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Sara St. James



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Professional Focus

Dr. St. James is an Assistant Professor at the UCSF Department of Radiation Oncology. She received her Ph.D. in Biomedical Engineering from the University of California, Davis and completed the Harvard Medical Physics Residency Program. Her clinical interests include implementing novel treatment planning approaches and standardizing quality assurance measurements and analysis.

Education

2003	Carleton University	BSc	Mathematics and Physics, High Honors
2005	McGill University	MSc	Medical Radiation Physics
2010	University of California, Davis	PhD	Biomedical Engineering
2014	Harvard Medical School	Medical Physics Residency	Harvard Medical Physics Residency Program

Professional Experience

2018-present	University of California, San Francisco	Assistant Professor	Radiation Oncology
2017-2018	Massachusetts General Hospital	Medical Physicist	Radiation Oncology
2016-2017	University of Washington, Seattle Cancer Care Alliance, Proton Therapy Center	Affiliate Assistant Professor	Radiation Oncology
2014-2016	University of Washington, Seattle Cancer Care Alliance, Proton Therapy Center	Assistant Professor, Medical Physicist	Radiation Oncology
2011-2012	Harvard Medical School, Brigham and Women's Hospital, Massachusetts General Hospital	Postdoctoral Fellow	Radiology and Nuclear Medicine

Awards & Honors

2001	NSERC Undergraduate Student Research Award, Carleton University
2002	Natural Science and Engineering Research Council (NSERC) Undergraduate Student Research Award, Carleton University
2006-2007	NIH Molecular Imaging Training Grant (Stipend + Out-of-State Tuition), University of California, Davis
2007	Medical Imaging Conference (Honolulu, HI), Institute of Electrical and Electronics Engineers
2008	Genentech First Place Award: Podium, University of California Systemwide Bioengineering Symposium
2008	Medical Imaging Conference Trainee Award (Dresden, Germany), Institute of Electrical and Electronics Engineers
2009	Graduate Student Travel Award, University of California, Office of Graduate Studies

2009	First Place, Medical Imaging Conference (MIC) Student Paper Award (Orlando, FL), Institute of Electrical and Electronics Engineers
2010	Medical Imaging Conference Trainee Award (Knoxville, TN), Institute of Electrical and Electronics Engineers
2012	Medical Imaging Conference Trainee Award (Anaheim, CA), Institute of Electrical and Electronics Engineers
2015	CoMotion Research Grant: Imaging of Positron Emitting Isotopes for Radiation Therapy Treatment Verification, University of Washington
2015	AAPM Summer School Scholarship, Topic: Proton Therapy, American Association of Physicists in Medicine
2015	Science Council Associates Mentorship Program, American Association of Physicists in Medicine
2016	Early Career Medical Physicist Scholarship Award, Winter Institute of Medical Physics

Recent Significant Publications :

Y.D. Tseng, L. Wootton, M. Nyflot, S. Apisarnthanarax, R. Rengan, C. D. Bloch, G. A. Sandison and S. St. James **?Four-dimensional computed tomography scans for conformal thoracic treatment planning: Is a single scan sufficient to capture thoracic tumor motion??** Phys. Med. Biol., vol. 63 no. 2 January 2018, doi: 10.1088/1361-6560/aaa44e.

T.C. Lee, S. R. Bowen, S. St. James, G. A. Sandison, P.E. Kinahan and M. J. Nyflot **?Accuracy comparison of 4D computed tomography (4DCT) and 4D cone beam computed tomography (4DCBCT)?**, International Journal of Medical Physics, Clinical Engineering and Radiation Oncology, June 2017 doi: 10.4236/ijmpcero.2017.63029.

J. Saini, D. Maes, A. Egan, S.R. Bowen, S. St. James, M. Janson, T. Wong and C. D. Bloch **?Dosimetric evaluation of a commercial proton spot scanning Monte Carlo dose algorithm: comparisons against measurements and simulations?** Phys. Med. Biol. vol. 62, no. 19, pp 7659-7681 Sept 2017.

J. Saini, S. L. Bowen, S. St. James, T. Wong and C. D. Bloch, **?Evaluation of ceramic marker for the treatment of ocular melanoma with proton therapy?**, Biomed. Phys. Eng. Express, vol. 3, no. 2, Mar 2017

A.T. Berman, S. St. James, and R. Rengan, **"Proton beam therapy for non-small cell lung cancer: current clinical evidence and future directions."** Cancers, vol. 7, no. 3, pp. 1178-1190, Jul 2015. doi: 10.3390/cancers7030831

O. Koybasi, P. Mishra, S. St. James, J.H. Lewis, and J. Seco, **"Simulation of dosimetric consequences of 4D-CT based motion margin estimation for proton radiotherapy using patient tumor motion data."** Phys Med Biol., vol. 59, no. 4, pp. 853-867, Feb 2014. doi:

10.1088/0031-9155/59/4/853

S. St. James, J. Seco, P. Mishra, and J.H. Lewis, "**Simulations using patient data to evaluate systematic errors that may occur in 4D treatment planning: A proof of concept study.**" *Med Phys.*, vol. 40, no. 9, 091706, Sep 2013. doi: 10.1118/1.4817244

C.L. Williams, P. Mishra, S. St. James, R. Mak, R.I. Berbeco, and J.H. Lewis, "**A mass-conserving 4D XCAT phantom for dose calculation and accumulation.**" *Med Phys.*, vol. 40, no. 7, 071728, May 2013. doi: 10.1118/1.4811102

P. Mishra, R. Li, S. St. James, R.H. Mak, Y. Yue, C.L. Williams, R.I. Berbeco and J.H. Lewis, "**Evaluation of 3D fluoroscopic image generation from a single planar treatment image on patient data with a modified XCAT phantom.**" *Phys Med Biol.*, vol. 58, no. 4, pp. 841-858, Feb 2013. doi: 10.1088/0031-9155/58/4/841

P. Mishra, S. St. James, W.P. Segars, R.I. Berbeco, and J.H. Lewis, "**Adaptation and applications of a realistic digital phantom based on patient lung tumor trajectories.**" *Phys Med Biol.*, vol. 54, no. 11, pp. 3597-3608, Jun 2012. doi: 10.1088/0031-9155/57/11/3597

S. St. James, P. Mishra, R.I. Berbeco, and J.H. Lewis, "**Quantifying ITV Instabilities Arising from 4DCT: a simulation study using patient data.**" *Phys Med Biol.*, vol. 57, no. 5, pp. L1-L7, Mar 2012. doi: 10.1088/0031-9155/57/5/L1 (Editor's Choice Article)

Y. Yang, S. St. James, Y. Wu, H. Du, J. Qi, R. Farrell, P.A. Dokhale, K.S. Shah, K. Vaigneur, and S.R. Cherry, "**Tapered LSO arrays for small animal PET.**" *Phys Med Biol.*, vol. 56, no. 1, pp. 139-153, Jan 2011. doi: 10.1088/0031-9155/56/1/009

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