

2022 Annual Meeting Calendar of Events**MEDICAL PHYSICS****PROGRAM OF THE MEETING***=**Presenting Author****Sunday, July 10, 2022****Student Meeting**

8:30 AM - 10:30 AM

-Ballroom C

SU-AB-BRC 2022 Annual Student Meeting: Global Medical Physics: Experiences, Lessons, and Getting Involved

Moderators: Reed Kolany, Sun Nuclear Corporation, Madison, WI and Stephanie Wang, Henry Ford Health System, Detroit, MI

8:30 AM **Introduction**8:40 AM **W. Ngwa, Johns Hopkins University: AAPM Efforts to Increase Global Access to Medical Physics Education, Training, and Tools: Opportunities for Student and Trainees**9:00 AM **A. Yorke, University of Washington: Approaches and Lessons Learned in Global Radiotherapy Physics**9:15 AM **A. Rubinstein, Henry Ford Health System: Improving Imaging Quality Assurance and Radiation Safety Abroad Through RAD-AID Medical Physics**9:30 AM **S. Avery, University of Pennsylvania: Establishing Pathways for Medical Physics Students and Trainees in Global Health**9:45 AM **Panel Discussion on Opportunities for Students to Get Involved****Council Symposia**

8:30 AM - 9:30 AM

-Ballroom B

SU-A-BRB International Council Symposium: Medical Physics Awareness in the Global Context

Moderator: Jatinder Palta, Virginia Commonwealth University, Richmond, VA

8:30 AM **Introduction**8:35 AM **J. Van Dyk, Western University: Global Medical Physics: Challenges and Opportunities**8:50 AM **W. Ngwa, Johns Hopkins University: Global Health Disparities: Challenges and Realities**9:05 AM **S. Parker, Wake Forest Baptist Health High Point Medical Center: Global Need Assessment and the AAPM**9:20 AM **Q & A**

-Ballroom B

SU-B-BRB Education Council Symposium: Celebrating Medical Physics Educators: Transformative leaders in Medical Physics Education

Moderator: Joann Prisciandaro, University of Michigan, Ann Arbor, MI

9:30 AM **Introduction**9:35 AM **M. Giger, University of Chicago: Teaching Medical Physics to Graduate Students Along Their Path to Becoming Independent Investigators**9:50 AM **F. Fahey, Children's Hospital: Changing Landscape of Medical Physics Education for Medical Physicists, Physicians, and Allied Health Professionals**10:05 AM **G. Starkschall: (Almost) Fifty Years in Medical Physics**10:20 AM **Q & A**

-Ballroom B

SU-C-BRB Joint Council Symposium: Celebrating the Recent Accomplishments of the AAPM

Moderator: Joann Prisciandaro, University of Michigan, Ann Arbor, MI

10:30 AM **Introduction**10:32 AM **D. Scanderbeg, UC San Diego: Promoting Medical Physics Through the AAPM Public Education Website****Sunday, July 10, 2022**10:44 AM **S. Avery, University of Pennsylvania: Increasing Access to Medical Physics Education and Research Excellence (AMPERE) for Global Health**10:56 AM **J. Hoisak, UC San Diego: The AAPM Mentorship Program: Creating Mentoring Opportunities for All Members**11:08 AM **M. Giger, University of Chicago: MIDRC: AAPM Leadership in Medical Imaging and Data Science**11:20 AM **Q & A**

-Ballroom B

SU-D-BRB Professional Council Symposium: In Memory of George Sherouse - Transforming Human Health Through Clinical Practice

Moderator: Jessica Clements, Kaiser Permanente, Pasadena, CA

11:30 AM **J. Clements, Kaiser Permanente: Memorial Tribute**11:40 AM **M. Kessler, The University of Michigan: Designing and Building the Fundamental Tools of Our Trade**11:55 AM **D. Pavord, Allegheny General Hospital: Mastering the Craft of Medical Physics**12:10 PM **P. Halvorsen, Beth Israel - Lahey Health: Professional Comportment: Understanding Your Role in Order To Best Serve the Clinical Mission**12:25 PM **J. Clements, Kaiser Permanente: Q & A****Exhibit Hall Opens**

12:30 PM - 1:00 PM

-Exhibit Hall

Therapy SNAP Oral

1:00 PM - 2:00 PM

-Room 206

SU-E-206 Advances in Treatment Planning I

Moderators: Zacariah Labby, University of Wisconsin, Madison, WI and Maryam Mashayekhi, University of Maryland School of Medicine, Baltimore, MD

1:00 PM **SU-E-206-01 A Novel Simultaneous Plan Quality and Beam Delivery Time SPARC Optimization Platform Using Primal Dual Active Set with Continuation (PDASC) - L. Zhao*, J. You, G. Liu, X. Lu, X. Ding**1:07 PM **SU-E-206-02 Automatic VMAT Machine Parameter Optimization Using Deep Deterministic Policy Gradients - W. Hrinivich*, H. Li, J. Lee**1:14 PM **SU-E-206-03 Direct Thickness Optimization (DTO) for Compensator Based IMRT - X. Liu*, R. Wiersma**1:21 PM **SU-E-206-04 Distributed and Scalable Optimization for Robust Proton Treatment Planning - A. Fu*, V. Taasti, J. Deasy, M. Zarepisheh**1:28 PM **SU-E-206-05 Fluence Aperture Alternating Optimization (FAAO) for HYPERSCAN Adaptive Aperture Treatment Planning - S. Zhou*, Q. Chen, Y. Tan, T. Mazur, R. Khan, T. Zhao, T. Zhang**1:35 PM **SU-E-206-06 Towards Automated, Knowledge-Based Brachytherapy Treatment Planning: Converting 3D Dose to Optimized Dwell Times - K. Kallis, L. Moore, D. Brown, J. Mayadev, K. Moore, S. Meyers***1:42 PM **SU-E-206-07 Cardiac Substructures Specific Knowledge-Based Treatment Planning for Lung Radiotherapy - S. Momin*, J. Wolf, J. Roper, Y. Lei, M. Lloyd, T. Liu, J. Bradley, K. Higgins, X. Yang, J. Zhang**1:49 PM **SU-E-206-08 The Evaluation of Total Marrow Irradiation Volumetric Modulated Arc Therapy Treatment Planning Using the Millennium and High Definition MLC - D. Zuro*, G. Vidal, C. Henson, C. Han, S. Hui, S. Ahmad, I. Ali**

2022 Annual Meeting Calendar of Events**Sunday, July 10, 2022****Imaging SNAP Oral**

1:00 PM - 2:00 PM

-Room 207

SU-E-207 MRI: New Algorithms, Techniques, and Applications I

Moderators: Courtney Morrison, Henry Ford Health System, Detroit, MI and Paul Kinahan, University of Washington, Seattle, WA

- 1:00 PM **SU-E-207-01 Noise2noise Deep Learning Based Acceleration for MRI Echo-Planar Imaging** - L. Qin*, C. Lindsay, A. Konik, G. Young
- 1:07 PM **SU-E-207-02 Optimizing the Performance of Bloch Fitting for the Analysis of AcidoCEST MRI** - T. Li*, K. Jones, W. Schuler, J. De La Cerda, A. Kotrotsou, S. Zhang, M. Pagel
- 1:14 PM **SU-E-207-03 Sampling Pattern Optimization for Multi-Contrast MRI with Fully Unrolled Reconstruction Network** - J. Zou*, Y. Cao
- 1:21 PM **SU-E-207-04 A Ratiometric Method for Assessing Multi-Modal Breast MRI Image Quality** - B. Byrd*, V. Krishnaswamy, J. Gui, M. Fox, K. Paulsen, R. Barth, T. Rooney
- 1:28 PM **SU-E-207-05 Cross-Site Generalizability of the Optimal Machine Learning Method for Prostate Cancer Diagnosis** - S. Hu*, J. Zhang, X. Teng, J. Cai
- 1:35 PM **SU-E-207-06 A Method to Extract the Cardiac Cycle Signal Directly for 2D Cine MR and CBCT Projection Images** - X. Wu*, Y. Hao, G. Hugo, C. Eldeniz, H. An, H. Gach, D. Yang
- 1:42 PM **SU-E-207-07 Using Radiomic Study Design Recommendations to Optimize Classification Performance in Brain Metastases** - D. Mitchell*, S. Buszek, B. Tran, H. Liu, C. Chung

-Room 201

SU-E-201 CT and CBCT: New Technologies, Algorithms, and Emerging Applications I

Moderators: Joseph Stayman, Johns Hopkins University, Baltimore, MD and Ting Chen, New York University, New York, NY

- 1:00 PM **SU-E-201-01 A Practical and Robust Method for Beam-Blocker Based Cone Beam CT Scatter Correction** - H. Cui*, X. Jiang, Y. Yang
- 1:07 PM **SU-E-201-02 Cone-Beam CT From Complete Data Using Saddle Trajectories on a Mobile Robotic CBCT Scanner** - J. Albrecht*, S. Rit, P. Steininger, F. Ginzinger, P. Huber, I. Messner, M. Kraihamer, H. Schmitz, S. Corradini, C. Belka, C. Kurz, M. Riboldi, G. Landry
- 1:14 PM **SU-E-201-03 Characterizing Lung Tumor Rigidity Via Ventilation-Induced Tumor Deformation: Implications on the Prognosis of Lung Squamous Cell Carcinoma** - Y. Lao*, W. Yang, D. Moghanaki, K. Sheng
- 1:21 PM **SU-E-201-04 Deep-Learning-Based Auto Segmentation (DLAS) of Organs at Risk in the Head and Neck Region: A Clinical Evaluation** - C. Johnson*, P. Tsai, G. Yu, C. Apinorasetkul, L. Hu, W. Xiong, A. Zhai, R. Press, H. Lin, S. Huang
- 1:28 PM **SU-E-201-05 Delineating Functional Lung Volume by Combining DECT Derived Perfused Blood Volume and 4DCT Derived Ventilation Maps for Radiation Treatment Planning** - G. Noid*, A. Tai, E. Gore, J. Shah, X. Li
- 1:35 PM **SU-E-201-06 Multi-Domain Constraint Based Estimation of Effective Atomic Number and Electron Density for Dual Energy CT** - Q. Wang*, H. Xie, C. Chang, T. Wang, J. Roper, X. Tang, J. Bradley, T. Liu, X. Yang
- 1:42 PM **SU-E-201-07 Physics-Informed Machine Learning for Estimating Pulmonary Perfusion from Non-Contrast 4DCT** - Y. Liu*, A. Nowacki, R. Castillo, Y. Vinogradskiy, G. Nair, C. Stevens, E. Castillo
- 1:49 PM **SU-E-201-08 Scatter Correction in Known-Component Model-Based Cone-Beam CT Reconstruction in the Presence of Metal Hardware** - A. Lopez Montes*, W. Zbijewski, J. Siewerdsen, J. Stayman, S. Liu

MEDICAL PHYSICS**Sunday, July 10, 2022****Therapy SNAP Oral**

1:00 PM - 2:00 PM

-Ballroom C

SU-E-BRC FLASH RT - Instrumentation and Dosimetry

Moderators: Brian Pogue, University of Wisconsin-Madison, Madison, WI and Sagarika Jain, Ohio State Univ, Columbus, OH

- 1:00 PM **SU-E-BRC-01 A Mechanistic Consideration of Oxygen Enhancement Ratio, Oxygen Transport and Their Relevancies for Normal Tissue Sparing Under FLASH Irradiation** - M. Jia*, X. Cao, H. PENG
- 1:07 PM **SU-E-BRC-02 Development of a Preclinical Research Platform for Ocular FLASH Radiotherapy Study** - D. Miles*, D. Sforza, J. Wong, M. Rezaee
- 1:14 PM **SU-E-BRC-03 FMEA of FLASH On a Clinical LINAC Shows Setup and Beam Gating as Largest Risks** - M. Rahman*, R. Zhang, D. Gladstone, B. Williams, E. Chen, C. Dexter, L. Thompson, P. Bruza, B. Pogue
- 1:21 PM **SU-E-BRC-04 GPU-Based Monte Carlo Treatment Planning System for Electron FLASH Radiotherapy** - B. Zhou*, W. Lu, Y. Lai, M. Rahman, R. Zhang, X. Jia, K. Wang
- 1:28 PM **SU-E-BRC-05 Increase in Excess Neutron Dose Due to Use of An Energy Degradier in Ultra-High Dose Rate Proton Therapy for FLASH** - D. Chen*, J. Zou, L. Dong, E. Diffenderfer
- 1:35 PM **SU-E-BRC-06 Systematic Evaluation of Ion Recombination Effects of Clinically Available Ion Chambers in FLASH Pencil Beam Scanning Proton Beam** - E. Lee*, J. Speth, Y. Zhang, Z. Xiao, A. Mascia
- 1:42 PM **SU-E-BRC-07 Utilization of Toroids for Output and Energy Monitoring of Pulsed Electron FLASH Beams** - K. Liu*, A. Glick, A. Palmiero, N. Chopra, S. Beddar, E. Schueler
- 1:49 PM **SU-E-BRC-08 Validation of a Novel Device for Characterizing Ultra High Dose Rate (FLASH) Electron Beams** - S. Jain*, J. Woollard, A. Cetnar, N. Gupta, A. Ayan

-Ballroom A

SU-E-BRA Quality and Safety in Radiotherapy I

Moderators: Todd Pawlicki, UC San Diego, La Jolla, CA and Sonja Dieterich, UC Davis Medical Center, Sacramento, CA

- 1:00 PM **SU-E-BRA-01 Continuous Advanced Imaging and Real-Time Verification During Spine SBRT Delivery** - A. Kassaei*, R. Scheuermann, P. Charpentier, A. Butala, J. Shabason, B. Burgdorf, J. Jones, D. Mihailidis
- 1:07 PM **SU-E-BRA-02 Dosimetric Characterization of Patient Setup Uncertainty for Patients Treated with Craniospinal Irradiation Using a VMAT Approach** - D. Barbee, J. Teruel, S. Taneja*, B. Cooper, J. Zhang, K. Osterman
- 1:14 PM **SU-E-BRA-03 Effect of Skin Color and Camera Obstruction on Accuracy of An Optical Surface Guidance System** - R. Popple*, E. Covington, D. Stanley, J. Fiveash
- 1:21 PM **SU-E-BRA-04 Onelso: A Streamlined HyperArc™ Patient and Machine QA for Single-Isocenter Multi-Target (SMT) SRS** - L. Skinner*, D. Capaldi, P. De Jean, J. Schulz, P. Dubrowski, A. Yu
- 1:28 PM **SU-E-BRA-05 Predicting Measurement-Based Patient-Specific Quality Assurance Results for ViewRay Plans Using Machine Learning** - A. Witztum*, G. Ibrahim, P. Wall, J. Lamb, G. Valdes
- 1:35 PM **SU-E-BRA-06 System Modeling for Safety Analysis: Leveraging Process Maps to Create Control Structures** - L. Wong*, T. Pawlicki
- 1:42 PM **SU-E-BRA-07 Towards Improved Robustness to Needle Displacement: A Robust Planning Technique for Gynecological High Dose Rate Interstitial Brachytherapy** - K. Jiang*, M. MacFarlane, R. McCarroll, N. Lamichhane, P. Mohindra
- 1:49 PM **SU-E-BRA-08 Validity of Definition of the Sclin in Small Fields Used in MR-Linac** - I. Das*, P. Yadav

2022 Annual Meeting Calendar of Events**Sunday, July 10, 2022****Multi-Disciplinary SNAP Oral**

1:00 PM - 2:00 PM

-Ballroom B

SU-E-BRB AI/ML Autopanning, Autosegmentation, and Image Processing I

Moderators: Poonam Yadav, Northwestern University Feinberg School of Medicine, Chicago, IL and Lei Xing, Stanford University School of Medicine, Stanford, CA

1:00 PM **SU-E-BRB-01 Adaptation of Dose Prediction DenseNet for Prostate Cancer Patients Treated with Different Beam Modes Using Transfer Learning** - J. Fu*, Z. Wang, J. Lewis, X. Qi

1:07 PM **SU-E-BRB-02 Automated Contour Edit Tracking to Improve AI Auto-Segmentation** - S. Elguindi*, A. Li, M. Zhu, L. Cervino, H. Veeraraghavan, J. Jiang, E. LoCastro

1:14 PM **SU-E-BRB-03 Automated Rectal Cancer Radiotherapy Planning** - K. Huang*, P. Das, A. Olanrewaju, C. Cardenas, D. Fuentes, L. Zhang, D. Hancock, H. Simonds, D. Rhee, S. Beddar, T. Briere, L. Court

1:21 PM **SU-E-BRB-04 Clinical Commissioning and Implementation of An In-House Artificial Intelligence (AI) Tool for Automated Head and Neck Intensity Modulated Radiation Therapy (IMRT) Treatment Planning** - X. Li*, Y. Sheng, Q. Wu, Y. Ge, C. Wang, D. Brizel, Y. Mowery, J. Lee, W. Wang, H. Stephens, D. Yang, F. Yin, Q. Wu

1:28 PM **SU-E-BRB-05 Comparing Transfer Learning, Data Augmentation, and Data Expansion in the Improvement of Medical Image Generation** - M. Woodland*, J. Wood, B. Anderson, S. Kundu, E. Lin, E. Koay, B. Odisio, C. Chung, H. Kang, A. Venkatesan, S. Yedururi, B. De, Y. Lin, A. Patel, K. Brock

1:35 PM **SU-E-BRB-06 Developing Clinical Pipeline to Translate Deep Learning Based Auto-Segmentation Models for Radiotherapy Planning** - M. Lin*, T. Bai, B. Wang, D. Nguyen, Y. Gonzalez, J. Wu, Y. Yan, X. Jia, A. Godley, S. Jiang, W. Lu

1:42 PM **SU-E-BRB-07 Pilot Implementation of AI GTVs for SRS to Brain Metastases** - D. Hsu*, M. Aristophanous, L. Cervino, Y. Hu, A. Apte, A. Iyer, K. Beal, B. Imber, A. Ballangrud

1:49 PM **SU-E-BRB-08 Task-Specific Fine-Tuning for Interactive Deep Learning Segmentation for Lung Fibrosis on CT Post Radiotherapy** - M. Trimpf*, P. Salome, D. Walz, J. Hörner-Rieber, S. Regnery, E. Stride, K. Vallis, J. Debus, A. Abdollahi, M. Gooding, M. Knoll

Specialty Program The New Era of Radiopharmaceutical Therapy SNAP Oral

1:00 PM - 2:00 PM

-Room 202

SU-E-202 Radiopharmaceutical Therapy Dosimetry

Moderators: Osama Mawlawi, MD Anderson Cancer Ctr., Houston, TX and Julia Brosch-Lenz, BC Cancer Research Center, Vancouver, BC

1:00 PM **SU-E-202-01 Uncertainty Analysis of Absorbed Dose Calculation in Targeted Radiotherapy Using a Bayesian Approach** - M. BENSIALI*, E. Davesne, E. Chojnacki, D. Broggio, S. Lamart, N. Anizan, S. Lebouilleux, D. Franck

1:07 PM **SU-E-202-02 Commissioning of a Commercial Whole-Body Gamma Camera Image-Based Radiopharmaceutical Therapy Treatment Planning System** - W. Erwin*

1:14 PM **SU-E-202-03 CT Metallic Artifacts Affect Clinical, SPECT Image-Based, Iodine-131 Radiopharmaceutical Therapy Dosimetry** - D. Adam*, T. Bradshaw, P. Hill, J. Grudzinski, S. Cho, A. Burr, P. Harari, B. Bednarz

1:21 PM **SU-E-202-04 Comparing Methods for Fitting and Integrating the Time-Activity Curve (TAC): Impact on Clinical Dosimetry After 177Lu-PRRT** - R. Danieli*, Y. Dewaraja, D. Raspanti, M. Ferrari, F. Botta, G. Glatting, M. Cremonesi

MEDICAL PHYSICS**Sunday, July 10, 2022**

1:28 PM **SU-E-202-05 Impact of Dosimetry Method On Organ and Tumor Absorbed Dose Estimates in Lutetium-177-DOTATATE Therapy of Neuroendocrine Tumors** - J. Brosch-Lenz*, A. Rahmim, C. Uribe

1:35 PM **SU-E-202-06 Voxel-Wise Preclinical Dosimetry of 177Lu-NM600 Using the Monte Carlo-Based Platform RAPID** - O. Kwon*, J. Grudzinski, D. Adam, P. Clark, R. Sriramaneni, C. Ferreira, J. Jeffery, C. Massey, C. Kerr, Z. Morris, R. Hernandez, J. Weichert, B. Bednarz

1:42 PM **SU-E-202-07 A Macroscale Model of the Adult Human Kidney with Arterial and Venous Cortical Vasculature for Applications in Radiopharmaceutical Dosimetry** - A. Dozic*, J. Aris, C. Correa Alfonso, S. Domal, J. Withrow, S. Xing, L. McCullum, C. Grassberger, H. Paganetti, W. Bolch

1:49 PM **SU-E-202-08 Computational Benchmarking of Nanoscale Dosimetry in DNA Damaged by 125I Decay** - O. Kwon*, B. Bednarz

Multi-Disciplinary SNAP Oral

2:00 PM - 3:00 PM

-Room 206

SU-F-206 Imaging for Treatment Assessment and Outcome Modeling

Moderators: Michael Lawless, University of Wisconsin-Madison, Madison, WI and Rebecca Howell, UT MD Anderson Cancer Center, Houston, TX

2:00 PM **SU-F-206-01 A Comprehensive Model to Predict Radiation Related Immunopression Following Lung SBRT** - C. Nguyen*, G. Minesinger, D. Lain, T. Showalter, R. Paul, J. Larner, K. Wijesooriya

2:07 PM **SU-F-206-02 Building a Bidirectional Encoder Representations from Transformers (BERT) Transfer Learning Framework for Glioma Overall Survival Prediction Using Unstructured Electronic Health Record Notes** - H. Lin*, J. Barrios Ginart, H. Gong, Y. Interian, W. Chen, R. Luo, T. Upadhaya, J. Lupo, S. Braunstein, O. Morin

2:14 PM **SU-F-206-03 Changes of Magnetic Resonance Radiomics in Response to Radium-223 Dichloride in Combination with Androgen Deprivation Therapy (ADT) and Stereotactic Body Radiation Therapy (SBRT) for Patients with Oligometastatic Castration Sensitive Prostate Cancer** - K. Qing*, T. Ketcherside, A. Liu, B. Liu, C. Han, W. Watkins, X. Feng, L. Zhao, Q. Chen, J. Liu, S. Dandapani

2:21 PM **SU-F-206-04 CT Radiomics Analysis on Whole Pancreas Between Healthy Individual and PDAC Patients: Uncertainty Analysis and Predictive Modeling** - A. Kolomaya, G. Ostdiek-wille, J. Wong, X. Cheng, C. Lin, Y. Lei, S. Zhou, S. Wang*

2:28 PM **SU-F-206-05 Deep Learning Dose Prediction as a Tool to Evaluate Treatment Complications Based on NCTP Models** - C. Draguet*, A. Barragan Montero, P. Populaire, G. Defraene, M. Thomas, K. Haustermans, J. Lee, E. Sterpin

2:35 PM **SU-F-206-06 Investigation of the Mechanisms of Prostate Tumor Growth Delay After Pulsed High Intensity Focused Ultrasound Treatment** - L. Chen*, D. Cvetkovic, K. Cai, B. Wang, X. Chen, C. Ma

2:42 PM **SU-F-206-07 Patient-Specific Adjuvant Chemotherapy Decision Making Using Radiomics for Locally-Advanced NPC: A Multicenter Retrospective Study** - X. Teng*, J. Zhang, Z. Ma, X. Han, S. Lam, H. Xiao, C. Liu, W. Li, Y. Huang, F. Lee, W. Yip, A. Cheung, H. Lee, J. Cai

2:49 PM **SU-F-206-08 Quantifying the Impact of Deformable Dose Accumulation Using Voxel-Level Dose-Response Analysis for Non-Small Cell Lung Cancer** - Y. He*, G. Cazoulat, C. Wu, L. Almodovar-Abreu, E. Mccollum, B. Rigaud, P. Balter, J. Pollard-Larkin, D. Rhee, L. Court, Z. Liao, R. Mohan, K. Brock

2022 Annual Meeting Calendar of Events**Sunday, July 10, 2022****Imaging SNAP Oral**

2:00 PM - 3:00 PM

-Room 207

SU-F-207 MRI: New Algorithms, Techniques, and Applications II

Moderators: Samuel Einstein, Penn State Hershey Medical Center, York, PA and Ping Hou, UT MD Anderson Cancer Center, Houston, TX

- 2:00 PM **SU-F-207-01 A Multi-Parametric Quantitative MR Protocol for Pre-Operative Radiotherapy Response Assessment in Soft-Tissue Sarcomas** - I. Thrussell*, J. Winfield, C. Messiou, S. Usman, J. Newman, R. Simoes, G. Hopkinson, S. Zaidi, A. Miah, M. Blackledge
- 2:07 PM **SU-F-207-02 Fast High-Resolution 3D Magnetization-Prepared GRE with Complementary Phase-Cycling Acquisitions** - Q. Peng*, Y. Zhao, C. Wu
- 2:14 PM **SU-F-207-03 Comparison of Compressed Sensing Accelerated MR Elastography to Standard Breath-Hold 2D Gradient Recalled Echo MRE for Estimating Liver Stiffness (LS)** - J. Zhang*, D. Akselrod, J. Tam, J. Gonyea, S. Hipko, M. Bazylewicz
- 2:21 PM **SU-F-207-04 Accelerated MRI Reconstruction Using Variational Feedback U-NET with Transfer Learning** - Y. Zhou*, R. Paul, P. Ding, R. Battle, A. Patel, B. Li
- 2:28 PM **SU-F-207-05 Association Between Liver Tumor and Surface Motion from Cine MR Images on an MRI-Linac** - W. Mao*, J. Kim, I. Chetty
- 2:35 PM **SU-F-207-06 Breast Lesion Characterization Using Kinetic Features Measured on Ultrafast DCE-MRI** - F. Pineda*, Z. Ren, K. Kulkarni, H. Abe, G. Karczmar
- 2:42 PM **SU-F-207-07 Investigation of the RF Heating Risk from Gas Supply Line During MR Guided Cryoablation** - L. Ren*, C. Favazza, J. Felmlee, D. Woodrum, S. Thompson, D. Adamo, A. Lu

-Room 201

SU-F-201 CT and CBCT: New Technologies, Algorithms, and Emerging Applications II

Moderators: Kai Yang, Harvard Medical School, Massachusetts General Hospital, Boston, MA and Karen Drukker, University of Chicago, Chicago, IL

- 2:00 PM **SU-F-201-01 A Weakly-Supervised Approach for Automatic Selection of Uniform Regions in Clinical CT Images** - W. Cao*, P. Korfiatis, T. Kline, M. Callstrom, A. Missert
- 2:07 PM **SU-F-201-02 Improving Cone-Beam CT Auto-Segmentation Accuracy Using Cycle GANs for Domain Adaptation** - K. Shah*, J. Shackleford, N. Kandasamy, G. Sharp
- 2:14 PM **SU-F-201-03 Leveraging the Elliptical Shape of the Uterocervix on Semi-Axial Cross-Sections for Improved Deep-Learning Segmentation on Cone-Beam CT** - S. Blackledge*, L. Wang, K. Zormpas-petridis, M. Blackledge, S. Lalondrelle, H. Mcnair, E. Harris
- 2:21 PM **SU-F-201-04 Reproducibility of An Automated Lobar Lung Tissue Assignment Technique Using CT Pulmonary Angiography** - N. Luu*, Y. ZHAO, S. Molloy
- 2:28 PM **SU-F-201-05 Accurate and Efficient Deep Neural Network Based Deformable Image Registration Method in Lung Cancer** - Y. Ding*, Z. Liu, H. Feng, J. Holmes, Y. Yang, N. Yu, T. Sio, S. Schild, B. Li, W. Liu
- 2:35 PM **SU-F-201-06 Comparative Analysis of a Resolution-Limiting X-Ray System and a Micro-CT System for the Quantification of Bone Mineral Density in Rat Models** - C. Warioba*, E. Marshall
- 2:42 PM **SU-F-201-07 Discriminability of Non-Gaussian Noise Properties in CT and the Limitation of the Noise Power Spectrum to Describe Noise Texture** - K. Boedeker*, D. Shin, L. Oostveen, I. Sechopoulos, C. Abbey

MEDICAL PHYSICS**Sunday, July 10, 2022**

- 2:49 PM **SU-F-201-08 Quantitative Dual-Energy CT with Limited-Angular-Range Data for Pulmonary Scans** - B. Chen*, Z. Zhang, D. Xia, E. Sidky, X. Pan

Multi-Disciplinary SNAP Oral

2:00 PM - 3:00 PM

-Ballroom C

SU-F-BRC Functional, Biologic and Anatomic IGRT

Moderators: Richard Castillo, Emory University, Atlanta, GA and Katelyn Hasse, University of California, San Francisco, San Francisco, CA

- 2:00 PM **SU-F-BRC-01 Evaluation of Variables Predicting Pulmonary Function Test (PFT) Changes for Lung Cancer Patients Treated on a Prospective 4DCT-Ventilation Functional Avoidance Clinical Trial** - N. Ghassemi*, R. Castillo, E. Castillo, B. Jones, M. Miften, B. Kavanagh, B. Lu, M. Werner-Wasik, R. Miller, J. Barta, I. Grills, T. Guerrero, C. Rusthoven, Y. Vinogradskiy
- 2:07 PM **SU-F-BRC-02 Using a Residual Neural Network to Predict Radiation-Induced Pulmonary Function Damage** - E. Wallat*, M. Flakus, A. Wuschner, J. Reinhardt, G. Christensen, J. Bayouth
- 2:14 PM **SU-F-BRC-03 X-Ray Image Decomposition Using Personalized Prior Knowledge for Improved Motion Tracking in Paraspinal SBRT** - X. He*, W. Cai, F. Li, Q. Fan, L. Cervino, J. Moran, P. Zhang, X. Li, T. Li
- 2:21 PM **SU-F-BRC-04 Ultra-Quality Multi-Parametric 4D-MRI for Real-Time Tumor Tracking in Liver Radiation Therapy Using A Dual-Supervised Downsampling-Invariant Deformable Registration Model** - H. Xiao*, X. Han, S. Zhi, Y. Wong, C. Liu, W. Li, W. Liu, W. Wang, Y. Zhang, H. Wu, H. Lee, A. Cheung, H. Chang, T. Li, J. Cai
- 2:28 PM **SU-F-BRC-05 Tracking Intrafractional Motion Using Orthogonal MV-KV Images in Paraspinal SBRT Treatment: Pilot Results on Clinical Patients** - Q. Fan*, H. Pham, T. Li, P. Zhang, L. Cervino, J. Moran, X. Li
- 2:35 PM **SU-F-BRC-06 Patient-Specific Synthetic MRI Generation from CBCT for Image Guidance in Liver SBRT** - Z. Zhang*, Z. Jiang, K. Lu, F. Yin, L. Ren
- 2:42 PM **SU-F-BRC-07 Real-Time CBCT Imaging and Motion Estimation Via a Single X-Ray Projection by a Motion Modeling-Based Convolutional Neural Network (MM-CNN)** - T. Mengke*, H. Shao, Y. Zhang
- 2:49 PM **SU-F-BRC-08 Development and Validation of a Novel Multi-Modal (MRI and KVCT) Method to Determine Proton Stopping Power Ratio** - R. Marants*, J. Scholey, E. Kaza, X. Miao, T. Benkert, A. Sudhyadhom

Therapy SNAP Oral

2:00 PM - 3:00 PM

-Ballroom A

SU-F-BRA Quality and Safety in Radiotherapy II

Moderators: Eric Ford, University of Washington, Seattle, WA and Jean Moran, Memorial Sloan Kettering Cancer Center, New York, NY

- 2:00 PM **SU-F-BRA-01 Complexity and Treatment Parameters Impact On IROC Head and Neck Phantom Performance Evaluated Using Random Forest** - H. Mehrens*, N. Hernandez, B. Lewis, A. Molineu, S. Kry
- 2:07 PM **SU-F-BRA-02 Development and Inter-Institutional Validation of An Automatic Vertebral-Body Misalignment Error Detector for Cone-Beam CT Guided Radiotherapy** - D. Luximon*, T. Ritter, E. Fields, J. Neylon, R. Petragallo, Y. Abdulkadir, J. Charters, D. Low, J. Lamb
- 2:14 PM **SU-F-BRA-03 Film-Less Quality Assurance (QA) of a Robotic-Arm Linac Using a Scintillation-Based Imaging System** - M. Ashraf*, L. Skinner, X. Gu, L. Xing, L. Wang

2022 Annual Meeting Calendar of Events**Sunday, July 10, 2022**

- 2:21 PM **SU-F-BRA-04** How Well Does the IROC H&N Phantom Serve as a Surrogate for Different Anatomical Sites? - F. Brooks*, M. Glenn, C. Peterson, C. Nelson, C. Clark, J. Pollard-Larkin, R. Howell, S. Kry
- 2:28 PM **SU-F-BRA-05** Multi-Institutional Study of a Bayesian Network-Based Assistive Tool for Physics Plan Review - S. Luk*, P. Kalendralis, C. Zegers, I. Bermejo, A. Kalet
- 2:35 PM **SU-F-BRA-06** Strategic Selection of Combinations of Quality Checks Via FMEA to Maximize Effectiveness of IMRT QA - J. O'Daniel*, Y. Cui, W. Giles, J. Adamson
- 2:42 PM **SU-F-BRA-07** The Development and Validation of a Physics Safety Checklist for Review of Automatically Generated Treatment Plans - K. Nealon*, L. Court, R. Douglas, S. Kry, V. Reed, S. Simiele, L. Zhang, E. Han
- 2:49 PM **SU-F-BRA-08** Using FMEA to Evaluate the Changes in Patient Risk for a New Automated Breast Planning Workflow - K. O'grady*, L. KUO, G. Tang, J. Moran, L. Hong, C. Della Bianca, K. Ohri, A. Ng, E. Lin, L. Santanam

Multi-Disciplinary SNAP Oral

2:00 PM - 3:00 PM

-Ballroom B

SU-F-BRB AI/ML Autopanning, Autosegmentation, and Image Processing II

Moderators: Ross Berbeco, Dana Farber/Brigham and Women's Hospital, Boston, MA and Qing-Rong Jackie Wu, Duke University Medical Center, Chapel Hill, NC

- 2:00 PM **SU-F-BRB-01** Adversarial Attacks on a Regression Based Deep Registration Network - F. Li*, W. Cai, X. He, J. Moran, L. Cervino, T. Li, X. Li
- 2:07 PM **SU-F-BRB-02** Automated Pipeline for Prostate Auto-Contouring and VMAT Planning - M. El Basha*, Q. Nguyen, D. Fuentes, J. Pollard-Larkin, F. Poenisch, Z. Yu, S. Frank, C. Cardenas, C. Nguyen, A. Olanrewaju, C. Tang, A. Aggarwal, S. Shah, L. Court
- 2:14 PM **SU-F-BRB-03** Automatic Image and Contour Augmentation for Deep Learning Auto-Segmentation of Complex Anatomy - N. Dang*, Y. Zhang, A. Amjad, J. Ding, C. Sarosiek, X. Li
- 2:21 PM **SU-F-BRB-05** Deep Learning-Based Auto Segmentation Using Generative Adversarial Network on Magnetic Resonance Images for Head and Neck Cancer - D. Kawahara*, A. Saito, Y. Nagata
- 2:28 PM **SU-F-BRB-06** Is Public Data Enough? A Comparison of Public and Institutional Deep Learning Models for Segmentation of 17 Organs-At-Risk in the Head and Neck - B. Clark*, N. Hardcastle, P. Jackson, L. Johnston, J. Korte
- 2:35 PM **SU-F-BRB-07** Radiation Oncology Enterprise-Wide Performance Evaluation of Commercial AI-Based Automated Image Segmentation Software Solutions - D. Maes*, E. Gates, P. Forouzaneshad, J. Kang, A. Lim, M. Lavilla, D. Melancon, B. Nguyen, Y. Tseng, E. Weg, J. Meyer, S. Bowen
- 2:42 PM **SU-F-BRB-08** Synthesizing Continuous 4D Respiratory Motion Using a Conditional Registration Network - Y. Sang*, D. Ruan
- 2:49 PM **SU-F-BRB-09** Longitudinal Monitoring of Esophageal Expansion to Capture Acute Esophagitis Prior to Its Onset - H. Veeraraghavan*, J. Jiang, A. Rimner, J. Deasy, M. Thor

Specialty Program The New Era of Radiopharmaceutical Therapy SNAP Oral

2:00 PM - 3:00 PM

-Room 202

SU-F-202 Advanced Imaging Applications for Radiotheranostics

Moderators: Brian Miller, University of Arizona / Banner University Medical Center Tucson, Tucson, AZ and Alejandro Bertolet, Massachusetts General Hospital, Boston, MA

MEDICAL PHYSICS**Sunday, July 10, 2022**

- 2:00 PM **SU-F-202-01** Efficient Nanoparticle-Mediated Radiolabeling of Cells for in Vivo PET Tracking - S. Khan*, G. Pratz
- 2:07 PM **SU-F-202-02** A Method for Partial Volume Correction of Dose Distributions Derived From PET-Based Theranostic Dosimetry - I. Marsh*, T. Bradshaw, J. Grudzinski, R. Hernandez, E. Aluicio-sarduy, B. Bednarz
- 2:14 PM **SU-F-202-03** Simultaneously Tracking Multiple Single Cells Using a Dual-Layer BGO/LSO PET Scanner - H. Nguyen*, S. Khan, N. Das, A. Natarajan, E. Takematsu, G. Pratz
- 2:21 PM **SU-F-202-04** Comparison of PET Image Quality and Production Yields of Radioisotopes of Scandium - K. Becker*, T. Bradshaw, S. Hurley, R. Geng, J. Wang, J. Batterton, T. Barnhart, A. Pirasteh, J. Engle
- 2:28 PM **SU-F-202-05** Use of Automation in Image Quality Analysis in PET - T. Moretti*, S. Leon, C. Schaeffer, M. Arreola
- 2:35 PM **SU-F-202-06** Comparison of Physiologic FDG PET Uptake in CT-Based Vs PET-Corrected Organ Contours in Non-Small Cell Lung Cancer Patients - O. Lokre*, A. Weisman, T. Perk
- 2:42 PM **SU-F-202-07** Investigation of Minimal Detectable Activity of I-131 for SPECT and Its Clinical Relevance - X. Kong*, M. Georgiou, S. Gulec, A. McGoron, X. Wu, S. Shukla

Refreshment Break in Exhibit Hall

3:00 PM - 3:30 PM

-Exhibit Hall

Imaging Best in Physics

3:00 pm - 4:00 pm

-Exhibit Hall | Forum 1

SU-G300-BIP-F1 Imaging Best in Physics (ePoster Presentations and Discussion)

Deep Learning-Based Motion Compensation for 4D-CBCT Reconstruction - See TH-E-201-03

Diffusion-Relaxation Correlation Spectroscopic Imaging (DR-CSI) in In-Vivo Body: Feasibility Study on Liver and Prostate - See TH-A-207-06

First Experimental Demonstration of Inter-Detector Row X-Ray Scattering in Edge-On Silicon Photon Counting CT: Impacts on Detective Quantum Efficiency - See WE-G-201-03

Implementation of 1000 Fps CdTe Photon-Counting Detectors (PCD's) for Simultaneous Biplane High-Speed Angiography (HSA) - See TH-C-201-04

Respiratory Motion Detection and Reconstruction Using CAPTURE and Deep Learning Phase2Phase Network for a 0.35 T MRI-LINAC System - See WE-A-201-06

Multi-Disciplinary - Best in Physics

3:00 pm - 4:00 pm

-Exhibit Hall | Forum 2

SU-G300-BIP-F2 Multi-Disciplinary Best in Physics (ePoster Presentations and Discussion)

Characterizing and Testing a Piezoelectric Film Detector for Proton Range Verification - See WE-B-202-06

Development of Quadruple On-Board Imaging to Guide Radiation Treatment in Small Animals - See MO-F-BRC-05

Feasibility of Biology-Guided Radiation Therapy Using a Long-Lived Antibody PET Tracer - See TH-A-206-03

Motion-Corrected Image Reconstruction with Unrolling Networks on an MRI-Linac - See TH-F-BRC-03

MRI of Radiation Effects: First Images and An Investigation of a Potential Hydroxyl Radical Mechanism - See WE-A-202-05

2022 Annual Meeting Calendar of Events**Sunday, July 10, 2022****Therapy Best in Physics**

3:00 pm - 4:00 pm

-Exhibit Hall | Forum 3

SU-G300-BIP-F3 Therapy Best in Physics (ePoster Presentations and Discussion)**Assessing the Value of Direct Patient Care for Medical Physicists: A Randomized Prospective Phase III Trial - See MO-F-202-01****Comparing Ultra-High Dose Rate Proton Delivery Techniques from Radiophysical, Radiochemical, and Radiobiological Perspectives - See TH-A-202-01****Dose and Dose Rate Optimization for FLASH Proton Therapy with Automated Bragg Peak and Shoot-Through Beam Selection - See TH-A-202-02****Optimization of Permeability and Currie Temperature for Higher Heat Generation in the Innovative Thermo-Brachytherapy Seed - See SU-K-207-08****Precision Dosimetry in Yttrium-90 Radioembolization Through CT Imaging of Radiopaque Microspheres in a Rabbit Liver Model - See WE-E-202-05****Therapy Interactive ePoster Discussion**

3:00 PM - 3:30 PM

-Exhibit Hall | Forum 4

SU-H300-lePD-F4 AI in Treatment Planning**SU-H300-lePD-F4-01 Sub-Second D(M,M) Calculation for LDR Prostate Brachytherapy Using Deep Learning Methods - F. Berumen-Murillo*, S. Abbasinejad Enger, L. Beaulieu****SU-H300-lePD-F4-02 Efficient Dose-Volume Histogram-Based Pre-Treatment Patient-Specific Quality Assurance Methodology with Combined Deep Learning and Machine Learning Models for Volumetric-Modulated Arc Radiotherapy - C. Zhu*, C. Gong, X. Jin**
SU-H300-lePD-F4-03 Learned Iterative Shrinkage-Thresholding Algorithm (LISTA) for Sparse Rectangular Aperture Optimization - Q. Lyu*, M. Cao, K. Sheng**SU-H300-lePD-F4-04 Development of a Multi-Domain Neural Network (MDNN) for Survival Prediction in Liver Metastases Patients Treated with Stereotactic Body Radiotherapy (SBRT) - A. Amini*, T. Arsenault, A. Baydoun, K. Nam, T. Biswas, T. Podder**
SU-H300-lePD-F4-05 Aperture and Control Point Weight Prediction for Breast VMAT Using Deep Learning - L. Vandewinckele*, T. Reynnders, S. Petillion, C. Weltens, F. Maes, W. Crijns**Multi-Disciplinary Interactive ePoster Discussion**

3:00 PM - 3:30 PM

-Exhibit Hall | Forum 5

SU-H300-lePD-F5 Adaptive Particle Therapy**SU-H300-lePD-F5-01 A Deep Learning Approach to Correct Scatter in Dual-Energy CBCT Data: Accuracy and Potential for Adaptive Proton Therapy - A. Lalonde*, B. Winey, H. Paganetti, G. Sharp****SU-H300-lePD-F5-02 Assessment of CBCT-Based Adaptive Intensity Modulated Proton Therapy (IMPT) Using Automated Planning for Head and Neck Cancer - Y. Xu*, N. Dogan, K. Padgett, M. De Ornelas****SU-H300-lePD-F5-03 Deep Learning Based 4D Synthetic CTs Generated from CBCTs for Proton Dose Calculations in Adaptive Proton Therapy - A. Thummerer*, C. Seller Oria, S. Visser, P. Zaffino, A. Meijers, R. Wijsman, G. Guterres Marmitt, J. Seco, J. Langendijk, A. Knopf, M. Spadea, S. Both****SU-H300-lePD-F5-04 Exploring the Proton Intra-Beam Range Verification for On-Line Adaptive Therapy: Initial Study with Low-Dose Short-Acquisition PET Imaging - D. Yang*, X. Zhu, L. Ma, M. Chen, Y. Park, W. Lu, Y. Shao****SU-H300-lePD-F5-05 Variation of Bragg Peak Positions in Cone-Beam CT as An Indicator of Adaptive Planning of the Head and Neck IMPT Treatments - B. Zhang*, W. Yao, N. Biswal, J. Zhou, J. Xu, H. Xu, S. Chen, B. Yi****SU-H300-lePD-F5-06 Proton Range Shift Verification by Using Gamma Electron Vertex Imaging (GEVI) System in Spot Scanning Proton Therapy - S. Kim*, Y. Ku, J. Jung, C. Kim, J. Jeong****MEDICAL PHYSICS****Sunday, July 10, 2022**

-Exhibit Hall | Forum 6

SU-H300-lePD-F6 Adaptive Treatment Planning and Delivery**SU-H300-lePD-F6-01 Dosimetric Evaluation of a CBCT-Based Daily Adaptive Radiotherapy Protocol for Locally Advanced Cervical Cancer - D. Branco*, J. Mayadev, K. Moore, X. Ray****SU-H300-lePD-F6-02 Accuracy of An Automated Software for Adaptive Radiotherapy of Head and Neck Cancers - S. Gros*, A. Block, A. Santhanam****SU-H300-lePD-F6-03 Retrospective Clinical Evaluation of a Decision-Support Software for Adaptive Radiotherapy of Head & Neck Cancer Patients - S. Gros*, A. Block, B. Lee, B. Emami, A. Santhanam****SU-H300-lePD-F6-04 Deep Learning Guided Segment-Maintained Adaptive Radiotherapy (SMART) - T. Knewton*, G. Szalkowski, X. Xu, P. Mavroidis, J. Dooley, S. Das, J. Lian****SU-H300-lePD-F6-05 Synergizing Artificial Intelligence 3D Dose Predictor with Ethos Intelligent Optimizer for Head and Neck Adaptive Radiotherapy Treatments - J. Visak*, E. Inam, B. Meng, D. Nguyen, D. Parsons, T. Zhuang, D. Moon, V. Avkshtol, D. Sher, M. Lin****Therapy Interactive ePoster Discussion**

3:00 PM - 3:30 PM

-Exhibit Hall | Forum 7

SU-H300-lePD-F7 Brachytherapy - I**SU-H300-lePD-F7-01 Medical Physics Residents Enjoy Brachytherapy Training and Demand More! - S. Simiele*, M. Aima, C. Melhus, S. Richardson****SU-H300-lePD-F7-02 Predicting Benefit for Hybrid Tandem and Needle Applications in the Treatment of Cervical Cancer with Brachytherapy - W. Watkins*, Y. Chen, S. Glaser****SU-H300-lePD-F7-03 An Automatic Needle and Seed Planning Algorithm for Head and Neck Seed Implant Brachytherapy - Z. Xiao*, F. Zhou, B. Liu, H. Sun, Z. Ji, Y. Jiang, J. Wang, Q. Wu****SU-H300-lePD-F7-04 Automation of Implant Reconstruction in Interstitial Brachytherapy of the Breast Using Electromagnetic Tracking - C. Dürrbeck*, R. Fietkau, V. Strnad, C. Bert****SU-H300-lePD-F7-05 A Deep Convolutional Neural Network Based Dose Engine for Seed Implant Brachytherapy - T. Xiong*, L. Geng, F. Zhou, B. Liu, Q. Wu****SU-H300-lePD-F7-06 Dynamically Moving Small Robot Arms Over the Body Contour for Novel Radiotherapy Between the Tele and Brachy Regimes - K. Svisasubramanian, W. Liu, K. Bush, A. Yu, M. Shi, J. Blickenstaff, M. Ashraf, D. Capaldi, L. Skinner*****Imaging Interactive ePoster Discussion**

3:00 PM - 3:30 PM

-Exhibit Hall | Forum 8

SU-H300-lePD-F8 Cone-Beam CT**SU-H300-lePD-F8-01 Dosimetry Measurements for CBCT O-Arms Using Phantom to Air Ratios - N. Busse*, M. Heard****SU-H300-lePD-F8-02 Introduction of Lambda: A Convenient and Robust Subvoxel Image Similarity Metric - P. Boyle*, M. Lauria, B. Stiehl, L. Naumann, A. Santhanam, D. Low****SU-H300-lePD-F8-03 Application of Lambda: Subvoxel Image Similarity in Complex Images - P. Boyle*, M. Lauria, B. Stiehl, L. Naumann, A. Santhanam, D. Low****SU-H300-lePD-F8-04 A Novel Model for Characterizing the Effects of Gantry Flex On 2D Antiscatter Grid Performance in CBCT Systems - M. Eldib*, F. Bayat, M. Miften, C. Altunbas****SU-H300-lePD-F8-05 Influence of Threshold Calibration on CT Image Quality of a Photon-Counting Detector - P. Rodesch*, D. Richtsmeier, L. Zalavari, M. Bazalova-Carter****SU-H300-lePD-F8-06 Perturbation-Based Quality Surrogate for Scatter Estimation and Parameter Optimization in Anti-Scatter Grid (ASG)-CBCT - D. Ruan*, F. Bayat, C. Altunbas**

2022 Annual Meeting Calendar of Events**Sunday, July 10, 2022**

-Exhibit Hall | Forum 9

SU-H300-lePD-F9 MRI Image Formation**SU-H300-lePD-F9-01 Nonlinear Conditional Time-Varying Granger Causality of Task fMRI Data Via Deep Stacking Networks** -

K. Chuang*, S. Ramakrishnapillai, L. Bazzano, O. Carmichael

SU-H300-lePD-F9-02 Developing Phenotypic-Specific Brain Templates for DTI-Based Analysis - L. LeMerise*, J. Guerrero,

S. Hartley, A. Alexander, B. Christian

SU-H300-lePD-F9-03 LapGM: A Novel Method to Accurately Bias Correct and Normalize MR Data - L. Vinas*, J. Fischer,

A. Sudhyadhom

SU-H300-lePD-F9-04 An In-Vivo Evaluation of MRI Sequences for Online Adaptive Cardiac Radioablation in the Presence of Cardiac Implantable Devices On a 1.5 T MR-Linac - O. Akdag*, A. Van Lier,

S. Mandija, R. Keesman, P. Borman, S. Van De Pol, J. Verhoeff,

F. Mohamed Hoesein, R. Hassink, B. Raaymakers, M. Fast

SU-H300-lePD-F9-05 Synthesizing High-Resolution 4D Cine MR Images for Mobile Tumor Motion Assessment - J. Lee*, H. Gach,

E. Laugeman, J. Chun, J. Kim, T. Kim

SU-H300-lePD-F9-06 Distribution of MR Safety Conditions Across Active Implanted Devices - A. Panda*, Y. Zhou, S. Fahrenholtz, J. Yu,

E. Rand, J. Hines, W. Sensakovic

Therapy Interactive ePoster Discussion

3:30 PM - 4:00 PM

-Exhibit Hall | Forum 4

SU-H330-lePD-F4 Proton Therapy I**SU-H330-lePD-F4-01 Machine Logfile-Based Patient QA Via Independent Monte Carlo Fully Replaces Measurements in Our Proton Therapy Facility** - I. Rinaldi*, J. Gajewski, N. Krah, A. Rucinski,

V. Patera, A. Schiavi, B. Nijsten

SU-H330-lePD-F4-02 Comparison of Different Methods to Measure the Beam Energy in Proton Therapy Using Pixelated Silicon Detectors - I. Schilling*, C. Bäcker, C. Bäumer, C. Behrends, M. Hötting,

K. Kröninger, B. Timmermann, J. Weingarten

SU-H330-lePD-F4-03 Characterization of An Isocenter Alignment Device for the Proton PBS Dynamic Collimation System -

T. Geoghegan*, K. Patwardhan, N. Nelson, L. Bennett, J. Yu,

A. Gutierrez, P. Hill, R. Flynn, D. Hyer

SU-H330-lePD-F4-04 A Treatment Planning Study Comparing LET- and Variable RBE-Based Optimization for Intensity-Modulated Proton Therapy - H. Moazami Goudarzi*, G. Lim, D. Grosshans,

R. Mohan, W. Cao

SU-H330-lePD-F4-05 Efficiency Improvement in Clinical Workflow by Commissioning a Supplemental Proton Machine Model with a Built-in Range Shifter - Z. Su*, W. Hsi**SU-H330-lePD-F4-06 Radiation Planning for Pencil Beam Scanning Proton Therapy Using Single Energy and Dual Energy Computed Tomography Simulation Methods** - S. Mossahebi, P. Sabouri,

A. Koroulakis, K. Lehman, D. Cusatis, J. Shah, P. Wohlfahrt, J. Molitoris*

Multi-Disciplinary Interactive ePoster Discussion

3:30 PM - 4:00 PM

-Exhibit Hall | Forum 5

SU-H330-lePD-F5 Deep Learning for Image Quality in Treatment Planning**SU-H330-lePD-F5-01 Dosimetric and Image Quality Assessment of a Novel Deep Learning-Based Framework for MRI Synthesis from CT for Prostate High Dose-Rate Brachytherapy** - A. Podgorsak*,

B. Venkatesulu, M. Abuhamad, M. Harkenrider, A. Solanki, J. Roeske,

H. Kang

SU-H330-lePD-F5-02 Deep Learning Projection Interpolation for Sparsely Sampled Real Patient CBCT Reconstruction - K. Lu*,

Z. Zhang, L. Ren, F. Yin

SU-H330-lePD-F5-03 A Deep Learning Method to Improve the Quality for High-Speed Imaging in a 1.5 T MRI Radiotherapy System - J. Zhu*, X. Chen, B. Yang, R. Wei, S. Qin, Z. Yang, Z. Hu, J. Dai,

K. Men

MEDICAL PHYSICS**Sunday, July 10, 2022**

-Exhibit Hall | Forum 6

SU-H330-lePD-F5-04 Attention Augmented Deep Learning-Based Dual-Energy CT Imaging Via Single-Energy CT Data - W. Zhang*,

T. Lv, Y. Chen, B. Sun, W. Zhao

SU-H330-lePD-F5-05 Deep Learning-Based Contrast Enhanced Dual-Energy CT Imaging from Non-Enhanced Single-Energy CT -

H. Xie, Y. Lei, T. Wang, J. Roper*, B. Ghavidel, M. McDonald, D. Yu,

X. Tang, J. Bradley, T. Liu, X. Yang

SU-H330-lePD-F5-06 Deep Learning-Based Metal Artifact Reduction for Planning CT in Radiation Therapy for Head and Neck Cancer -

J. Lee*, J. Lee, S. Jung

SU-H330-lePD-F6 MR-Linac**SU-H330-lePD-F6-01 Improvement of Online Treatment Planning with the MR-Linac Using Fat-Suppressed MRI** - T. Salzillo*,

A. Dresner, A. Way, K. Wahid, S. Mulder, A. Yoder, S. Ahmed,

K. Corrigan, G. Manzar, L. Andring, C. Pinnix, R. Stafford, A. Mohamed,

J. Wang, C. Fuller

SU-H330-lePD-F6-02 Assessing Artefacts of Cardiac Pacemakers and Leads at a 1.5T Elekta Unity MR-Linac - D. Lee*, M. Trombetta,

G. Shaw, S. Oh, M. Hwang, D. Pavord, J. Sohn

SU-H330-lePD-F6-03 Towards Automated QA Using the Electronic Portal Imaging Device in a High-Field MR-Linac - J. Liang*, S. Lim,

N. Tyagi, X. Gonzalez Souto, J. Moran, E. Subashi

SU-H330-lePD-F6-04 Fabrication of a Novel Device Insert to Assess Feasibility of Manually Gated Treatments on MR Linac - J. Visak,

D. Parsons, T. Chiu, A. Godley, J. Deng*

SU-H330-lePD-F6-05 Real-Time Motion Monitoring Under Deep Inspiration Breath Hold Using Orthogonal Cine MRI for Abdominal Targets On MR-Linac - H. Jassar*, A. Tai, X. Chen, E. Paulson,

F. Lathuilliere, S. Beriault, F. Hebert, L. Savard, D. Cooper, S. Cloake,

X. Li

SU-H330-lePD-F6-06 Pancreatic Tumor Motion Correlation with Common Motion Surrogates on Cine MRI Acquired with a MR-Linac System - B. Lewis*, A. Guta, J. Shin, Z. Ji, J. Kim, T. Kim**Therapy Interactive ePoster Discussion**

3:30 PM - 4:00 PM

-Exhibit Hall | Forum 7

SU-H330-lePD-F7 Brachytherapy - II**SU-H330-lePD-F7-01 A Knowledge-Based Machine Learning Model for DVH Prediction in HDR Brachytherapy** - Z. Li*, Q. Zhu, Z. Li, J. Fu,

Z. Yang

SU-H330-lePD-F7-02 Custom 3D-Printed Interstitial Applicator Template Library for HDR Brachytherapy - Y. Gonzalez*,

B. Hrycushko, X. Jia, J. Visak, N. Dunton, L. Smith, C. Nwachukwu,

K. Albuquerque, T. Chiu

SU-H330-lePD-F7-03 DoseStats: An Open-Source Eclipse API Script for Improving Workflow Efficiency and Safety in GYN HDR Brachytherapy Planning - E. Simiele*, E. Kidd, N. Kovalchuk,

T. Niedermayr

SU-H330-lePD-F7-04 Cross Comparison and Validation of Metallic Catheter Reconstruction for Use in High-Dose-Rate Brachytherapy Utilizing Electromagnetic Tracker, Ultrasound, and Computed**Tomography Information** - N. Hassan Rezaeian*, G. Cohen,

D. Aramburu Núñez, J. Beaudry, P. McCann, A. Damato

SU-H330-lePD-F7-05 Clinical Outcome-Driven Intelligent Automatic Treatment Planning of High-Dose-Rate Brachytherapy for Cervical Cancer - E. Wang*, C. Shen, Y. Gonzalez, X. Jia**SU-H330-lePD-F7-06 A 3-D Printed Solution for Clinically-Relevant in Vitro HDR Brachytherapy** - A. Silvus*, T. Mazur, S. Goddu,

A. Cohen, A. Heermann, J. Zoberi, S. Markovina, M. Altman

Imaging Interactive ePoster Discussion

3:30 PM - 4:00 PM

-Exhibit Hall | Forum 8

SU-H330-lePD-F8 New and Emerging Technology**SU-H330-lePD-F8-01 Generating a Phantom with a Motion Model Ground Truth** - B. Lau*, O. Dillon, T. Reynolds, R. O'Brien

2022 Annual Meeting Calendar of Events**Sunday, July 10, 2022**

SU-H330-lePD-F8-02 Development of a Quality Assurance Phantom with Different Testing Materials for Microwave Imaging - N. Alsoub*, S. Ahmad, I. Ali

SU-H330-lePD-F8-04 Characterization of Functional Lung Tissue - M. Rodriguez*, A. Wright, W. Watkins

SU-H330-lePD-F8-05 A Novel Super-Voxel Method for Generating Robust Lung Ventilation Image from CT - Z. Chen*, Y. Huang, G. Ren, J. Cai

SU-H330-lePD-F8-06 Preliminary Investigation of Phase-Contrast CT Image Reconstruction from Limited-Angular-Range Data - Z. Zhang*, B. Chen, D. Xia, E. Sidky, X. Pan

Multi-Disciplinary Interactive ePoster Discussion

3:30 PM - 4:00 PM

-Exhibit Hall | Forum 9

SU-H330-lePD-F9 Radiomics

SU-H330-lePD-F9-01 Radiotherapy and Immunotherapy Combinations: Optimize the Synergistic Effect Via a Quantitative System - Y. Xing*, C. Timmerman, D. Saha, B. Chen, X. Jia, M. Story, R. Timmerman, D. Nguyen, S. Jiang

SU-H330-lePD-F9-02 Levenshtein Distance-Based Feature Representation for Structure Name Standardization in Radiotherapy - Y. Hu*, L. Santanam

SU-H330-lePD-F9-03 A Framework for Reproducible and Scalable Radiomics Pipelines for Radiation Oncology Using Self-Contained Containers and Workflow Manager - W. Choi*, H. Nourzadeh, S. Lee, Y. Chen, N. Ghassemi, Y. Vinogradskiy, A. Dicker

SU-H330-lePD-F9-04 A Combined Radiomic and Clinical Model for the Differential Diagnosis of Pneumonitis in Patients with NSCLC (Non-Small Cell Lung Cancer) Patients Receiving Immunotherapy (IO Therapy) - A. Traverso*, F. Tohidinezhad, D. Bontempi, A. Dekker, L. Hendriks, D. De Ruyscher

SU-H330-lePD-F9-05 Radiomics on Spatial-Temporal Manifolds Via Fokker-Planck Dynamics - J. Stevens*, J. Je, Y. Gao, C. Wang, Y. Mowery, D. Brizel, F. Yin, J. Liu, K. Lafata

SU-H330-lePD-F9-06 A Radiogenomics Study Using a Network-Based Unbalanced Optimal Mass Transport Method in Head and Neck Squamous Cell Carcinoma - J. Oh*, H. Veeraraghavan, E. Katsoulakis, A. Apte, J. Zhu, Y. Yu, N. Lee, V. Hatzoglou, A. Tannenbaum, N. Riaz, J. Deasy

Therapy Interactive ePoster Discussion

4:00 PM - 4:30 PM

-Exhibit Hall | Forum 4

SU-H400-lePD-F4 FLASH

SU-H400-lePD-F4-01 Assessment of the Suitability of 3D PRESAGE Phantom for Relative Dose Measurements in a FLASH Electron Beam - C. Elliston*, M. Rahman, Y. Wang, A. Sloop, J. Sunnerberg, R. Zhang, J. Adamovics, C. Wu

SU-H400-lePD-F4-02 Improving Conformality and Homogeneity with Intensity Modulated Electron FLASH Radiotherapy - M. Rahman, K. Erhart, D. Gladstone, P. Bruza, C. Thomas, L. Jarvis, J. Hoopes, B. Pogue, R. Zhang*

SU-H400-lePD-F4-03 Evaluation of the Response of EBT3, EBT-XD, MD-V3, and HD-V2 GafChromic Films in Proton FLASH Fields - A. Darafsheh*, Y. Hao, D. Owen, T. Zwart, M. Wagner, T. Zhao

SU-H400-lePD-F4-04 SRS Multiple Brain Metastasis in Palliative Patients as Potential Indication Site for Multi-Energy Conformal FLASH Using a Proton Linac - A. Kolano, W. Kozłowska*, T. Gray, C. Liu, P. Xia, J. Farr

SU-H400-lePD-F4-05 Robustness Analysis of Single-Energy Bragg Peak FLASH Plans for Hypofractionated Liver Radiotherapy - S. Wei*, H. Lin, C. Shi, W. Xiong, C. Chen, S. Huang, R. Press, S. Hasan, A. Chhabra, I. Choi, C. Simone, M. Kang

SU-H400-lePD-F4-06 Design Study of Static and Dynamic Ridge Filters for FLASH-IMPT - G. Zhang*, W. Gao, M. Jia, H. Peng

MEDICAL PHYSICS**Sunday, July 10, 2022****Multi-Disciplinary Interactive ePoster Discussion**

4:00 PM - 4:30 PM

-Exhibit Hall | Forum 5

SU-H400-lePD-F5 Radiomics for Outcome Modeling

SU-H400-lePD-F5-01 A Graph Attention Network Combining Both Radiomics and Clinical Data for Improved and Interpretable Prediction of Lymph Node Invasion in High-Grade Prostate Cancers - M. Larose*, N. Touma, N. Raymond, D. LeBlanc, F. Rasekh, B. Neveu, H. Hovington, M. Vallieres, F. Pouliot, L. Archambault

SU-H400-lePD-F5-02 Radiomics-Based Multiple Prognosis Prediction Using Mutual Information Between Treatment Outcomes as Prior Knowledge in Nasopharyngeal Carcinoma - Z. Ma*, J. Zhang, X. Teng, S. Lam, X. Han, H. Xiao, C. Liu, W. Li, Y. Huang, F. Lee, W. Yip, A. Cheung, H. Lee, J. Cai

SU-H400-lePD-F5-03 A Comparative Study of Radiomics and Deep-Learning Approaches for Predicting Surgery Outcomes in Early-Stage Non-Small Cell Lung Cancer (NSCLC) - H. Zhang*, Z. Yang, B. Ackerson, Z. Hu, M. Khazaieli, C. Kelsey, F. Yin, C. Wang

SU-H400-lePD-F5-04 Predictive Value of Pre-Operative MRI Radiomics for Treatment Response in Invasive Breast Cancer - A. Rincon*, L. Young, Y. Yang, F. Yang

SU-H400-lePD-F5-05 Pre-Operative MRI Imaging Phenotype Predicts for Recurrence in Invasive Breast Cancer - A. Rincon*, L. Young, Y. Yang, F. Yang

-Exhibit Hall | Forum 6

SU-H400-lePD-F6 Deep Learning Image Processing and Segmentation

SU-H400-lePD-F6-01 Intracranial Vessel Wall Segmentation Using a Novel Tiered Loss to Capture Class Inclusion - H. Zhou*, J. Xiao, Z. Fan, D. Ruan

SU-H400-lePD-F6-02 A Cascade Neural Network for Tumor Segmentation in Head & Neck Cancer - H. Liu*, A. Qasem, Z. Zhou

SU-H400-lePD-F6-03 An Enhancement Method That Improves the Auto-Segmentation Performance on Abdominal Region Cone-Beam CT - J. Duan, G. Huang, X. Feng, Q. Chen*

SU-H400-lePD-F6-04 Automatic Multi-Organ Segmentation Using a Deep Neural Network for Assessing Dose to Organs at Risk During Breast Radiotherapy - M. Saha*, J. Jung, S. Lee, C. Lee, C. Lee, M. Mille

SU-H400-lePD-F6-05 RefineNet Based 2D and 3D Automatic Segmentation for Clinical Target Volume and Organs at Risks for Patients with Cervical Cancer in Postoperative Radiotherapy - C. Xiao*, X. Jin

Therapy Interactive ePoster Discussion

4:00 PM - 4:30 PM

-Exhibit Hall | Forum 7

SU-H400-lePD-F7 Brachytherapy - III

SU-H400-lePD-F7-01 Feasibility of HDR Brachytherapy Applicator Commissioning and QA Using a Mobile CT Scanner - M. Stock*, Y. Vinogradskiy, R. Taleei

SU-H400-lePD-F7-02 Systematic Review on the Use of Artificial Intelligence in Brachytherapy - J. Theeler, Y. Kim*

SU-H400-lePD-F7-03 Investigating Applicator Effect on the Depth-Dose Distribution of a Novel Y-90 Disc Source with 3D-Printed Film Dosimetry Tools - L. Huang*, X. Chang, J. Chang, J. Liu, Y. Cao

SU-H400-lePD-F7-04 Bayesian Optimization in Treatment Planning of High Dose Rate Brachytherapy - H. Jafarzadeh*, X. Mao, S. Abbasinejad Enger

SU-H400-lePD-F7-05 Evaluation of Dose Accumulation with Deformable Image Registration of External-Beam Radiotherapy and Brachytherapy for Cervical Cancer - M. Tariq*, N. Lavini, S. Sour, G. Gill

2022 Annual Meeting Calendar of Events**Sunday, July 10, 2022****Multi-Disciplinary Interactive ePoster Discussion**

4:00 PM - 4:30 PM

-Exhibit Hall | Forum 8

SU-H400-IePD-F8 MR-Guided Adaptive Radiotherapy**SU-H400-IePD-F8-01 Dense UNet for Automatic Contour Correction On Abdominal MRI for MR-Guided Adaptive Radiation Therapy** - C. Sarosiek*, J. Ding, A. Amjad, Y. Zhang, N. Dang, X. Li**SU-H400-IePD-F8-02 Feasibility of Predicting Deliverable Daily Plans Using Deep Learning for MR-Guided Adaptive Radiation Therapy** - S. Hamdan*, H. Nasief, L. Buchanan, Y. Zhang, E. Omari, X. Li**SU-H400-IePD-F8-03 Feasibility of MRI-Only Adaptive Radiotherapy for Brain On 1.5 T MR-Linac** - R. Li*, S. Ding, H. Liu, Y. Li, B. Wang, X. HUANG**SU-H400-IePD-F8-04 On-Line Adaptive and Real-Time Intrafraction Motion Management of Spine-SBRT On An MR-Linac** - J. Cunningham*, K. Snyder, J. Kim, S. Siddiqui, P. Parikh, I. Chetty, J. Dolan**SU-H400-IePD-F8-05 Automated Deformable Registration Using Patch-Based ViT-Morph for MR-Guided Adaptive Radiotherapy** - Y. Zhao*, X. Chen, C. Yu, L. Court, B. McDonald, T. Pan, H. Wang, X. Wang, J. Phan, J. Yang**SU-H400-IePD-F8-06 Improving Structural Similarity Based Indication for MR-Guided Online Adaptation Replanning** - A. Parchur*, H. Nasief, S. Lim, E. Omari, Y. Zhang, X. Li**Imaging Blue Ribbon ePoster**

4:00 PM - 5:00 PM

-Exhibit Hall | Forum 1

SU-I400-BReP-F1 Imaging BLUE RIBBON**SU-I400-BReP-F1-01 On the Optimal Number of Energy Channels in Multi-Energy Photon-Counting Based CT to Improve Gold Identification: A Simulation Study** - X. Hu, Y. Zhong*, K. Yang, X. Jia**SU-I400-BReP-F1-02 Improving Image Quality of Framed Gamma Knife Treatment Planning MRI with Flexible Array Coils** - J. Sanders*, H. Liu, S. Krafft, D. Mackin, R. Stafford, C. Walker, T. Briere, P. Hou**SU-I400-BReP-F1-03 Reducing Parametric Maps' Error by Sliding Window Reconstruction and Inter-Phase Data Sharing in Low-Rank Four-Dimensional Magnetic Resonance Fingerprinting (4D-MRF)** - Y. Wong*, C. Liu, T. Li, J. Cai**SU-I400-BReP-F1-04 CT Beam Width Measurement Using a CTDI Pencil Chamber** - M. Fadhel*, K. Grizzard, D. Vergara, R. Perez Franco, M. Hoerner**SU-I400-BReP-F1-05 Prompt Gamma 2D Imaging with a Slit-Slat Gamma Camera for Real-Time Treatment Monitoring in Protontherapy: Monte Carlo Simulation Study** - E. Malekzadeh, H. Rajabi, P. Sabouri*, E. Fiorina, F. Kalantari**Multi-Disciplinary Blue Ribbon ePoster**

4:00 PM - 5:00 PM

-Exhibit Hall | Forum 2

SU-I400-BReP-F2 Multi-Disciplinary BLUE RIBBON**SU-I400-BReP-F2-01 Beating the Curse of Dimensionality: Applying Unbalanced Optimal Transport Clustering of Delta Radiomics to Predict Survival Outcomes in Lung Cancer Patients Treated with Immunotherapy** - H. Veeraraghavan*, J. Oh, J. Zhu, J. Jiang, A. Tannenbaum, D. Gomez, J. Deasy**SU-I400-BReP-F2-02 Clinical Implementation of DECT for Proton Therapy with Reduced Range Uncertainty Margins: Reproducibility and Predicted Range Differences** - S. O'Reilly*, L. Yin, A. Kassaei, Y. Chang, C. Cheng, J. Zou, T. Li, A. Lin, J. Lukens, R. Lustig, G. Kurtz, M. Alonso-Basanta, L. Dong, B. Teo**SU-I400-BReP-F2-03 Patient-Specific Image Prior Assisted Fast MR Imaging for Online Adaptive Radiotherapy** - Y. Gao*, C. Shen, Y. Gonzalez, J. Deng, X. Jia**MEDICAL PHYSICS****Sunday, July 10, 2022****SU-I400-BReP-F2-04 CBCT Forecasting - A Convolution-LSTM Based Machine Learning Framework for Predicting "ahead-Of-Time" Patient Anatomy, Dose to Be Delivered, and Dose Trend in Head and Neck Radiotherapy** - A. Santhanam*, B. Stiehl, M. Lauria, R. Savjani, S. Gros, D. Low**SU-I400-BReP-F2-05 GPU-Accelerated Monte Carlo-Based Online Adaptive Proton Therapy Efficiently and Effectively Accounted for Inter-Fractional Anatomical Changes in PBS** - H. Feng*, S. Patel, W. Wong, J. Younkin, G. Penoncello, D. Hernandez Morales, J. Stoker, D. Robertson, M. Fatyga, M. Bues, S. Schild, R. Foote, W. Liu**Therapy Blue Ribbon ePoster**

4:00 PM - 5:00 PM

-Exhibit Hall | Forum 3

SU-I400-BReP-F3 Therapy BLUE RIBBON**SU-I400-BReP-F3-01 Quantitative Prospective Evaluation of Automated Contouring for HDR Gynecologic Brachytherapy** - Z. Iqbal*, S. Marcrom, R. Cardan, A. Kraus, K. Lee, A. McClain, R. Popple, C. Cardenas**SU-I400-BReP-F3-02 A Deep Learning-Based Approach for Statistical Robustness Evaluation in Proton Therapy Treatment Planning** - I. Vazquez*, M. Gronberg, X. Zhang, L. Court, X. Zhu, S. Frank, M. Yang**SU-I400-BReP-F3-03 An Independent Dose Calculation Method for MR-Guided Radiotherapy with Elekta Unity MR-Linac** - X. Chen*, M. Hwang, S. Oh, D. Lee, D. Pavord, B. Coopey, J. Sohn**SU-I400-BReP-F3-04 Reference Dosimetry in External MR-Guided Radiotherapy** - A. Sarfehnia*, P. Alvarez, H. Bouchard, L. de Prez, J. Dolan, G. Ibbott, V. Malkov, B. Muir, D. Rogers, B. Van Asselen, J. Wolthaus, P. Yadav**SU-I400-BReP-F3-05 Gamma Imaging Using Hybrid Coded-Aperture and Compton Scatter Imaging** - B. Montz*, J. Hayward, C. Ramsey**Therapy SNAP Oral**

4:00 PM - 5:00 PM

-Room 206

SU-J-206 Treatment Planning and Delivery in Particle Therapy

Moderators: Katja Langen, Emory University School of Medicine, Atlanta, GA and Boon-Keng Kevin Teo, University of Pennsylvania, Wayne, PA

4:00 PM **SU-J-206-01 An Evolutionary Algorithm of the Spot Sparsity Optimization in Proton Arc Therapy** - L. Zhao*, G. Liu, X. Li, X. Ding4:07 PM **SU-J-206-02 Biological Optimization of Peak-To-Valley Dose Ratio and Normal-Tissue Survival Fraction for Proton Minibeam Radiation Therapy** - W. Zhang*, W. Li, Y. Lin, F. Wang, R. Chen, H. Gao4:14 PM **SU-J-206-03 Deep Learning-Based Prompt-Gamma Imaging for Range Verification in Proton Radiotherapy** - Z. Jiang*, J. Polf, L. Ren4:21 PM **SU-J-206-04 Development and Evaluation of Spot-Scanning Hadron Arc (SHArc) Therapy Using Light and Heavy Ions** - S. Mein*, B. Kopp, T. Tessonier, J. Liermann, S. Harrabi, J. Debus, C. Schömers, A. Abdollahi, T. Haberer, A. Mairani4:28 PM **SU-J-206-05 Dynamically Collimated Proton Arc Therapy** - B. Smith*, R. Flynn, D. Hyer4:35 PM **SU-J-206-06 Sensitivity of Carbon RBE Models to Reference Parameter Variations** - S. Hartzell*, P. Taylor, F. Guan, C. Peterson, R. Howell, S. Kry4:42 PM **SU-J-206-07 Stochastic Coordinate Descent Optimization Algorithm for Rapid Spot-Scanning Fixed-Beam Or Arc Therapy** - J. Fan*, J. Cai, Y. Lin, R. Chen, H. Gao4:49 PM **SU-J-206-08 Validation of the RayOcular Treatment Planning System for Proton Therapy of the Eye** - B. Koska*, J. Wulff, C. Bäcker, C. Bäumer, C. Behrends, B. Timmermann

2022 Annual Meeting Calendar of Events**Sunday, July 10, 2022****Imaging SNAP Oral**

4:00 PM - 5:00 PM

-Room 207

SU-J-207 Emerging and Pre-clinical Imaging Technologies

Moderators: Rebecca Lamoureux, University of New Mexico Hospital, Albuquerque, NM and Anuj Kapadia, Oak Ridge National Lab, Oak Ridge, TN

4:00 PM **SU-J-207-01 Accuracy and Spatial Resolution Comparison of Two Proton Computed Tomography Scanners** -

G. Dedes*, H. Drosten, S. Götz, J. Dickmann, C. Sarosiek, M. Pankuch, N. Krah, S. Rit, V. Bashkurov, R. Schulte, R. Johnson, K. Parodi, E. DeJongh, G. Landry

4:07 PM **SU-J-207-02 Analysis of X-Ray Diffraction Imaging of Thick Tissue Samples Using GPU-Accelerated Monte Carlo** - K. Ferguson*, J. Greenberg

4:14 PM **SU-J-207-03 Boundary-Constrained Neural Network for Mouse Organ Segmentation** - L. Jiang*, Q. Xu, A. Chatzioannou, K. Sheng

4:21 PM **SU-J-207-04 Comparison of Operational Characteristics of Single Crystal and Pixelated Cadmium Telluride (CdTe) Detector Systems Under Identical Benchtop X-Ray Fluorescence (XRF) Imaging Conditions** - H. Moktan Tamang*, S. Jayarathna, S. Cho

4:28 PM **SU-J-207-05 Investigating Metal and Amyloid-Beta Plaque Distribution in TgSWDI Transgenic Mice After Sub-Chronic Lead Exposure Using Synchrotron X-Ray Fluorescence** - A. Webb*, O. Antipova, H. Gu, Y. Du, W. Zheng, H. Nie

4:35 PM **SU-J-207-06 Optimization of Ultrasound Image Quality for Automatic, Real-Time Segmentation of Spinal Bone Surfaces** - L. MacLean*, D. China, K. Ding, J. Siewerdsen, N. Johnson, N. Crawford, A. Uneri

4:42 PM **SU-J-207-07 Quantification of the Accuracy and Cross-Fleet Variability of Spectral Doppler Flow Velocity Measurements** - M. Russ*, N. Lafata, S. Robertson, E. Samei

-Room 201

SU-J-201 Radiography and Fluoroscopy

Moderators: Kevin Little, University of Chicago, Chicago, IL and Ashley Tao, Gundersen Health System, La Crosse, WI

4:00 PM **SU-J-201-01 A Quantitative Assessment of Image Distortion During Fluoroscopically-Guided Orthopedic Surgery** - X. Nie*, A. Siddique, P. Hardy, J. Zhang

4:07 PM **SU-J-201-02 Application of a Psychophysical Staircase Method for Determining Detection Thresholds in Fluoroscopic Imaging** - D. Olivera Velarde*, E. Marshall, J. Cruz Bastida, N. Baughan, J. Cruz Bastida, C. Guo, K. Feinstein, I. Reiser

4:14 PM **SU-J-201-03 Fourier-Domain Bandpass Filtering to Enable Spatial Resolution Sensitivity of a Channelized Hotelling Observer Applied to X-Ray Angiography** - K. Fetterly*, D. Gomez Cardona

4:21 PM **SU-J-201-04 The Use of Hybrid Computational Phantoms to Estimate the Patient's Peak Skin Dose During Fluoroscopically Guided Interventional Procedures (FGIPs)** - R. Makkia*, M. Fadhel, M. Hoerner, D. Vergara

4:28 PM **SU-J-201-05 Using Radiation Dose Structured Reports in the Patient Skin Dose Tracking System (DTS) for Fluoroscopically-Guided Interventional Procedures** - J. Troville*, J. Collins, M. Islam, J. Nosal, J. Woods, A. Syeda, M. Orji, S. Rudin, C. Ionita, D. Bednarek

4:35 PM **SU-J-201-06 An Integrated Quality Index Metrology to Represent Multi-Feature Quality of Clinical Radiographic Chest Images** - N. Lafata*, E. Macdonald, F. Ria, E. Samei

4:42 PM **SU-J-201-07 Patient Vs. Phantom: The Impact of Post-Processing On Image Quality of Chest Radiographs** - V. Yadav*, E. Macdonald, N. Lafata, J. Wilson, E. Samei

MEDICAL PHYSICS**Sunday, July 10, 2022****Therapy SNAP Oral**

4:00 PM - 5:00 PM

-Ballroom C

SU-J-BRC Applications of AI in Radiotherapy Planning and Adaptation

Moderators: Lei Ren, University of Maryland, Baltimore, MD and Dan Ruan, UCLA School of Medicine, Los Angeles, CA

4:00 PM **SU-J-BRC-01 AI-Dose Predictor for Secondary Dose Calculation for a Novel Compensator-Based IMRT System for Low- and Middle-Income Countries** - K. Oh*, M. Gronberg, S. Gay, A. Olanrewaju, B. Sengupta, T. Netherton, C. Cardenas, L. Court, E. Ford

4:07 PM **SU-J-BRC-02 An Automated Pipeline for AI-Based Analysis of CBCT-Guided Patient Alignment** - J. Neylon*, D. Luximon, T. Ritter, J. Lamb

4:21 PM **SU-J-BRC-04 An Investigation of the Transferability of Deep-Learning Based Head and Neck Dose Prediction Model Among Different Institutions** - Y. Chang*, B. Teo, T. Li, R. McBeth

4:28 PM **SU-J-BRC-05 Fully Convolutional Neural Network Model to Predict 3D Dose for Breast Radiotherapy** - F. Nematollahi*, K. Moore, L. Moore, K. Kislign

4:35 PM **SU-J-BRC-06 Investigation of Computation Time and Storage Saving Using Generative Adversarial Network (GAN) Source Models for Dose Simulation of a Binary MLC Linac** - M. Shi*, S. Cui, C. Chuang, O. Oderinde, N. Kovalchuk, K. Bush, M. Surucu, L. Xing, B. Han

4:42 PM **SU-J-BRC-07 Learning Data Set Format for AI Breathing Predictive Filter** - J. Barbieri*, R. Teboh Forbang, A. Ndlovu

4:49 PM **SU-J-BRC-08 Machine Learning Based Oxygen and Carbon Concentration Derivation Using Dual-Energy CT for PET-Based Dose Verification in Proton Therapy** - Y. Liu*, L. Zhou, H. PENG, M. Jia

SAM Therapy Scientific Symposium

4:00 PM - 5:00 PM

-Ballroom A

SU-J-BRA The Need for Robust Dosimetry of Flash Beams

Moderator: Dimitris Mihailidis, University of Pennsylvania, Wynnewood, PA

4:00 PM **M. McEwen, National Research Council: FLASH Dosimetry - What We Do and Do Not Know**

4:15 PM **A. Subiel, National Physical Laboratory: Challenges of FLASH Beam Dosimetry: Detector Selection**

4:33 PM **A. Mascia, University of Cincinnati Medical Center: Proton FLASH Beam Dosimetry and Beam Monitoring**

4:51 PM **Panel Discussion**

Multi-Disciplinary SNAP Oral

4:00 PM - 5:00 PM

-Room 202

SU-J-202 Emerging Imaging, Therapy, and Dosimetry Solutions I

Moderators: Jennifer Dolan, Henry Ford Cancer Institute, Detroit, MI and Frederic Fahey, Children's Hospital, Peaks Island, ME

4:00 PM **SU-J-202-01 Low-Dose, Short-Acquisition, On-Line PET Imaging for Proton Intra-Beam Range Verification** -

D. Yang*, X. Zhu, L. Ma, M. Chen, Y. Park, W. Lu, Y. Shao

4:07 PM **SU-J-202-02 Accurate HU Generation for MR-LINAC Using MV-CBCT** - Y. Hu, C. Williams, R. Berbeco, M. Myronakis*

4:14 PM **SU-J-202-03 A Raw Data Correction and Iterative Reconstruction Pipeline for Quantitative CBCT-Guided Radiation Therapy** - F. Bayat*, M. Eldib, M. Miften, C. Altunbas

4:21 PM **SU-J-202-04 Longitudinal Image Analysis to Predict the Recurrence of Distant Brain Metastases After SRS Treatment** - G. Szalkowski*, K. Thung, T. Zhu, J. Shumway, J. Hall, C. Shen, P. Yap, J. Lian

2022 Annual Meeting Calendar of Events**Sunday, July 10, 2022**

- 4:28 PM **SU-J-202-05 XIOSIS: Novel Deep Learning Method for Image-Guided Spacer Placement in Spacer-Enabled Pancreatic Cancer Radiotherapy** - H. Hooshangnejad*, J. Lee, K. Ding
- 4:35 PM **SU-J-202-06 Machine-Learning Modeling of Patient-Reported Swallowing Dysfunction Using Dose to the Epiglottis and Pharyngeal Constrictors** - M. Pepin*, S. Anaya, R. Foote, Y. Garces, H. Emily, D. Mundy, M. Nebennittich, D. Routman, S. Catherine, S. Lester, D. Ma, S. Shiraishi
- 4:42 PM **SU-J-202-07 Introducing Ultra-Low-Field MRI to Radiation Therapy - Radiofrequency Breast Coil Optimization and Design** - T. Hornung*, N. Koonjoo, S. Yan, M. Rosen, T. Bortfeld
- 4:49 PM **SU-J-202-08 Ultrasound-Based Motion Tracking Using Hybrid Learning Network** - Y. Lei*, M. Axente, X. Dai, J. Roper, A. Dhabaan, Y. Chen, J. Bradley, T. Liu, X. Yang

Therapy Interactive ePoster Discussion

4:30 PM - 5:00 PM

-Exhibit Hall | Forum 4

- SU-H430-lePD-F4 Beam Measurements and Commissioning**
- SU-H430-lePD-F4-01 Primary Standards and Measurement Methods for X-Ray Emitting Electronic Brachytherapy devices – EMPIR Project: PRISM-EBT** - T. Schneider*
- SU-H430-lePD-F4-02 Commissioning of a Standing and Recumbent Total Skin Electron Therapy (TSET) for a Varian TrueBeam STx and a TrueBeam Linear Accelerator: A Single-Institutional Experience** - A. Rodrigues*, E. Cullom, Y. Xie, Y. Sheng, J. Kowalski, Q. Wu
- SU-H430-lePD-F4-03 Predicting Linac Beam Properties from Sparse Measurements Using a Neural Representation Network for Fast Commissioning and Quality Assurance** - L. Liu*, L. Shen, L. Xing
- SU-H430-lePD-F4-04 A Novel Multi-Headed Scintillation Detector for Fast and Efficient Dose Measurements at Multiple Locations Simultaneously** - B. Lessard*, Y. Lechasseur, S. Lambert-girard, F. Therriault-Proulx, L. Beaulieu, L. Archambault
- SU-H430-lePD-F4-05 Feasibility of Performing Volumetric Calorimeter Measurements Using a 3D-Printed Vessel** - M. D'Souza*, A. Sarfehnia
- SU-H430-lePD-F4-06 Small Field Output Factor (FOF) Measurements During Commissioning of a 0.35T MR-Linac System** - M. Alghamwa*, J. Sohn, R. Hawranko, S. Kim, P. Yadav, I. Das, W. Song

Multi-Disciplinary Interactive ePoster Discussion

4:30 PM - 5:00 PM

-Exhibit Hall | Forum 5

- SU-H430-lePD-F5 Data Science Autopanning and Autosegmentation**
- SU-H430-lePD-F5-01 An Integrated Reporting Dataset for Investigating Programmatic Modifications of Radiotherapy Treatment Planning Data** - M. Schmidt*, P. Szentivanyi, F. Reynoso, N. Knutson, G. Hugo, E. Sajo, J. Labrash, B. Sun, P. Zygmanski, M. Jandel, A. Price
- SU-H430-lePD-F5-02 Automated Brain Metastases Segmentation with a Deep Dive into False Positives Detection** - H. Ziyadee*, C. Cardenas, D. Yeboa, J. Li, J. Johnson, Z. Zhou, J. Sanders, R. Mumme, L. Court, T. Briere, J. Yang
- SU-H430-lePD-F5-03 A Sensitivity Analysis on the Relationship Between Dose and Overlap Metrics for Head & Neck Normal Tissues** - B. Marquez*, C. Owens, K. Huang, M. El Basha, R. Mumme, C. Nguyen, C. Peterson, D. Fuentes, T. Whitaker, T. Nethererton, L. Court
- SU-H430-lePD-F5-04 Developing a Head-And-Neck CBCT Segmentation Network from Unlabeled Data Via Domain Adaptation and Self-Training** - T. Mengke*, X. Liang, H. Morgan, H. Shao, S. Jiang, Y. Zhang

MEDICAL PHYSICS**Sunday, July 10, 2022**

-Exhibit Hall | Forum 6

- SU-H430-lePD-F6 Data Science Robustness, Performance, and Data Harmonization**
- SU-H430-lePD-F6-01 Deep Fusion of CT Imaging and Blood Markers to Estimate Portal Venous Hypertension: Novel Optimization of Data Fusion Quality** - Y. Wang*, X. Li, M. Konanur, B. Konkell, E. Seyferth, N. Brajer, J. Liu, M. Bashir, K. Lafata
- SU-H430-lePD-F6-02 Need for PET/CT Harmonization in Multi-Center Immunotherapy Radiomics Studies** - K. Strašek*, R. Jeraj, M. Namías, D. Valentinuzzi
- SU-H430-lePD-F6-03 Curation of a Large Public Head and Neck Dataset for Machine Learning (RADCURE) Using an Automated Data Mining Platform** - M. Welch*, T. Patel, M. Kazmierski, J. Marsilla, S. Huang, S. Kim, K. Rey-mcintyre, B. O'Sullivan, J. Waldron, N. Becker, S. Bratman, A. Hope, B. Haibe-kains, T. Tadic
- SU-H430-lePD-F6-04 The Medical Imaging and Data Resource Center (MIDRC) Technology Development Project (TDP) 3c: Developing Tools to Assist in Task-Specific Performance Evaluation for Machine Learning Algorithms Employing MIDRC Data** - K. Drukker, B. Sahiner, T. Hu, G. Kim, H. Whitney, N. Baughan, K. Myers, M. Giger, M. McNitt-Gray*
- SU-H430-lePD-F6-05 Towards Fairness in Artificial Intelligence for Medical Imaging: Identification and Mitigation of Biases in the Roadmap from Data Commons to Model Design and Deployment** - K. Drukker*, W. Chen, J. Gichoya, N. Grusauskas, J. Kalpathy-Cramer, S. Koyejo, K. Myers, R. Sá, B. Sahiner, H. Whitney, Z. Zhang, M. Giger
- SU-H430-lePD-F6-06 Numerical and Experimental Investigation On the Robustness of Deep Neural Network-Based Multi-Class Classification Model of CT Images with Respect to Image Noise** - Y. Peng*, C. Shen, Y. Gonzalez, S. Zhang, X. Jia

Therapy Interactive ePoster Discussion

4:30 PM - 5:00 PM

-Exhibit Hall | Forum 7

- SU-H430-lePD-F7 Quality Improvement and Outcomes**
- SU-H430-lePD-F7-01 Initial Evaluation of an MR-Compatible Phantom for Daily Imaging Quality Assurance (QA) Using a 0.35 T MR Linear Accelerator** - T. Romaguera*, P. Perez, V. Obrien, K. Mittauer, J. McCulloch, D. Alvarez, R. Tolakanahalli, M. Chuong, A. Gutierrez
- SU-H430-lePD-F7-02 NTCP Modeling of Xerostomia 12 Months After Radiotherapy for Oropharyngeal Cancer Using the PRO-CTCAE Scoring System** - A. Tzikas*, E. Lavdas, D. Kehayas, R. Amdur, W. Mendenhall, N. Sheets, S. Stathakis, R. Green, L. Marks, S. Das, B. Chera, P. Mavroidis
- SU-H430-lePD-F7-03 Do Machine Learning-Based Models Perform Better Than Clinical Models in Predicting Biochemical Outcome for Prostate Cancer Patients?** - L. Sun*, H. Quon, W. Smith, C. Kirkby
- SU-H430-lePD-F7-04 Implementation of Continuous Cherenkov Imaging Over 1 Year for Radiation Therapy Quality Improvement** - S. Decker*, D. Alexander, M. Jermyn, P. Bruza, R. Zhang, E. Chen, B. Pogue, L. Jarvis, D. Gladstone
- SU-H430-lePD-F7-05 Image-Based Features in Machine Learning to Identify Delivery Errors and Predict Error Severity for Patient-Specific IMRT QA** - Y. Huang*, Z. Xu, H. Liu
- SU-H430-lePD-F7-06 Investigating the Ability of Patient-Specific QA Devices to Detect Changes in Dose Distribution Due to MLC Positioning Errors in Stereotactic Radiotherapy Plans** - S. James*, C. Huh, E. Elder, A. Al-Basheer, J. Barrett, F. Mostafaei

Therapy SNAP Oral

5:00 PM - 6:00 PM

-Room 206

SU-K-206 Radiobiological Modeling and Biologically Guided RT

Moderators: David Carlson, Yale University School of Medicine, New Haven, CT and Mariana Guerrero, University of Maryland School of Medicine, Baltimore, MD

2022 Annual Meeting Calendar of Events**Sunday, July 10, 2022**

- 5:00 PM **SU-K-206-01 A High-Performance Computational Framework to Simulate Biological Effects of Radiation Exposure as a Function of Chromosome Structure** - M. Andriotti*, J. Gounley, C. Wang, A. Kapadia, G. Agasthya
- 5:07 PM **SU-K-206-02 Analytical Modeling of Intertrack Interaction in Ultra-High Dose Rate (FLASH) Radiotherapy** - A. Baikalov*, R. Abolfath, R. Mohan, J. Wilkens, S. Bartzsch
- 5:14 PM **SU-K-206-03 Does Reduction of Variable RBE-Weighted Dose in Organs at Risk Impact Clinical Proton Plan Quality?** - L. Heuchel*, C. Hahn, J. Ödén, E. Traneus, J. Wulff, S. Plaupe, B. Timmermann, C. Bäumer, A. Lühr
- 5:21 PM **SU-K-206-04 Empirical Relative Biological Effectiveness (RBE) for Mandible Osteoradionecrosis (ORN) in Head and Neck Cancer Patients Treated with Pencil-Beam-Scanning Proton Therapy (PBSPT): A Retrospective, Case-Matched Cohort Study** - Y. Yang*, O. Muller, S. Shiraishi, M. Harper, A. Amundson, W. Wong, L. McGee, J. Rwigema, S. Schild, M. Bues, M. Fatyga, J. Anderson, S. Patel, R. Foote, W. Liu
- 5:28 PM **SU-K-206-05 High Throughput Alpha Particle Irradiator for Radiobiology Research** - D. Martinus*, D. Flint, S. Bright, M. Khuroo, S. Prajapati, S. Shaitelman, G. Sawakuchi
- 5:35 PM **SU-K-206-06 Is the Radiosensitizing Effect of Platinum Nanoparticles in Proton Irradiation Due to An Enhanced Proton Energy Deposition?** - C. Behrends*, C. Bäcker, I. Schilling, S. Zwiehoff, J. Weingarten, K. Kröninger, C. Rehbock, S. Barcikowski, J. Wulff, C. Bäumer, B. Timmermann
- 5:42 PM **SU-K-206-07 Targeted MR Contrast Nanoparticles for Programmed Death Ligand-1 Expression** - N. Brown*, G. Bort, P. Rocchi, L. Cames, M. Iyer, T. Doussineau, F. Lux, J. Schoenfeld, M. Dougan, O. Tillement, R. Berbeco
- 5:49 PM **SU-K-206-08 Using 2D Dose Ventilation Volume Histogram to Better Predict the Incidence of Radiation Pneumonitis** - B. Liang*, J. Dai

-Room 207

SU-K-207 Brachytherapy

Moderators: Abby Besemer, University of Nebraska Medical Center, Omaha, NE and Ryan Flynn, University of Iowa Hospitals and Clinics, Iowa City, IA

- 5:00 PM **SU-K-207-01 Comparing Spatial Accuracy of Catheter Localization Between Stepping-Transverse Mode and Twister-Sagittal Mode in Transrectal Ultrasound (TRUS) Based High-Dose-Rate (HDR) Brachytherapy for Prostate Cancer Therapy** - M. Keohane*, S. Dieterich, J. Matney, P. Beagen, J. Zhao, R. Valicenti, T. Liu, S. Benedict, P. Park
- 5:07 PM **SU-K-207-02 Deterministic Multi-Energy Prostate Brachytherapy Treatment Optimization** - C. Frank*, P. Ramesh, Q. Lyu, D. Ruan, S. Park, K. Sheng
- 5:14 PM **SU-K-207-03 Development of a Novel MRI-Compatible Applicator for Intensity Modulated Rectal Brachytherapy** - A. Thibodeau-Antonacci*, T. Vuong, B. Liontis, F. Rayes, S. Pande, S. Abbasinejad Enger
- 5:21 PM **SU-K-207-04 Dose Map Prediction for High-Dose-Rate Brachytherapy Using Deep Learning Neural Networks** - Z. Li*, Q. Zhu, Z. Li, J. Fu, Z. Yang
- 5:28 PM **SU-K-207-05 GafChromic Film Dosimetry for Evaluation of Intraocular Shielding Materials in I-125 Eye Plaque Brachytherapy** - C. Oare*, B. Gerbi, C. Ferreira
- 5:35 PM **SU-K-207-06 Image Registration of An EMT-Enabled Afterloader and CT Scan: A Phantom Study** - I. Gomez Sarmiento*, D. Tho, W. De Jager, D. Laurendeau, L. Beaulieu
- 5:42 PM **SU-K-207-07 Dose Distribution with a High-Z Intraocular Shield-Ferrofluid System: An I-125 Eye Plaque Brachytherapy Monte Carlo Study** - C. Oare*, B. Gerbi, C. Ferreira
- 5:49 PM **SU-K-207-08 BEST IN PHYSICS (THERAPY): Optimization of Permeability and Currie Temperature for Higher Heat Generation in the Innovative Thermo-Brachytherapy Seed** - S. Taghizadehghahremanloo*, D. Shvydka, E. Parsai

MEDICAL PHYSICS**Sunday, July 10, 2022****Imaging SNAP Oral**

5:00 PM - 6:00 PM

-Room 201

SU-K-201 Radiation Dosimetry

Moderators: Kalpana Kanal, University of Washington, Seattle, WA and Samuel Brady, Cincinnati Children's Hospital Med Ctr, Mason, OH

- 5:00 PM **SU-K-201-01 A Computed Tomography (CT) Organ Dose Library for Pregnant Females of Varying Body Size and Fetuses of Varying Gestational Age** - S. Domal*, C. Kofler, L. Carter, J. Ocampo Ramos, A. Kesner, P. Zanzonico, W. Bolch
- 5:07 PM **SU-K-201-02 A Deep Learning Empowered Investigation of Patient Posture Effects on Non-Contrast Head CT Dosimetry** - W. Zhou*, X. Zhou, D. Huo
- 5:14 PM **SU-K-201-03 Determining the Contribution of CT to Total Skin Dose for Procedures in a Hybrid CT/Angiography Suite** - M. Glassell*, B. Schwarz, L. Rill, M. Arreola
- 5:21 PM **SU-K-201-04 Size Specific Alert Thresholds for Individualized Patient Dose Monitoring in CT** - B. Hurley*, C. Smitherman, T. Petrone
- 5:28 PM **SU-K-201-05 NCIRF2.0: Organ Dose Calculator for Patients Undergoing Radiography and Fluoroscopy** - C. Lee*, S. Streitmatter, J. Shin
- 5:35 PM **SU-K-201-06 Computation of Gonadal Dose Irradiated from Urine Contaminated Diapers in Pediatric Patients During Renal Scintigraphy Exam** - Y. Lu*, S. Kumbhar, Y. Liu, N. Vo, M. Baker, J. Qi
- 5:42 PM **SU-K-201-07 The UF-MSK Computational Phantom Library for Medical Dosimetry: Adult Males and Females** - R. Dawson*, J. Baggett, W. Smither, L. Dinwiddie, S. Wehmeier, S. Domal, C. Kofler, L. Carter, J. Ocampo Ramos, P. Zanzonico, A. Kesner, W. Bolch

Multi-Disciplinary SNAP Oral

5:00 PM - 6:00 PM

-Ballroom C

SU-K-BRC CT and MR-Guided Adaptive RT

Moderators: Ping Xia, The Cleveland Clinic Foundation, Cleveland, OH and Siamak Nejad-Davarani, University of Michigan, Ann Arbor, MI

- 5:00 PM **SU-K-BRC-01 Implementation of Primary and Secondary Methods for Automatically Determining Necessity of Online Adaptive Replanning During MRI-Guided Adaptive Radiation Therapy** - H. Nasief*, A. Parchur, E. Omari, Y. Zhang, X. Chen, X. Li
- 5:07 PM **SU-K-BRC-02 Evaluation of Confidence Intervals in Daily Deformable Dose Accumulation in Parotid Glands to Guide Dose Adaptation During CT-Guided Radiation Therapy of Head and Neck Cancer** - J. Garcia-Alvarez*, K. Kainz, H. Zhong, C. Schultz, X. Li
- 5:14 PM **SU-K-BRC-03 Validation of CBCT-Based Machine-Learning Automated Planning for Adaptive Prostate Radiation Therapy** - A. Khalifa*, M. Golshan, I. Navarro, V. Malkov, C. McIntosh, T. Purdie, T. Tadic, J. Winter
- 5:21 PM **SU-K-BRC-04 Towards Online Intra-Fraction Treatment Adaptation: Real-Time Dose Estimation of MLC Tracked MR-Guided Radiotherapy** - E. Persson*, E. Goodwin, B. Eiben, A. Wetscherek, S. Nill, U. Oelfke
- 5:28 PM **SU-K-BRC-05 Integration of 3D Geometric Distortion Assessment into An Automated Daily End-To-End MRL QC Tool** - D. Mateescu, V. Malkov*, A. Danyanovich, S. Jelveh, J. Winter, D. Letourneau
- 5:35 PM **SU-K-BRC-06 High-Resolution Ultrashort Echo Time (UTE) 4D MRI with Camera-Based Respiratory Motion Sensing for Lung Cancer Radiotherapy Treatment Planning and Monitoring** - C. Wu*, G. Krishnamoorthy, V. Yu, E. Subashi, A. Rimner, R. Otazo

2022 Annual Meeting Calendar of Events**Sunday, July 10, 2022**

- 5:42 PM **SU-K-BRC-07 Impact of Visual Biofeedback on Breathing Regularity During 4D-MRI Acquisition On the MR-Linac** - K. Keijnemans*, P. Borman, B. Raaymakers, M. Fast
- 5:49 PM **SU-K-BRC-08 Prediction of Irregular Respiration Motion Using Auto Associative Kernel Regression** - M. Ratner*, C. Ramsey, A. Usynin, A. Harnage

SAM Therapy Scientific Symposium

5:00 PM - 6:00 PM

-Ballroom A

SU-K-BRA Biomathematical Modeling for Individualized and Targeted Cancer Treatment

Moderator: David (Bo) McClatchy, Massachusetts General Hospital, Somerville, MA

- 5:00 PM **J. Scott, Cleveland Clinic: Shifting the Paradigm in Radiation Planning from Constraint Satisfaction to True Optimization: The Role of Mathematical Biology**
- 5:16 PM **C. Grassberger, Massachusetts General Hospital: Modeling Radiotherapy in Combination with Targeted Agents**
- 5:32 PM **W. Ngwa, Johns Hopkins University: Nanoparticle Drone Models for Delivery of Immunotherapy to Boost the Abscopal Effect**
- 5:48 PM **Panel Discussion**

Multi-Disciplinary SNAP Oral

5:00 PM - 6:00 PM

-Room 202

SU-K-202 Emerging Imaging, Therapy, and Dosimetry Solutions II

Moderators: Chang Ming Charlie Ma, Fox Chase Cancer Center, Philadelphia, PA and Jacqueline Andreozzi, Moffitt Cancer Center, Tampa, FL

- 5:00 PM **SU-K-202-01 Application of Magnetic-Induced Hyperthermia into Radiation Therapy and Efficacy of Combined Modalities On Prostate Cancer Cells** - D. Heo*, B. Lokeshwar, J. Barrett, C. Huh
- 5:07 PM **SU-K-202-02 Detailed Pediatric Heart Models for Dose Reconstruction of Children in the National Wilms Tumor Study** - C. Lee*, M. Mille, C. Rigsby, A. Popescu, K. Griffin, M. Gopalakrishnan, J. Jung, C. Lee, J. Kalapurakal
- 5:14 PM **SU-K-202-03 Efficacy and Photon Energy Dependency of In-Vivo Radiodynamic Therapy (RDT) with 5-Aminolevulinic Acid (5-ALA)** - D. Yang*, D. Cvetkovic, T. Dos Santos, L. Chen, C. Ma
- 5:21 PM **SU-K-202-04 Monte Carlo Model of a Prototype Dual-Layer Flat Panel Detector for Multi-Energy KV-CBCT** - I. Ozoemelum*, M. Myronakis, T. Harris, P. Huber, M. Jacobson, R. Fueglistaller, M. Lehmann, D. Morf, R. Berbeco
- 5:28 PM **SU-K-202-05 Multi-Energy Cone Beam CT Image-Guided Intensity-Modulated Small-Animal Irradiation Platform** - Y. Zhong*, X. Hu, H. Liu, Y. Lai, C. Shen, X. Jia
- 5:35 PM **SU-K-202-06 Ultra-Sensitive Single Pixel Bioluminescence Tomography for in Vivo Cell Tracking** - Z. Tong*, Z. Deng, X. Xu, K. Wang
- 5:42 PM **SU-K-202-07 Utility of EPID-Based Automated Quality Assurance (AQA) Test Suite for Verifying Machine Performance Following Non-Routine Maintenance Events** - J. Steers*, J. DeMarco, H. Al-Hallaq, J. Mikell, M. Barnes, G. Kim, N. Gupta, D. DiCostanzo, A. Ayan, M. Perez, J. Irrer, J. Moran
- 5:49 PM **SU-K-202-08 Validation of a Forward Model for Thick Scintillator Imaging and Spectral Extraction with a Light Field Camera** - B. Preusser*, J. Slagowski, P. La Riviere, R. Wiersma

MEDICAL PHYSICS**Monday, July 11, 2022****SAM Professional Symposium**

7:30 AM - 8:30 AM

-Room 206

MO-A-206 Excelling as a Medical Physicist Outside the Clinic

Moderator: Christine Gnaster, Radformation, Greensboro, NC

- 7:30 AM **Introduction**
- 7:35 AM **S. Mutic, Varian Medical Systems: Resources and Involvement for Non-Clinical Medical Physicists in the AAPM**
- 7:50 AM **H. Whitney, Wheaton College: Non-Clinical Professions: What Are They and How Do I Get Started?**
- 8:05 AM **Y. Lee, Elekta: Real Stories: A Clinical Physicist Finds Industry**
- 8:20 AM **Q & A**

SAM Imaging Educational Course

7:30 AM - 9:30 AM

-Room 207

MO-AB-207 Cardiac Imaging

Moderator: Shuai Leng, Mayo Clinic, Rochester, MN

- 7:30 AM **E. Williamson, Mayo Clinic Rochester: Multimodality Cardiac Imaging: Which Test for Which Indication?**
- 7:55 AM **Z. Qi, Henry Ford Health System: Lighting Up the Heart- Principles and Applications of Nuclear Cardiac Imaging**
- 8:20 AM **R. Muthupillai, University of Houston: Cardiac MRI: A Tool for Comprehensive Evaluation of Heart Health**
- 8:45 AM **S. Leng, Mayo Clinic: Cardiac CT: Fundamentals and Recent Advances**
- 9:10 AM **Q & A**

SAM Imaging Scientific Symposium

7:30 AM - 9:30 AM

-Room 201

MO-AB-201 Interventional Imaging

Moderator: Tess Reynolds, University of Sydney, Eveleigh, AU

- 7:30 AM **K. Li, University of Wisconsin-Madison: Bringing Photon Counting Detectors to the Interventional Room**
- 7:55 AM **A. Martin, UCSF: Interventional MRI-Guided Surgery**
- 8:20 AM **T. Reynolds, University of Sydney: Integrating Interventional CBCT Imaging into the Treatment Workflow of Traumatic Musculoskeletal Injuries**
- 8:45 AM **B. Pogue, University of Wisconsin-Madison: Fluorescence Guided Surgery Methods**
- 9:10 AM **Q & A**

Multi-Disciplinary Scientific Session

7:30 AM - 8:30 AM

-Ballroom C

MO-A-BRC Machine Intelligence Efficacy and Quality I

Moderators: Adam Yock, Vanderbilt University Medical Center, Nashville, TN and Ying Xiao, University of Pennsylvania, Philadelphia, PA

- 7:30 AM **MO-A-BRC-01 An Automated Evaluation Tool for Quantitative Assessment of Knowledge-Based Planning Models** - J. Harms*, D. Stanley, R. Popple
- 7:40 AM **MO-A-BRC-02 Development and Maintenance of a Knowledge-Based Planning Quality Assurance Tool for a Statewide Radiation Oncology Quality Consortium** - C. Matrosic*, K. Dess, K. Torolski, R. Marsh, M. Grubb, D. Dryden, D. Jarema, C. Fraser, P. Paximadis, M. Dominello, J. Hayman, S. Jolly, M. Matuszak
- 7:50 AM **MO-A-BRC-03 Inter-Observer variation of Target and Organ Contouring Before and After the Adoption of A deep-Learning Auto-Contouring Model for Localized Prostate Cancer** - Y. Wang*, S. Kamran, J. Efstathiou

2022 Annual Meeting Calendar of Events**Monday, July 11, 2022**

- 8:00 AM **MO-A-BRC-04 Prospective Clinical Experiences of Using the First Pediatric Deep-Learning Auto-Contouring models for Cranio-Spinal Irradiation (CSI)** - S. Zieminski*, S. MacDonald, T. Yock, Y. Wang
- 8:10 AM **MO-A-BRC-05 Quantifying the Impact of Class Imbalance Handling Techniques on Medical Image Deep Learning Performance** - B. Reber*, K. Brock
- 8:20 AM **MO-A-BRC-06 Task-Based Sampling of the MIDRC Sequestered Data Commons for Algorithm Performance Evaluation** - N. Baughan*, H. Whitney, K. Drukker, B. Sahiner, T. Hu, G. Kim, M. McNitt-Gray, K. Myers, M. Giger

SAM Therapy Educational Course

7:30 AM - 9:30 AM

-Ballroom A

MO-AB-BRA Current Challenges and Prospects in Motion Management for Radiotherapy

Moderator: David Carlson, Yale University School of Medicine, New Haven, CT

- 7:30 AM **J. Cammin, University of Maryland: Current and Future Motion Management Techniques in Imaging for RT Simulation**
- 8:00 AM **J. Bertholet, Inselspital Bern University Hospital: An Overview of Motion Management in External Beam Photon Radiotherapy**
- 8:30 AM **B. Teo, University of Pennsylvania: Opportunities and Challenges for Motion Management in Proton Therapy**
- 9:00 AM **P. Poulsen, Aarhus University Hospital: Real-Time Motion Management for Adaptive Radiotherapy**

SAM Therapy Scientific Symposium

7:30 AM - 9:30 AM

-Ballroom B

MO-AB-BRB Joint AAPM-ESTRO Symposium: FLASH-From Experimental Beam Lines to the Clinic

Moderators: Catharine Clark, UCLH, London, SRY and Nuria Jornet, Hospital Sant Pau, Barcelona,

- 7:30 AM **B. Sørensen, Aarhus University Hospital: Radiobiology: What We Know, What We Don't (Minimum Dose Threshold? Boundaries of Current Knowledge, Mechanisms). What the Data Tells Us**
- 7:55 AM **E. Diffenderfer, University of Pennsylvania: Commissioning An Experimental Beam Line for In Vivo FLASH Experiments (Set Up, Imaging, High Accuracy Animal Irradiation)**
- 8:20 AM **A. Lomax, Paul Scherrer Institute: Translating FLASH Into the Clinic: Treatment Planning and Preparing for Clinical Trials**
- 8:45 AM **C. Simone, New York Proton Center: FLASH Radiotherapy: Potentials, Challenges, and a Path Towards Clinical Implementation**
- 9:10 AM **Panel Discussion**

SAM Joint Imaging|Therapy Educational Course

7:30 AM - 9:30 AM

-Room 202

MO-AB-202 Imaging for Radiation Therapy: Challenges and Solutions

Moderators: Srinivas Cheenu Kappadath, UT MD Anderson Cancer Center, Houston, TX and Jordan Slagowski, University of Wisconsin - Madison, Madison, WI

- 7:30 AM **T. Szczykutowicz, University of Wisconsin-Madison: CT Simulation Optimization Strategies in Radiation Oncology**
- 7:55 AM **S. Gardner, Henry Ford Health System: Innovations in CBCT for Image-Guided Radiotherapy**
- 8:10 AM **N. Tyagi, Memorial Sloan Kettering Cancer Center: MR Simulation in Radiotherapy: Challenges and Solutions**

MEDICAL PHYSICS**Monday, July 11, 2022**

- 8:40 AM **S. Bowen, University of Washington, School of Medicine: Challenges of FDG PET/CT Imaging for Radiotherapy**
- 9:00 AM **T. Pan, UT MD Anderson Cancer Center: Innovations in FDG PET/CT Imaging for Radiotherapy**
- 9:20 AM **Q & A**

SAM Professional Symposium

8:30 AM - 9:30 AM

-Room 206

MO-B-206 Clinical-Industry Partnerships

Moderator: Bin Cai, University of Texas Southwestern Medical Center, Dallas, TX

- 8:30 AM **B. Cai, University of Texas Southwestern Medical Center: Experience and Lessons Learned Working with Startup Partners**
- 8:42 AM **L. Henke, Washington University School of Medicine: How to Build Successful Clinical & Industry Partnerships- A Perspective from a Radiation Oncologist**
- 8:54 AM **T. Li, University of Pennsylvania: Experience and Lessons Learned Through Collaborations with Large Industrial Partners**
- 9:08 AM **K. Brown, Elekta Oncology Systems LTD: Driving Innovation in Health Care Through Strategic Partnerships - A Perspective from Vendor**
- 9:18 AM **Panel Discussion**

Multi-Disciplinary Scientific Session

8:30 AM - 9:30 AM

-Ballroom C

MO-B-BRC Machine Intelligence Efficacy and Quality II

Moderators: Yoichi Watanabe, University of Minnesota, Minneapolis, MN and X. Sharon Qi, UCLA School of Medicine, Los Angeles, CA

- 8:30 AM **MO-B-BRC-01 Clinical Applicability-Oriented Contour Quality Classification for Auto-Segmentation** - Y. Zhang*, J. Ding, A. Amjad, C. Sarosiek, N. Dang, W. Hall, B. Erickson, X. Li
- 8:40 AM **MO-B-BRC-02 Comprehensive Evaluation of a Real-Time 3D MR Imaging Technique Using a Deformation-Driven Deep Convolutional Neural Network (KS-RegNet)** - H. Shao*, T. Li, M. Dohopolski, J. Wang, J. Cai, J. Tan, K. Wang, Y. Zhang
- 8:50 AM **MO-B-BRC-03 Deep Learning-Guided Iterative Refinement to Improve Label Quality and Consistency** - H. Zhou*, J. Xiao, Z. Fan, D. Ruan
- 9:00 AM **MO-B-BRC-04 Patient-Specific Transfer Learning to Enhance the Performance of Deep Learning Auto-Segmentation in 0.35 T MRgRT for Prostate Cancer** - M. Kawula*, I. Hadi, L. Nierer, M. Vagni, D. Cusumano, L. Boldrini, L. Placidi, S. Corradini, C. Belka, G. Landry, C. Kurz
- 9:10 AM **MO-B-BRC-05 Quality Assurance of Head & Neck OARs Segmentation with Machine Learning and Deep Learning** - J. Duan*, J. Castle, X. Feng, Q. Chen
- 9:20 AM **MO-B-BRC-06 Twin AI Algorithms for Quality Control of Auto-Segmentation in Radiation Therapy** - C. Guthrie*, R. Zeleznik, D. Bitterman, R. Punglia, J. Bredfeldt, H. Aerts, R. Mak

Therapy Interactive ePoster Discussion

9:30 AM - 10:00 AM

-Exhibit Hall | Forum 4

MO-C930-lePD-F4 Automated Software and Clinical Tools

MO-C930-lePD-F4-01 Radiation Planning Assistant: International Physician Review of Automatically Generated Contours and Radiotherapy Plans - L. Court*, L. Zhang, A. Olanrewaju, R. Mumme, R. Douglas, D. Rhee, Y. Xiao, C. Cardenas, T. Netherton, C. Nguyen, A. Aggarwal, A. Jhingran, C. Trauernicht, H. Simonds, B. Beadle

2022 Annual Meeting Calendar of Events**Monday, July 11, 2022****MO-C930-lePD-F4-02 Design and Implementation of Fully Automated Multi-Campus Patient Plan Readiness System -**

S. Elguindi*, M. Zhu, D. Wang, L. Santanam, A. Li

MO-C930-lePD-F4-03 Hazard Testing to Probe Points of Weakness in Automated Planning Tools - K. Nealon*, R. Douglas, E. Han, S. Kry, V. Reed, S. Simiele, L. Zhang, L. Court**MO-C930-lePD-F4-04 Automated Clinical-Criteria-Driven Optimal Planning: Clinical Experience with 5000 Patients -** Q. Huang*, Y. Zhou, G. Jhanwar, J. Yang, H. Pham, L. Cervino, J. Deasy, M. Zarepisheh, L. Hong**MO-C930-lePD-F4-05 Fast Monte Carlo Dose Calculation Tool for Varian Halcyon Using Virtual Source Models -** J. Castle*, Q. Chen, X. Feng**MO-C930-lePD-F4-06 Web-Based Fully Automatic 2nd Check for Online Adaptive Radiotherapy: Clinical Evaluation -** R. Reynolds*, Y. Gonzalez, J. Lin, W. Lu, M. Lin, M. Chen, A. Godley, A. Pompos, S. Jiang, B. Cai**Multi-Disciplinary Interactive ePoster Discussion**

9:30 AM - 10:00 AM

-Exhibit Hall | Forum 5

MO-C930-lePD-F5 Machine Learning for Toxicity Prediction MO-C930-lePD-F5-01 Patient-Specific Nuclei Size and Cell Spacing Distribution Extraction from Histopathology Whole Slide Images for Treatment Outcome Prediction Modelling - Y. Zou*, M. Lecavalier-barsoum, M. Pelmus, S. Abbasinejad Enger**MO-C930-lePD-F5-02 Prediction of Radiation Induced Lymphedema for Head & Neck Cancer Patients Using Ensemble Feature Selection and Machine Learning -** P. Teo*, K. Rogacki, M. Gopalakrishnan, B. Mittal, I. Das, M. Abazeed, M. Gentile**MO-C930-lePD-F5-03 Radiotherapy Induced Xerostomia Prediction Through Cluster Models Incorporating 3D Spatial Dose Within the Parotid Gland and Machine Learning Techniques -** M. Chao*, I. El Naqa, R. Bakst, Y. Lo, J. Penagaricano**MO-C930-lePD-F5-04 Novel Neural Network Approach to Predict Radiation-Induced Lymphopenia in Lung Cancer Patients After Radiotherapy -** Y. Kim*, I. Chamseddine, R. Mohan, T. Xu, S. Lin, Z. Liao, H. Paganetti, A. Saraf, D. McClatchy, J. Kim, Y. Cho, H. Yoon, S. Cho, C. Grassberger

-Exhibit Hall | Forum 6

MO-C930-lePD-F6 Novel Technologies**MO-C930-lePD-F6-01 Demonstration of a Novel Metal Artifact Reduction Technique with KV-MV CBCT -** M. Jacobson*, T. Harris, M. Lehmann, P. Huber, M. Myronakis, I. Ozoemelum, R. Fueglistaller, D. Morf, R. Berbeco**MO-C930-lePD-F6-02 Towards Quantitative In-Tumor Dosimetry Using XACT -** L. Sun*, G. Gonzalez, P. Pandey, S. Wang, Y. Chen, L. Xiang**MO-C930-lePD-F6-03 A Monte Carlo Study to Investigate Material Subtraction Performance of a Multi-Layer KV-CBCT Detector -** I. Ozoemelum*, M. Myronakis, T. Harris, P. Huber, M. Jacobson, R. Fueglistaller, M. Lehmann, D. Morf, R. Berbeco**MO-C930-lePD-F6-04 Deep Inspiration Breath Hold (DIBH) for Lung SABR Under Mechanically-Assisted and Non-Invasive Ventilation (MANIV) -** L. Vander Veken*, G. Van Ooteghem, B. Ghaye, A. Razavi, X. Geets**MO-C930-lePD-F6-05 On-Couch IMRT Treatment for Prostate Cancer Patients Without an Individualized Pre-Treatment Plan -** T. Zhuang*, D. Parsons, Y. Gonzalez, G. Gibbard, M. Lin, B. Cai, B. Hrycushko, D. Nguyen, R. Reynolds, A. Godley, A. Pompos, N. Desai, S. Jiang**MO-C930-lePD-F6-06 Quantification of Nanoparticle Radiosensitizers Using Dual-Energy CT -** T. Harris*, M. Jacobson, S. Bennett, M. Myronakis, I. Ozoemelum, Y. Hu, A. Sudhyadhom, F. Lux, O. Tillement, R. Berbeco**MEDICAL PHYSICS****Monday, July 11, 2022****Therapy Interactive ePoster Discussion**

9:30 AM - 10:00 AM

-Exhibit Hall | Forum 7

MO-C930-lePD-F7 Stereotactic Radiosurgery**MO-C930-lePD-F7-01 Stereotactic Radiosurgery of Small Brain Lesions Via MLC Aperture-Shape Controller HyperArc VMAT -** D. Pokhrel*, M. Kudrimoti, M. Bernard**MO-C930-lePD-F7-02 An Optimal Solution Study Using the Leksell Gamma Knife® Lightning Optimizer for Stereotactic Radiosurgery of Benign Lesions -** D. Wiecezorek, R. Kotecha, Y. Lee, M. Tom, M. Hall, M. Mehta, M. Mcdermott, A. Gutierrez, R. Tolakanahalli*, R. Tolakanahalli**MO-C930-lePD-F7-03 Dosimetric Impact of Lesion Size and Number on Mean Brain Dose with Stereotactic Radiosurgery for Brain Metastases -** D. Wiecezorek*, R. Tolakanahalli, Y. Lee, M. Hall, M. Tom, M. Mehta, M. Mcdermott, A. Gutierrez, R. Kotecha**MO-C930-lePD-F7-04 Implementation of Genetic Algorithm for PTV-Margin in Single Isocenter Multiple Metastases Using Brainlab ElementsTM -** J. Rojas Lopez*, R. Diaz Moreno, C. Venencia**MO-C930-lePD-F7-05 Dosimetric Effect of Intra-Fraction Motion in Multiple Brain Metastases SRS/SRT: An Evaluation Based on a Robotic Radiosurgery System -** X. Chen*, L. Chen, J. Liu, L. Wang, C. Ma**Imaging Interactive ePoster Discussion**

9:30 AM - 10:00 AM

-Exhibit Hall | Forum 8

MO-C930-lePD-F8 Advances in CT**MO-C930-lePD-F8-01 Evaluation of Radiation Dose and Image Quality of Cone-Beam CT Acquisitions with Intraoperative Imaging Systems for Spine Surgery -** J. Wang*, S. Mc Kenney, L. Phillips**MO-C930-lePD-F8-02 Two Vendor-Specific Deep Learning Iterative Reconstruction Algorithms (DLIR) for CT Were Assessed for Image Quality Impact Towards Dose Reduction Feasibility -** S. Brady***MO-C930-lePD-F8-03 Implementation of An Automated Software to Identify CT Repeated Scans and Reduce Wasted Contrast, Time and Ionizing Radiation Dose -** N. Fitousi*, H. Bosmans, T. Szczukutowicz, J. Jacobs**MO-C930-lePD-F8-04 The Longitudinal Impact of a Team of Medical Physicists on Computed Tomography Protocol Optimization -** J. Meier*, J. Krebs, T. Szczukutowicz**MO-C930-lePD-F8-05 Effect of Tin Spectral Filtration on Organ and Effective Dose in CT Colonography and CT Lung Cancer Screening -** G. Fong*, A. Skalsky, F. Dong, B. Herts, D. Nachand, A. Primak, P. Segars, X. Li**MO-C930-lePD-F8-06 A New Dose Modulation Scheme for Coronary Artery Calcium Scoring CT Based on the Patient Size Adapted Noise Thresholds in the Ascending Aorta -** Y. Zhou*, E. Eastman, C. Lee, A. Scott

-Exhibit Hall | Forum 9

MO-C930-lePD-F9 MRI Quantitative Imaging**MO-C930-lePD-F9-01 Can Abnormal Pudendal Nerve Be Detected and Evaluated Using MR DWI ADC Values - A Preliminary Study -** J. James*, A. Jawahar**MO-C930-lePD-F9-02 Comparison of Effective Connectivity and Functional Connectivity for Brain Health in Middle-Aged Adults -** K. Chuang*, S. Ramakrishnapillai, K. Madden, J. St Amant, K. Gwizdala, R. Dhullipudi, L. Bazzano, O. Carmichael**MO-C930-lePD-F9-03 Automatic Organ Contouring for Head and Neck MR-Guided Online Adaptive Radiotherapy Using Neural Networks -** V. Koteva*, D. Mcquaid, A. Dunlop, B. Eiben, U. Oelfke**MO-C930-lePD-F9-04 A Comparison of Methods for Computing T1 in MOLLI Images -** A. Moody*, H. Huber, L. Cox, P. Nathanielsz, G. Clarke**MO-C930-lePD-F9-05 Reducing Bias and Noise in T2* Measurements for Low-SNR Data: A Phantom Study -** G. Anthony*, X. Zhang, X. Guan, R. Dharmakumar

2022 Annual Meeting Calendar of Events**Monday, July 11, 2022**

MO-C930-lePD-F9-06 In-Vivo Assessments of Creatine-Kinase-Based ATP Buffering in Human Skeletal Muscle Following Isotonic and Isometric Exercise Using 31P-MRS - N. Sanchez*, A. Moody, G. Clarke

Best of Professional

9:30 AM - 10:00 AM

-Exhibit Hall | Forum 1

MO-C930-BOP-F1 Best of Professional

MO-C930-BOP-F1-01 Improved Gender Distribution of Moderators and Speakers at AAPM Annual Meetings Over Time - A. Roso-Mares*, S. St. James, A. Cetnar, J. Pollard-Larkin, R. Jaggi, S. Evans, J. Moran, L. Cervino

MO-C930-BOP-F1-02 Facilitating MRI Protocol Standardization and Creating a Protocol Website with An In-House Automated Software - E. Eastman*, N. Binesh, A. Scott, Y. Zhou

MO-C930-BOP-F1-03 Successful Implementation of an IMRT/VMAT Same-Day SRS/SBRT Treatment Program - M. Aristophanous*, D. Wang, S. Shen, A. Ballangrud, A. Li, M. Zhu, S. McBride, K. Beal, J. Yang, L. Cervino

MO-C930-BOP-F1-04 Paperless EMR Integration of INTRABEAM IORT Documentation for Improved Efficiency and Safety of Treatment Delivery - J. Jackson*, H. Kang, S. Gros

MO-C930-BOP-F1-05 Blinding of Residency Applications in Medical Physics – Promises and Pitfalls - A. Cetnar*, D. DiCostanzo, M. Weldon, J. Mathews, A. Swanson, N. Gupta

Coffee Break in Exhibit Hall

9:30 AM - 10:15 AM

-Exhibit Hall

President's Symposium

10:15 AM - 12:15 PM

-Ballroom BC

MO-D-BRBC Important Conversations: The Alzheimer's Epidemic – Patient Engagement – ARPA-H and Cancer Moonshot

Moderator: J. Daniel Bourland, Wake Forest University, Winston-Salem, NC

10:15 AM Welcome and Introduction

10:25 AM Welcome - ASTRO

10:29 AM Welcome - RSNA

10:33 AM J. Bourland, Wake Forest University: Medical Physics: Perspectives and Impact

10:45 AM Introduction

10:48 AM E. Shaw, Wake Forest University: The Alzheimer's Epidemic: Implications for the Medical Physicist

11:13 AM Introduction

11:16 AM R. Milman, University of Colorado School of Medicine: What We Can Learn from Patients and Why We Need to Listen

11:36 AM Introduction

11:39 AM T. Schwetz, NIH: Accelerating Innovation in Health and Biomedical Research: ARPA-H and the Cancer Moonshot

12:04 PM Discussion

Lunch Break in Exhibit Hall

12:15 PM - 1:45 PM

-Exhibit Hall

MEDICAL PHYSICS**Monday, July 11, 2022****Multi-Disciplinary Interactive ePoster Discussion**

1:15 PM - 1:45 PM

-Exhibit Hall | Forum 2

MO-E115-lePD-F2 MR-Guided Adaptive Radiotherapy II

MO-E115-lePD-F2-01 Influence of Abdominopelvic Air Pockets in the Dosimetric Accuracy of Online Pelvic Adaptive Radiation Therapy - O. Dona Lemus*, S. Tanny, M. Cummings, M. Pacella, N. Joyce, M. Webster, H. Jung, J. Yoon, N. Burns, R. Nucci, E. Hagenbach, D. Zheng

MO-E115-lePD-F2-02 On the Utilization of a Pseudo-Inverse Consistency Metric to Evaluate Deformable Dose Accumulation Error for MRI-Guided Adaptive Radiotherapy - H. Zhong*, J. Garcia-Alvarez, K. Kainz, X. Li

MO-E115-lePD-F2-03 Daily 4DMRI Assessed Motion and Its Impact on ITV for Non-Gated MRI-Guided Adaptive Radiation Therapy of Liver Cancer - E. Omari*, H. Jassar, M. Straza, E. Paulson, X. Chen, E. Ahunbay, W. Hall, X. Li

MO-E115-lePD-F2-04 Low-Dose Contrast-Enhancement MRI Using Deep Learning with Patient-Specific Image Prior for Liver Cancer Adaptive Radiotherapy - Y. Gao, J. Deng, X. Jia*

Therapy Interactive ePoster Discussion

1:15 PM - 1:45 PM

-Exhibit Hall | Forum 3

MO-E115-lePD-F3 Novel Treatment Planning Techniques

MO-E115-lePD-F3-01 Quantitative Evaluation of Knowledge-Based Treatment Planning Models Integrated with Multi-Criteria Optimization - S. Jayarathna*, K. Reddy, H. Li, K. Guida

MO-E115-lePD-F3-02 Hippocampal Sparing Whole Brain: RapidPlan Model V2.0 Training Process - R. Foster*, A. Magliari, R. Clark

MO-E115-lePD-F3-03 Automated Inverse Planning Using a Hyperparameter Tuning Approach - M. Kim*, K. Maass, A. Aravkin

MO-E115-lePD-F3-04 Collimator Angle Rotation and Sub Arc Optimization (CRAO) Based VMAT Radiotherapy for Multiple Brain Metastases - S. Jiuling*

MO-E115-lePD-F3-05 Creating Skin Flash in VMAT Breast Planning Using a Two Narrow Virtual Bolus Technique - B. Liu*, A. Liu, P. Mandelin, W. Hou, T. Williams, J. Kim

-Exhibit Hall | Forum 4

MO-E115-lePD-F4 Patient Specific Quality Assurance

MO-E115-lePD-F4-01 A Phantom for Dosimetric Quality Assurance of Non-Coplanar and Mixed Beam Treatment Techniques - S. Mueller*, W. Volken, G. Guyer, H. Loebner, J. Bertholet, D. Frei, P. Mackeprang, C. Zhu, P. Manser, M. Fix

MO-E115-lePD-F4-02 An Adjustable Deep Learning Model for Improved EPID Dosimetry - X. He*, F. Li, Q. Fan, W. Cai, L. Cervino, J. Moran, S. Lim, X. Li, T. Li

MO-E115-lePD-F4-03 Lung SBRT VMAT QA Benchmark and Prediction Using a Random-Forest Model with Weighted Gamma Passing Rate and Histogram-Based Features - C. He*, A. Le

MO-E115-lePD-F4-04 Variational Clustering: Toward Unervised Machine Learning-Based Error Detection in Patient-Specific IMRT QA - J. Perez-Sanchez*, B. Lu, S. Samant, J. Li, C. Liu, G. Yan

MO-E115-lePD-F4-05 Quality Assurance of MLC Auto-Feathering Junctions for Supine Craniospinal Axis Irradiation (CSI) VMAT On Ring-Gantry Halcyon Linac - D. Carlton*, W. St Clair, D. Pokhrel

MO-E115-lePD-F4-06 Treatment Plan Complexity Quantification for Predicting Patient-Specific Quality Assurance of Stereotactic Volumetric Modulated Arc Therapy - X. Xue*, Y. Ding, W. Wei, C. Ma, X. Wang

2022 Annual Meeting Calendar of Events**Monday, July 11, 2022****Specialty Program The New Era of Radiopharmaceutical Therapy Interactive ePoster Discussion**

1:15 PM - 1:45 PM

-Exhibit Hall | Forum 5

MO-E115-lePD-F5 Radiopharmaceutical Imaging and Dosimetry**MO-E115-lePD-F5-01 I-131 Sodium Iodide Dosimetry for Thyroid Cancer: Three Case Studies** - M. Oumano*, D. Yoo**MO-E115-lePD-F5-02 Annihilation Gamma-Ray Interference In Tc-99m Clinical Images: Energy Spectrum Softening Due To Lead Shielding** - D. Vergara*, K. Grizzard**MO-E115-lePD-F5-03 Fetal Dose Positron Emission Tomography and Computed Tomography in Pregnant Patients** - C. Burton*, F. Fahey, B. Shulkin**MO-E115-lePD-F5-04 Collimator and Energy Window Optimization in Bremsstrahlung SPECT/CT for Imaging Yttrium-90 Microspheres** - R. Nosrati*, E. Olguin, M. Palmer**MO-E115-lePD-F5-05 Evaluating the Accuracy of a Practical and Quantitative Imaging and Dosimetry Protocol for Post-Treatment Yttrium-90 SPECT/CT** - S. Kim*, L. Rodriguez, G. Herrera, S. Abbasinejad Enger, D. Alvarez**MO-E115-lePD-F5-06 Investigating Spatiotemporal Distribution of Chain Alpha Emitters in Intra- and Inter- Cellular Spaces for Targeted Radiotherapy** - R. Khan*, J. Grafe**Multi-Disciplinary Interactive ePoster Discussion**

1:15 PM - 1:45 PM

-Exhibit Hall | Forum 6

MO-E115-lePD-F6 MRI in Radiation Therapy**MO-E115-lePD-F6-01 Experimental Validation of the Dosimetric Impact of a Gadolinium-Based Contrast Agent on a Photon Beam in the Presence of 1.5 T Magnetic Field** - K. Hall*, L. Kim, G. Ibbott, F. Riaz, M. Reyhan**MO-E115-lePD-F6-02 Wavelet-Based Radiomics Analysis of Dynamic Contrast-Enhanced (DCE)-MR Information for Characterization of Acute Brain Tumor Response in Animal Model** - H. Bagher-Ebadian*, T. Nagaraja, G. Cabral, K. Farmer, O. Valadie, P. Acharya, B. Movsas, S. Brown, J. Ewing, I. Chetty**MO-E115-lePD-F6-03 Retrospective Cardio-Respiratory Motion Corrected Dose Evaluation for the Left Ventricle and Left Ventricle Myocardium from Lung Radiation Therapy Treatments** - A. Omid*, E. Weiss, J. Wilson, M. Rosu-Bubulac**MO-E115-lePD-F6-04 4D-THRIVE MRI for Internal Target Volume Estimation in Abdominal and Lung Radiation Therapy** - J. Deng, T. Aguilera, R. Hannan, A. Godley***MO-E115-lePD-F6-05 Real Time Volumetric MRI From Ultra-Sparse Samples Via Implicit Neural Representation Learning** - R. Yesiloglu*, L. Shen, A. Johansson, Y. Cao, J. Balter, L. Xing, L. Liu**MO-E115-lePD-F6-06 A Hybrid Model Derived from Multi-Parametric MRIs for Predicting Neoadjuvant Chemoradiation Response in Locally Advanced Rectal Cancer** - H. Chen*, X. Li, X. Qi**Therapy Interactive ePoster Discussion**

1:15 PM - 1:45 PM

-Exhibit Hall | Forum 7

MO-E115-lePD-F7 Treatment Planning**MO-E115-lePD-F7-01 Validation of the Monte Carlo Algorithm in Radiance™ Treatment Planning System Based on the BEAMnrc/EGSnrc Built Model of the Mobetron Intraoperative Linear Accelerator** - C. Iliaskou*, V. Boronikolas, I. Sachpazidis, G. Rossi, M. Gainey, R. Saum, D. Baltas**MO-E115-lePD-F7-02 Assessment of Two Treatment Planning Methods for Accounting CT Metal-Artifacts in Breast Tissue Expanders** - J. Ramos-Mendez*, A. Villa, X. Li, A. Melancon, M. Sharma**MO-E115-lePD-F7-03 Implementation of Novel Treatment Planning Strategies to Reduce Cardiac Dose in Locally Advanced Non-Small Cell Lung Cancer Patients** - J. Kim*, J. Dewalt, A. Feldman, K. Adil, B. Movsas, I. Chetty**MEDICAL PHYSICS****Monday, July 11, 2022****MO-E115-lePD-F7-04 Evaluating the Superficial Dose Enhancement of Brass Mesh Bolus for VMAT Postmastectomy Radiation** - T. Keiper*, K. Kisling, P. Hua, R. Manger**MO-E115-lePD-F7-05 Can Image Segmentation Evaluation Metrics Be Used for Assessing the Quality of SBRT Plans?** - T. Arsenault*, A. Amini, A. Baydoun, B. George, L. Bailey, S. Bhat, R. Kashani, T. Podder**MO-E115-lePD-F7-06 Extracting Organ-Specific Radiobiological Parameters from Compiled Clinical Data for Reirradiation Planning of Head and Neck Cancer** - E. Quashie*, A. Tai, P. Prior, M. Awan, C. Schultz, X. Li**Imaging Interactive ePoster Discussion**

1:15 PM - 1:45 PM

-Exhibit Hall | Forum 8

MO-E115-lePD-F8 Breast Imaging**MO-E115-lePD-F8-01 Validation of Patient-Derived Heterogeneous Breast Phantoms for Advanced Dosimetry in Mammography and Tomosynthesis** - M. Caballo, C. Rabin*, C. Fedon, A. Rodriguez-Ruiz, O. Diaz, J. Boone, D. Dance, I. Sechopoulos**MO-E115-lePD-F8-02 Automatic Dose Monitoring in Mammography: Trends and Observations** - A. Hernandez*, J. Boone, J. Seibert**MO-E115-lePD-F8-03 Leveraging Predictive Uncertainty of a Convolutional Neural Network to Flag Unacceptable Segmentations** - Z. Klanecek*, H. Bosmans, A. Studen, M. Vrhovec, D. Huff, B. Schott, Y. Kuan, L. Cockmartin, N. Marshall, T. Wagner, K. Herlt, M. Krajc, K. Jarm, R. Jeraj**MO-E115-lePD-F8-04 X-Ray Detector Technologies Affect Breast Cancer Detection Performance: An in Silico Breast Imaging Study** - A. Sengupta*, M. Lago, A. Badano**MO-E115-lePD-F8-05 Case-Based Repeatability of AI Classification on Multi-Modality Imaging of Breast Lesions Using DCE-MRI and FFD** - H. Whitney*, K. Drukker, A. Edwards, L. Lan, H. Abe, M. Giger

-Exhibit Hall | Forum 9

MO-E115-lePD-F9 Ultrasound, Optical, and Multi-modality Imaging**MO-E115-lePD-F9-01 Validation of a Commercial Artificial Intelligence Auto-Segmentation System for Head and Neck Treatment Site** - P. Tsai*, S. Huang, R. Press, A. Shim, C. Apinorasetkul, C. Chen, L. Hu, E. Jang, H. Lin**MO-E115-lePD-F9-02 Development of Spectrally Encoded Optical Polarization Imaging for Skin Cancer Margin Detection** - P. Jermain*, T. Iorizzo, D. Goldberg, M. Maloney, B. Mahmoud, A. Yaroslavsky**MO-E115-lePD-F9-03 Optimizing Multispectral Singlet Oxygen Luminescence Dosimetry (MSOLD) in Photofrin-Mediated PDT** - R. Hall*, H. Sun, T. Zhu**MO-E115-lePD-F9-04 A Novel Ultrasound Beamformer with the Align-Peak-Response for Flexible Array Transducers** - Z. Feng*, E. Sun, D. China, X. Huang, H. Hooshangnejad, E. González, M. Lediju Bell, K. Ding**MO-E115-lePD-F9-05 Looking Through the Noise: Freehand Tomographic Reconstruction Using Noise Decorrelation and Acoustic Waveform Properties of 2D Images** - O. Ivashchenko*, T. Natali, T. Ruers**Best of Professional**

1:15 PM - 1:45 PM

-Exhibit Hall | Forum 1

MO-E115-BOP-F1 Best of Professional**MO-E115-BOP-F1-01 Automatic Delineation of the Hippocampus Based on Deep Learning Using Multimodal Imaging for Cerebral Radiotherapy** - R. Zhang*, Y. Liu, C. Fu, J. Zhang, D. Li, C. Chen, Z. Dai, L. Jia, W. Zhang**MO-E115-BOP-F1-02 Patient Dosimetry Statistics from Permanent Cs-131 Low Dose Rate Brachytherapy Implants in the Brain** - A. Turner*, D. Brachman**MO-E115-BOP-F1-03 Is Lead Foil Necessary for Flattening Filter Free Beam Reference Dosimetry?** - S. Gao*, C. Nelson, V. Kathiriarachchi, M. Choi, R. Saxena, R. Kendall, P. Balter

2022 Annual Meeting Calendar of Events**Monday, July 11, 2022**

MO-E115-BOP-F1-04 Adaptive Planning Using PreciseART for Glioblastoma Patient Wearing Tumor Treating Fields Device -
Y. Qin*, R. Tobias, R. Foster, M. Pankuch
MO-E115-BOP-F1-05 Prone SPECT Breast Imaging On a Dedicated Cardiac System: Initial Phantom Study Using Radiolucent Patient Support - K. Williams*, M. Tornai

SAM Professional Symposium

1:45 PM - 3:45 PM

-Room 206

MO-FG-206 Advancing EDI at Every Level of Med Phys Part 1: For Trainees, the Workplace and Beyond

Moderator: Richard Castillo, Emory University, Atlanta, GA

1:45 PM **R. Castillo, Emory University: Overview of DISC Activities**
2:20 PM **K. Paradis, Michigan Medicine: Exploring the Med Phys Pipeline**
2:55 PM **V. Ainsworth: So You Want To Make Your Environment More LGBTQIA+ Inclusive?**
3:30 PM **Q & A**

SAM Imaging Educational Course

1:45 PM - 3:45 PM

-Room 207

MO-FG-207 Artifacts and Image Quality Issues in MRI Advanced/Rapid Techniques

Moderators: Nathan Yanasak, Augusta University, Crawfordville, GA and Trevor Andrews, Washington University at St Louis, Saint Louis, MO

1:45 PM **T. Andrews, Washington University at St Louis: Review of Basic MRI Artifacts in the Clinical Realm**
2:10 PM **Y. Shu, Mayo Clinic: MRI Artifacts/Quality for Non-Cartesian Sequences**
2:35 PM **N. Yanasak, Augusta University: MRI Artifacts/Quality for Accelerated Techniques (pMRI & SMS)**
3:00 PM **M. Doneva, Philips: MRI Artifacts/Quality for Dramatically Undersampled Techniques (CS & AI-based Reconstruction)**
3:25 PM **Q & A**

Education Session

1:45 PM - 3:45 PM

-Room 201

MO-FG-201 Arthur Boyer Award for Innovation in Medical Physics Education

Moderator: Victor Montemayor, Germantown Academy, Fort Washington, PA

1:45 PM **MO-FG-201-01 Experience and Survey Results From a National Hands-On Workshop On Simulated Error Training for the Physics Plan Review -** P. Johnson*, L. Schubert, G. Kim, J. Faught, C. Buckey, L. Conroy, S. Luk, D. Schofield, S. Parker
2:00 PM **MO-FG-201-02 Student Experiential Learning Through Patient Education: Game-Oriented Radiotherapy Simulation for Pediatric Cancer Patients -** J. Cai*, S. Lee, A. Nicol, V. Tam, H. Law, V. Leung, J. Cai
2:15 PM **MO-FG-201-03 The Use of An Anthropomorphic Prostate Simulator in a Transrectal Ultrasound Imaging Training Workshop for Medical Physicists -** A. Doyle, D. Cody, D. King, F. Sullivan, J. Browne*
2:30 PM **MO-FG-201-04 An Affordable Platform for Virtual Reality-Based Patient Education in Radiation Therapy -** J. Schulz*, A. Yu, P. Dubrowski, E. Blomain, C. Marquez
2:45 PM **MO-FG-201-05 3D Projection Mapping for Dose Visualization in Radiation Oncology Physics Education -** A. Yock*
3:00 PM **MO-FG-201-06 Ten-Year Initiatives in Teaching Physics to Diagnostic Radiology Residents -** J. Zhang*, P. Hardy, F. Raslau, J. Lee, S. Jones, M. Oates

MEDICAL PHYSICS**Monday, July 11, 2022****Multi-Disciplinary Scientific Session**

1:45 PM - 2:45 PM

-Ballroom C

MO-F-BRC Novel Imaging and Therapy Solutions

Moderators: Wensha Yang, University of Southern California, Los Angeles, CA and Alonso Gutierrez, Miami Cancer Institute, Miami, FL

1:45 PM **MO-F-BRC-01 6-DoF Intrafraction Cranial Motion Detection Using Capacitive Sensing Technology: Simulation and Volunteer Study -** P. Sadeghi*, D. Bastin-decoste, J. Robar
1:55 PM **MO-F-BRC-02 A Planning Environment for Intracranial Electric Field Treatment of Brain Tumors -** E. Iredale*, B. Voigt, A. Rankin, K. Kim, J. Chen, S. Schmid, M. Hebb, T. Peters, E. Wong
2:05 PM **MO-F-BRC-03 Cell Morphometry Guides Nanoparticle-Mediated Chemoradiotherapy Against Brain Cancers -** A. Benoit*, A. Hubbard, Y. Walter, O. Salas, E. Jank, A. Ekpenyong
2:15 PM **MO-F-BRC-04 Characterization of a Segmented Printed Circuit Board (PCB)-Based Extrapolation Ionization Chamber -** A. Khan*, J. Radtke, L. DeWerd
2:25 PM **MO-F-BRC-05 BEST IN PHYSICS (MULTI-DISCIPLINARY): Development of Quadruple On-Board Imaging to Guide Radiation Treatment in Small Animals -** H. Wang*, X. Li, L. Xu, Y. Ren, W. Deng, H. Feng, Z. Yang, S. Ma, Q. Ni, Y. Kuang
2:35 PM **MO-F-BRC-06 TopasOpt: An Open-Source Library for Optimization with Topas Monte Carlo -** B. Whelan*, B. Loo, P. Keall

SAM Therapy Educational Course

1:45 PM - 2:45 PM

-Ballroom A

MO-F-BRA Recent Task Groups on the Use of MR in External Beam Radiotherapy: TG 284 and 294

Moderator: Neelam Tyagi, Memorial Sloan Kettering Cancer Center, New York, NY

1:45 PM **Y. Hu, Mayo Clinic Arizona: Acceptance Testing and QA Pertaining to MR Simulation and MR Biomarkers**
2:00 PM **C. Glide-Hurst, University of Wisconsin-Madison: Safety, Staffing, Equipment Selection and Optimization of Simulation Workflow for Radiotherapy Planning and Response Assessment Studies**
2:15 PM **K. McGee, Mayo Clinic: Current Status of MR Biomarkers in Radiation Oncology**
2:30 PM **Q & A**

Early-Career Investigator Symposium

1:45 PM - 3:45 PM

-Ballroom B

MO-FG-BRB Early-Career Investigator Symposium

Moderators: E. Russell Ritenour, Medical University of South Carolina, Charleston, SC and Matthew Podgorsak, Roswell Park Cancer Institute, Buffalo, NY

1:45 PM **MO-FG-BRB-01 A Multi-Institutional, Convolutional Neural Network-Based Approach to the Detection of Vertebral Body Mis-Alignments in Planar X-Ray Setup Images -** R. Petragallo*, P. Bertram, P. Halvorsen, I. Ifimtia, J. Lamb, O. Morin, G. Narayanasamy, D. Saenz, K. Sukumar, G. Valdes, L. Weinstein, M. Wells, B. Ziemer
1:57 PM **MO-FG-BRB-02 A Neural Ordinary Differential Equation Model for Visualizing Deep Neural Network Behaviors in Multi-Parametric MRI Based Glioma Segmentation -** Z. Yang*, Z. Hu, H. Ji, K. Lafata, S. Floyd, F. Yin, C. Wang

2022 Annual Meeting Calendar of Events**Monday, July 11, 2022**

- 2:09 PM **MO-FG-BRB-03** Combining Monte Carlo Voxel-Level External Beam Radiotherapy and Iodine-131 SPECT Based Radiopharmaceutical Therapy Dosimetry Using Deformable Registration and Radiobiological Quantities - D. Adam*, J. Grudzinski, P. Hill, T. Bradshaw, S. Cho, A. Burr, P. Harari, B. Bednarz
- 2:21 PM **MO-FG-BRB-04** Computational Mapping of Lymphocytic Topology On Digital Pathology Images with Single Cell Resolution Immunohistochemistry Validation - X. Li*, G. Sotolongo, Y. Mowery, J. Hodgins, A. Janowczyk, L. Barisoni, K. Lafata
- 2:33 PM **MO-FG-BRB-05** Development and Validation of a Population-Based Anatomical Colorectal Model for Radiation Dosimetry in Late Effects Studies of Childhood Cancer Survivors - C. Owens*, B. Rigaud, E. Ludmir, A. Gupta, S. Shrestha, A. Paulino, S. Smith, C. Peterson, S. Kry, C. Lee, T. Henderson, G. Armstrong, K. Brock, R. Howell
- 2:45 PM **MO-FG-BRB-06** Explainable Machine Learning for Predicting Overall Survival of Patients with Locally Advanced Non-Small Cell Lung Cancer Treated with Photon and Proton Radiotherapy - L. Duan*, S. Lee, R. Caruana, T. Kegelman, S. Feigenberg, Y. Xiao
- 2:57 PM **MO-FG-BRB-07** Pair Production Tomography Imaging - Q. Lyu*, R. Neph, K. Sheng
- 3:09 PM **MO-FG-BRB-08** Pulse to Pulse Cherenkov Imaging In Vivo During FLASH Radiotherapy Tracks Output and Surface Profiles - M. Rahman*, M. Ashraf, R. Zhang, X. Cao, D. Gladstone, L. Jarvis, J. Hoopes, B. Pogue, P. Bruza
- 3:21 PM **MO-FG-BRB-09** MRI Detection of Iron Metabolism to Predict GBM Outcomes - M. Petronek*, C. Lee, V. Monga, J. Buatti, J. St-Aubin, D. Spitz, V. Magnotta, B. Allen
- 3:33 PM **MO-FG-BRB-10** An Integrated Machine Learning and Biomechanical Modeling Guided Deformable Image Registration Framework for Consistent Parenchymal Tissue Tracking in Lung CT Scans - B. Stiehl*, M. Lauria, L. Naumann, D. O'Connell, P. Boyle, I. Barjaktarevic, D. Low, A. Santhanam

Therapy Scientific Session

1:45 PM - 2:45 PM

-Room 202

MO-F-202 Impacting Global Health Through Medical Physics

Moderators: Laurence Edward Court, UT MD Anderson Cancer Center, Houston, TX and Afua Yorke, University of Washington, Seattle, WA

- 1:45 PM **MO-F-202-01** BEST IN PHYSICS (THERAPY): Assessing the Value of Direct Patient Care for Medical Physicists: A Randomized Prospective Phase III Trial - T. Atwood*, D. Brown, J. Murphy, K. Moore, T. Juang, A. Azuara, J. Mayadev, B. Rose, A. Sandhu, A. Mundt, T. Pawlicki
- 1:55 PM **MO-F-202-02** Bridging the Gap in Access to Radiotherapy in Low- and Middle-Income Countries Using a Co-Compensator Based IMRT Device: A Treatment Planning System Study of Head & Neck and Cervical Cases - B. Sengupta*, K. Oh, P. Zaki, P. Sponseller, C. Cardenas, L. Court, E. Ford
- 2:05 PM **MO-F-202-03** Clinical Implementation of Stereotactic Body Radiation (SBRT) Therapy Program in Less Resourced Radiotherapy Facility Using a Locally Designed Lung Phantom - A. Quaye*, E. Addison, M. Pokoo-aikins, E. Osei, A. Yorke
- 2:15 PM **MO-F-202-04** Hypofractionated Radiotherapy for Addressing Disparities and Advancing Global Health in Sub-Saharan Africa - W. Swanson*, J. Chin, W. Ngwa
- 2:25 PM **MO-F-202-05** Medical Physics Quality Assurance and Management Practices in a Low-Middle Income Country (LMIC): An On-Site Visit and Audit - A. Yorke*, E. Ford, S. Tagoe, E. Addison

MEDICAL PHYSICS**Monday, July 11, 2022**

- 2:35 PM **MO-F-202-06** Recommendations for Revision of Conservative Shielding Calculation Factors in NCRP 151 - A. Morice*, M. Schmidt, J. Kavanaugh

Partners in Solutions Therapy

1:45 PM - 3:45 PM

-Innovation Room 1

MO-PinS-INV1 Respiratory Motion Management Systems

Moderators: Christopher Peeler, UT MD Anderson Cancer Center, Houston, TX and Deborah Schofield, AdventHealth Orlando, Clermont, FL

- 1:45 PM **C. Peeler, UT MD Anderson Cancer Center: Respiratory Motion Management Systems**
- 2:15 PM **Transition Introduce Exhibitor**
- 2:16 PM **K. Kvasnica, Accuray: Adapting to Respiratory Motion in Radiation Therapy**
- 2:31 PM **Transition Introduce Exhibitor**
- 2:32 PM **S. Mucic, Varian Medical Systems: End to End (E2E) Solutions for Respiratory Motion Management in Radiotherapy**
- 2:47 PM **Transition Introduce Exhibitor**
- 2:48 PM **P. Barry, Elekta, Inc.: Active Breath-Hold with ABC™ for Motion Management with An Elekta Linear Accelerator for Stereotactic Body Radiotherapy of Lung Cancer**
- 3:03 PM **Transition Introduce Exhibitor**
- 3:04 PM **B. Waghorn, Vision RT Ltd: Vision RT: Surface Guided Radiation Therapy From Head to Toe**
- 3:19 PM **Transition Introduce Exhibitor**
- 3:20 PM **M. Nilsing, C-RAD Positioning AB: Scratching the Surface On SGRT - How to Manage Respiratory Motion**
- 3:35 PM **Q & A**

Partners in Solutions Imaging

1:45 PM - 3:30 PM

-Innovation Room 2

MO-PinS-INV2 3D Mammography

Moderators: Justin Brown, University of Florida, Gainesville, FL and Yu Liu, Medical College of Wisconsin, Milwaukee, WI

- 1:45 PM **J. Brown, University of Florida: 3D Mammography**
- 2:15 PM **Transition Introduce Exhibitor**
- 2:16 PM **M. Radicke, Siemens Healthineers: System Resolution in X-Ray Breast Tomosynthesis**
- 2:36 PM **Transition Introduce Exhibitor**
- 2:37 PM **T. Patel, Hologic, Inc: Hologic 3D Mammography Highlights**
- 2:57 PM **Transition Introduce Exhibitor**
- 2:58 PM **R. Iordache, GE Healthcare: GE Senographe Pristina 3D and Advanced Applications**
- 3:18 PM **Q & A**

Multi-Disciplinary Scientific Session

2:45 PM - 3:45 PM

-Ballroom C

MO-G-BRC MR-Linac Planning and Delivery

Moderators: Minsong Cao, UCLA School of Medicine, Los Angeles, CA and Eenas Omari, Medical College of Wisconsin, Milwaukee, WI

- 2:45 PM **MO-G-BRC-01** Dose-Of-The-Day procedure for UGI Cancer Sites Treated On An Online Adaptive MR-Linac System - O. Semenik*, T. Stanesco, M. Velec, A. Shessel, A. Barry, J. Lukovic, L. Dawson, A. Hosni-Abdalaty
- 2:55 PM **MO-G-BRC-02** Experimental and Monte Carlo Based Determination of Magnetic Field Correction Factors KB in 6 MV Photon Fields - M. Alissa*, D. Czarniecki, A. Schoenfeld, R. Kapsch, S. Frick, K. Zink

2022 Annual Meeting Calendar of Events**Monday, July 11, 2022**

- 3:05 PM **MO-G-BRC-03 First Experimental Demonstration of Time-Resolved Plastic Scintillation Dosimetry On An MR-Linac** - P. Uijtewaal*, P. Borman, B. Cote, Y. Lechasseur, J. Turcotte, S. Lambert-girard, P. Woodhead, S. Woodings, W. de Vries, R. Flores, S. Smith, B. Raaymakers, M. Fast
- 3:15 PM **MO-G-BRC-04 Gated Beam Dosimetry Properties of a 1.5T MR-Linac** - X. Chen*, E. Omari, A. Tai, H. Jassar, Y. Zhang, E. Paulson, E. Ahunbay, C. Sandin, M. Kydonieos, X. Li
- 3:25 PM **MO-G-BRC-05 Monte Carlo Based Continuous Aperture Optimization for Volumetric Modulated Arc Therapy On MR-Linacs** - S. Su*, P. Atwal, I. Popescu
- 3:35 PM **MO-G-BRC-06 Technical Feasibility of Real-Time Cardiorespiratory Motion Mitigation Using MRI-Guided MLC-Tracking On the Unity MR-Linac** - P. Borman*, P. Uijtewaal, O. Akdag, P. Woodhead, B. Raaymakers, M. Fast

SAM Therapy Educational Course

2:45 PM - 3:45 PM

-Ballroom A

MO-G-BRA Recent Task Group Reports on Brachytherapy: TG-222 and TG-303

Moderator: Joann Prisciandaro, University of Michigan, Ann Arbor, MI

- 2:45 PM **Introduction**
- 2:47 PM **H. Zhang, University of South California: Mesh Brachytherapy Planning Techniques and Dosimetric Parameters**
- 2:59 PM **W. Feng, Saint Barnabas Medical Center: Mesh Brachytherapy Quality Management and Medical Event Definition**
- 3:11 PM **K. Hwang, UT MD Anderson Cancer Center: Protocol Development and MRI Basics for the Implementation of MRI in High Dose Rate Brachytherapy**
- 3:23 PM **J. Zoberi, Washington University School of Medicine: Applicator Commissioning and Workflow Development for the Implementation of MRI in High Dose Rate Brachytherapy**
- 3:35 PM **Q & A**

Therapy Scientific Session

2:45 PM - 3:45 PM

-Room 202

MO-G-202 Novel Technology and Applications

Moderators: Mi Huang, Mayo Clinic Florida, Jacksonville, FL and Yu Kuang, University of Nevada, Las Vegas, Las Vegas, NV

- 2:55 PM **MO-G-202-02 Bayesian Optimization of a Novel Intensity Modulated X-Ray Source** - B. Whelan*, P. Keall, J. Perl, J. Wang, S. Trovati, S. Tantawi, R. Fahrig, P. Maxim, M. Shumail, B. Loo
- 3:05 PM **MO-G-202-03 Measurement of Radiation Chemical Yield (G-Value) of Alanine Dosimeter Using Superconducting Quantum Interference Device** - H. Yamaguchi*, N. Matsumoto, H. Takahashi
- 3:15 PM **MO-G-202-04 Viability of the Virtual Cone Technique Using a Fixed Small Multi-Leaf Collimator Field for Small Target Radiosurgery** - T. Neupane*, C. Shang, T. Leventouri, W. Muhammad
- 3:25 PM **MO-G-202-05 Probabilistic Interpretation of a Single-Isocenter Multi-Target SRS Robustness Analysis** - N. Bice*, J. Xue, K. Osterman, D. Barbee, P. Galavis, t. qu, J. Teruel
- 3:35 PM **MO-G-202-06 In Vivo Cherenkov Imaging Analysis Can Detect Inter- and Intra-Fractional Radiotherapy Treatment Anomalies** - S. Decker*, D. Alexander, P. Bruza, R. Zhang, E. Chen, L. Jarvis, D. Gladstone, B. Pogue

MEDICAL PHYSICS**Monday, July 11, 2022****Multi-Disciplinary Interactive ePoster Discussion**

3:45 PM - 4:15 PM

-Exhibit Hall | Forum 1

MO-H345-lePD-F1 Image Registration**MO-H345-lePD-F1-01 Cumulative Dose Evaluation On TSET Patient Fem Using Cherenkov Imaging** - Y. Zhu*, W. Zhong, T. Miao, B. Pogue, T. Zhu**MO-H345-lePD-F1-02 A Patient-Specific Approach for Estimating the Voxel-Level Uncertainty Distribution of Deformable Image Registration in Adaptive Radiotherapy** - S. Meyer*, S. Alam, L. KUO, Y. Hu, L. Cervino, P. Zhang**MO-H345-lePD-F1-03 A Novel Edge Gradient Distance Metric for Automated Evaluation of Deformable Image Registration Quality** - Y. Xu*, J. Ford, J. Williamson, N. Dogan**MO-H345-lePD-F1-04 Define Target Volume for Cardiac Radioablation Surgery Using Integration of Endoventricular Electroanatomic Mapping and Coherent Point Drift** - T. Chen*, H. Wang, Y. Yuan, C. Barbhuiya, D. Barbee**MO-H345-lePD-F1-05 A Practical Guide to Radiotherapy Image Registration Software Commissioning with TG-132 Common Dataset** - Y. Natsuaki*, M. Fan, T. McDaniels, R. Shaw, P. Sansourekidou

-Exhibit Hall | Forum 2

MO-H345-lePD-F2 Machine Learning for Adaptive Radiotherapy**MO-H345-lePD-F2-01 Integration of Attention-GAN to Predict Mid-Treatment Dual-Energy CT for Head and Neck Adaptive Radiation Therapy** - Y. Yan*, R. BAYLISS, H. Emami Gohari, M. Dong, C. Glide-Hurst**MO-H345-lePD-F2-02 NeRP: Implicit Neural Representation Learning with Prior Embedding for Sparsely Sampled Image Reconstruction and Adaptive Radiation Therapy** - L. Shen*, J. Pauly, L. Xing**MO-H345-lePD-F2-03 Clinical Application of Synthetic CTs for Proton Therapy of Lung Cancer Patients** - V. Taasti*, D. Hattu, I. Hadzic, S. Pai, M. Gooding, J. Sage, D. De Ruyscher, A. Traverso, R. Canters**MO-H345-lePD-F2-04 Deep Learning-Based Simultaneous Multi-Phase Deformable Image Registration of Sparse 4D-CBCT** - I. Herzig*, P. Paysan, S. Scheib, F. Schilling, J. Montoya, M. Amirian, T. Stadelmann, P. Eggenberger, R. Füchslin, L. Lichtensteiger**MO-H345-lePD-F2-05 A Novel CT Guided Adaptive Radiotherapy Platform with An End-To-End Integrated Simulation to Treatment Solution** - N. Wen*, Y. Liu, J. Zhou, W. Zhang, L. Wang, C. Ni**Therapy Interactive ePoster Discussion**

3:45 PM - 4:15 PM

-Exhibit Hall | Forum 3

MO-H345-lePD-F3 Dosimetric Tools**MO-H345-lePD-F3-01 Novel Radiochromic Film Dosimeter for Radiotherapy Applications** - N. Chopra*, K. Liu, S. Beddar, E. Schueler**MO-H345-lePD-F3-02 NanoLIC: A Liquid-Filled Ionization Chamber for Experimental Verification of Dose Enhancement with Gold Nanoparticles** - E. Jiménez-ortega*, D. González-castaño, J. López-valverde, F. Gomez, A. Leal Plaza**MO-H345-lePD-F3-03 Using Wavelet Transform to Compute Pixel Sensitivity Maps of MV Portal Imaging Devices** - M. Ahmed***MO-H345-lePD-F3-04 Comparing ArcCHECK and Portal Dosimetry Gamma Index Scores for VMAT TBI** - J. Rembish*, S. Taneja, K. Osterman, N. Bice, J. Teruel, D. Barbee**MO-H345-lePD-F3-05 On the Use of a Commercial Plastic Scintillation Detector for Determination of Detector-Specific Small Field Output Correction Factors of Other Detectors** - M. Besnier*, F. Beaulieu, F. Berthiaume, Y. Cervantes Espinosa, B. Côté, S. Lambert-girard, D. LeBlanc, Y. Lechasseur, F. Therriault-Proulx, L. Archambault, L. Beaulieu, L. Gingras

2022 Annual Meeting Calendar of Events**Monday, July 11, 2022**

-Exhibit Hall | Forum 4

MO-H345-lePD-F4 Particle Therapy**MO-H345-lePD-F4-01 Linear Energy Transfer Comparison Between**

IMPT Brain Plans Produced for Different Beamlines - D. Sievert*,

T. Zhao, T. Zhang, S. Perkins, S. Badiyan, E. Traneus, T. Mazur

MO-H345-lePD-F4-02 Evaluation of Abdomen IMPT Treatments Using Deformed Treatment Planning CT Based on Pre-Treatment

Cone-Beam CT - S. Charyyev*, M. McDonald, A. Dhabaan

MO-H345-lePD-F4-03 ArcPT Plan Optimization: Thinking Out of the

Box with Mixed-Integer Programming - S. Wuycens*, M. Saint-

guillain, G. Janssens, E. Sterpin, J. Lee, K. Souris

MO-H345-lePD-F4-04 Integrating Structure Propagation

Uncertainties in The optimization of Online Adaptive Proton

Therapy Plans - L. Nenoff*, G. Buti, A. Sudhyadhom, G. Sharp,

H. Paganetti

MO-H345-lePD-F4-05 Dependence of LET-Enhancement On Patient-

Specific Anatomy in Intensity Modulated Proton Therapy Treatment

Planning for Rectal Cancer - J. Rivera*, K. Gergelis, R. Mutter, H. Wan

Chan Tseung, C. Hallemeier, N. Remmes, M. Herman, J. Ma

MO-H345-lePD-F4-06 A Nearly-Exact Beam Angle Optimization

Algorithm Via Angle Generation Method - H. Shen*, G. Zhang, Y. Lin,

R. Chen, Y. Long, H. Gao

Multi-Disciplinary Interactive ePoster Discussion

3:45 PM - 4:15 PM

-Exhibit Hall | Forum 5

MO-H345-lePD-F5 Tracking Strategies**MO-H345-lePD-F5-01 Simultaneous Temporal and Dose**

Optimization for MLC Tracking: Cutting Dose Errors in Half -

L. Mejnertsen*, E. Hewson, J. Booth, P. Keall

MO-H345-lePD-F5-02 Investigating a Real-Time Dose Calculation to

Guide Multi-Target MLC Tracking - E. Hewson*, D. Nguyen, A. Le,

J. Booth, P. Keall, L. Mejnertsen

MO-H345-lePD-F5-03 Three-Dimensional Voxel-By-Voxel Motion

Tracking of Mobile Phantoms Using Microwave Imaging -

N. Alsbou*, S. Ahmad, I. Ali

MO-H345-lePD-F5-04 Real-Time Tracking Diaphragm Motion On

During-Treatment KV Cone Beam Projection Images Using

ResNet50 - J. Liang*, Q. Liu, E. Porter, D. Yan

MO-H345-lePD-F5-05 A Deep Learning Fiducial Marker Detection

Algorithm for Beam's-Eye-View Marker Tracking for Liver Cancer

Patients - D. Chrystall*, E. Hewson, C. Sengupta, A. Mylonas, T. Wang,

R. O'Brien, Y. Lee, P. Poulsen, D. Nguyen, P. Keall, J. Booth

MO-H345-lePD-F5-06 A Smartphone-Based Surface Guided

Radiation Therapy Tracking System for Respiratory Monitoring in

Radiation Therapy - D. Capaldi*, M. Axente, A. Yu, L. Skinner,

N. Prionas, E. Hirata, T. Nano

-Exhibit Hall | Forum 6

MO-H345-lePD-F6 Novel Imaging Applications**MO-H345-lePD-F6-01 Treatment Outcomes of Patients Treated with**

the 2nd Generation MR-Guided Focused Ultrasound System for

Symptomatic Uterine Fibroids: Five-Year Follow-Up - J. Browne*,

K. Gorny, N. Hangiandreou, Z. Long, S. Laughlin-tommaso, G. Hesley

MO-H345-lePD-F6-02 Rtdsm: An Open-Source Software for Dose-

Surface Map Generation and Analysis - H. Patrick*, J. Kildea

MO-H345-lePD-F6-03 Characterization of Fluoroscopy Radiation

Dose Associated with the Administration of Y-90 Microspheres for

Radioembolization Therapy - X. Nie*, K. Recca, J. Zhang

MO-H345-lePD-F6-04 A New CBCT Image Analysis for the

Evaluation of Tumor Response to Lung SBRT - Z. Xiu*, X. Wang,

J. Allen, R. McGarry, W. Luo

MO-H345-lePD-F6-05 Achieving An Efficient and Accurate Volume

Doubling Time Estimation of Lung Nodules Detected in a Thoracic

CT (Computed Tomography) Screening Using 3D UNet

Segmentation Model - H. Hsu*, Y. Liu, B. Peng, M. Wu, Y. Lee,

P. Chaudhary, R. DiTusa, T. Lin, S. Jambawalikar

MO-H345-lePD-F6-06 Evaluation of Striatal Functional Connectivity

Changes Across Heavy and Non-Heavy Alcohol Drinking Rhesus

Macaques with Resting State FMRI - K. Ruano Espinoza*

MEDICAL PHYSICS**Monday, July 11, 2022****Therapy Interactive ePoster Discussion**

3:45 PM - 4:15 PM

-Exhibit Hall | Forum 7

MO-H345-lePD-F7 Automation in Treatment Planning**MO-H345-lePD-F7-01 Automating Contouring and Treatment**

Planning for Pediatric 3D-Craniospinal Irradiation Therapy -

S. Hernandez*, J. Parkes, H. Burger, C. Nguyen, D. Rhee, A. Paulino,

T. Netherton, R. Mumme, J. Guma-de La Vega, J. Duryea, C. Cardenas,

R. Howell, D. Fuentes, J. Pollard-Larkin, L. Court

MO-H345-lePD-F7-02 Predicting Dosimetric Impact of Setup

Uncertainties in Multi-Isocenter Spine SBRT Using An Automated

Dose Accumulation Tool - L. Zhang, L. Zhang*, J. Liang,

J. Mechalakos, M. Aristophanous, N. Shah, Y. Hu, P. Zhang, L. Cervino

MO-H345-lePD-F7-03 A Comparison of In-House and Shared

Knowledge-Based Planning (KBP) Models for Bilateral Head and

Neck Treatment Planning - O. Trejo*, H. Li, K. Guida

MO-H345-lePD-F7-04 Plan Quality Evaluation of Automated Non-

Coplanar VMAT for Head and Neck Cancer Radiation Therapy -

L. Smith*, Q. Lyu, K. Woods, Y. Gao, E. Morris, T. Ma, K. Sheng,

S. Tenn, A. Kishan, J. Hegde, M. Steinberg, R. Chin, M. Cao

MO-H345-lePD-F7-05 The Impact of Advanced ESAPI-Based

Automated Total Body Irradiation Treatment Planning On Plan

Standardization - R. Frederick*, L. Van Dyke, J. Lovis, A. Hudson,

G. Pierce

MO-H345-lePD-F7-06 Development and Implementation of An

Automated Planning Algorithm for Multi-Metastatic Stereotactic

Radiosurgery Using Eclipse Scripting - T. Mann*, N. Ploquin, K. Thind

Refreshment Break in Exhibit Hall

3:45 PM - 4:30 PM

-Exhibit Hall

Imaging Blue Ribbon ePoster

4:30 PM - 5:30 PM

-Exhibit Hall | Forum 1

MO-I430-BReP-F1 Imaging BLUE RIBBON**MO-I430-BReP-F1-01 Using the CTDIvol to Estimate the Mid-Liver**

MAs for ACR CT Phantom Scans with the Adult Abdomen Protocol -

P. Chaudhary*, B. Peng, T. Lin, R. DiTusa, H. Hsu, B. Navot,

S. Jambawalikar, K. Hamacher

MO-I430-BReP-F1-02 Diagnostic Performance of Lung Cancer

Screening On Low Dose CT - C. Read*, T. Taylor, K. Smith, M. Cerullo,

L. Strickland, C. Wang, B. Tong, K. Lafata

MO-I430-BReP-F1-03 CT Dose Index Determination in Dose

Modulation Prospectively Involving the Third-Generation Iterative

Reconstruction and Noise Index - A. Scott*, Y. Zhou, C. Lee,

E. Eastman

MO-I430-BReP-F1-04 How Accurate Is in Vivo Noise Estimation

From Patient CT Images? Validation of Methods Against Ensemble

Noise Gold Standard - F. Ria*, H. Setiawan, E. Abadi, J. Solomon,

E. Samei

MO-I430-BReP-F1-05 Dose Assessment On the Use of Tin Spectral

Filtration for CT Colonography - G. Fong*, X. Li, N. Obuchowski,

D. Nachand, F. Dong, A. Primak, W. Karim, B. Herts

Multi-Disciplinary Blue Ribbon ePoster

4:30 PM - 5:30 PM

-Exhibit Hall | Forum 2

MO-I430-BReP-F2 Multi-Disciplinary BLUE RIBBON**MO-I430-BReP-F2-01 An Automated Solution to Presenting Dose**

Distributions of Radiotherapy in a Hospital Information System -

J. Wu*, J. Lin, A. Pompos, D. Sher, K. Westover, R. Timmerman,

S. Jiang, Y. Yan

2022 Annual Meeting Calendar of Events**Monday, July 11, 2022**

MO-I430-BReP-F2-02 Prospective Test-Retest Evaluation of Diffusion-Weighted MRI Sequences On a 1.5T MR-Linac and a 1.5T MR Simulator for Oropharyngeal Cancers in Vivo and in Phantoms - B. McDonald*, T. Salzillo, S. Mulder, S. Ahmed, A. Dresner, K. Preston, R. He, J. Christodouleas, A. Mohamed, J. Wang, P. Van Houdt, A. Dave, M. Boss, C. Fuller

MO-I430-BReP-F2-03 Target Volume Comparison Between Clinicians Comparing the Traditional 17segment Model and Direct Registration of Electroanatomic Maps in Stereotactic Arrhythmia Radioablation for Refractory Ventricular Tachycardia - S. Oh*, G. Shaw, A. Thosani, E. Liu, M. Trombetta, J. Sohn

MO-I430-BReP-F2-04 Quantification of Gold Nanoparticle Radiosensitization On Prostate Cancer Combining Monte Carlo Simulations and the Local Effect Model - R. Schmidt*, D. Hara, J. Ford, N. Dogan, J. Shi, A. Pollack

MO-I430-BReP-F2-05 Development and Validation of Strong Tesla Electron Return Effect Reduction (STEER) Planning Technique for Centrally Located Lung Radiotherapy with MR-Linac System - J. Visak*, B. Cai, M. Lin, A. Pompos, A. Godley, P. Iyengar, C. Park, K. Westover

Therapy Blue Ribbon ePoster

4:30 PM - 5:30 PM

-Exhibit Hall | Forum 3

MO-I430-BReP-F3 Therapy BLUE RIBBON

MO-I430-BReP-F3-01 An AI-Based Approach to Inter-Subject Deformable Image Registration - J. Jiang*, M. Thor, A. Rimner, J. Deasy, H. Veeraraghavan

MO-I430-BReP-F3-02 Metaheuristic Optimization Method for Neutron Capture Therapy - C. Busch*, S. Bogetic, C. Ramsey

MO-I430-BReP-F3-03 The Use of a Mini Ridge Filter with Cyclotron-Based Pencil Beam Scanning Proton Therapy - F. O'grady*, M. Janson, A. Rao, A. Chawla, J. Fan, P. Wang

MO-I430-BReP-F3-04 Robust Multi-Site Deep Learning-Based Dose Predictions for Volumetric Modulated Arc Therapy Using the MR-Linac - G. Tsekas*, G. Bol, B. Raaymakers

MO-I430-BReP-F3-05 To Establish Correlation Between Physical Microdosimetric Quantities Such as Dose Mean Lineal Energy, Target Size and Biological Endpoints Such as DNA Double Strand Breaks in HeLa Cells Irradiated with Iridium-192 High Dose Rate Brachytherapy Source and 225kV X-Rays - S. Dev*, B. Behmand, P. Pater, S. Abbasinejad Enger

International Program

4:30 PM - 6:00 PM

-Room 206

MO-J-206 Addressing Global Needs in Medical Physics Support

Moderators: Eugene Lief, VA Medical Center, Pelham, NY and Wilfred Ngwa, Johns Hopkins University, Washington, DC

4:30 PM **E. Lief, VA Medical Center: Global Needs in Medical Physics Support**

4:35 PM **C. Trauernicht, Stellenbosch University: A Regional Prospective of the Global Medical Physics Collaboration**

5:05 PM **W. Ngwa, Johns Hopkins University: Global Standards of Medical Physics and Ways of Bringing Them Up**

5:13 PM **S. Parker, Wake Forest Baptist Health High Point Medical Center: Global Needs Questionnaire and Its Results**

5:21 PM **A. Yorke, University of Washington: Medical Physics Quality Assurance and Quality Management Practice – A Global Survey**

5:29 PM **I. Barreto, University of Florida College of Medicine: Conference Participation as a Way of Promoting Collaboration With LMIC**

5:37 PM **C. Della Bianca, Memorial Sloan-Kettering Cancer Center: Global Educational Work**

5:45 PM **Q & A****MEDICAL PHYSICS****Monday, July 11, 2022****SAM Imaging Educational Course**

4:30 PM - 6:00 PM

-Room 207

MO-J-207 CT Protocol Optimization for the Real World

Moderator: Timothy Szczukutowicz, University of Wisconsin-Madison, Madison, WI

4:30 PM **C. Jensen, MD Anderson: Oncologic CT of the Abdomen/pelvis: Case Examples of Why Higher Radiation Doses Are Beneficial**

4:50 PM **N. Beckmann, UT Health Science Center: Patient Positioning for IQ Optimization**

5:10 PM **C. Bartels, UW-Madison: Contrast Basics for Protocol Optimization**

5:30 PM **T. Szczukutowicz, University of Wisconsin-Madison: Back and Forth with the Panel: Protocol Case Examples**

5:50 PM **Back and Forth with the Panel: Protocol Case Examples**

SAM Imaging Scientific Symposium

4:30 PM - 6:00 PM

-Room 201

MO-J-201 Attenuation Correction in PET and SPECT with and without Transmission Imaging

Moderator: Youngho Seo, University of California San Francisco, San Francisco, CA

4:30 PM **M. King, UMass Medical Center: Use of Transmission Imaging and CT for SPECT and PET Attenuation Correction**

4:50 PM **T. Pan, UT MD Anderson Cancer Center: Mitigation of Misregistration and Tumor Motion in PET/CT With Data-Driven Gating of Both PET and CT**

5:10 PM **J. Yang, UT Southwestern: CT-Less Attenuation Correction in PET/MRI, Brain PET, and Dedicated Cardiac SPECT Using MRI or Deep Learning Algorithms**

5:30 PM **Y. Du, Johns Hopkins University: Artificial Intelligence for SPECT Attenuation Correction**

5:50 PM **Q & A****Multi-Disciplinary Scientific Symposium**

4:30 PM - 6:00 PM

-Ballroom C

MO-J-BRC Grand Challenges: Deep Learning-Spectral CT, Truth-Based CT, and SIRPRISE Yttrium-90 Microspheres

Moderators: Samuel Armato, The University of Chicago, Chicago, IL and Keyvan Farahani, National Cancer Institute, Bethesda, MD

4:30 PM **S. Armato, The University of Chicago: Introduction**

K. Farahani, National Cancer Institute: Introduction

4:39 PM **E. Sidky, University of Chicago: DL-Spectral CT Challenge Organizers**

X. Pan, University of Chicago: DL-Spectral CT Challenge Organizers

4:48 PM **DL-Spectral CT Challenge, Winners**

4:57 PM **DL-Spectral CT Challenge, Runners-Up**

5:06 PM **E. Samei, Duke University Health System: TrueCT Challenge Organizer**

5:15 PM **TrueCT Challenge, Winners**

5:24 PM **TrueCT Challenge, Runners-Up**

5:33 PM **D. Alvarez, Miami Cancer Institute: SIRPRISE Challenge Organizer**

5:42 PM **SIRPRISE Challenge, Winners**

5:51 PM **SIRPRISE Challenge, Runners-Up**

2022 Annual Meeting Calendar of Events**Monday, July 11, 2022****SAM Therapy Educational Course**

4:30 PM - 6:00 PM

-Ballroom A

MO-J-BRA Managing Implanted Devices

Moderator: Maria Chan, Memorial Sloan Kettering Cancer Center, Basking Ridge, NJ

- 4:30 PM **S. Lim, Memorial Sloan Kettering Cancer Center:** Dosimetric Concerns of Post-Mastectomy Tissue Expanders During External Beam Radiation Therapy
- 4:50 PM **S. Kry, The University of Texas MD Anderson Cancer Center:** Clinical Management of Cardiac Implantable Electronic Device (CIED) Patients
- 5:10 PM **C. Shi, City of Hope:** Clinical Practices of Managing Implantable Medical Devices for Proton Therapy
- 5:30 PM **M. Chan, Memorial Sloan Kettering Cancer Center:** A Review of Managing Commonly Seen Implanted Devices for Radiotherapy Patients
- 5:50 PM **Q & A**

SAM Multi-Disciplinary Scientific Symposium

4:30 PM - 6:00 PM

-Ballroom B

MO-J-BRB Grant Funding Symposium: Pearls and Pitfalls

Moderators: Amit Sawant, University of Maryland School of Medicine, Baltimore, MD and Carri Glide-Hurst, University of Wisconsin-Madison, Middleton, WI

- 4:30 PM **Introduction**
- 4:35 PM **C. Obcemea, NIH:** Program Activities in Radiation Oncology Research at NCI
- 4:50 PM **I. Hancu, NIH:** The Nuts and Bolts of Getting Your Research Funded by NIH
- 5:05 PM **J. Siewerdsen, Johns Hopkins University:** Grant Reviewer Pro Tips: Imaging
- 5:15 PM **A. Sawant, University of Maryland School of Medicine:** Grant Reviewer Pro Tips: Therapy
- 5:25 PM **K. Brock, The University of Texas MD Anderson Cancer Center:** Grant Reviewer Pro Tips: Multi-Disciplinary
- 5:35 PM **Panel Discussion**

SAM Specialty Program The New Era of Radiopharmaceutical Therapy

4:30 PM - 6:00 PM

-Room 202

MO-J-202 Medical Physics Cross-Specialization in the Era of Radiotheranostics

Moderator: Caridad Borrás, Washington, DC

- 4:30 PM **C. Borrás:** Introduction: What is Radiotheranostics?
- 4:35 PM **M. Stabin, NV5/Dade Moeller:** Why Patients Undergoing Radiotheranostics Treatments Need Individualized Dosimetry
- 5:00 PM **M. Martin, Therapy Physics, Inc.:** NRC Regulatory Training and Experience Requirements for a Medical Physicist using Radionuclides to Qualify as an Authorized Medical Physicist
- 5:15 PM **O. Mawlawi, MD Anderson Cancer Ctr.:** Recognition of Medical Physics Certification for Radiotheranostics?
- 5:30 PM **M. Mahesh, Johns Hopkins University:** Potential Reimbursement Pathways for Medical Physics Services
- 5:45 PM **Q & A**

AAPM Awards Ceremony and Reception

6:30 PM - 9:00 PM

-Marriott Marquis

MEDICAL PHYSICS**Tuesday, July 12, 2022****SAM Professional Symposium**

7:30 AM - 9:30 AM

-Room 206

TU-AB-206 Mentorship: Elevating Clinical and Research Careers

Moderators: Ke Sheng, UCLA School of Medicine, Los Angeles, CA and Kathleen Surry, London Regional Cancer Program, London, ON and Jeremy Hoisak, UC San Diego, Chula Vista, CA

- 7:30 AM **K. Sheng, UCLA School of Medicine:** Mentoring Graduate Students for a Creative and Productive Research Career
- 7:35 AM **X. Jia, The University of Texas Southwestern Medical Ctr:** Personalized Career Development for Medical Physics Trainees
- 7:45 AM **B. Pogue, University of Wisconsin-Madison:** A Roadmap for Research in Medical Physics via Academic Medical Centers: The DIVERT Model
- 7:55 AM **K. Sheng, UCLA School of Medicine:** A Graduate Education That Sparks Creativity
- 8:05 AM **M. Bazalova-Carter, University of Victoria:** Becoming an Academic Medical Physicist - From Graduate School to Faculty
- 8:10 AM **K. Sheng, UCLA School of Medicine:** Mentoring Graduate Students Q/A
- 8:25 AM **K. Surry, London Regional Cancer Program:** Mentorship, To Take That Next Step
- 8:35 AM **Y. Lee, Elekta:** Making the Jump from Clinical Medical Physics to Industry
- 8:45 AM **I. Dragojevic, UC San Diego:** Balancing Academic Aspirations and Clinical Service
- 8:55 AM **G. Aldosary, King Abdulaziz Medical City:** An international lens on professional advancement, through education and training
- 9:05 AM **P. Taylor, UT MD Anderson Cancer Center:** Making That Leap to Leadership
- 9:15 AM **J. Hoisak, UC San Diego:** Mentorship, To Take That Next Step Q/A

SAM Imaging Educational Course

7:30 AM - 9:30 AM

-Room 207

TU-AB-207 Advanced MR in the Clinic

Moderator: Ho-Ling Anthony Liu, UT MD Anderson Cancer Center, Houston, TX

- 7:30 AM **Q. Yuan, UT Southwestern Medical Center:** T1/T2/T2* Mapping
- 7:47 AM **X. Zhou, University of Illinois College of Medicine at Chicago:** Diffusion MRI
- 8:04 AM **Y. Jung, University of California, Davis:** Perfusion MRI
- 8:21 AM **H. Liu, UT MD Anderson Cancer Center:** Functional MRI
- 8:38 AM **C. Lin, Mayo Clinic:** MR Elastography
- 8:55 AM **S. Einstein, Penn State Hershey Medical Center:** MR Spectroscopy
- 9:12 AM **Q & A**

SAM Imaging Scientific Symposium

7:30 AM - 9:30 AM

-Room 201

TU-AB-201 Virtual Clinical Trials

Moderators: Ehsan Samei, Duke University Health System, Durham, NC and Lei Ren, University of Maryland, Baltimore, MD

- 7:30 AM **E. Samei, Duke University Health System:** Virtual Trials Foundations
- 7:50 AM **E. Samei, Duke University Health System:** Virtual Trials in Imaging
- 8:10 AM **L. Ren, University of Maryland:** Virtual Trials in Therapy
- 8:30 AM **A. Maidment, University of Pennsylvania:** Virtual Trials IT and Data Infrastructure

2022 Annual Meeting Calendar of Events**Tuesday, July 12, 2022**

- 8:50 AM **A. Badano, Food & Drug Administration: Virtual Trials and Regulatory Science**
 9:10 AM **Q & A**

SAM Multi-Disciplinary Scientific Symposium

7:30 AM - 9:30 AM

-Ballroom C

TU-AB-BRC Biomarkers of Response to Radiation and Immune Modulating Therapies for Advanced Cancer Management

Moderators: David Mankoff, University of Pennsylvania, Philadelphia, PA and Stephen Bowen, University of Washington, School of Medicine, Seattle, WA

- 7:30 AM **D. Mankoff, University of Pennsylvania: Introduction to the Biomarker Landscape**
 7:35 AM **M. Farwell, University of Pennsylvania: Evolving Paradigm for Assessing Response to Immunomodulatory Therapies**
 7:55 AM **R. Li, Stanford University: Radiomics of Radiation and Immune Response Patterns**
 8:15 AM **A. Wu, City of Hope: Clinical and Preclinical Imaging of the Immune System**
 8:35 AM **K. Schalper, Yale University: Role of Molecular Diagnostics and Advanced Tumor Tissue Analysis to Guide Optimal Anti-Cancer Treatment**
 8:55 AM **S. Bowen, University of Washington, School of Medicine: Combining Imaging & Circulating Biomarkers of Response to Personalize Chemo-Immunotherapy and Radiation Therapy**
 9:15 AM **Panel Discussion**

SAM Therapy Educational Course

7:30 AM - 9:30 AM

-Ballroom A

TU-AB-BRA Emerging and Re-Emerging Brachytherapy Treatments

Moderators: Dae Yup Han, Yale University, New Haven, CT and Antonio Damato, Memorial Sloan Kettering Cancer Center, New York, NY

- 7:30 AM **A. Damato, Memorial Sloan Kettering Cancer Center: A New Alpha Particle Treatment Device: Introduction and Clinical Implementation**
 7:47 AM **S. Abbasienejad Enger, Medical Physics Unit, McGill University, Montreal, QC, Canada: A New Alpha Particle Treatment Device: Current and Future Developments**
 8:05 AM **K. Roberts, Yale University: Clinical Aspects of Intravascular Brachytherapy**
 8:20 AM **J. Prisciandaro, University of Michigan: Intravascular Brachytherapy (IVBT) 101: Commissioning and QA**
 8:35 AM **D. Han, Yale University: Clinical Implementation of Intravascular Brachytherapy (IVBT)**
 8:50 AM **D. Aramburu Núñez, Memorial Sloan Kettering Cancer Center: New Development in Brain Brachytherapy**
 9:10 AM **Discussion | Q & A**

SAM Joint Imaging|Therapy Educational Course

7:30 AM - 9:30 AM

-Ballroom B

TU-AB-BRB Advances in Breast Cancer Diagnosis and Treatment: Mammography, Breast Biopsy, SBRT, APBI

Moderators: Sua Yoo, Duke University Medical Center, Durham, NC and Ingrid Reiser, The University of Chicago, Chicago, IL

- 7:30 AM **S. Chou, Massachusetts General Hospital: The Radiologist's Perspective: Imaging Work-Up of a Positive Recall**
 7:50 AM **C. Green, Walter Reed National Military Medical Center: Diagnostic Breast Imaging: 3D Ultrasound and Breast Tomosynthesis Deformable Registration**

MEDICAL PHYSICS**Tuesday, July 12, 2022**

- 8:05 AM **I. Reiser, The University of Chicago: Biopsy Procedures and Margin Assessment**
 8:20 AM **Q & A**
 8:30 AM **S. Yoo, Duke University Medical Center: Pre-Operative Linac Based Breast Radiosurgery**
 8:47 AM **Y. Zhang, UT Southwestern Medical Ctr at Dallas: Pre- and Post-Op Breast SBRT Using Gamma Pod**
 9:04 AM **F. Poenisch, MD Anderson Cancer Center: APBI Using Proton Therapy**
 9:21 AM **Q & A**

Multi-Disciplinary Scientific Session

7:30 AM - 8:30 AM

-Room 202

TU-A-202 Imaging for Treatment Planning

Moderators: Shannon O'Reilly, University of Pennsylvania, Philadelphia, PA and George Ding, Vanderbilt University, Nashville, TN

- 7:30 AM **TU-A-202-01 An Investigation of Using Extracellular Volume Fraction Derived from Dual-Energy CT For pancreatic Tumor Delineation** - G. Godfrey*, G. Noid, P. Knechtges, W. Hall, J. Shah, B. Erickson, X. Li
 7:40 AM **TU-A-202-02 ASSET: Auto-Segmentation of the Seventeen SEGments for Ventricular Tachycardia Ablation in Radiation Therapy** - E. Morris*, R. Chin, T. Wu, C. Smith, S. Nejad-Davarani, M. Cao
 7:50 AM **TU-A-202-03 Automatic Fiducial Marker Localization Via Quantitative Susceptibility Mapping (QSM) in Magnetic Resonance (MR)-Only Simulation for Radiation Therapy (RT) of Prostate Cancer** - C. Shen*, J. Wu, Y. Yan, X. Jia, P. Medin, A. Godley, J. Deng
 8:00 AM **TU-A-202-04 Exploring Clinical Trade-Offs for Brain Tumor Cases with a Probabilistic Clinical Target Volume** - G. Buti*, N. Shusharina, A. Ajdari, E. Sterpin, T. Bortfeld
 8:10 AM **TU-A-202-05 Potential of Diffusion Weighted MRI to Support Definition of the Clinical Target Volume in Soft-Tissue Sarcoma Treatment** - N. Shusharina*, J. Coll-font, C. Nguyen
 8:20 AM **TU-A-202-06 Quantifying the Accuracy of T1- and T2-Weighted MRI for Detecting Whole Brain Tumor Burden** - P. Chen*, D. Healey, S. Mehta, C. Quarles, M. Scarpelli

Therapy Scientific Session

8:30 AM - 9:30 AM

-Room 202

TU-B-202 Advances in SRS/SBRT

Moderators: Patrick Hill, University of Wisconsin, Madison, WI and Lei Wang, Stanford University, Stanford, CA

- 8:30 AM **TU-B-202-01 Deep Reinforcement Learning Based Intelligent Virtual Planner of Gamma Knife Radiosurgery for Vestibular Schwannoma** - Y. Liu, C. Shen, T. Wang, J. Zhang, X. Yang, T. Liu, S. Kahn, H. Shu, Z. Tian*
 8:40 AM **TU-B-202-02 Frameless HyperArc VMAT for Hippocampal Sparing WBRT with SIB Dose to Multiple Brain Metastases** - C. Boyle*, W. St Clair, D. Pokhrel
 8:50 AM **TU-B-202-03 Multi-Institutional Study to Demonstrate An Increase in Variability of Delivered Dose to Patients for SRS Treatments as a Result of Dosimetric Leaf Gap Parameter Tuning** - A. Santoso, O. Blasi, R. Popple, S. Holmes, K. Woods, Y. Vinogradskiy, A. Qureshi, C. Antonakakis, J. Jones, D. Thomas, L. Olsen, L. Olsen*
 9:00 AM **TU-B-202-04 Off-Axis Dosimetric Leaf Gap Measurement and Optimization for Single Isocenter Multi Target Stereotactic Radiosurgery** - I. Rusu*, A. Podgorsak, J. Roeske, H. Kang, A. Sethi
 9:10 AM **TU-B-202-05 Positioning Accuracy of a Robotic Motion Head Platform for Real-Time 6DoF Robotic Motion-Compensated SRS** - K. Farrey*, K. Yenice, P. Ferjancic, E. Flores-Martinez, R. Wiersma, C. Denis, J. Kelly

2022 Annual Meeting Calendar of Events**Tuesday, July 12, 2022**

9:20 AM **TU-B-202-06 Producing High Quality Cranial SRS Plans with 4Pi Planning Technique** - G. Narayanasamy*, N. Shrestha, M. Bimali, P. Sabouri, F. Kalantari, Z. Su

Multi-Disciplinary Interactive ePoster Discussion

9:30 AM - 10:00 AM

-Exhibit Hall | Forum 2

TU-D930-lePD-F2 Deep Learning for Treatment Verification and Assessment

TU-D930-lePD-F2-01 Methodology for Radiosensitivity-Related Genetic Pathway Identification Using Interpretable Deep Learning and Radiosensitivity Prediction Model - E. Kim*, W. Lee

TU-D930-lePD-F2-02 Deep Learning-Based 3D Proton-Acoustic Imaging Using a Matrix Ultrasound Array for Dose Verification in Prostate Proton Therapy - Z. Jiang*, L. Sun, W. Yao, L. Xiang, L. Ren
TU-D930-lePD-F2-03 Accurate Correction of Abdominopelvic CBCT with Internal Air Pockets Using a Hybrid Method of Deep Learning and Deformable Registration for Online Verification of Proton Range - J. Uh*, C. Wang, C. Hua

TU-D930-lePD-F2-04 A Deep Learning Model with Radiomics Analysis Integration for Glioblastoma Post-Resection Survival Prediction - Z. Hu*, Z. Yang, J. Zhao, H. Zhang, E. Vaio, K. Lafata, F. Yin, C. Wang

TU-D930-lePD-F2-05 Deep Learning-Based Prognosis Prediction of Diffuse Large B-Cell Lymphoma in PET Images - C. Qian*, C. Jiang, D. Cao, X. Kai, J. Sun, G. Liugang, N. Xinye

Therapy Interactive ePoster Discussion

9:30 AM - 10:00 AM

-Exhibit Hall | Forum 3

TU-D930-lePD-F3 Radiobiology and Small Animal Systems

TU-D930-lePD-F3-01 Ex Vivo Quantitative X-Ray Fluorescence Analysis of Gold Nanoparticle Based On Machine Learning - D. Hara*, W. Tao, N. Dogan, A. Pollack, J. Ford, J. Shi

TU-D930-lePD-F3-02 On Achievable Dose-Rates in a Small Animal Radiation Research Platform (SARRP) and Energy Dependency of EBT3, EBT-XD, and HD-V2 Radiochromic Films - D. Mulrow*, Y. Hao, W. Lo, T. Mazur, L. Sobotka, A. Darafsheh

TU-D930-lePD-F3-03 Dosimetric Comparison of Small Animal Intensity-Modulated Versus 3D Conformal Radiotherapy Using a Computer-Generated Cardiac Mouse Phantom - J. Slagowski*, E. Pearson, G. Redler, D. Olivera Velarde, H. Halpern, R. Tummala, B. Aydogan

TU-D930-lePD-F3-04 Modeling Differential Tumor and Normal-Tissue Response of FLASH-RT Via Radiolytic Oxygen Depletion and Reactive Oxygen Species - J. Ma*, M. Tang, H. Gao

TU-D930-lePD-F3-05 Tumor-Volume Correction for Equivalent Uniform Dose (EUD) Derived from Tumor Control Probability (TCP) - A. Chvetsov*

-Exhibit Hall | Forum 4

TU-D930-lePD-F4 Treatment Planning and Verification Techniques

TU-D930-lePD-F4-01 Robust, Applicator-Free and Bolus-Free Mixed Electron-Photon Beam Radiation Therapy for Soft Tissue Sarcoma - V. Heng*, M. Serban, C. Freeman, M. Renaud, J. Seuntjens

TU-D930-lePD-F4-02 Breast Proton Therapy Treatment and Optimization Recommendations - R. Ger*, K. Sheikh, B. Floreza, E. Gogineni, V. Croog, H. Li, J. Wright

TU-D930-lePD-F4-03 Using Brass Mesh Bolus to Improve Patient Surface Dose for IMRT/VMAT Irradiation of Chest Wall and Groin Using 6 MV and 6 MV FFF Beams - J. Cui*, J. Cui, J. Cui, Z. Xu, C. Cheng, I. Mustaphalli, F. Momin, W. Yang, H. Gallogly, S. Bian, O. Ragab, L. Ma

TU-D930-lePD-F4-04 Benchmarking Publicly Available Knowledge-Based Planning Models with An In-House Trained Model - J. Zhang*, J. Wolf, K. Luca, O. Kayode, J. Bradley, X. Yang, T. Liu, J. Roper
TU-D930-lePD-F4-05 On the Use of Fully-Automated HyperArc VMAT Module Or Halcyon RDS for Angiosarcoma of Total Scalp Irradiation - D. Pokhrel*, M. Bernard, W. St Clair, M. Kudrimoti

MEDICAL PHYSICS**Tuesday, July 12, 2022**

TU-D930-lePD-F4-06 Geometric and Dosimetric Verification of the GammaPod System - K. Yun*, A. Dare, Y. Liang, S. Oh, M. Goss, D. Pavord

Multi-Disciplinary Interactive ePoster Discussion

9:30 AM - 10:00 AM

-Exhibit Hall | Forum 5

TU-D930-lePD-F5 IGRT Motion Management and Tracking

TU-D930-lePD-F5-01 Impact of Vertical Pixel Binning on Markerless Tumor Tracking in Dual Energy Imaging - M. Kaur*, J. Luce, H. Mostafavi, M. Lehmann, D. Morf, L. Zhu, H. Kang, M. Walczak, M. Harkenrider, J. Roeske

TU-D930-lePD-F5-02 Stability of a Hands-Free Ultrasound Probe During Free-Breathing Imaging with Applications to Motion Management in IGRT - S. Jupitz*, B. Bednarz

TU-D930-lePD-F5-03 Surface Monitoring for Dynamic Trajectory Radiotherapy - A Feasibility Study - H. Loebner*, J. Bertholet, D. Frauchiger, M. Stampanoni, P. Manser, M. Fix

TU-D930-lePD-F5-04 Four-Dimensional Magnetic Resonance Fingerprinting (4D-MRF) Using Motion Compensation and Alternating Direction Method of Multipliers (ADMM) for Liver Cancer Radiotherapy - C. Liu*, T. Li, P. Cao, E. Hui, Y. Wong, Z. Wang, H. Xiao, W. Li, X. Teng, J. Zhang, A. Cheung, H. Lee, M. Ying, J. Cai

TU-D930-lePD-F5-05 Dosimetric Comparison of Gated Versus Reconstructed Non-Gated Treatment Delivery of Pancreas Lesions in MRgRT - B. Lee*, S. Hoffman, A. Podgorsak, A. Abusubha, G. Sawa, A. Sethi, W. Small, T. Refaat

Professional Interactive ePoster Discussion

9:30 AM - 10:00 AM

-Exhibit Hall | Forum 6

TU-D930-lePD-F6 Professional Interactive ePoster Discussion

TU-D930-lePD-F6-01 Development and Implementation of a Comprehensive CT Protocol Website Updated Automatically with An In-House Software - E. Eastman*, A. Scott, C. Lee, Y. Zhou

TU-D930-lePD-F6-02 A Software Tool for Optimizing Daily and Monthly CT Quality Control Program Including Self-Notification and Database Management: A Pilot Deployment On a Single CT Scanner - H. Hsu*, B. Peng, Y. Liu, Y. Lee, M. Wu, T. Lin, P. Chaudhary, R. DiTusa, S. Jambawalikar

TU-D930-lePD-F6-03 COVID-19 Pandemic Induced Practice Changes in the Study of The American Association of Physicists in Medicine (AAPM) Northern California Chapter - X. Liu*, J. Zhang, A. Yu, V. Sehgal, X. Qi, D. Ruan, M. Barker, Z. Shen, S. Goetsch

TU-D930-lePD-F6-04 The Pivotal Role of Diagnostic Medical Physics Practice in Driving Imaging Industry Standards. How a Local Effort May Petition a Successful Global Change - I. Bercha*

TU-D930-lePD-F6-05 Implementation of Accountability Strategy to Improve Package Time - W. Duggar*, L. Weatherall, M. Nittala, T. Thomas, E. Mundra, J. Otts, W. Woods, C. Yang, S. Vijayakumar

TU-D930-lePD-F6-06 Evolution of Work-From-Home Preferences in Radiation Therapy Physics and Dosimetry From 2020 to 2022 - A. Riegel*, J. Antone, Y. Cao

Therapy Interactive ePoster Discussion

9:30 AM - 10:00 AM

-Exhibit Hall | Forum 7

TU-D930-lePD-F7 Particle Therapy Dosimetry

TU-D930-lePD-F7-01 Predicting Electronic Stopping Power in Materials for Incident Ions Using Machine Learning - S. Taghizadehghahremanloo, F. Akbari*, D. Shvydka, N. Sperling, E. Parsai

TU-D930-lePD-F7-02 Development of a Log File Based Patient-Specific Quality Assurance for PBS Proton Therapy Using Open-Source Software Within the RayStation Treatment Planning System - B. Chiang*, J. Meyer, T. Wong, D. Maes

2022 Annual Meeting Calendar of Events**Tuesday, July 12, 2022**

TU-D930-lePD-F7-03 OSLD and TLD Characterization in Carbon Ion Scanning Beams - P. Taylor*, M. Ciocca, A. Mirandola, S. Hartzell, S. Kry

TU-D930-lePD-F7-04 Patient-Specific Quality Assurance for Proton Spot-Scanning Small Fields - C. Chen*, J. Liu, Y. Yang, G. Yu, M. Kang, C. Barker, H. Lin, S. Huang

TU-D930-lePD-F7-05 Line-Of-Response (LOR)-Based Mid-Range Probing—towards Online Proton Range Verification and Plan Adaptation - L. Ma*, M. Chen, D. Yang, Y. Zhong, X. Jia, X. Gu, Y. Shao, W. Lu

Imaging Interactive ePoster Discussion

9:30 AM - 10:00 AM

-Exhibit Hall | Forum 8

TU-D930-lePD-F8 Advances in CT II

TU-D930-lePD-F8-01 Correction Factors for Partial Volume Averaging in the Quantification of Radiopaque Nanomaterial-Embedded Resorbable Polymers - A. Melancon*, J. Damasco, M. Jacobsen, J. Perez, M. Bernardino, E. San Valentin, K. Court, B. Godin, R. Layman, M. Melancon

TU-D930-lePD-F8-02 Development of a Generalizable, Vendor-Neutral Metal Object Insertion Framework to Simulate Metal Devices and Image Artifacts in Interventional CT - C. Favazza*, L. Ren, W. Cao, A. Missert, A. Ferrero

TU-D930-lePD-F8-03 Differentiating Immune Checkpoint Inhibitor-Related Pneumonitis from Radiation Pneumonitis for NSCLC Patients Using CT-Based Radiomics - Q. Qiu*, L. Xing, Y. Yin, Q. Wen

TU-D930-lePD-F8-04 Extraction of Osteosclerotic Regions Using Diffusion Equation - K. Doi*, Y. Anetai, H. Takegawa, Y. Koike, S. Nakamura, T. Nishio

TU-D930-lePD-F8-05 Fast and Motion Robust CT Super Resolution Using Sinogram - y. yoon*, J. Chun, J. Baek, J. Choi, J. Kim

TU-D930-lePD-F8-06 Tin Filter for Large Patient Routine Abdominal Scan: A Feasibility Study - D. Huo*, X. Zhou, W. Zhou

-Exhibit Hall | Forum 9

TU-D930-lePD-F9 MRI Radiomics and Segmentation

TU-D930-lePD-F9-01 Patient Fine-Tuning of NnUnet for MRI Organ Autosegmentation - J. Hogan*, D. Yang, B. Baumann, Y. Duan, C. Zhao

TU-D930-lePD-F9-02 Weakly Supervised Convolutional Neural Networks for Segmentation of Diffusely Abnormal White Matter in Multiple Sclerosis - B. Musall*, A. Kamali, J. Lincoln, V. Ly, X. Luo, P. Narayana, R. Gabr

TU-D930-lePD-F9-03 Monitoring the Effect of Cariporide On Intracellular PH in Brain Tumors by Chemical Exchange Saturation Transfer MRI - M. Mozaffari*, N. Nystrom, A. Li, M. Bellyou, T. Scholl, R. Bartha

TU-D930-lePD-F9-04 Normalization of Temperature Effects for Quality Assurance of Quantitative Prostate Apparent Diffusion Coefficient (ADC) Imaging Across Multiple Sites - K. Hwang*, J. Yung, R. Stafford, A. Venkatesan

TU-D930-lePD-F9-05 Effects of DWI Pulse Sequence Parameters and Type On ADC Map Calculation at 3T in a Quantitative MRI Phantom - J. Yu*, A. Silva, Y. Zhou, A. Panda

TU-D930-lePD-F9-06 MRI IDEAL IQ Radiomics-Based Assessment of Pelvic Bone Marrow Changes After Concurrent Chemo-Radiotherapy for Cervical Cancer - X. QIN*, C. Wang, G. Gong, Y. Yin

Coffee Break | Visit the Vendors

9:30 AM - 11:00 AM

-Exhibit Hall

Expanding Horizons

9:30 AM - 10:30 AM

-Exhibit Hall | Forum 1

MEDICAL PHYSICS**Tuesday, July 12, 2022****Multi-Disciplinary Interactive ePoster Discussion**

10:00 AM - 10:30 AM

-Exhibit Hall | Forum 2

TU-D1000-lePD-F2 CBCT-guided Adaptive Radiotherapy

TU-D1000-lePD-F2-01 A Protocol for Implementing CBCT Guided Daily Online Adaptive Radiotherapy Safely and Efficiently to Maximize Patient Benefit - X. Ray*, K. Kisling, G. Kim, K. Moore

TU-D1000-lePD-F2-02 Introducing An Isotoxic Paradigm for Delivery of Ultra-High Doses to Oligometastatic Disease Using Ethos Online Adaptive Radiotherapy - G. Redler*, H. Musunuru, R. Katipally, C. Lynch, N. Nasser, A. Olson, G. Gan, J. Luke, S. Chmura

TU-D1000-lePD-F2-03 Benchmark CBCT-Based Adaptive Online Radiotherapy for SAbR of Thoracic Malignancies - Y. Gonzalez*, B. Meng, D. Parsons, B. Hrycushko, T. Zhuang, B. Cai, Y. Zhang, K. Westover, P. Iyengar, A. Godley, S. Jiang, M. Lin

TU-D1000-lePD-F2-04 Clinical Experience with a CBCT Dose Reconstruction Process to Inform Adaptive Radiotherapy for Head and Neck Cancer Patients - A. McNiven*, B. Chan, J. Moseley, V. Kong, A. Shessel, J. Bissonnette, M. Velec, J. Waldron, A. Hope, T. Patel, T. Tadic

TU-D1000-lePD-F2-05 Adaptive Radiotherapy Via Deep Learning-Based Quantitative Cone-Beam CT Imaging - L. Wan*, H. Wu, S. Xu, B. Sun, W. Zhao

Therapy Interactive ePoster Discussion

10:00 AM - 10:30 AM

-Exhibit Hall | Forum 3

TU-D1000-lePD-F3 SBRT/SRS Measurement Techniques

TU-D1000-lePD-F3-01 Target Localization Error Estimation in Linac Based SRS Treatment - S. Gholami, G. Narayanasamy*, F. Kalantari, P. Sabouri, Z. Su

TU-D1000-lePD-F3-02 Long-Term SRS Isocenter Coincidence Stability Assessed with a Hidden Target Phantom and a Custom Winston-Lutz Analysis Software - B. Winey*, M. Bussiere

TU-D1000-lePD-F3-03 A New Approach to the Characterization of a Radiosurgery System: End-To-End Testing Using Phantom-Based 3D Dosimetry System - Y. Wang*, P. Fan, F. Li, A. Xu, T. Wang, J. Choi, J. Adamovics, C. Wu

TU-D1000-lePD-F3-04 Lung SBRT: Quality Management for Improved Outcomes - I. Iftimia*, A. Mckee, A. Nixon, H. Hsu, P. Halvorsen

TU-D1000-lePD-F3-05 Dosimetric Comparison of Linac-Based SRS and Gamma Knife Plans for Arteriovenous Malformations - B. Garcia*, E. Calugaru, B. Chitti, B. Delacruz, A. Goenka, J. Chang

-Exhibit Hall | Forum 4

TU-D1000-lePD-F4 SBRT/SRS Planning

TU-D1000-lePD-F4-02 An IMRT Auto-Planning Agent for Dose Gradient Control in Regions with Conflicting Constraints - H. Stephens*, J. Zhang, Y. Ge, Q. Wu, Q. Wu

TU-D1000-lePD-F4-03 A 3D Dosimetric Data-Driven Multipath Network for Outcome Prediction in Early-Stage Non-Small Cell Lung Cancer Patients Treated with Stereotactic Body Radiotherapy - T. Arsenaault*, A. Amini, B. George, S. Bhat, L. Bailey, P. Vempati, B. Young, C. Towe, P. Linden, Y. Sun, N. Zaorsky, D. Spratt, R. Muzic, T. Biswas, T. Podder

TU-D1000-lePD-F4-04 SBRT Lung Treatment Planning Methods to Lower the Modulation Factor - A. Boria, G. Narayanasamy, D. Desai, F. Kalantari*, P. Sabouri, Z. Su

TU-D1000-lePD-F4-05 Automated Treatment Planning Framework for Single-Isocenter Multi-Target (SIMT) Cranial SRS Treatments - J. Teruel*, J. Xue, N. Bice, P. Galavis, M. Malin, A. Rea, A. Mccarthy, T. Daniels, D. Barbee

TU-D1000-lePD-F4-06 Evaluating Plan Quality for Multitarget Brain Tumors: Single Iso Multi Target Vs Single Iso Single Target Plans - J. Byrne*, E. Salari, E. Parsai

2022 Annual Meeting Calendar of Events**Tuesday, July 12, 2022****Multi-Disciplinary Interactive ePoster Discussion**

10:00 AM - 10:30 AM

-Exhibit Hall | Forum 5

TU-D1000-lePD-F5 Imaging for Treatment Guidance**TU-D1000-lePD-F5-01 Impact of Multi-Energy CT On Tumor****Delineation of Primary Head and Neck Tumors** - J. Miller*, L. DiMaso-Myers, P. Harari, B. Morris, E. Merfeld, J. Shah, A. Burr, M. Lawless**TU-D1000-lePD-F5-02 Predicting Bladder Dose Constraints Using Combined Overlap Volume Histogram and Relative Pose Method: Quantitative Characterization of the Reference Bladder for Setup** - Y. Lao*, M. Cao, S. Tenn, J. Neylon, K. Sheng**TU-D1000-lePD-F5-03 Using 4D-CBCT in Single-Fraction Lung SBRT** - P. Qi*, S. Balik, T. Zhuang, L. Lu, G. Videtic, K. Stephans, P. Xia**TU-D1000-lePD-F5-04 Using Liver Dome Positions to Improve the Breath-Hold Reproducibility for Gated Liver SBRT** - B. Guo*, K. Stephans, N. Woody, P. Xia**TU-D1000-lePD-F5-05 Daily Dose Assessment On Organ Variation and Target Coverage for Post-Operative Prostate Cancer Patients** - S. Lo*, B. Laughlin, T. DeWees, M. Beckett, K. Tinnon, C. Vargas, S. Schild, N. Yu, J. Rwigema, S. Keole, W. Wong, Y. Rong**TU-D1000-lePD-F5-06 Implementation of Intrafraction Motion Review (IMR) for Stereotactic Treatment of the Spine for Patients with Spinal Fixation Hardware** - A. Cetnar*, M. Degnan, J. Pichler, S. Jain, S. Morelli**Professional Interactive ePoster Discussion**

10:00 AM - 10:30 AM

-Exhibit Hall | Forum 6

TU-D1000-lePD-F6 Professional Interactive ePoster Discussion**TU-D1000-lePD-F6-01 Study On the Effect of Scanning Timing On MR Simulation of Small Volume Brain Metastases** - M. Chen*, G. Gong, L. Wang, Y. Su, Y. Yin**TU-D1000-lePD-F6-02 An Application for the Collection Of Weekly MRI QC Across the Emory Campus** - A. Salazar*, P. Sharma, M. Goette, H. Kitajima, J. Nye**TU-D1000-lePD-F6-03 A System-Wide Magnetic Resonance Safety Program as a Value Add Proposition** - R. Parker, B. Betz, Y. Zhou, D. Buer, A. Gray, E. Boote***TU-D1000-lePD-F6-04 Multi-Institution Consensus for Acquisition of Portable Chest Radiographs Through Glass Barriers** - J. Wait***TU-D1000-lePD-F6-05 Time Cost of Off-Label MR Scanning of Patients with Active Implants** - A. Panda*, S. Fahrenholtz, Y. Zhou, E. Rand, J. Yu, J. Hines, W. Sensakovic**TU-D1000-lePD-F6-06 Automatic Classification of Digital X-Ray Quality Control Images with a Modified GoogLeNet** - H. Ai***Therapy Interactive ePoster Discussion**

10:00 AM - 10:30 AM

-Exhibit Hall | Forum 7

TU-D1000-lePD-F7 Adaptive and Biology-guided Radiation Therapy**TU-D1000-lePD-F7-01 Deep Learning-Based Automatic Segmentation Framework for Targets and OARs in Cervical High Dose Rate (HDR) Brachytherapy** - R. Ni*, S. Kim, B. Haibe-kains, A. Rink**TU-D1000-lePD-F7-02 Develop a Treatment Plan That Would Result in Highly Localized IFN β production in Well-Oxygenated Tumor Cells** - A. Almalki*, D. Miles, R. Stewart, Y. Chang, K. Stantz**TU-D1000-lePD-F7-03 Implementation of a Knowledge-Based Planning Model for Gastrointestinal (GI) Site Specific Tumors in Photon Radiotherapy** - A. Kassaei*, A. Dimofte, P. Irmen, J. Marcel, T. Zhu**TU-D1000-lePD-F7-04 A Single Institution Comprehensive Time Analysis of KV-CBCT Based Online Daily Adaptive Radiotherapy Treatment Deliveries** - C. Cardenas*, J. Belliveau, R. Popple, D. Stanley**MEDICAL PHYSICS****Tuesday, July 12, 2022****TU-D1000-lePD-F7-05 Salvage Spine Stereotactic Re-Irradiation Treatment Planning and Daily Plan Adaptation Using MR-Linac** - E. Han*, D. Yeboa, T. Briere, J. Yang, P. Castillo, M. Pham, H. Wang
TU-D1000-lePD-F7-06 Feasibility and Dosimetric Benefit of Online Adaptive Radiotherapy (ART) for Treatment of Post-Hysterectomy Endometrial Cancer - T. Wang*, S. Yoon, N. Taunk, T. Li**Imaging Interactive ePoster Discussion**

10:00 AM - 10:30 AM

-Exhibit Hall | Forum 8

TU-D1000-lePD-F8 CT Dosimetry**TU-D1000-lePD-F8-01 Practical, Robust CTDI100 Equivalent Measure Using a Thimble Ion Chamber and a Photodiode** - B. Maloney*, P. Patel, D. Bakalyar**TU-D1000-lePD-F8-02 Determining Water Equivalent Diameter and Size Specific Dose Estimates from CT Localizers** - C. Burton***TU-D1000-lePD-F8-03 Dose-Reduced Kidney Stone CT Protocol Optimized with Size-Specific Dose Estimate** - S. Deng*, A. Kulkarni, N. Harris, L. Zimmermann, R. Al Helo, D. Jordan**TU-D1000-lePD-F8-04 Validation of a Method to Calculate Longitudinal Dose Profile for the Patients with Body CT Exams** - X. Li*, T. Marschall, K. Yang, B. Liu**TU-D1000-lePD-F8-05 The UF-MSK Computational Phantom Library for Medical Dosimetry: Pediatric Males and Females** - J. Baggett*, R. Dawson, Y. Wang, W. Smither, L. Dinwiddie, S. Wehmeier, S. Domal, C. Kofler, L. Carter, J. Ocampo Ramos, P. Zanzonico, A. Kesner, W. Bolch**TU-D1000-lePD-F8-06 Patient-Specific Estimate of Effective Dose and Fetus Dose in Potentially Pregnant Pediatric Patients Undergoing Low Dose Pelvis CT Scan** - R. Nosrati*, M. Callahan, S. Voss, D. Zhang

-Exhibit Hall | Forum 9

TU-D1000-lePD-F9 Radiography and Fluoroscopy**TU-D1000-lePD-F9-01 3D X-Ray-Induced Acoustic Fluoroscopy for Interventional Operations** - S. Wang*, V. Ivanov, P. Pandey, L. Sun, K. Bjegovic, L. Xiang**TU-D1000-lePD-F9-02 Evaluation of a Mobile C-Arm Fluoroscopic Device with Cone Beam Tomosynthesis Capabilities for Pediatric Orthopedic Spinal Procedures** - S. McKenney*, L. Phillips, J. Wang**TU-D1000-lePD-F9-03 Validation of Fluoroscopy Peak Skin Dose in Radimetrics** - S. Dharmadhikari*, R. Neill, Z. Glass**TU-D1000-lePD-F9-04 Image Quality Preservation with Substantial Dose Reduction for Adults and Pediatric Patients Using New C-Arm CBCT Protocols** - S. Brady*, N. Hilvert, J. Racadio**TU-D1000-lePD-F9-05 Assessing the Limits of Virtual Grid Technology as a Replacement for Physical Grids in Long-View Radiography** - D. Beaulieu***TU-D1000-lePD-F9-06 Image Corrections for a 1000 Fps High-Speed Angiography (HSA) Photon Counting Detector (PCD) System** - X. Wu*, S. Setlur Nagesh, A. Shields, E. Vanderbilt, C. Ionita, D. Bednarek, S. Rudin**Multi-Disciplinary Interactive ePoster Discussion**

10:30 AM - 11:00 AM

-Exhibit Hall | Forum 1

TU-D1030-lePD-F1 Imaging for Patient Setup and Target Alignment**TU-D1030-lePD-F1-01 Automated Patient Positioning Error Detection with Orthogonal Setup DRR and Treatment KV Radiograph Image Pairs** - J. Charters*, R. Petragallo, D. Luximon, J. Neylon, D. Low, J. Lamb**TU-D1030-lePD-F1-02 Facilitation of Automated Estimation of Setup Uncertainty in Pediatric Proton Therapy Patients with Deep Learning and Optical Character Recognition** - J. Becksfort*, A. Saunders, M. Marker, T. Russell, T. Merchant, C. Hua

2022 Annual Meeting Calendar of Events**Tuesday, July 12, 2022**

TU-D1030-lePD-F1-03 End to End Comparison of Surface Guided Imaging Versus Orthogonal X-Ray Imaging for Single Isocenter, Multiple Target SRS Treatment Using 3D Gel Head Phantoms - V. Bry*, D. Saenz, E. Pappas, G. Kalaitzakis, N. Papanikolaou, K. Rasmussen

TU-D1030-lePD-F1-04 Evaluation of Different Holographic Visualization Techniques for Surface-Guided Patient Alignment Using Mixed Reality (MixR) and the Microsoft HoloLens 2 - A. Jackson*, P. Johnson, E. Feldman, A. Martin-gomez

TU-D1030-lePD-F1-05 A Simplified and Accurate Off-Axis Winston-Lutz Method for Single-Isocenter Multiple-Target Stereotactic Radiosurgery - A. Eagle*, M. Tallhamer, J. Keener, S. Geneser

-Exhibit Hall | Forum 2

TU-D1030-lePD-F2 Deep Learning for Image Segmentation

TU-D1030-lePD-F2-01 An Initial Longitudinal Performance Analysis for a Deep Learning-Based Medical Image Segmentation Model - B. Wang*, M. Dohopolski, T. Bai, M. Lin, J. Wu, D. Nguyen, S. Jiang

TU-D1030-lePD-F2-02 Deep Learning Method for Objective Segmentation of Radiation-Induced Dermatitis in Skin Photographs - Y. Park*, S. Choi, M. Cho, J. Son, M. Han, J. Kim, H. Kim, D. Kim, J. Kim, C. Hong

TU-D1030-lePD-F2-03 Segmentation of the Left Anterior Descending Coronary Artery Using Curvature-Guided Deep Learning for Lung Cancer Patients Treated with Radiotherapy - Y. Yue*, A. Curtis, S. Ng, K. Huang, T. Lautenschlaeger

TU-D1030-lePD-F2-04 Deep Learning Based Automatic Contour Quality Assurance for Auto-Segmentation of Abdominal Organ - N. Dang*, Y. Zhang, A. Amjad, J. Ding, C. Sarosiek, X. Li

TU-D1030-lePD-F2-05 An Independent Evaluation of Six Commercially Available Deep Learning-Based Auto Segmentation Platforms Using Large Multi-Institutional Datasets - L. Yuan*, Q. Chen, Y. Rong, H. Al-Hallaq, S. Benedict, B. Cai, Q. Wu, K. Latifi, Y. Xiao, X. Yang, X. Qi

Therapy Interactive ePoster Discussion

10:30 AM - 11:00 AM

-Exhibit Hall | Forum 3

TU-D1030-lePD-F3 Radiation Protection and Shielding

TU-D1030-lePD-F3-01 Evaluation and Use of Shielding Materials for Critical Organ Protection in 50 KV Intrabeam Intraoperative Radiation Therapy (IORT) - S. Trichter*, A. Swistel, J. Ng, F. Kulidzhanov, J. DeWyngaert

TU-D1030-lePD-F3-02 Dosimetric Evaluation of Lead Vinyl for Shielding and Skin Collimation in Electron Radiotherapy - X. Liu*, M. Chan, J. Park, D. Wang

TU-D1030-lePD-F3-03 Deliver Proton FLASH Beams with a Saturated Monitor Chamber for Pre-Clinical Studies - H. Lin*, Y. Yang, G. Yu, M. Kang, S. Wei, S. Huang, Q. Chen, H. Zhai, C. Chen, M. Folkerts, C. Shi

TU-D1030-lePD-F3-04 Reporting the In-Field Thermal Neutron Yield of Elekta Versa HD Linear Accelerator Using Foil Activation Technique for Different Irradiation Conditions - V. Raveendran*, R. Ph

-Exhibit Hall | Forum 4

TU-D1030-lePD-F4 Pre-Clinical Modeling

TU-D1030-lePD-F4-01 Radiosensitization effect and Therapeutic Benefits of Small Sized Gold Nanoparticles - S. Yasmin-Karim*, U. Ibeh, M. Moreau, N. Bih, U. Ngwa, B. Ziberi, R. Kumar, G. Makrigiorgos, W. Ngwa

TU-D1030-lePD-F4-02 A Cell Survival Model That Accounts for Sublethal Radiation Damage - O. Vassiliev*, R. Mohan

TU-D1030-lePD-F4-03 A Mechanistic Radiotherapy Tumor Response Model Predicts Primer Fractions Would Significantly Improve Local Control - J. Jeong*, Z. Gouw, J. Sonke, J. Deasy

MEDICAL PHYSICS**Tuesday, July 12, 2022**

TU-D1030-lePD-F4-04 Monte Carlo Simulations of Microdosimetry and Radiolytic Species Production for Preclinical Proton Beam Using GATE and Geant4-DNA - G. Fois*, G. Blain, S. Chiavassa, G. Delpon, V. Fiegel, F. Haddad, C. Koumeir, V. Métié, F. Poirier, V. Potiron, N. Servagent, S. Supiot, J. Vandendorre, L. Maigne

TU-D1030-lePD-F4-05 Gamma FLASH – Ultra-High Dose Rate Radiation Therapy Using Co-60: A Proof-Of-Principle Study of An Animal-Oriented FLASH Platform - Y. Ma*, S. Wang, L. Zhuang

TU-D1030-lePD-F4-06 An in Vivo Oxygen Transport Model Describing the Physiological Impact On FLASH Radiotherapy - L. Guo*, K. Wang

Multi-Disciplinary Interactive ePoster Discussion

10:30 AM - 11:00 AM

-Exhibit Hall | Forum 5

TU-D1030-lePD-F5 Advancing Science to Expand Access to State-of-the-Art Applications in Medical Physics: I

TU-D1030-lePD-F5-01 Progressively Refined Joint Registration-Segmentation (ProSeg) of Gastrointestinal Organs at Risk from Cone-Beam CT - J. Jiang*, J. Hong, N. Tyagi, M. Reyngold, C. Crane, H. Veeraraghavan

TU-D1030-lePD-F5-03 Phytoradiotherapy - An Integrative Approach to Cancer Treatment - S. Avery*, T. Alfonzetti, D. Goia, S. Yasmin-Karim, W. Ngwa

TU-D1030-lePD-F5-04 An AI-Based Stereotactic Radiosurgery Management Web Platform for Brain Metastases - Z. Yang*, M. Chen, H. Jiang, Z. Wardak, S. Stojadinovic, R. Timmerman, T. Dan, W. Lu, X. Gu

TU-D1030-lePD-F5-05 Fully-Automated Hybrid Proton-Photon Therapy Via Fraction Optimization - W. Li*, W. Zhang, Y. Lin, R. Chen, H. Gao

TU-D1030-lePD-F5-06 Cancer Detection of Colonoscopy with Transformer-Based Learning Algorithm - X. Jia*, Y. Zhou, S. Sang, Y. Shen, M. Laurie, H. Ren, M. Islam, O. Eminaga, J. Liao, L. Xing

Professional Interactive ePoster Discussion

10:30 AM - 11:00 AM

-Exhibit Hall | Forum 6

TU-D1030-lePD-F6 Professional Interactive ePoster Discussion

TU-D1030-lePD-F6-01 Image-Guided Margin Assessment to LINAC-Based Radiosurgery for Single and Multiple Brain Metastases Based on Post-Treatment CBCT Shifts - T. Reynolds*, M. Ozer

TU-D1030-lePD-F6-02 Prediction of Three Dimensional Dose Distribution Using a Convolutional Neural Network for Prostate Radiation Volumetric Modulated Arc Therapy - J. Yuan*, R. Kashani, N. Zaorsky, D. Spratt, Y. Zheng

TU-D1030-lePD-F6-03 A Real-Time System for Detecting Couch Collisions During Radiotherapy Treatment Delivery - L. Yuan*, J. Patrick, E. Klein, Z. Saleh

TU-D1030-lePD-F6-04 Quantifying Deformation Versus Artifact On 4DCT and Breathhold Scans - A. Bejarano Buele*, Z. Whiting, J. McKay, T. Denton, J. Tanyi, J. Treas, A. Bowers, A. Searfoss, I. Butterwick, D. Grimm, J. Grimm

TU-D1030-lePD-F6-05 Developing An Expedited Stereotactic Treatment Planning Workflow with a Culture of Safety - J. Baker*, A. Riegel, Y. Cao, L. Potters

TU-D1030-lePD-F6-06 Optimization of Isocenter Position for Multiple Brain Metastases Single-Isocenter Stereotactic Radiosurgery - Z. Shen*, H. Wang, Y. Shao, Z. Xu

Therapy Interactive ePoster Discussion

10:30 AM - 11:00 AM

-Exhibit Hall | Forum 7

TU-D1030-lePD-F7 Proton Therapy II

TU-D1030-lePD-F7-01 Development of An Auto-Commissioning Procedure for An Electron Beam Model Applicable to Photon MLC Shaped Beams - M. Fix, D. Frei, S. Mueller*, G. Guyer, H. Loebner, W. Volken, P. Manser

2022 Annual Meeting Calendar of Events**Tuesday, July 12, 2022**

TU-D1030-lePD-F7-02 Expanding Microdosimetry to Include Indirect Damage Induced by Protons and Alpha Particles - A. Bertolet*, G. Tamborino, H. Paganetti, J. Schuemann

TU-D1030-lePD-F7-03 Integrating Ethos Adaptive Radiotherapy in a Multi-Vendor Environment: First Clinical Experience - J. Pursley*, C. Foote, D. McClatchy, S. Yan, D. Gierga

TU-D1030-lePD-F7-04 Independent Beam Modeling for the RefleXion X1 System - M. Chen*, J. Tan, G. Gibbard, Y. Park, T. Zhuang, M. Lin, K. Wang, X. Jia, B. Cai, W. Lu

TU-D1030-lePD-F7-05 Preliminary Evaluation of the High-Resolution Diode Array for ZAP-X Dosimetry - Y. Niu*, Y. Yuan, A. Rashid, D. Pang

TU-D1030-lePD-F7-06 Modeling DNA Metaphase Structure Based On Loop Extrusion Model - B. Dinh*, Y. Lai, Y. Chi

History Symposium

11:00 AM - 12:15 PM

-Room 206

TU-E-206 Developments in the Historical Evolution of Medical Physics: Radiation Therapy Dose Fractionation and Ultrasound Imaging

Moderator: Slavik Tabakov, King's College London - KSCMD, London,

11:00 AM Introduction

11:05 AM C. Orton, Wayne State University: The Evolution of Radiation Therapy Dose Fractionation

11:25 AM S. Tabakov, King's College London - KSCMD: A Historical Perspective of Medical Ultrasound

11:45 AM L. Rothenberg, Memorial Sloan-Kettering Cancer Center: Remembering Edith Quimby

12:00 PM C. Ling, Varian Medical Systems: The Legacy of Edward R. Epp

SAM Imaging Educational Course

11:00 AM - 12:15 PM

-Room 207

TU-E-207 The Use of Cumulative Effective Dose - An Educational Debate

Moderator: Ehsan Samei, Duke University Health System, Durham, NC

11:00 AM Introduction

11:15 AM M. Rehani, Massachusetts General Hospital: In Favor of Tracking Cumulative Dose

11:45 AM R. Milman, University of Colorado School of Medicine: Against Tracking Cumulative Dose

Imaging Scientific Session

11:00 AM - 12:15 PM

-Room 201

TU-E-201 X-Ray-Based Breast Imaging

Moderators: Ingrid Reiser, The University of Chicago, Chicago, IL and Ioannis Sechopoulos, Radboud University Medical Centre, Nijmegen,

11:00 AM TU-E-201-01 Keynote Address - I. Reiser*

11:15 AM TU-E-201-02 Deep-Unfolding-Network-Based Non-Blind Deblurring for Fast-Rotating Wide-Angle Digital Breast Tomosynthesis - S. Hyun*, S. Lee, H. Kim, S. Cho

11:25 AM TU-E-201-03 Dual Energy Material Decomposition for Volumetric Breast Density Measurement Using a Direct-Indirect Dual-Layer Detector - H. Huang*, X. Duan, W. Zhao

11:35 AM TU-E-201-04 Lesion Detectability in Contrast-Enhanced Breast CT Using Model Observers - S. Lyu*, A. Hernandez, C. Abbey, J. Boone

11:45 AM TU-E-201-05 Secondary Electron Energy Spectrum from High-Energy Contrast-Enhanced Mammography - H. Kitten*, A. Sampson

MEDICAL PHYSICS**Tuesday, July 12, 2022**

11:55 AM TU-E-201-06 Use of Radiomic Texture to Characterize Relationships Across the Parenchymal Field in Women with Breast Cancer on FFDs and Specimen Radiographs - N. Baughan*, H. Li, L. Lan, M. Embury, G. Whitman, R. El-Zein, I. Bedrosian, M. Giger

12:05 PM TU-E-201-07 A Workflow to Improve Dual-Energy Spectral Separation in Direct-Indirect Dual-Layer Detector for Contrast-Enhanced Breast X-Ray Imaging - X. Duan*, H. Huang, W. Zhao

Multi-Disciplinary Scientific Symposium

11:00 AM - 12:15 PM

-Ballroom C

TU-E-BRC The Anne and Donald Herbert Distinguished Lectureship in Modern Statistical Modeling

Moderator: Radhe Mohan, UT MD Anderson Cancer Center, Houston, TX

11:00 AM R. Mohan, UT MD Anderson Cancer Center: Introduction

11:10 AM S. Bentzen, University of Maryland School of Medicine: Models and Modeling in Radiation Oncology-What's Next?

12:05 PM Q & A

SAM Therapy Educational Course

11:00 AM - 12:15 PM

-Ballroom A

TU-E-BRA IROC - Who is Who in Support of NCI Clinical Trials

Moderators: Koren Smith, UMass Chan Medical School/IROC RI, Lincoln, RI and Paige Taylor, UT MD Anderson Cancer Center, Houston, TX

11:00 AM S. Kry, The University of Texas MD Anderson Cancer Center: IROC Overview, Site Qualification, and Credentialing

11:20 AM K. Smith, UMass Chan Medical School/IROC RI: IROC Case Review and Data Management

11:35 AM Y. Xiao, University of Pennsylvania: IROC Protocol Development and Research Activities

11:50 AM M. Boss, American College of Radiology: IROC Imaging Services

12:05 PM Q & A

SAM Multi-Disciplinary Scientific Symposium

11:00 AM - 12:15 PM

-Ballroom B

TU-E-BRB AI Clinical Translation: Opportunities and Pitfalls

Moderator: Steve Jiang, UT Southwestern Medical Center, Dallas, TX

11:00 AM H. Veeraraghavan, Memorial Sloan Kettering Cancer Center: Experience in Deploying AI Auto-Segmentation for Clinical Use: New Areas of Development

11:15 AM T. Purdie, The Princess Margaret Cancer Centre - UHN: Automation Bias in the Clinical Deployment of AI

11:30 AM J. Kang, University of Washington: Translating Minimally-Supervised NLP to Interpretable Clinical AI

11:45 AM S. Jiang, UT Southwestern Medical Center: Individualization Is the Key for the Successful Implementation of AI in Clinical Routine

12:00 PM Q & A

2022 Annual Meeting Calendar of Events**Tuesday, July 12, 2022****SAM Specialty Program The New Era of Radiopharmaceutical Therapy**

11:00 AM - 12:15 PM

-Room 202

TU-E-202 ICRU Report on Dosimetry-Guided Radiopharmaceutical Therapy

Moderator: Roger Howell, Rutgers New Jersey Medical School, Newark, NJ

11:00 AM **G. Sgouros, Johns Hopkins Medical Institute: Introduction to the ICRU Report on Dosimetry-Guided Radiopharmaceutical Therapy**11:15 AM **K. Sjogreen Gleisner, Lund University: Nomenclature and Levels of Prescribing, Recording and Reporting**11:30 AM **R. Hobbs, Johns Hopkins University: RBE and Bioeffect Modeling**11:45 AM **Y. Dewaraja, University of Michigan: Implementation Examples**12:00 PM **Q & A****Lunch Break - On Your Own**

12:15 PM - 1:45 PM

Multi-Disciplinary Interactive ePoster Discussion

1:15 PM - 1:45 PM

-Exhibit Hall | Forum 2

TU-F115-lePD-F2 MR-Only Simulation and Targeting

TU-F115-lePD-F2-01 Urethral Inter-Fractional Geometric and Dosimetric Variations of Prostate Cancer Patients: A Study Using An On-Board MRI - J. Pham*, R. Savjani, S. Yoon, T. Yang, Y. Gao, M. Cao, P. Hu, K. Sheng, D. Low, M. Steinberg, A. Kishan, Y. Yang

TU-F115-lePD-F2-02 Synthetic CT Generation from Truncated MRI Using a Modified CycleGAN Model - X. Chen*, Y. Zhao, L. Court, H. Wang, T. Pan, J. Phan, X. Wang, J. Yang

TU-F115-lePD-F2-03 Generating Synthetic CT From T1-Weighted Brain MRI Using a Linear Mixed-Effects Regression Model -

A. Pandey, S. Yoganathan, B. Guo, R. Zhang*

TU-F115-lePD-F2-04 Assessment of MR-Generated Synthetic CT for Treatment Planning of Gamma Knife Radiosurgery - t. qu*, J. Xu, J. Xue, D. Barbee, D. Kondziolka, H. Wang

TU-F115-lePD-F2-05 Ferumoxytol Relaxivity and Signal Enhancement for MR-Guided Radiation Therapy (MRgRT) at 0.35T: A Feasibility Study - J. Pham*, C. Colbert, M. Cao, K. Nguyen, Y. Yang

Therapy Interactive ePoster Discussion

1:15 PM - 1:45 PM

-Exhibit Hall | Forum 3

TU-F115-lePD-F3 External Beam Modeling

TU-F115-lePD-F3-01 Comparison of Aperture Complexity Between VMAT Plans Using Conventionally Flattened (FF) and Flattening-Filter-Free (FFF) Beams - Q. Liu*, J. Liang

TU-F115-lePD-F3-02 Standardized Commissioning Approach for VersaHD Linacs to Use a Single Beam Model - L. Fisher, P. Potrebko, A. Iwinski Sutter, T. Nurushev, T. Fox, S. Patton*

TU-F115-lePD-F3-03 Clinical Validation of a User Defined Ethos Flattening Filter Free Beam Model in RayStation - D. McClatchy*, C. Foote, S. Yan, J. Pursley

TU-F115-lePD-F3-04 Tuning An Analytical Proton Therapy Dose Calculation Algorithm for Penumbral Agreement in Collimated Pencil Beam Scanning Proton Therapy - L. Bennett*, K. Erhart, N. Nelson, J. Yu, A. Gutierrez, S. Rana, B. Smith, P. Hill, D. Hyer, T. Geoghegan, K. Patwardhan, W. Culbertson, R. Flynn

TU-F115-lePD-F3-05 Dependence of Subgroup Size On Predictive Quality Assurance for Beam Asymmetry Using Statistical Process Control and Autoregressive Integrated Moving Average Modeling - J. Li*, M. Chan, D. Wang

MEDICAL PHYSICS**Tuesday, July 12, 2022**

-Exhibit Hall | Forum 4

TU-F115-lePD-F4 Novel Dosimetry

TU-F115-lePD-F4-01 Silicon Devices for Monitoring Electron FLASH Beams - O. Villarreal*, A. Vignati, M. Abujami, D. Bersani, E. Data, C. Galeone, S. Giordanengo, F. Mas Milian, E. Medina, D. Montalvan Olivares, V. Monti, R. Cirio, R. Sacchi

TU-F115-lePD-F4-02 Comparison of Absorbed Dose Determination Using the Updated IAEA TRS398 CoP with TRS398 CoP and AAPM TG51 Addendum Protocol - M. diMayorca*, M. Tavakoli, S. Wadi-Ramahi, P. Andreo, M. Huq

TU-F115-lePD-F4-03 Fading Correction for Calibration of a Novel 2D OSL-Film Dosimeter - M. Caprioli*, L. Delombaerde, M. De Saint-hubert, L. De Freitas Nascimento, R. De Roover, S. Galvez Febles, K. Himschoot, B. Van Der Heyden, D. Vandenbroucke, P. Leblans, W. Crijns

TU-F115-lePD-F4-04 Comprehensive Evaluation in the Use of Gafchromic EBT3 Film for High-Dose Radiation Therapy - K. Liu*, P. Jorge, R. Moeckli, E. Schueler

TU-F115-lePD-F4-05 Novel Detector Array for Radiotherapy Beam Monitoring: Resistive Electrode Array (REA) - P. Zygmanski*, J. Lima, A. Liles, V. Zhang, I. Gineitaite, E. Sajo, D. Brivio

Multi-Disciplinary Interactive ePoster Discussion

1:15 PM - 1:45 PM

-Exhibit Hall | Forum 5

TU-F115-lePD-F5 Advancing Science to Expand Access to State-of-the-Art Applications in Medical Physics: II

TU-F115-lePD-F5-01 Energy Matrix Based Energy Layer Optimization for Proton Arc Therapy - G. Zhang*, H. Shen, Y. Lin, R. Chen, Y. Long, H. Gao

TU-F115-lePD-F5-02 FLASH Optimization Via Modified Orthogonal Matching Pursuit - Y. Zhu*, Y. Lin, X. Zhang, R. Chen, H. Gao

TU-F115-lePD-F5-03 Feasibility of Combining Transmission Beams and Spread-Out Single-Energy Bragg Peaks for Proton FLASH Radiotherapy - C. Ma*, X. Yang, R. Liu, L. Lin, D. Bohannon, T. Liu, J. Bradley, J. Zhou

TU-F115-lePD-F5-04 Evaluation of a Laser Doppler Vibrometer for Quality Assurance of FLASH and Conventional Proton Treatment -

S. Avery*, J. Liu, W. Nie, A. Kassaei, L. Dong, M. Pineda, J. Eichenberger, K. Parodi, C. Sehgal

TU-F115-lePD-F5-05 Practical Consideration of Single-Energy Bragg Peak FLASH-RT for Lung Tumor Treatment Planning - M. Kang*, S. Wei, I. Choi, C. Simone, H. Lin

TU-F115-lePD-F5-06 Development of a Proton SBRT FLASH Treatment Technique with Dose, Dose Rate, and LET Optimization Using Patient Specific 3D Ridge Filters - R. Liu*, S. Charyyev, N. Wahl, W. Liu, J. Zhou, X. Yang, W. Dynan, M. Kang, K. Higgins, J. Bradley, L. Lin

Professional Interactive ePoster Discussion

1:15 PM - 1:45 PM

-Exhibit Hall | Forum 6

TU-F115-lePD-F6 Professional Interactive ePoster Discussion

TU-F115-lePD-F6-01 Pencil Beam Scanning Proton Treatment Planning for Breast Cancer Patients with Metal Tissue Expander - W. Xiong*, H. Lin, A. Zhai, M. Kang, G. Yu, I. Choi

TU-F115-lePD-F6-02 Two-Year Experience on Uniform-WET Couch in Proton Therapy - A. Goughenour*, J. McCullar, G. MacLennan, R. Rahimi Darabad, F. O'grady, C. Bamberger, A. Parniani, A. Rao, J. Fan, P. Wang

TU-F115-lePD-F6-03 An Estimate of Fetal Dose from Permanent Cs-131 Brachytherapy Implants in the Brain - A. Turner*, C. Ferreira

TU-F115-lePD-F6-04 Dosimetric Evaluation of Stereotactic Prostate Reirradiation Using Cyberknife as An Alternative to HDR Brachytherapy for Locally Recurrent Prostate Cancer - X. Zhang*, S. Jang, S. Lee, S. Keohan, A. Hirsch

2022 Annual Meeting Calendar of Events**Tuesday, July 12, 2022**

TU-F115-lePD-F6-05 Introducing an AAPM Working Group on International Dosimetry Integration: A Resource for the AAPM Membership to Identify Where Primary Standards and Protocols Are Needed for Clinical Applications - S. Abbasinejad Enger, P. Alvarez, W. Culberson, R. Kapsch, S. Kry, M. McEwen, M. Mitch, B. Muir, M. Pankuch, J. Renaud, R. Tosh*, K. Working

TU-F115-lePD-F6-06 Clinical Implementation of An In-House Made Perineal Template for Low Dose Rate Prostate Brachytherapy Treatment - J. Urribarri*

Therapy Interactive ePoster Discussion

1:15 PM - 1:45 PM

-Exhibit Hall | Forum 7

TU-F115-lePD-F7 SBRT Planning and Dose Delivery

TU-F115-lePD-F7-01 IMRT and SBRT Treatment Planning Study for the First Clinical Installation of Biology-Guided Radiotherapy System - D. Pham*, E. Simiele, D. Breikreutz, D. Capaldi, O. Oderinde, B. Han, M. Surucu, L. Vitzthum, M. Gensheimer, H. Bagshaw, A. Chin, D. Chang, N. Kovalchuk

TU-F115-lePD-F7-02 Characterization of An Independent 3D Dose and MU Verification Software for Lung SBRT Treatments - G. Baltz*, R. Manigold, S. Kirsner

TU-F115-lePD-F7-03 Is SBRT Treatment for Central/Ultra-Central Lung Tumor a Feasible Option on Ring-Gantry Halcyon Linac? - S. McCarthy*, M. Bernard, W. St Clair, M. Kudrimoti, D. Pokhrel

TU-F115-lePD-F7-04 Single-Isocenter/Multi-Target (SMT) SBRT Treatment on Ring-Gantry Halcyon: Risk of Target(s) Coverage Loss - R. Mallory*, M. Bernard, M. Kudrimoti, D. Pokhrel

TU-F115-lePD-F7-05 Toward Providing Informed Guidance for Normal Tissue Setup Uncertainty in Prostate SBRT - F. Forghani*, M. Schmidt, A. Price, F. Reynoso, N. Knutson, M. Prusator, T. Mazur

Imaging Interactive ePoster Discussion

1:15 PM - 1:45 PM

-Exhibit Hall | Forum 8

TU-F115-lePD-F8 Multi-Energy CT

TU-F115-lePD-F8-01 Impact of Iterative Beam-Hardening Correction on Iodine and Calcium Quantification in Multi-Energy CT - J. Miller*, L. DiMaso-Myers, P. Wohlfahrt, J. Shah, M. Lawless

TU-F115-lePD-F8-02 Direct Dose Measurements Comparing Single-Energy and Dual-Energy Head CT Scan - N. Correa*, M. Glassell, C. Schaeffer, I. Barreto, M. Arreola

TU-F115-lePD-F8-03 Verification of Dual-Energy CT Calcium Quantification Accuracy in a Phantom System - C. Wood*, M. Jacobsen, B. Amini, D. Schellingerhout, W. Yang, R. Layman

TU-F115-lePD-F8-04 Which Dual Energy CT Method Uses Less Energy? - M. Lipford*, J. Schoen, J. Kim, T. West, J. Burdette, C. Geer, J. Sachs, C. Whitlow

TU-F115-lePD-F8-05 Quantification Accuracy of Iodine and Iron Loads in Liver Lesions of An Anthropomorphic Phantom Simulating a Multi-Phase Liver CT - Y. Zhou*, A. Scott, C. Lee, E. Eastman

TU-F115-lePD-F8-06 Model-Based Pulse Pileup and Charge Sharing Compensation for Photon Counting Detectors - K. Taguchi*, C. Polster, P. Segars, N. Aygun, K. Stierstorfer

SAM Professional Symposium

1:45 PM - 3:45 PM

-Room 206

TU-GH-206 Recruitment and Applications from Grad School through Early Career: Both Points of View

Moderators: Joshua Wilson, Duke University Health System, Raleigh, NC and David Pearson, University of Toledo, Toledo, OH

1:45 PM Introduction

1:55 PM K. Hendrickson, University of Washington: The Program's POV: Applicant Review and Screening

MEDICAL PHYSICS**Tuesday, July 12, 2022**

2:10 PM R. Rodgers, Vanderbilt University School of Medicine: The Applicant's POV: Material Preparation and Applying

2:25 PM T. Juang, UC San Diego: The Program's POV: Strategies for Structured and Virtual Interviewing

2:40 PM T. Ritter, VCU Health System: The Applicant's POV: The Interview

2:55 PM Y. Perry, University of Toledo: The Program's POV: Selection and Deciding

3:25 PM J. Brindle, Rhode Island Hospital / Warren Alpert Medical: The Applicant's POV: Selection and Deciding

3:40 PM E. Covington, University of Michigan: The Applicant's POV: Selection and Deciding

SAM Imaging Educational Course

1:45 PM - 2:45 PM

-Room 207

TU-G-207 Read With an Expert: Mammography

Moderator: Shinn-Huey Chou, Massachusetts General Hospital, Boston, MA

1:45 PM S. Chou, Massachusetts General Hospital: Read With an Expert: Mammography

2:30 PM Q & A

SAM Imaging Scientific Symposium

1:45 PM - 3:45 PM

-Room 201

TU-GH-201 Advances in Magnetic Resonance Imaging

Moderator: Yingli Yang, UCLA, Los Angeles, CA

1:45 PM Y. Cao, The University of Michigan: Recent Advances in Diffusion and Perfusion MRI

2:10 PM Y. Hu, Mayo Clinic Arizona: Tissue Microenvironment MRI

2:35 PM R. Lattanzi, NYU: Multi-Parametric Quantitative MRI

3:05 PM J. Cai, The Hong Kong Polytechnic University: Toward Push-Button Free-Breathing Quantitative MRI

3:25 PM Q & A

SAM Therapy Educational Course

1:45 PM - 3:45 PM

-Ballroom C

TU-GH-BRC Brain Mets Management: Registries and Automation for Longitudinal Assessment

Moderators: Kenneth Bernstein, NYU Langone Medical Center, New York, NY and Taoran Li, University of Pennsylvania, Philadelphia, PA

1:45 PM K. Bernstein, NYU Langone Medical Center: Brain Metastases Outcome Data for Patients with Significant Survival Improvements

1:50 PM W. Shi, Thomas Jefferson University: Changing Landscape of Brain Metastasis Treatment: Clinical Challenges and How Physics Can Help

2:10 PM D. Schlesinger, University of Virginia Health Systems: Lessons from the Conception and Development of a Prospective National SRS Registry

2:30 PM H. Lin, University of California San Francisco: Obtaining Deeper Insights from EMR Clinical Notes for the Longitudinal Management of Brain Mets

2:50 PM X. Gu, Stanford University: An AI-Enabled Multiple Brain Metastases Courses Management Platform: Automatic Target Detection and Dosimetric Tracking

3:10 PM T. Li, University of Pennsylvania: Treatment Planning for Longitudinal Multi-Course SRS for Brain Metastasis

3:30 PM Q & A

2022 Annual Meeting Calendar of Events**Tuesday, July 12, 2022****Therapy Scientific Session**

1:45 PM - 2:45 PM

-Ballroom A

TU-G-BRA Space-time Modulation of Treatment

Moderators: Minsun Kim, University of Washington, Seattle, WA and Sina Mossahebi, University of Maryland Medical School, Baltimore, MD

- 1:45 PM **TU-G-BRA-01 A Novel Method for Placing Lattice Targets for Spatially Fractionated Stereotactic Body Radiation Therapy (SFSBRT)** - L. Buchanan*, P. Keigwin, M. Kaluarachchi, M. Schwer, G. Cardarelli
- 1:55 PM **TU-G-BRA-02 A Novel Transportable Set-Up for Preclinical Proton Minibeam Therapy** - M. Ahmed*, E. Beyreuther, S. Bicher, J. Meyer, J. Pawelke, T. Schmid, J. Stolz, J. Wilkens, S. Bartzsch
- 2:05 PM **TU-G-BRA-03 A Simulation of the Effect of Respiration-Induced Motion On the Delivered Dose Distribution in LATTICE Radiation Therapy** - A. Van Slyke*, M. Mashayekhi, J. Molitoris, W. Regine, B. Yi, B. Zhang, S. Chen
- 2:15 PM **TU-G-BRA-04 A Study of Shifting 3D Dose GRID for Adaptive Spatially Fractionated Brain Radiosurgery** - L. Ma*, H. Zhang, E. Chang
- 2:25 PM **TU-G-BRA-05 Automated Optimization of Lattice Geometry to Maximize Dose Heterogeneity in Spatially Fractionated Radiation Therapy (SFRT)** - P. Hill*, R. BAYLISS, Z. Morris, C. Glide-Hurst
- 2:35 PM **TU-G-BRA-06 Multi-Field 3D MLC-Based Spatially Fractionated Radiotherapy for Large and Bulky Masses: Risk of Intrafraction Motion Errors** - C. Lemos*, M. Bernard, W. St Clair, M. Kudrimoti, D. Pokhrel

Science Council Session

1:45 PM - 3:45 PM

-Ballroom B

TU-GH-BRB Science Council Session: Advancing Science to Expand Access to State-of-the-Art Applications in Medical Physics

Moderators: Kristy Brock, The University of Texas MD Anderson Cancer Center, Houston, TX and Jan Seuntjens, Princess Margaret Cancer Centre, Toronto, ON

- 1:45 PM **TU-GH-BRB-01 Opportunistic CT AI Screening for Low Bone Mineral Density** - S. Fahrenholtz*, I. Banerjee, A. Tariq, B. Patel, W. Sensakovic
- 1:57 PM **TU-GH-BRB-02 A Phase II Clinical Trial Design to Assess Intestinal Toxicity Reduction with Adaptive External Beam Radiation Therapy in the Treatment of Cervical Cancer (ARTIA-Cervix)** - K. Moore*, X. Ray, D. Branco, C. McCann, S. Davidson, L. Levin, K. Russell, S. Kohlmyer, J. Mayadev
- 2:09 PM **TU-GH-BRB-03 Augmented Colorectal Cancer Detection Using Self-Attention-Incorporated Deep Learning** - X. Jia*, S. Sang, Y. Zhou, H. Ren, M. Laurie, M. Islam, O. Eminaga, J. Liao, L. Xing
- 2:21 PM **TU-GH-BRB-04 Deep Learning-Based Echocardiographic Image Segmentation for Ultrasound-Guided Cardiac Intervention** - Y. Lei, M. Axente, Y. Fu*, J. Roper, J. Bradley, T. Liu, X. Yang
- 2:33 PM **TU-GH-BRB-05 Automated Robotic Targeting System for In-Vivo Histotripsy Treatment** - M. Wagner*, S. Periyasamy, A. Kutlu, J. Swietlik, T. Ziemlewicz, M. Speidel, F. Lee, P. Laeseke
- 2:45 PM **TU-GH-BRB-06 Image Synthesis with Weak Supervision Model for Brachytherapy of Prostate Cancer** - Y. Pang*, Y. Huang, X. Chen, B. Lian, T. Royce, P. Yap, J. Lian
- 2:57 PM **TU-GH-BRB-07 An Implementation of Gastrointestinal Tract Motility in a 4D Imaging Phantom of Human Anatomy** - E. Subashi*, P. Segars, H. Veeraraghavan, J. Deasy, N. Tyagi

MEDICAL PHYSICS**Tuesday, July 12, 2022**

- 3:09 PM **TU-GH-BRB-08 Improved MV-CBCT Using a Novel Multilayer Imager** - T. Harris*, M. Jacobson, M. Myronakis, M. Lehmann, P. Huber, D. Morf, I. Ozoemelum, R. Berbeco
- 3:21 PM **TU-GH-BRB-09 In Vivo Demonstration of 3D-Dosimetry and Radiation Beam Localization Via Ionizing Radiation Acoustics Imaging (iRAI) in a Rabbit Model** - I. Oraiqat*, I. El Naqa, W. Zhang, N. Ba Sunbul, C. Tichacek, K. Chang, X. Wang, E. Moros, P. Carson, K. Cuneo, M. Matuszak, D. Litzenberg
- 3:33 PM **TU-GH-BRB-10 Intelligent Automatic Treatment Planning for Prostate Cancer Stereotactic Body Radiation Therapy** - Y. Gao*, C. Shen, Y. Gonzalez, X. Jia, Y. Park

SAM Specialty Program The New Era of Radiopharmaceutical Therapy

1:45 PM - 2:45 PM

-Room 202

TU-G-202 New IAEA Programs and Projects on Radiopharmaceutical Therapy

Moderators: Robert Hobbs, Johns Hopkins University, Baltimore, MD and Peter Knoll, IAEA, Vienna,

- 1:45 PM **P. Knoll, IAEA: IAEA Activities in Radiopharmaceutical Therapy**
- 2:00 PM **Y. Dewaraja, University of Michigan: IAEA Publication On Dosimetry for Radiopharmaceutical Therapy**
- 2:10 PM **K. Sjogreen Gleisner, Lund University: IAEA Publication On Dosimetry for Radiopharmaceutical Therapy**
- 2:20 PM **R. Hobbs, Johns Hopkins University: IAEA CRPE2.30.05. Dosimetry in Radiopharmaceutical Therapy in Personalized Patient Treatment**
- 2:35 PM **Q & A**

SAM Educational Topic-Specific Guided Tours-Therapy

1:45 PM - 3:45 PM

-Room 209A

TU-TOUR-209A Independent Dose Verification Solutions (Limited Capacity: First Come, First Served)

Moderator: Kenneth Cashion, AdventHealth Orlando, Orlando, FL

- 1:45 PM **B. Chiang, University of Washington: Independent Dose Verification Solutions**
- 2:15 PM **Group Tours to the following vendors: J Hamilton with Sun Nuclear Corporation; C Bohorquez with LAP of America Laser Applications, Inc.; C Gnaster with Radformation; A Nagle with IBA Dosimetry**

SAM Imaging Educational Course

2:45 PM - 3:45 PM

-Room 207

TU-H-207 Ultrasound Elastography in the Clinic

Moderator: Zaiyang Long, Mayo Clinic, Rochester, MN

- 2:45 PM **S. McAleavey, University of Rochester: Principles and Applications of Ultrasound Elastography**
- 3:00 PM **I. Rosado-Mendez, University of Wisconsin - ADCL: Shear Wave Elasticity Imaging in Obstetrics**
- 3:15 PM **Z. Long, Mayo Clinic: Challenges With Implementing Liver Shear Wave Elastography in a Clinical Practice**
- 3:30 PM **Q & A**

Therapy Scientific Session

2:45 PM - 3:45 PM

-Ballroom A

TU-H-BRA Advances in Safety

Moderators: Dustin Jacqmin, University of Wisconsin-Madison, Madison, WI and Samantha Simiele, MD Anderson Cancer Center, Houston, TX

2022 Annual Meeting Calendar of Events**Tuesday, July 12, 2022**

- 2:45 PM **TU-H-BRA-01 A Digital Peer to Automatically Detect Atypical Prescriptions in Radiotherapy** - Q. Li*, J. Wright, R. Hales, K. Voong, T. McNutt
- 2:55 PM **TU-H-BRA-02 A User-Specific Automatic Contouring, Planning, and QA Solution for Cervical Cancer Radiotherapy** - D. Rhee*, A. Jhingran, B. Rigaud, K. Huang, C. Anakwenze, K. Kisling, B. Beadle, C. Cardenas, S. Kry, S. Prajapati, L. Zhang, K. Brock, W. Shaw, H. Simonds, L. Court
- 3:05 PM **TU-H-BRA-03 Assessing Initial Plan Check Efficacy Using TG 275 Failure Modes and Incident Reporting** - A. Riegel*, J. Baker, J. Lauritano, E. Calugaru, A. Oliveira, W. Buckenberger, J. Antone, W. Ge, J. Chang, C. Polvorosa, A. Sharma, W. Chen, Y. Cao, A. Kapur, L. Potters
- 3:15 PM **TU-H-BRA-04 Complexity and Treatment Parameters Impact On IROC Lung Phantom Performance Evaluated Using Random Forest** - H. Mehrens*, B. Lewis, N. Pajot, P. Taylor, P. Alvarez, A. Molineu, S. Kry
- 3:25 PM **TU-H-BRA-05 Using Phantom Results to Quantify Treatment Error Among the Radiation Oncology Community** - S. Edward*, C. Peterson, R. Howell, J. Pollard-Larkin, P. Balter, S. Kry
- 3:35 PM **TU-H-BRA-06 Using System Theoretic Process Analysis to Design a Commissioning Procedure for MLC Tracking** - J. Hindmarsh*, S. Dieterich, J. Booth, P. Keall

SAM Specialty Program The New Era of Radiopharmaceutical Therapy

2:45 PM - 3:45 PM

-Room 202

TU-H-202 The SNMMI Lu-177 Dosimetry Global Challenge: Results and Conclusions

Moderator: Yuni Dewaraja, University of Michigan, Ann Arbor, MI

- 2:45 PM **Y. Dewaraja, University of Michigan: Organizing a Challenge with Global Access to Digital Research Data**
- 2:55 PM **R. Danieli, Institut Jules Bordet: Participant's Perspective: Methods Used to Complete Tasks 1 - 5 and Challenges**
- 3:05 PM **W. Erwin, UT MD Anderson Cancer Center: Participant's Perspective: Methods Used to Complete Tasks 1 - 5 and Challenges**
- 3:15 PM **C. Uribe, BC Cancer: Results**
- 3:35 PM **Panel Discussion: Implications for Standardization**
- 3:35 PM **Panel Discussion: Implications for Standardization**

Multi-Disciplinary Interactive ePoster Discussion

3:45 PM - 4:15 PM

-Exhibit Hall | Forum 2

TU-I345-IePD-F2 Deep Learning for Treatment Planning

- TU-I345-IePD-F2-01 Automated Whole-Brain Radiotherapy Treatment Planning Via Deep Learning Auto-Contouring and Customizable Landmark-Based Field Aperture Design** - Y. Xiao*, D. Rhee, T. Netherton, L. Zhang, C. Nguyen, R. Douglas, R. Mumme, A. Aggarwal, S. Skett, T. Patel, C. Trauernicht, H. Simonds, C. Cardenas, L. Court
- TU-I345-IePD-F2-02 IMRT Plans Guided by Novel Artificial Intelligence Neuro-Fuzzy Algorithm** - E. Cisternas Jimenez*, F. Yin
- TU-I345-IePD-F2-03 Using Deep Neural Network for Beam Angle Selection in 4 π IMRT Planning of Patients with Lung Cancer** - A. Sadeghnejad Barkousaraie*, M. Lin, S. Jiang, D. Nguyen
- TU-I345-IePD-F2-04 Deep-Learning Based Automated Contouring, Dose-Prediction, and Planning in High-Dose-Rate Prostate Brachytherapy** - C. Guthrie*, T. Harris, D. O'Farrell, S. Friesen, M. King, I. Buzurovic, R. Cormack
- TU-I345-IePD-F2-05 Input Feature Design and Their Impact On the Artificial Intelligence Planning Agent's Performance** - X. Li*, Y. Ge, Q. Wu, C. Wang, Y. Sheng, W. Wang, H. Stephens, F. Yin, Q. Wu

MEDICAL PHYSICS**Tuesday, July 12, 2022****Therapy Interactive ePoster Discussion**

3:45 PM - 4:15 PM

-Exhibit Hall | Forum 3

TU-I345-IePD-F3 Autosegmentation in Radiation Therapy

- TU-I345-IePD-F3-01 Longitudinal Lung Tumor Segmentation On CBCTs Using Sequential Transduction Neural Network and Self-Supervised Domain Adaptation** - R. Li*, N. Ebadi, A. Das, A. Roy, N. Kirby, N. Papanikolaou, M. Bonnen, P. Rad
- TU-I345-IePD-F3-02 A Breast Auto-Contouring Model for Contour Verification in a Breast Radiotherapy Clinical Trial** - H. Baroudi*, C. Nguyen, S. Maroongroge, B. Smith, K. Hoffman, J. Niedzielski, S. Shaitelman, A. Melancon, S. Shete, T. Whitaker, J. Duryea, S. Hernandez, M. El Basha, R. Mumme, T. Netherton, L. Court
- TU-I345-IePD-F3-03 Atlas Based Automatic Segmentation, A Clinical Implementation & Assessment of Accuracy** - S. Costello*, D. Pearson

-Exhibit Hall | Forum 4

TU-I345-IePD-F4 Novel Treatment Planning Techniques

- TU-I345-IePD-F4-01 The Fluence Sensitivity Matrix and the Influence of Variable Scattering Radius in IMRT Optimization** - H. Stephens*, Q. Wu, Q. Wu
- TU-I345-IePD-F4-02 Planning Strategies for Whole Head-And-Neck Radiation with Robustness Against Shoulder Motion Using Volumetric-Modulated Arc Therapy** - J. Cammin*, T. Bouton, E. Chacko, E. Paranaada, B. Zhang, S. Chen, J. Molitoris, B. Yi
- TU-I345-IePD-F4-03 Biology-Guided Radiotherapy (BgRT) Treatment Planning Feasibility Study for Head-And-Neck, Abdomen, and Pelvis** - N. Kovalchuk*, L. Vitzthum, D. Pham, C. Chuang, M. Gensheimer, A. Da Silva, B. Han, D. Chang, M. Surucu
- TU-I345-IePD-F4-04 Commissioning and Validation of a Monte Carlo Algorithm for Spine Stereotactic Radiosurgery** - C. Knill*, R. Sandhu, B. Loughery, L. Lin, R. Halford, D. Drake, M. Snyder

Multi-Disciplinary Interactive ePoster Discussion

3:45 PM - 4:15 PM

-Exhibit Hall | Forum 5

TU-I345-IePD-F5 Advancing Science to Expand Access to State-of-the-Art Applications in Medical Physics: III

- TU-I345-IePD-F5-01 A Novel Lesion-Center-Based Machine Learning Pipeline for Distinguishing Between Metastatic and Healthy Bone Regions in Cancer Patients** - H. Naseri*, H. Naseri, S. Skamene, M. Tolba, M. Faye, P. Ramia, J. Khriguian, H. Patrick, A. Andrade, M. David, J. Kildea
- TU-I345-IePD-F5-02 A Radiomics-Integrated Deep-Learning Model for Identifying Radionecrosis Following Brain Metastasis Stereotactic Radiosurgery** - J. Zhao*, Z. Yang, Z. Hu, E. Vaio, D. Carpenter, S. Floyd, K. Lafata, F. Yin, C. Wang
- TU-I345-IePD-F5-03 Development of An Affordable, Novel, Patient-Centric Phantom to Determine Optimal SGRT Camera Settings for a Diverse Skin Tone Range** - V. Bry*, K. Almazan, J. Hernandez, S. Buxton, M. Allahar, L. Rocha, K. Papanikolaou, T. Wagner, K. Rasmussen
- TU-I345-IePD-F5-04 Lymph Node Segmentation Via Deep Feature Boosting Network in Head and Neck CT Images** - T. Peng*, K. Wang, M. Dohopolski, H. Shao, Y. Zhang, J. Wang
- TU-I345-IePD-F5-05 Radio-Luminescent Imaging for Rapid, High Resolution Eye Plaque Loading Verification** - W. Liu, P. De Jean, H. Yan*, E. Grafil, M. Ashraf, T. Niedermayr, M. Astrahan, P. Mruthyunjaya, B. Beadle, L. Xing
- TU-I345-IePD-F5-06 Test-Time Adaptation for Deformable Image Registration** - Y. Sang*, M. McNitt-Gray, Y. Yang, M. Cao, D. Low, D. Ruan

2022 Annual Meeting Calendar of Events**Tuesday, July 12, 2022****Professional Interactive ePoster Discussion**

3:45 PM - 4:15 PM

-Exhibit Hall | Forum 6

TU-I345-IePD-F6 Professional Interactive ePoster Discussion**TU-I345-IePD-F6-01 Readiness for Radiation Treatment Continuity: Survey On Contingency Plans Against Cyberattacks** - B. Yi*,

A. Sawant, S. Chen, S. Lee, B. Zhang

TU-I345-IePD-F6-02 P3app - a Fully Automated Plan Checking Tool for Philips Pinnacle TPS - C. Wu***TU-I345-IePD-F6-03 Comparison in GRID Planning of Self-Developed and Commercially Available Methods** - M. Xu*, R. Foster, Y. Qin, J. Wei**TU-I345-IePD-F6-04 Have You Lost Your Mold During the COVID-19 Pandemic?** - L. Voros*, V. Yu, L. Zhang, Y. