APPENDIX X.

<u>PUBLISHED ABSTRACTS</u>

by members of the Medical Physics Unit : 2022 calendar year (x 38)
(names of MPU staff members are underlined, students are indicated by †, presenter indicated by *)

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1. D.S. Ayala Alvarez†*, <u>M. Popovic</u>, V.J. Heng†, <u>P.G.F. Watson</u>, <u>M.D.C. Evans</u>, <u>J. Seuntjens</u>, *A treatment planning framework for glioblastoma using Monte Carlo calculation of intraoperative radiotherapy dose distributions*, International Conference on Monte Carlo Techniques for Computer Applications (MCMA), April 11-13, 2022, Antwerp, Belgium. Oral presentation.

2. Y.M. Tai†*, V.J. Heng†, <u>M. Serban</u>, <u>J. Seuntjens</u>, *Log files-based quality assurance of mixed electron-photon beam radiation therapy*, International Conference on Monte Carlo Techniques for Computer Applications (MCMA), April 11-13, 2022, Antwerp, Belgium. Oral presentation.

3. V.J. Heng†*, <u>T. Connell</u>, M-A. Renaud, <u>J. Seuntjens</u>, *Accuracy of an independent Monte Carlo dose verification software*, International Conference on Monte Carlo Techniques for Computer Applications (MCMA), April 11-13, 2022, Antwerp, Belgium. Oral presentation.

4. C. Dries*, A. Simon, W. Morgane, S. Dennis, D.S. Ayala Alvarez†, <u>J. Seuntjens</u>, <u>P.G.F. Watson</u>, F. Verhaegen, B. Reniers, *Microdosimetric spectra of electronic brachytherapy skin treatment devices: A MC approach*, International Conference on Monte Carlo Techniques for Computer Applications (MCMA), April 11-13, 2022, Antwerp, Belgium. Oral presentation.

5. J. Bian†*, J. Duran†, S. Wook-Geun, J. Ramos-Méndez, L. Childress, J.C. Sankey, <u>J. Seuntjens</u>, <u>S.A. Enger</u>, *Updating GEANT4-DNA to enable simulation of radiation chemical yield of hydrated electrons at different temperatures and pH values*, International Conference on Monte Carlo Techniques for Computer Applications (MCMA), April 11-13, 2022, Antwerp, Belgium. Oral presentation.

6. L. Carroll†*, <u>S.A. Enger</u>, *Design and validation of MaRSS: A modular radiation simulation software package*, International Conference on Monte Carlo Techniques for Computer Applications (MCMA), April 11-13, 2022, Antwerp, Belgium. Oral presentation.

7. M. Rahbaran†, J. Kalinowski†, J.M.G.Tsui, J. DeCunha, <u>S.A. Enger</u>*, *Monte-Carlo based smulations of the uncertainties in clinical water-based intravascular brachytherapy dosimetry*, International Conference on Monte Carlo Techniques for Computer Applications (MCMA), April 11-13, 2022, Antwerp, Belgium. Oral presentation.

8. Y. Daoud†*, L. Carroll†, <u>S.A. Enger</u>, *A radiation detector simulation toolkit for calculating the arterial input function during dynamic positron emission tomography*, International Conference on Monte Carlo Techniques for Computer Applications (MCMA), April 11-13, 2022, Antwerp, Belgium. Oral presentation.

9. S. Dev†*, B. Behmand†, <u>P. Pater</u>, <u>S.A. Enger</u>, *Establishing correlation between physical microsimetric quantities and biological endpoints such as DNA double strand break*, International Conference on Monte Carlo Techniques for Computer Applications (MCMA), April 11-13, 2022, Antwerp, Belgium. Oral presentation.

10. J. Manalad†*, L. Montgomery†, <u>J. Kildea</u>, *On the Monte Carlo simulation of neutron-induced direct and indirect DNA damage to estimate neutron relative biological effectiveness*, International Conference on Monte Carlo Techniques for Computer Applications (MCMA), April 11-13, 2022, Antwerp, Belgium. Oral presentation.

11. P. Kim†*, <u>S.A. Enger</u>, *A theoretical Monte Carlo study for Yttrium-90 radioembolization on hepatocellular carcinoma tumours*, International Conference on Monte Carlo Techniques for Computer Applications (MCMA), April 11-13, 2022, Antwerp, Belgium. Poster presentation.

12. Y. Zou†*, L.L. Weishaupt†, <u>S.A. Enger</u>, *McMedHacks: Deep learning for medical image analysis workshops and Hackathon in radiation oncology*, Annual Meeting of the European Society for Radiotherapy & Oncology (ESTRO), May 06-10, 2022, Copenhagen, Denmark, presentation OC-0014; Radiother. Oncol. **170**(1), S4-S5 (2022).

