

APPENDIX X

PUBLISHED ABSTRACTS

by members of the Medical Physics Unit : 2015 calendar year (x 58)
(names of MPU staff members are underlined, students are indicated by †)

1. M. Vallieres†, A. Diamant-Boustead†, S. Laberge, I.R. Levesque, I. El Naqa, *A machine learning approach for creating texture-preserved MRI tumor*, Med. Phys. **42**(6), 3323; 57th Annual Meeting & Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA, SU-J-E-250.
2. L. Liang, H. Bekerat†, N Tomic, F. DeBlois, S. Devic, M. Morcos†, M. Popovic, P. Watson†, J. Seuntjens, *Impact of the radiochromic film energy response on dose measurements of low energy electronic brachytherapy sources*, Med. Phys. **42**(6), 3440 (2015).
3. P. Pater†, G. Bäckström†, M.F. Villegas, A. Ahnesjö, S. Enger, J. Seuntjens, I. El Naqa, *Influence of proton track-cell nucleus incidence angle on relative biological effectiveness*, Med. Phys. **42**(6), 3448; 57th Annual Meeting & Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA (poster), SU-E-T-494.
4. M.A. Renaud†, R. Flynn, J. Seuntjens, S.A. Enger, *Rotating shield high dose rate brachytherapy with ¹⁵³Gd and ⁷⁵Se isotopes*, Med. Phys. **42**, 3455 (2015).
5. L. Mirzakhanian†, V. Giusti, S.A. Enger, *Investigation of the uncertainties involved in secondary neutron/gamma production in Geant4/MCNP6 Monte Carlo codes for proton therapy application*, Med. Phys. **42**, 3455 (2015).
6. P. Pater†, G. Bäckström†, M.F. Villegas, A. Ahnesjö, S.A. Enger, J. Seuntjens, I. El Naqa, *On the value of LET as a radiation quality descriptor in RBE-LET relationships*, Med. Phys. **42**(6), 3469; 57th Annual Meeting & Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA (poster), SU-E-T-581.
7. S. Aldelaijan, F. Alzorkany, B. Moftah, F. Alrumayan J. Seuntjens, D. Lewis, S. Devic, *Radiochromic film quenching effect reduction for proton beam dosimetry*, Med Phys. **42**(6), 3489 (2015). doi: 10.1118/1.4925028.
8. D. Markel†, I.R. Levesque, J. Larkin, P. Leger, I. El Naqa, *Temporally realistic manipulation a 4D biomechanical lung phantom for evaluation of simultaneous registration and segmentation*, Med. Phys. **42**(6), 3549; 57th Annual Meeting & Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA, MO-AB-BRA-09.
9. J. Seuntjens, L. Beaulieu, L. Collins, P. Despres, S. Devic, I. El Naqa, J. Nadeau, G.B. Pike, A. Reader, *The CREATE medical physics research training network: Training of new generation innovators*, Med. Phys. **42**(6), 3557; 57th Annual Meeting & Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA (oral presentation), MO-DE-BRA-04.
10. Y. Zlateva†, I. El Naqa, *Cherenkov emission dosimetry: Feasibility for electron radiotherapy*, Med. Phys. **42**(6), 3567; 57th Annual Meeting and Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA, BEST IN PHYSICS (THERAPY), presentation, MO-FG-303-2.
11. I. El Naqa, *Radiomics and the coming pan-omics revolution*, Med. Phys. **42**(6), 3632; 57th Annual Meeting & Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA, TU-G-303-04.
12. J. Renaud†, A. Sarfehnia, J. Seuntjens, *Development of a probe-format graphite calorimeter for practical clinical dosimetry: Numerical design optimization, prototyping, and experimental proof-of-concept*, Med. Phys. **42**(6), 3649; 57th Annual Meeting & Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA (accepted), WE-AB-BRB-01.
13. I. El Naqa, *Cranial TCP/NTCP modeling insights and caveats*, Med. Phys. **42**(6), 3685; 57th Annual Meeting & Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA, WE-F-304-05.
