

**American Association of Physicists in Medicine**  
**July 21-25, 2024; Los Angeles, CA**  
**Department of Radiation Oncology**  
**University of Maryland School of Medicine**  
**50 scientific presentations + 2 other presentations**

Bamberger C, <b>Xing L, Rahimi R</b>	Troubleshooting methods for failed patient-specific quality assurance in proton therapy: Insights from case studies	Poster
<b>Byrne K, Davies E, Tran P, Jiang K.</b>	A platform for efficient murine lung irradiation using planar image guidance.	Poster
<b>Cao Y, Chern H-RR, Kunaprayoon D, Mishra M, Ren L</b>	Interpretable AI-assisted clinical decision making for treatment selection of brain metastases in radiation therapy	SNAP oral
<b>Cao Y, Qi XS</b>	Establishing ground truth in AI	Moderators
<b>Cao Y, Sutera P, Mendes WS, Yousefi B, Hrinivich WT, Deek M, Phillips R, Song D, Kiess A, Guler OC, Torun N, Reyhan M, Sawant A, Marchionni L, Simone NL, Tran P, Onal C, Ren L</b>	Machine learning predicts conventional imaging metastasis-free survival for oligometastatic castration-sensitive prostate cancer using multimodality imaging prostate-specific membrane antigen PET and CT radiomics	Poster
<b>Ding J, Gopal A, Guerro M, Cammin J, Kalavagunta C, Zhang B, Chen S, Zhou J, Xu H</b>	Decoding mysteries: How electron density phantom choice impacts CT and CBCT HU measurements	Poster
<b>Ding J, Kalavagunta C, Lasio G, Gopal A</b>	Evaluation of robust optimization techniques in deep inspiration breath-hold breast radiotherapy for enhanced cardiac dose sparing	Poster
<b>Ding J, Vicente EM, Modiri A, Sawant A, Gopal A</b>	Improving post-RT preservation of lung function through sparing airways and functional lung: Clinical validation of deliverability and dosimetric accuracy	Poster
Eckrich C, <b>Huang K</b>	AAPM Medical Physics Student Meeting: Navigating the future: Staying current in medical physics	Moderators
<b>Guerrero M</b>	Principles of hyperthermia physics and clinical applications	Oral, invited program
<b>Guerrero M, Cammin J, Molitoris JK, Rodrigues D</b>	Comparison of the biological effect of different hyperthermia treatment schedules using HT-EQD2	Poster
Han D, Qi H, <b>Yao W</b> , Lee NY, Youssef I, Simone C, Lin H	Validation of LET-weighted dose and its application in reducing biological uncertainties for head and neck proton therapy	Poster
<b>Huang K, Byrne KE, Bazyar S, Tran P, Sawant A, Jiang K</b>	A novel collimator for high throughput murine hemi- and whole thoracic lung irradiation using ultra-high dose rate electron beams	Poster

<b>Huang K</b> , Wang K, <b>Gopal A</b> , Hendershot J, Kusmaul E, Steinberg M, <b>Chen S</b> , <b>Guerrero M</b>	Auto-planning using multicriteria optimization for prostate cancer radiotherapy	Poster
Jackson J, Su F-CF, Suneja G, <b>Rahimi R</b> , Nie W, Li X	Evaluating two novel materials for 3D printed boluses in head and neck external beam radiation therapy	Poster
<b>Jiang K</b> , <b>Byrne KE</b> , <b>Poirier YP</b> , <b>Mossahebi S</b> , Griffiths L, Boivin G, Sharma R, <b>Sawant A</b> , Jackson IL, <b>Balcer-Kubiczek E</b> , Vilalta M, <b>Carrier F</b>	Uhdr pencil beam scanning protons at 60 Gy/2 spare skin but not lung in mice with hemithoracic lung irradiation	Oral
Jiang Z, <b>Lang Y</b> , Wu QJ, Xiang L, <b>Ren L</b>	Towards general deformable medical image registration using large models: A preliminary study	Poster
Jiang Z, Sharma VR, Cham M, Peterson SW, <b>Mossahebi S</b> , Gobbert MK, Polf JC, <b>Ren L</b>	Deep learning-based prompt gamma imaging for proton range verification: A Monte Carlo simulation study on patient data	Poster
<b>Lang Y</b> , Jiang Z, Surr L, Xiang L, <b>Ren L</b>	Enhancing image quality in acoustic imaging using the Segment Anything Model	Poster
<b>Lang Y</b> , <b>Rodrigues D</b> , <b>Ren L</b>	Automatic specific absorption rate prediction for hyperthermia treatment planning using deep learning method	Poster
Li X, Chen KL, Xu J, Su F-CF, <b>Rahimi R</b>	Detector-specific output baselining for proton pencil beam scanning systems	Poster
<b>Ling X</b> , <b>Alexander G</b> , <b>Molitoris JK</b> , Choi J, Schumaker L, Mehra R, Gaykalova D, <b>Ren L</b>	Radiomic biomarkers of locoregional recurrence: Prognostic insights from oral cavity squamous cell carcinoma preoperative CT scans	Poster
<b>Mossahebi S</b>	Reporting early clinical outcomes of photons & proton beam SFRT for large & bulky tumors – University of Maryland experience	Oral Invited program
<b>Mossahebi S</b> , <b>Banskota A</b> , O’Neil M, <b>Gonzalez RM</b> , <b>Olis S</b> , <b>MacFarlane MJ</b> , <b>Yi BY</b>	Effect of energy layer spacing on plan quality and treatment delivery time of intensity modulated proton therapy of breast patients	Poster
<b>Nasehi Tehrani J</b>	Optimizing curve-fitting algorithms for GafChromic dosimetry analysis: A comparative evaluation	Poster
Oh K, Palmiero AN, Cetnar A, <b>Jiang K</b> , <b>Byrne KE</b> , Rafael K, Gallagher KJ, Praestegaard LH, Hoffman L, Bello RD, Jain S, Tanadini-Lang S, Zhou S-M, Smith W, <b>Poirier YP</b> , McNeur J	Flashforward Consortium: Multi-institutional evaluation of dosimetry systems using the electron flash research extensions	Poster
Olaizola J, Gutierrez NG, Oakes JM, <b>Sawant A</b> , <b>Vicente EM</b>	Understanding the impact of radiation-induced airway injury on post-radiotherapy lung ventilation: Insights from computational fluid dynamics modeling	Poster

<b>Poirier Y</b> , Amos R, Bello R, Gallagher K, <b>Mossahebi S</b> , Oh K, Præstegaard L, Rutar F, Smith W, Xu J, Zhou S.	Recommendations from the Varian Consortium e-FLASH radiation safety working group	?
Qiao Z, Yu B, Zhang Z, Jiang Z, Lee J, Lai Y, Fang R, Gong K, Wu D, <b>Ren L</b> , Huang M	Radiomics features-driven implementation for the enhancement of CBCT images via multiple 2D and 3D optimal generative adversarial networks	Poster
<b>Rahimi R</b> , Bamberger C, Castro J, D'Souza G, Chen KL, Nie W, Fan J, Li X	Advancing proton therapy with customized 3D printed bolus solutions	Poster
<b>Rahimi R</b> , Chen KL, Fan J, Khan R	Radiochromic film models for proton beam therapy: EBT3 vs EBT4	Poster
<b>Ren L</b>	Interpretable AI in radiation therapy	Oral, invited program
<b>Ren L</b> , Whitney HM	Road to trustworthy AI: Uncertainty management, interpretability and beyond	Moderators
Rodriguez Gonzales L, Kim K, Jiang Z, <b>Ren L</b> , Xiang L	Towards 3D volumetric ultrasound imaging for radiotherapy monitoring	Poster
Sabouri P, Wohlfahrt P, Shah J, Koroulakis A, <b>Molitoris JK</b> , <b>Mossahebi S</b>	Assessing dual-energy and single-energy CT discrepancies in proton stopping-power prediction: Implications for treatment planning	Poster
Sangal A, <b>Choi J</b> , Chang Y, Zhong H, <b>Ren L</b>	Development of a digital twin Xman phantom using deep learning-based diffusion model for imaging and treatment optimization in liver cancer radiation therapy	Poster
<b>Sawant A</b> , Hindley N	Motion management and tumor tracking I	Moderators
<b>Sawant A</b>	TrueBeam with HyperSight	Oral (Varian presentation)
Sharma VR, Polf JC, Peterson SW, Jiang A, Cham M, <b>Mossahebi S</b> , Gobbert MK, <b>Ren L</b> .	Insights into the prompt gamma generation in real patient anatomy during proton therapy delivery: a Geant4-based Monte Carlo study	Poster
<b>Soomro MH</b> , Xu J, Ding J, Cammin J, Van Slyke A, Liang X, Roys S, Zhuo J, Ernst T, Gullapalli RP, Nevo E, <b>Sawant A</b>	Feasibility of real-time electromagnetic surface tracking inside the treatment room	Oral
<b>Vicente EM</b> , Abadi E	Lung functional imaging and analysis	Moderators
<b>Wang K</b> , Vyfhuis M, Singh G, Lejano D, <b>Nichols E</b>	Challenge in machine learning based progression free survival for predicting for breast cancer patients undergoing adjuvant IMPT: Insights from a CPH model with iterative feature selection	Poster
<b>Xu J</b> , Ding J, Jiang K, MacFarlane MJ, <b>Poirier YP</b> , Lamichhane N, Huang K, Wang K, Chang Y, Chen S	Can VMAT be used for SRS treatment of small lesions <1 cm?	Poster
<b>Xu J</b> , Tien CJ	Brachytherapy	Moderators
Xu J, <b>Wang K</b> , Huamg K, Ding J, <b>Chang Y</b> , Cammin J, Zhang B, Zhou J, Chen S	An efficient protocol for in vivo dose verification with EBT3 films	Poster

<b>Yao W, Biswal N, Deng W, MacFarlane MJ, Mossahebi S, Poirier Y, Zakhary MJ, Zhang B, Yi BY</b>	Raystation LET commissioning and LET patient-specific QA with measured IDD	Poster
<b>Yao W, Zhang B, Yi BY</b>	Plan specific robustness and its application in adaptive plan strategy based on daily CBCT in intensity modulated proton therapy: Pelvis cases	Poster
<b>Yi BY, Mossahebi S, Biswal N, Polf J</b>	Macrospot filter for generating spread-out Bragg peak from single-energy proton beams	Poster
<b>Zakhary MJ, Redell D, Alicia D, Jatczak J, Bark R, Biswal NC, Mossahebi S, Sun K, Molitoris JK, Yi BY</b>	It's not always anatomical change: Nominal plan robustness can predict plan degradation in proton therapy for oropharyngeal head and neck cancer	Poster
<b>Zhang B, Yao W, Xu H, Xu J, Zhou J, Biswal N, Zhang H, Lee S-W, Chen S, Yi BY</b>	Feasibility of using CBCT as a dosimetric monitoring tool for IMPT	Poster
Zhang H, Ding GX, <b>Zhang B</b> , Homann KL	Comparison of Fif, Ecomp and VMAT plans for robustness for left breast radiotherapy	Poster
<b>Zhou J, Benda R, Xu H, Zhang B, Chen Q, Lasio G, Xu J, Gopal A, Chen S</b>	Evaluation of patient setup differences between Alignrt and fiducial matching on Kv-Kv orthogonal pair in accelerated partial breast irradiation	Poster