

APPENDIX IX.

PUBLICATIONS

by members of the Medical Physics Unit : 2013 calendar year (x 60)
(names of MPU staff members are underlined, students are indicated by †)

1. S.D. Davis, W. Parker, M.D.C. Evans, *Using mean dose rate to compare relative dosimetric efficiency with respect to source type and source change schedules for HDR brachytherapy*, J. Appl. Clin. Med. Phys. **14**, 53–61 (2013).
2. G. Forestier, F. Lalys, D.L. Collins, J. Meixensberger, S. Wassef, T. Neumuth, B. Goulet, L. Riffaud, P. Jannin, *Multi-site study of surgical practice in neurosurgery based on surgical process models*, J. Biomed. Informatics **46**(5), 822-829 (2013).
3. J.S.W. Campbell, G.B. Pike, *Potential and limitations of diffusion MRI tractography for the study of language*, Brain and Language, July 2013. doi:10.1016/j.bandl.2013.06.007.
4. E. Klepousniotou, V.L. Gracco, G.B. Pike, *Pathways to lexical ambiguity: fMRI evidence for bilateral fronto-parietal involvement in language processing*, Brain & Language, October 2013 [Epub ahead of print].
5. P.A. MacDonald, H. Ganjavi, D.L. Collins, S. Karama, A.C. Evans, The Brain Development Cooperative Group, *Investigating the relation between striatal volume and IQ*, Brain Imaging Behav., Jun 30, 2013.
6. C. Haegelen, P. Coupé, V.S. Fonov, N. Guizard, P. Jannin, X. Morandi, D.L. Collins, *Efficiency of automated segmentation of basal ganglia and deep brain structures on MRI of patients with Parkinson's disease*, Intl. J. Comp. Asst. Radiol. Surg. **8**(1), 99-110 (2013).
7. S. Kafouri, M. Kramer, G. Leonard, M. Perron, G.B. Pike, L. Richer, R. Toro, S. Veillette, Z. Pausova, T. Paus, *Breastfeeding and brain structure in adolescence*, Intl. J. Epidemiology **42**(1), 150-9 (2013).
8. C. Haegelen, P. Perucca, C.-E. Châtillon, L. Andrade-Valença, R. Zelmann, J. Jacobs, D. L. Collins, F. Dubeau, A. Olivier, J. Gotman, *High-frequency oscillations, extent of surgical resection and surgical outcome in drug-resistant focal epilepsy*, Epilepsia **54**(5), 848-57 (2013).
9. G. Landry, F. deBlois, F. Verhaegen, *ImaSim, a software tool for basic education of medical x-ray imaging in radiotherapy and radiology*, Front Physics **1**, 22 (2013).
10. R. Schirmacher, V. Bernard-Gauthier, A.J. Reader, J.P. Soucy, E. Schirmacher, B. Wängler, C. Wängler, *Design of brain imaging agents for positron emission tomography: Do large bioconjugates provide an opportunity for in vivo brain imaging?* Future Medicinal Chemistry **5**(14), 1621-1634 (2013).
11. M.M. Chakravarty, P. Steadman, M.C. van Eede, R.D. Calcott, V. Gu, P. Shaw, A. Raznahan, D.L. Collins, J.P. Lerch, *Performing label-fusion based segmentation using multiple automatically generated templates*, Human Brain Mapping **34**(10), 2635-54 (2013).
12. B. Axelsson, C.E. de Almeida, H. Delis, W.R. Hendee, I.D. McLean, B. Moftah, J. Seuntjens, S. Tabakov, A.K. Toutaoui, W. Van der Putten, D. van der Merwe, *Postgraduate medical physics academic programmes*, endorsed by the International Organization for Medical Physics (IOMP) Training Course Series 56, International Atomic Energy Agency (IAEA), Vienna, Austria, December 2013, pp. 1-27, ISSN1018-5518.
13. L. Rittner, J.S.W. Campbell, P.F. Freitas, S. Appenzeller, G.B. Pike, R.A. Lotufo, *Analysis of scalar maps for the segmentation of the corpus callosum in diffusion tensor fields*, J. Math. Imaging & Vision **45**, 214-226 (2013). DOI 10.1007/s10851-012-0377-4.
14. D. García-Lorenzo, S. Francis, S. Narayanan, D.L. Arnold, D.L. Collins, *Review of automatic segmentation methods of multiple sclerosis white matter lesions on conventional magnetic resonance imaging*, Med. Image Analysis **17**(1), 1-18 (2013).
15. J. Seuntjens, E. Chung†, E. Soisson, Reply to Comment on “Dose homogeneity specification for reference dosimetry of non-standard fields”, Med. Phys. **39**, 407-414 (2012); Med. Phys. (Letters) **40**(3), 037102 (2013).