14. J. Seuntjens *IAEA/AAPM code of practice for the dosimetry of static small photon fields*, Med. Phys. **42**(6), 3700; 57th Annual Meeting & Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA (oral presentation), TH-A-213-02.

15. I. Das, J. Seuntjens, *Small field dosimetry: Overview of AAPM TG-155 and the IAEA-AAPM code of practice*, Med. Phys. **42**(6), 3700; 57th Annual Meeting & Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA (oral presentation), TH-A-213-0.
16. F. Liu, A. Tai, P. Lee, T. Biswas, G. Ding, I. El Naqa, J. Grimm, A. Jackson, F. Kong, T. LaCouture, B. Loo, M. Miften, T. Solberg, X. Li, *Tumor control probability modeling for stereotactic body radiation therapy of early-stage lung cancer using multiple bio-physical models*, Med. Phys. **42**(6), 3701; 57th Annual Meeting & Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA, TH-AB-304-04.
17. S. Hickling†, P. Leger, I. El Naqa, *Amplitude and frequency characteristics of acoustic waves induced following radiotherapy linear accelerator irradiation*, Med. Phys. **42**(6), 3723; 57th Annual Meeting & Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA, TH-CD-304-06.
18. Z. Ahmed†, I. El Naqa, I.R. Levesque, *A constrained linear reference region model for DCE-MRI*, Med. Phys. **42**(6), 3735; 57th Annual Meeting & Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA, TH-CD-207-03.
19. J. Seuntjens, *Standards for non-standard photon beams*, Med. Phys. **42**(6), 3739; 57th Annual Meeting & Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA (oral presentation), TH-E-304-04.
20. M. McEwen, R. Tosh, A Sarfehnia, J. Seuntjens, *Reference dosimetry for beam modalities other than MV photons*, Med. Phys. **42**(6), 3739; 57th Annual Meeting & Exhibition of the American Association of Physicists in Medicine, July 12-16, Anaheim, CA (oral presentation), TH-E-304-0.
21. M. Carrier-Vallieres†, C.R. Freeman, Z. Ahmed†, R Turcotte, M. Hickeson, M. Serban et al, *Early assessment of tumor aggressiveness using joint FDG-PET/MRI textural features: Prediction of prospective cohort and potential improvement using hypoxia and perfusion biomarkers*, Int J. Rad. Oncol. Biol. Phys **93** (3) S6 (2015).
22. P. Papaconstadopoulos†, L. Archambault, J. Seuntjens, *On the accuracy of the Exradin W1 and the spectrum calibration method in scintillation dosimetry for small fields*, J. Eur. Soc. Radioth. Oncol. **115**(1), S71, abs. OC-0149 (Proffered papers); 3rd Forum - ESTRO, Radiotherapy & Oncology, Barcelona, Spain, April 24-28, 2015.
23. P. Pater†, G. Bäckström†, M.F. Villegas, A. Ahnesjö, S.A. Enger, J. Seuntjens, *Initial DNA damage patterns with MC track structure and ionization clusters*, Radioth. Oncol. **115**(1), S76-S77; 3rd Forum - ESTRO, Radiotherapy & Oncology, Barcelona, Spain, April 24-28, 2015.
24. T. Vuong, T. Niazi, S. Devic, *Role of endoluminal brachytherapy for rectal cancer: Current status and challenges*, Radioth. Oncol. **115**(1), S111 (2015).
25. B. Moftah, A. Basfar, K. Rabaeh, A. Almousa, M.A. Al Kafi, S. Devic, *Radiation response of an improved optical CT based 3D gel dosimeter for radiation therapy quality assurance*, Radioth. Oncol. **115**(1), S183 (2015).
26. S. Aldelaijan, S. Devic, M. Shehadeh, F. Alzorkany, K. Al-Hadyan, G. Alsbeih, J. Seuntjens, B. Moftah, *Dose calibration and monitoring for radiobiological experiments with low energy proton beams*, Radioth. Oncol. **115**(1), S217; 3rd Forum - ESTRO, Barcelona, Spain, April 24-28, 2015.
27. S. Devic, H. Mohammed, S. Aldelaijan, N. Tomic, J. Seuntjens, F. DeBlois, S. Lehnert, S.L. Faria, *FDG based glycolytic biological target volume: Warburg effect vs. hypoxia*, Radiother. Oncol. **115**(1), S385; 3rd Forum - ESTRO, Barcelona, Spain, April 24-28, 2015.
28. L. Liang, H. Bekerat†, N. Tomic, F. DeBlois, T. Vuong, S. Devic, A. Nobah, M. Mohiuddin, B. Moftah, *Optimal beam quality for linac-based spatially fractionated grid radiation therapy (SFGRIT)*, Radiother. Oncol. **115**(1), S385; 3rd Forum - ESTRO, Barcelona, Spain, April 24-28, 2015.
29. P. Watson†, M. Popovic, J. Seuntjens, *An in-air Monte Carlo investigation of a miniature low energy x-ray tubes*, J. Eur. Soc. Radioth. Oncol. **115**(1), S412; abs. PO-0820, (poster presentation) - 3rd Forum - ESTRO, Barcelona, Spain, April 24-28, 2015.
30. M. Renaud†, J. Seuntjens, *Mixed beam inverse planning strategies*, J. Eur. Soc. Radiother. Oncol. **115**(1), S457; abs. PO-0890 (poster discussion): 3rd Forum - ESTRO, Barcelona, Spain, April 24-28, 2015.
31. J. Coates†, A.K. Jeyaseelan, N. Ybarra, J. Tao†, M. David, S. Faria, L. Souhami, F. Cury, M. Duclos, I. EL Naqa, *Evaluation of NTCP radiogenomic modeling frameworks in hypofractionated prostate cancer patients*, J. Eur. Soc. Radiother. Oncol. **115**(1), S464-465; abs. PO-0901 (poster presentation); 3rd Forum - ESTRO, Radiotherapy & Oncology, Barcelona, Spain, April 24-28, 2015.
32. J. Seuntjens, L. Beaulieu, D.L. Collins, S. Devic, I. El Naqa, J.L. Nadeau, G.B. Pike, A. Reader, *The CREATE Medical Physics Research Training Network: Training of new generation innovators in medical physics*, Radiother. Oncol. **115**(1), S544; 3rd Forum - ESTRO, Barcelona, Spain, April 24-28, 2015.

33. N. Tomic, C. Quintero†, F. DeBlois, J. Seuntjens, S. Devic, *Radiochromic film based dose measurements during radiotherapy 4D CT-simulation*, Radiother. Oncol. 115(1), S755; 3rd Forum - ESTRO, Barcelona, Spain, April 24-28, 2015,
34. M. Serban, M.A. Renaud†, R. Maglieri†, A. Alexander, C.R. Freeman, *Eliminating dosimetric uncertainties in tomotherapy delivery in sarcoma patients planned using Monte Carlo techniques*, Radioth. Oncol. **115**, S786-S787; 3rd Forum - ESTRO, Barcelona, Spain, April 24-28, 2015.
35. F. Villegas, G. Bäckström†, S.A. Enger, A. Ahnesjö, *Impact of the microdosimetric spread on LQ-parameterization of cell survival data for protons and Co-60 photons*, Radiother. Oncol. **115**(1), S803; 3rd Forum - ESTRO, Barcelona, Spain, April 24-28, 2015,
36. K.S. Hyung, V. Fonov, D.L. Collins, G. Gerig, IBIS Network, M.A. Styner, *Shape index distribution based local surface complexity applied to the human cortex*, Med. Imag.: Image Proc. SPIE 9413, Orlando, Florida, February 21-26, 2015.
