Famulari†, E. Soisson, M. Duclos, S. Enger, *Consequences of patient heterogeneities for intermediate-energy sources in post-implant assessment of prostate brachytherapy treatment plans*, Physica Medica **42**(8); International Conference on Monte Carlo Techniques for Medical Applications (MCMA), Naples, Italy; October 15-18, 2017.
50. X. Wang†, J. Seuntjens, F.M. Vareas, *Assessment of RBED electron-impact ionization cross sections for Monte Carlo electron transport*, Physica Medica **42**(S1), 35; International Conference on Monte Carlo techniques for Medical Applications (MCMA), Naples, Italy; October 15-18, 2017.
51. A. Sarfehnia, N. Entezari, G. Peterson, J. Renaud†, H Nusrat, *Development of an MRI-compatible water calorimeter for Absolute Dosimetry in MRLinac and Gamma Knife*, 59th Annual Meeting and Exhibition - American Association of Physicists in Medicine (AAPM), Denver, Colorado, July 30-August 3, 2017. Oral presentation TU-FG-205-06.
52. M. Serban, C. Kirisits, K. Nkiwane, I. Dumas, J. Swamidas, A. De Leeuw, R. Hudej, G. Lowe, R. Potter, J. Lindegaard, K. Tanderup, *Irradiated volumes in image guided adaptive brachytherapy in cervix cancer: Results from the EMBRACE study*, Int. J. Radiat. Oncol. Biol. Phys. **99**(2), S25 (2017). DOI: <http://dx.doi.org/10.1016/j.ijrobp.2017.06.071> .
53. A. Diamant†, I. El Naqa, S. Faria, J. Seuntjens, *Can dose metrics predict distant metastases in SBRT non-small cell lung cancer patients?*, Int. J. Radiat. Oncol. Biol. Phys. **99**(2), E452. DOI: <http://dx.doi.org/10.1016/j.ijrobp.2017.06.1685>, American Society for Radiation Oncology Annual Meeting (ASTRO), September 24-27, 2017, San Diego, California. #ASTRO17.
54. G. Famulari†, S. Enger, *IMBrachy: A novel intensity modulated brachytherapy delivery system using 169Yb*, ASTRO 59th Annual Meeting, September 24-27, 2017, San Diego, USA; Int. J. Radiat. Oncol. Biol. Phys. **99**(2), E657 (2017). DOI: <http://dx.doi.org/10.1016/j.ijrobp.2017.06.2187>.
55. A. Joseph†, L. Hendren, T. Hijal, J. Kildea, *Predicting waiting times in radiation oncology using machine learning*, Proc. 16th IEEE International Conference on Machine Learning & Applications (ICMLA), Cancun, Mexico, December 18-21, 2017.