Tokihiro Yamamoto, M.S., Ph.D.

Research/Academic Interests

Dr. Yamamoto's scientific interests focus on developing and investigating novel imaging technologies and integrating these innovations into clinical radiotherapy to improve therapeutic gains in cancer radiotherapy.

Areas of active research include: (1) the development of lung ventilation/perfusion imaging based on computed tomography (CT) and deformable image registration, and applications in lung cancer radiotherapy to reduce pulmonary toxicity, and (2) the investigation of radiomics, an emerging method that applies advanced mathematical algorithms to extract quantitative features predictive of gene expression or clinical outcomes from imaging data, toward personalized radiotherapy.

Specialty

Cancer, Medical Physics, Radiation Oncology

Department

Radiation Oncology

Division

Radiation Oncology

Center/Program Affiliation

UC Davis Comprehensive Cancer Center

Additional Phone

Physician Referrals: 800-4-UCDAVIS (800-482-3284)

Languages

Japanese

Education

M.S., Osaka University, Suita, Osaka, Japan 2004
Ph.D., Osaka University, Suita, Osaka, Japan 2007
B.S., Osaka University, Suita, Osaka, Japan 2002

Fellowships

Stanford University, Stanford CA 2011

Board Certifications

American Board of Radiology, Therapeutic Radiological Physics, 2014
Japanese Board of Medical Physics (JBMP), 2007

Professional Memberships

American Association of Physicists in Medicine (AAPM)
American Society for Radiation Oncology (ASTRO)
Japan Society of Medical Physics (JSMP)
Japan Society of Pulmonary Functional Imaging
Japanese Society for Therapeutic Radiology and Oncology (JASTRO)

Honors and Awards

Science Council Session, the American Association of Physicists in Medicine (AAPM), 2013
Young Scientist Sponsorship, European Respiratory Society (ERS), 2011
Scientific Presentation Award, International Workshop for Pulmonary Functional Imaging, 2011
John S. Laughlin Science Council Research Symposium, American Association of Physicists in

Medicine (AAPM), 2010

Select Recent Publications

Kida S, Bal M, Kabus S, Negahdar M, Shan X, Loo BW Jr, Keall PJ, Yamamoto T. CT ventilation functional image-based IMRT treatment plans are comparable to SPECT ventilation functional image-based plans. Radiother Oncol. 2016 Mar;118(3):521-7.

Yamamoto T, Kabus S, Bal M, Keall P, Benedict S, Daly M. The first patient treatment of computed tomography ventilation functional image-guided radiotherapy for lung cancer. Radiother Oncol. 2016 Feb;118(2):227-31.

Yu AS, von Eyben R, Yamamoto T, Diehn M, Shultz DB, Loo BW Jr, Maxim PG. Anatomic optimization of lung tumor stereotactic ablative radiation therapy. Pract Radiat Oncol. 2015 Nov-Dec;5(6):e607-13.

Negahdar M, Fasola CE, Yu AS, von Eyben R, Yamamoto T, Diehn M, Fleischmann D, Tian L, Loo BW, Maxim PG. Noninvasive pulmonary nodule elastometry by CT and deformable image registration. Radiother Oncol. 2015 Apr;115(1):35-40.

Yamamoto T, Kabus S, Lorenz C, Mittra E, Hong JC, Chung M, Eclov N, To J, Diehn M, Loo BW Jr, Keall PJ. Pulmonary ventilation imaging based on 4-dimensional computed tomography: comparison with pulmonary function tests and SPECT ventilation images. Int J Radiat Oncol Biol Phys. 2014 Oct 1;90(2):414-22.

Yang J, Yamamoto T, Mazin SR, Graves EE, Keall PJ. The potential of positron emission tomography for intratreatment dynamic lung tumor tracking: a phantom study. Med Phys. 2014 Feb;41(2):021718.

Yamamoto T, Kabus S, Lorenz C, Johnston E, Maxim PG, Diehn M, Eclov N, Barquero C, Loo BW

Jr, Keall PJ. 4D CT lung ventilation images are affected by the 4D CT sorting method. Med Phys. 2013 Oct;40(10):101907.

Fan Q, Nanduri A, Yang J, Yamamoto T, Loo B, Graves E, Zhu L, Mazin S. Toward a planning scheme for emission guided radiation therapy (EGRT): FDG based tumor tracking in a metastatic breast cancer patient. Med Phys. 2013 Aug;40(8):081708.

Wilms M, Werner R, Yamamoto T, Handels H, and Ehrhardt E 2015 Population-based correspondence models for respiratory motion estimation in the presence of inter-fraction motion variations. In: Proc. of the Imaging and Computer Assistance in Radiation Therapy Workshop, MICCAI 2015, 81-88.

Kabus S, Klinder T, Yamamoto T, Keall P J, Loo B W, Jr. and Lorenz C 2013 Robust lung ventilation assessment. In: Proc. of the Fifth International Workshop on Pulmonary Image Analysis, MICCAI 2013, 75-83.

© 2016 UC Regents