37. T. Connell†, M-A. Renaud†, J. Seuntjens, *Investigations on scattering foil free beamlines and the development of the McGill University modulated electron radiotherapy program*, Varian Research Symposium, Atlanta, Georgia, March 23-25, 2015 (poster presentation).
38. D.A. Moreno, A. Jesson, N. Subbanna, Z. Karimaghloo, D.L. Arnold, D.L. Collins, T. Arbel, *Diffeomorphic registration of healthy tissue priors to brain MRI for pathology segmentation*, IEEE International Symposium on Biomedical Imaging (IEEE ISBI): From Nano to Macro, New York, New York, April 16-19, 2015.
39. E. Barlow-Krelina, M. Lysenko, N. Akbar, B. Aubert-Broche, D.L. Collins, E.A. Yeh, B. Banwell, C. Till, *Neuropsychological assessment in pediatric-onset multiple sclerosis patients: Sensitivity of hand dexterity to T1 and T2 lesion volume*, Neuroinflammation Symposium, Toronto, Ontario, April 2015.
40. E. Alonso-Ortiz†, I.R. Levesque, G.B. Pike, *ΔB_0 correction for myelin water fraction imaging based on multi-slice MGRE acquisitions*, Proc. 23rd Scientific Meeting of the ISMRM, Toronto, Ontario, p.444 (2015).
41. K. Nakamura, V.S. Fonov, N. Guizard, S. Narayanan, D.L. Arnold, D.L. Collins, *Extending BrainWeb for evaluating methods of brain volume change: Simulation of central and peripheral brain atrophy*, Proc. 23rd Scientific Meeting of the Society for Magnetic Resonance in Medicine (ISMRM), Toronto, Ontario, p.2492, May 30-June 05, 2015.
42. Z. Ahmed†, I.R. Levesque, *DCE-MRI shape analysis using model-based classification shapes with NNLS*, Proc. 23rd Scientific Meeting of the Society for Magnetic Resonance in Medicine (ISMRM), Toronto, Ontario, p.3066, May 30-June 05, 2015.
43. J.A. Rioux, I.R. Levesque, B.K. Rutt, *Biexponential T1 relaxation at 7T: Characterization and impact on T1 mapping*, Proc. 23rd Scientific Meeting of the Society for Magnetic Resonance in Medicine (ISMRM), Toronto, Ontario, p.3241, May 30-June 05, 2015.
44. B. De Leener, A. Roux, J. Touati, S. Levy, M. Taso, V.S. Fonov, D.L. Collins, V. Callot, J. Cohen-Adad, *Template-based analysis of multi-parametric MRI data with the spinal cord toolbox*, Proc. 23rd Scientific Meeting of the Society for Magnetic Resonance in Medicine (ISMRM), Toronto, Ontario, p.4437, May 30-June 05, 2015.
45. E. Barlow-Krelina, E.A. Yeh, M. Lysenko, N. Akbar, B. Aubert-Broche, D.L. Collins, B. Banwell, C. Till, *The role of physical activity on brain volume and cognitive efficiency in pediatric-onset multiple sclerosis: Comparing strenuous and moderate activity*, Canadian Psychological Association Convention, Ottawa, Ontario, June 04-06, 2015.
46. E. Barlow-Krelina, M. Lysenko, N. Akbar, B. Aubert-Broche, D.L. Collins, E.A. Yeh, B. Banwell, C. Till, *Neuropsychological assessment in pediatric-onset multiple sclerosis patients: Sensitivity of hand dexterity to T1 and T2 lesion volume*, 45th Annual Meeting of the Jean Piaget Society. Toronto, Ontario, June 04-06, 2015.
47. M. Fan†, F. DeBlois, J. Thebaut, *Quality control of TrueBeam VMAT FFF treatment deliveries with portal dosimetry and Eclipse*, Proc. World Congress on Medical Physics and Biomedical Engineering (IUPESM), Toronto, Ontario, June 07-12, 2015.
48. J. Mullins†, K. Asiev, F. DeBlois, J. Seuntjens, A. Syme, *Delivery of VMAT treatments with nonstandard SAD using dynamic trajectories*, Proc. World Congress on Medical Physics and Biomedical Engineering (IUPESM), Toronto, Ontario, June 07-12, 2015.
49. L. Mirzakhanian†, V. Giusti, S.A. Enger, *Investigation of the uncertainties involved in the low energy proton interaction in Geant4/MCNP6 for proton therapy applications*, Proc. World Congress on Medical Physics and Biomedical Engineering (IUPESM), Toronto, Ontario, June 07-12, 2015.
50. P. Pater†, G. Bäckström†, M.F. Villegas, A. Ahnesjö, S.A. Enger, J. Seuntjens, *Exploring RBE dependence on proton track angular incidence*, Proc. World Congress on Medical Physics and Biomedical Engineering (IUPESM), Toronto, Ontario, June 07-12, 2015.

51. G. Bäckström†, M.F. Villegas, S.A. Enger, A. Ahnesjö, *Impact of the microdosimetric spread on cell survival data analysis*, Proc. World Congress on Medical Physics and Biomedical Engineering (IUPESM), Toronto, Ontario, June 07-12, 2015.
52. Y. Zeighami, M. Ulla, M. Dadar, Y. Iturria-Medina, K. Larcher, A.C. Evans, D.L. Collins, A. Dagher, *Parkinson's disease targets an intrinsic brain network*, Organization for Human Brain Mapping (OHBM), Honolulu, Hawaii, June 14-18, 2015.
53. D. Markel†, J. Larkin, P. Léger, I.R. Levesque, I. El Naqa, *Temporally realistic manipulation a 4D biomechanical lung phantom for evaluation of simultaneous registration and segmentation*, 57th Annual Meeting and Exhibition of the American Association of Physicists in Medicine, Anaheim, California, July 12-16, 2015 (Selected for Young Investigator Symposium).
54. M. Vallières†, A. Boustead†, S. Laberge, I.R. Levesque, I. El Naqa, *A machine learning approach for creating texture-preserved MRI tumor models from clinical sequences*, 57th Annual Meeting and Exhibition of the American Association of Physicists in Medicine, Anaheim, California, July 12-16, 2015.
55. P. Orban, S. Urchs, M. Savard, C. Madjar, A. Tam, L. Theroux, A. Evans, P. Rosa-Neto, D.L. Collins, J. Poirier, J. Breitner, P. Bellec, and the PREVENT-AD Research Group, *Functional brain network subtypes are associated with AD biomarkers in an again high-risk cognitively normal cohort: The Prevent-AD study*, Alzheimer's Association (AAIC), Washington D.C., July 18-23, 2015.
56. E. Barlow-Krelina M. Lysenko, N. Akbar, B. Aubert-Broche, D.L. Collins, E.A. Yeh, B. Banwell, C. Till, *Physical activity in patients with pediatric- onset multiple sclerosis: Associations with brain volume and cognitive efficiency*, 123rd Annual Convention of the American Psychological Association, Toronto, Ontario, August 06-09, 2015. Winner of the Blue Ribbon Award.
57. R. Giraud, V. Ta, N. Papadakis, D.L. Collins, P. Coupé, *Optimisation de l'algorithme PatchMatch pour la segmentation de structures anatomiques*, XXVe Colloque GRETSI - Traitement du Signal et des Images Lyon. Lyon, France. (ID160), September 2015.
58. M. Vallières†, C.R. Freeman, Z. Ahmed†, R. Turcotte, M. Hickeson, S. Skamene, K. Jeyaseelan, L. Hathout, M. Serban, S. Xing†, T. Powell, J. Seuntjens, I.R. Levesque, I. El Naqa, *Early assessment of tumor aggressiveness using joint FDG-PET/MRI textural features: Prediction of prospective cohort and potential improvement using hypoxia and perfusion biomarkers*, 57th Annual Meeting of the American Society for Therapeutic Radiology and Oncology, San Antonio, Texas, October 18-21, 2015.