13. D.S. Ayala Alvarez†*, <u>P.G.F Watson</u>, <u>M. Popovic</u>, V.J. Heng†, <u>M.D.C. Evans</u>, <u>J. Seuntjens</u>, *TG-43 dosimetry characterization of the INTRABEAM system with spherical applicators*, Annual Meeting of the European Society for Radiotherapy & Oncology (ESTRO), May 06-10, 2022, Copenhagen, Denmark, presentation MO-0298; Radiother. Oncol. **170**(1), S260-S261 (2022).

14. M. Serban, M Gallois†, T. Urtubey†, et al, K. Tanderup, *Effect of dose and fractionation de-escalation in low-risk cervix cancer treated with EBRT and BT*, Annual Meeting of the European Society for Radiotherapy & Oncology (ESTRO), May 06-10, 2022, Copenhagen, Denmark, **Brachytherapy Best Paper**. Presentation OC-0503; Radiother. Oncol. **170**(1), S451-S453 (2022).

15. S.A. Enger, *Creating a 'successful' work environment*, Annual Meeting of the European Society for Radiotherapy & Oncology (ESTRO), May 06-10, 2022, Copenhagen, Denmark. Presentation SP-0706; Radiother. Oncol. **170**(1), S620 (2022).

16. L.L. Weishaupt†* Té Vuong, A. Thibodeau-Antonacci†, A. Garant, K. Singh, C. Miller, A-G. Martin, F. Schmitt-Ulms, S.A. Enger, *Automated rectal tumor segmentation with inter-observer variability-based uncertainty estimates*, Annual Meeting of the European Society for Radiotherapy & Oncology (ESTRO), May 06-10, 2022, Copenhagen, Denmark. Poster presentation PO-1325; Radiother. Oncol. **170**(1), May S1120-S1121 (2022).

17. Y. Daoud†*, L. Carroll†, S.A. Enger, *Mapping of the human wrist to develop a non-invasive radiation detector for Dynamic PET application*, Annual Meeting of the European Society for Radiotherapy & Oncology (ESTRO), May 06-10, 2022, Copenhagen, Denmark. Poster presentation PO-1617; Radiother. Oncol. **170**(1), S1405-S1406 (2022).

18. V. Fortier, I.R. Levesque, *Further insight on T_1 relaxation in fat-water mixtures*, Joint Meeting of the ISMRM-ESMRMB, May 07-12,2022, London, UK. Oral presentation, p. 179.

19. T.L. Lefebvre, Y. Ueno, A. Dohan, A. Chatterjee, M. Vallières, E. Winter-Reinhold, S. Saif, I.R. Levesque, X.Z. Zeng, R. Forghani, J. Seuntjens, P. Soyer, P. Savadjiev, C. Reinhold, *Development of MRI-based 3D radiomics signatures for preoperative risk stratification of patients with histology-proven endometrial cancer*, Joint Meeting of the ISMRM-ESMRMB, May 07-12,2022, London, UK. Oral presentation, p. 723.

20. Z. Ahmed†*, I.R. Levesque, *Accuracy of quantitative DCE-MRI depends on the implementation of the convolution operation*, Joint Meeting of the ISMRM-ESMRMB, May 07-12,2022, London, UK. Poster presentation, p. 1585.

21. V. Fortier, E. McNabb, A. Mohamed, R. Zakarian, I.R. Levesque, C. Reinhold, *Accuracy of a commercially available high-speed T_2-corrected multi-echo single voxel sequence at 3T as a function of R_2^* for measurement of liver fat content*, Joint Meeting of the ISMRM-ESMRMB, May 07-12,2022, London, UK. Poster presentation, p. 2397.

22. M-A. Fortin*, V. Fortier, J. Campos Pazmiño*, A. van der Kouwe, I.R. Levesque, *Fat-water separated T_1 mapping with multi-echo MP2RAGE*, Joint Meeting of the ISMRM-ESMRMB, May 07-12,2022, London, UK. Poster presentation, p. 2854.

23. J. Campos-Pazmiño†*, V. Fortier, I.R. Levesque, *Feature and voxel fidelity constraints improve the accuracy of direct inversion quantitative susceptibility mapping in deep gray matter*, Joint Meeting of the ISMRM-ESMRMB, May 07-12,2022, London, UK. Poster presentation, p. 3308.

24. D. Patel*, A. Badalan†*, Z. Ahmed†, I.R. Levesque, *Increased repeatability in blind source separation analysis of dynamic contrast enhanced MRI*, Joint Meeting of the ISMRM-ESMRMB, May 07-12,2022, London, UK. Poster presentation, p. 4989.

25. A. Badalan†*, Z. Ahmed†, M-A. Fortin, T. Rosin*, I.R. Levesque, *Analysis of dynamic-contrast-enhanced MRI using model-based classification shapes and non-negative least-squares*, Celebration of Research & Training in Oncology (CORTO), June 21, 2022, McGill University, Montreal, Quebec. Oral presentation.