16. J. Morin, D. Béliveau-Nadeau, E. Chung†, J. Seuntjens, D. Thériault, L. Archambault, S. Beddar, L. Beaulieu, *A comparative study of small field total scatter factors and dose profiles using plastic scintillation detectors and other stereotactic dosimeters: The case of the CyberKnife*, Med. Phys. **40**(1), 011719-1-011719-10, (2013).
17. J. Renaud†, D. Marchington, J. Seuntjens, A. Sarfehnia, *Development of a graphite probe calorimeter for absolute clinical dosimetry*, Med. Phys. (Letters) **40**(2), 020701 (2013).
18. J. Verhaeghe, A.J. Reader, *Accelerated PET water activation acquisition with signal separation methodology*, Med. Phys. **40**(3), art no. 031909 (2013).
19. B. White, T. Zhao, J. Lamb, S. Wuenschel, J. Bradley, I. El Naqa, D. Low, *Distribution of lung tissue motion during free breathing*, Med. Phys. **40**(4), (2013).
20. P. Papaconstadopoulos†, J. Seuntjens, *A source model for modulated electron radiation therapy using dynamic jaw movements*, Med. Phys. **40**(5), 051707-1-051070-12 (2013).
21. E. Chung†, S.D. Davis, J. Seuntjens, *Experimental analysis of general ion recombination in a liquid-filled ionization chamber in high-energy photon beams*, Med. Phys. **40**(6), 062104 (7pp) (2013). http://online.medphys.org/resource/1/mphya6/v40/i6/p062104_s1?view=fulltext
22. D. Markel, H. Zaidi, I. El Naqa, *Novel multimodality segmentation using level sets and Jensen-Renyi divergence*, Med. Phys. **40**, 121908 (2013).
23. S. Karama, M.E. Bastin, C. Murray, N.A. Royle, L. Penke, S.M. Maniega, A.J. Gow, J. Corley, M. del C. Valdés Hernández, J.D. Lewis, M-É. Rousseau, C. Lepage, V.S. Fonov, D.L. Collins, T. Booth, P. Rioux, T. Sherif, R. Adalat, J.M Starr, A.C. Evans, J.M. Wardlaw, I.J. Deary, *Childhood IQ explains associations between IQ and brain cortical thickness in old age*, Mol Psychiatry, Jun 4, 2013. doi: 10.1038/mp.2013.64.
24. C.L. Tardif, B.J. Bedell, S.F. Eskildsen, D.L. Collins, G.B. Pike, *Quantitative magnetic resonance imaging of cortical multiple sclerosis pathology*, Multi. Scle. Int. doi: 10.1155/2012/742018. Epub 2012, November 18, 2013.
25. D. De Nigris, D.L. Collins, T. Arbel, *Fast rigid registration of pre-operative magnetic resonance images to intra-operative ultrasound for neurosurgery based on high confidence gradient orientations*, Neuroimage **8**(4), 649-661 (2013).
26. S.F. Eskildsen, P. Coupé, D. García-Lorenzo, V.S. Fonov, J.C. Pruessner, D.L. Collins, *Prediction of Alzheimer's disease in subjects with mild cognitive impairment from the ADNI cohort using patterns of cortical thinning*, Neuroimage **65**, 511-21 (2013).
27. M. Albaugh, S. Ducharme, D.L. Collins, K. Botteron, R. Althoff, A.C. Evans, S. Karama, J. Hudziak, *Evidence for a cerebral cortical thickness network anti-correlated with amygdalar volume in healthy youths: Implications for the neural substrates of emotion regulation*, Neuroimage **71**, 42-9 (2013).
28. K. Mareckova, M. Chakravarty, C. Lawrence, G. Leonard, D. Perusse, M. Perron, G.B. Pike, L. Richer, S. Veillette, Z. Pausova, T. Paus, *Does skull shape mediate the relationship between objective features and subjective impressions about the face?* NeuroImage **79**, 234-40 (2013).
29. B. Aubert-Broche, V.S. Fonov, D. García-Lorenzo, A. Mouiha, N. Guizard, P. Coupé, S.F. Eskildsen, D.L. Collins, *A new method for structural volume analysis of longitudinal brain MRI data and its application in studying the growth trajectories of anatomical brain structures in childhood*, Neuroimage **82C**, 393-402 (2013).
30. M. Boccardi, M. Bocchetta, L.G. Apostolova, G. Preboske, N. Robitaille, P. Pasqualetti, D.L. Collins, S. Duchesne, C.R. Jack Jr, G.B. Frisoni, *Establishing magnetic resonance images orientation for the EADC-ADNI manual hippocampal segmentation protocol*, Neuroimaging, Nov 26, 2013. doi: 10.1111/jon.12065.
31. J. Ansado, D.L. Collins, S. Joubert, V.S. Fonov, O. Monchi, S.M. Brambati, F. Tomaiuolo, M. Petrides, S. Faure, Y. Joannette, *Interhemispheric coupling improves the brain's ability to perform low cognitive demand tasks in Alzheimer's disease and high cognitive demand tasks in normal aging*, Neuropsychology **27**(4), 464-480 (2013).
32. D. Hayes, N.W. Duncan, C. Wiebking, K. Pietruska, P. Qin, S. Lang, J. Gagnon, P. Gravel, J. Verhaeghe, A.P. Kostikov, R. Schirmacher, A.J. Reader, J. Doyon, P. Rainville, G. Northoff, *GABAA receptors predict aversion-related brain responses: An fMRI-PET investigation in healthy humans*, Neuropsychopharm. **38**(8), 1438-1450 (2013).
33. A. Fotros, K.F. Casey, K. Larcher, J. Verhaeghe, S.M.L. Cox, P. Gravel, A.J. Reader, A. Dagher, C. Benkelfat, M. Leyton, *Cocaine cue-induced dopamine release in amygdala and hippocampus: A high-*