26. B. Behmand, M.D.C. Evans, Y. Kamio, T. Connell, J. Babik, S.A. Enger, *Correlation between radiation-induced foci and tumor nuclei size distribution*, Celebration of Research & Training in Oncology (CORTO), June 21, 2022. Poster presentation.

27. N. Chabaytah, J. Babik, B. Behmand, T. Connell, M.D.C. Evans, R. Ruo, Y. Poirier, S.A. Enger, *Characterization of the relative biological effectiveness of a variation of photon energies for irradiation of HeLa and PC-3 cell lines*, Celebration of Research & Training in Oncology (CORTO), June 21, 2022. Poster presentation.

28. S. Nasrin, S.R. Skamene, M. Popovic, *Imaging protocols in radiation therapy of pediatric CNS malignancies*, Celebration of Research & Training in Oncology (CORTO), June 21, 2022. Poster presentation.

29. D.S. Ayala Alvarez†*, M. Popovic, V.J. Heng†, P.G.F. Watson, M.D.C. Evans, J. Seuntjens, *Patient-specific treatment planning for intraoperative radiotherapy of glioblastoma*, Canadian Organization of Medical Physicists (COMP), June 22-25, 2022, Québec, Quebec. Oral presentation.

30. J. Babik, N. Chabaytah, B. Behmand, T. Connell, M.D.C. Evans, R. Ruo, Y. Poirier, S.A. Enger, *Characterization of the relative biological effectiveness of a variation of photon energies for irradiation of HeLa and PC-3 cell lines*, American Association of Physicists in Medicine (AAPM), July 10-14, 2022, Washington, DC. Poster presentation.

31. N. Chabaytah, J. Babik, B. Behmand, <u>T. Connell</u>, <u>M.D.C. Evans</u>, <u>R. Ruo</u>, <u>Y. Poirier</u>, <u>S.A. Enger</u>, *Characterization of the relative biological effectiveness of a variation of photon energies for irradiation of HeLa and PC-3 cell lines*, American Association of Physicists in Medicine (AAPM), July 10-14, 2022, Washington, DC. Poster presentation.

32. J. Li, <u>H. Bekerat</u>, <u>M.D.C. Evans</u>, T. Vuong, N. Chabaytah, J. Babik, B. Behmand, <u>S.A. Enger</u>, *Characterizing the relative biological effectiveness of different radiaton modalities on HCT116, a human colorectal cancer cell line*, New Avenues in the Non-Operative Management of Patients with Rectal Cancer: Time for Discussion, October 13-15, 2022, Montreal, Quebec. Oral presentation.

33. J. Campos Pazmiño†*, V. Fortier, <u>I.R. Levesque</u>, *Accurate direct inversion susceptibility mapping in deep gray matter with feature and voxel fidelity constraints*, Joint Workshop on MR Phase, Magnetic Susceptibility & Electrical Properties Mapping, October 16-19, 2022, Lucca, Italy. Poster presentation, p. 6.

34. J. Campos-Pazmiño†*, V. Fortier, <u>I.R. Levesque</u>, *Using feature and voxel fidelity constraints to improve the accuracy of direct inversion quantitative susceptibility mapping in deep gray matter*, Journée Scientifique du Réseau de Bio-Imagerie du Québec (RBIQ), November 03, 2022, Sherbrooke, Quebec. Flash oral presentation.

35. S. Aldelaijan, H. Alsaleh, C. Constantinescu, <u>S. Devic</u>, I. Buzurovic, <u>B.A. Moftah</u>, *A novel quality assurance system to evaluate MR-only workflow for interstitial and intracavitary gynecological HDR brachytherapy*, Med. Phys. **49**(6), E814 (2022).

36. A. Bourgouin, F. Keszti†, W. Simon, A. Schoenfeld, <u>J. Seuntjens</u>, A Schüller, et al, "FLASH in the Clinic Track (Oral Presentations)", *Performance of a probe-type graphite calorimeter (Aerrow) in ultra-high dose per pulse electron beams*, Physica Medica **94**, S42 (2022).

37. I.J. Gerard, M.L. Bernier, T. Hijal, N. Kopek, <u>P. Pater</u>, <u>G. Stroian</u>, J. Alfieri, *Stereotactic arrhythmia radioablation for ventricular tachycardia (StAR-VT): A single institution, dose de-escalation: Phase II Trial*, Int. J. Radiat. Oncol. Biol. Phys. **114**(3), suppl. E416-417 (Nov 2022).

38. I.J. Gerard, M.L. Bernier, T. Hijal, N. Kopek, <u>P. Pater</u>, <u>G. Stroian</u>, B. Toscani Gomes da Silveira, J. Alfieri, *Single institution experience with stereotactic arrhythmia radioablation for ventricular tachycardia*, Int. J. Radiat. Oncol. Biol. Phys. **114**(3), suppl. E417 (Nov 2022).