- resolution PET [^{18}F]Fallypride study in cocaine dependent participants, *Neuropsychopharm.* **38**(9), 1780-1788 (2013).
34. N.W. Duncan, P. Gravel, C. Wiebking, A.J. Reader, O. Lyttleton, G. Northoff, *Grey matter density and GABAA binding potential show a positive linear relationship across cortical regions*, *Neuroscience* **235**, 226-231 (2013).
 35. S.H. Kim, V.S. Fonov, C. Dietrich, C. Vachet, H.C. Hazlett, R.G. Smith, M.M. Graves, J. Piven, J.H. Gilmore, S.R. Dager, R.C. McKinstry, S. Paterson, A.C. Evans, D.L. Collins, G. Gerig, M.A. Styner, I. Network, *Adaptive prior probability and spatial temporal intensity change estimation for segmentation of the one-year-old human brain*, *J. Neurosci. Methods* **212**(1), 43-55 (2013).
 36. P. Gravel, J. Verhaeghe, A.J. Reader, *3D PET image reconstruction including both motion correction and registration directly into an MR or stereotaxic spatial atlas*, *Phys. Med. Biol.* **58**, 105-126 (2013).
 37. J. Verhaeghe, A.J. Reader, *Simultaneous water activation and glucose metabolic rate imaging with PET*, *Phys. Med. Biol.* **58**, 393-411 (2013).
 38. S. Aldelaijan, A. Nobah, G. Alsbeih, B. Moftah, I. Aldahlawi, A. Alzahrany, N. Tomic, S. Devic, *Dosimetry of biological irradiations using radiochromic films*, *Phys. Med. Biol.* **58**, 3177-3189 (2013).
 39. G.I. Angelis, A.J. Reader, P.J. Markiewicz, F.A. Kotasidis, W.R. Lionheart, J.C. Matthews, *Acceleration of image-based resolution modelling reconstruction using an expectation maximization nested algorithm*, *Phys. Med. Biol.* **58**, 5061-5083 (2013).
 40. J.V. Manjon, P. Coupe, L. Concha, A. Buades, D.L. Collins, M. Robles, *Diffusion weighted image denoising using overcomplete local PCA*, *Public Library of Science (PLoS) One*, **8**(9), e73021 (2013). doi: 10.1371/journal.pone.0073021.
 41. S.D. Tran, Y. Liu, D. Xia, O.M. Maria†, S. Khalili, R.W-Y. Wang, V-H. Quan, S. Hu, J. Seuntjens, *Paracrine effects of bone marrow soup restore organ function, regeneration, and repair in salivary glands damaged by irradiation*, *PLoS One*, PLOS ONE PONE-D-13-00873R1 10.1371/journal.pone.0061631 – sent to production.
 42. M.D.C. Evans, C. Hudon, E.B. Podgorsak, C.R. Freeman, *Institutional experience with a rotational total skin electron irradiation technique: A three-decade review (1981-2012)*, *Reports of Practical Oncology & Radiotherapy*, online June 17, 2013.
 43. R. Al-Wassia, H. Bahig, E. Poon, W. Parker, C.R. Freeman, *Daily setup uncertainty analysis for craniospinal irradiation using helical tomotherapy*, *Practical Rad. Oncol.* **3** (4), 349-355 (2013).
 44. Y. Cui, J.M. Galvin, W. Parker, S. Breen, F.F. Yin, J. Cai, L.S. Papiez, X.A. Li, *Implementation of remote 3-dimensional image guided radiation therapy quality assurance for Radiation Therapy Oncology Group clinical trials*, *Intl. J. Radn. Oncol. Biol. Phys.* **85** (1), 271-277 (2013).
 45. N. Patel, S. Faria, F. Cury, M. David, M. Duclos, G. Shenouda, R. Ruo, L. Souhami, *Hypofractionated radiation therapy (66 Gy in 22 fractions at 3 Gy per fraction) for favorable-risk prostate cancer: Long-term outcomes*, *Intl. J. Radiat. Oncol. Biol. Phys.* **86**(3), 534-9 (2013).
 46. M. Raux, L. Tyvaert, M. Ferreira, F. Kindler, E. Bardinnet, C. Karacho, C. Morelot-Panzini, J. Gotman, G.B. Pike, L. Koski, T. Similowski, *Functional magnetic resonance imaging suggests automatization of the cortical response to inspiratory threshold loading in humans*, *Respiratory Physiol. Neurobiol.* **189**(3), 571-80 (2013).
 47. C. Robinson, T. DeWees, I. El Naqa, K. Creach, J. Olsen, T. Crabtree, B. Meyers, V. Puri, P. Parikh, J. Bradley, *Patterns of failure and survival after stereotactic body radiation therapy or lobar resection for clinical stage I non-small-cell lung cancer*, *J. Thor. Oncol.* **8**(2), 192-201 (2013).
 48. C. Elliot, D.L. Collins, D.L. Arnold, T. Arbel, *Temporally consistent probabilistic segmentation of new multiple sclerosis lesions in brain MRI*, *IEEE Trans. Med. Imag.* Apr 16, 2013 [Epub ahead of print].
 49. M. Kersten-Oertel, P. Jannin, D.L. Collins, *The state of the art in mixed reality visualization in image-guided surgery*, *IEEE Trans. Vis. Comp. Graphics* **37**(2), 98-112 (2013).
 50. M. Kersten-Oertel, P. Jannin, D.L. Collins, *An evaluation of depth enhancing perceptual cues for vascular volume visualization in neurosurgery*, *IEEE Trans. Vis. Comp. Graphics*, Oct 3, 2013. [Epub ahead of print].
 51. S. Quinlan-Davidson, T. AlMahmoud, R. Al-Wassia, M.D.C. Evans, G. Ph.D, S. Callejo, C. Edelstein, G. Shenouda, *Intraoperative sonographically assisted radioactive iodine 125 plaque brachytherapy for choroidal melanoma: visual acuity outcome*, *J. Ultrasound Med.* **32**(6), 995-1001, (2013).

52. L. Mercier, D. Araujo, C. Haegelen, R.F. Del Maestro, K. Petrecca, D.L. Collins, *Registering pre- and post-resection 3D ultrasound for improved residual brain tumor localization*, J. Ultrasound in Med. Biol. **39**(1), 16-29 (2013).
53. C.I. Mark, G.B. Pike, *Novel functional magnetic resonance imaging to quantify neuronal hemodynamic and metabolic underpinnings of cognitive impairment in mild traumatic brain injury and amyotrophic lateral sclerosis*, Chapter 2, pp20-34, in "Beyond the Line", Ed. MUQP - McGill Queen's Press, (2013).
54. M.D.C. Evans, J. Kildea, W. Parker, *The measurement of neutron energy spectra in the high energy neutron flux environment of medical accelerators using the nested neutron spectrometer*, Proc. Annual scientific meeting of the Canadian Radiation Protection Association, p 99 (2013).
55. S. Bériault, M. Archambault-Wallenburg, A.F. Sadikot, D.L. Collins, G.B. Pike, *Automatic markov random field segmentation of susceptibility-weighted MR venography*, MICCAI-CLIP 2013, LNCS.
56. R. Zelman, S. Bériault, K. Mok, C. Haegelen, J.A. Hall, A. Olivier, G.B. Pike, D.L. Collins, *Automatic optimization of depth electrode trajectory planning*, MICCAI-CLIP 2013, LNCS.
57. S. Bériault, S. Drouin, A.F. Sadikot, Y. Xiao, D.L. Collins, G.B. Pike, *A prospective evaluation of computer-assisted deep brain stimulation trajectory planning*, MICCAI-CLIP 2012, LNCS, **7761**, pp. 42-49, Springer, Heidelberg (2013).
58. Z. Karimghaloo, D.L Arnold, D.L. Collins, T. Arbel, *Adaptive voxel, texture and temporal CRF for detection of gad-enhancing lesions in multiple sclerosis in brain MRI*, MICCAI 2013 Workshop on Clinical Image-based Procedures: Translational Research in Medical Imaging.
59. N. Subanna, D.L. Collins, D. Precup, T. Arbel, *Hierarchical probabilistic Gabor and MRF segmentation of brain tumours in MRI*, MICCAI 2013 Workshop on Clinical Image-based Procedures: Translational Research in Medical Imaging.
60. R. Zelman, D.L. Collins, *Automatic optimization of depth electrode trajectory planning*, MICCAI 2013 Workshop on Clinical Image-based Procedures: Translational Research in Medical Imaging.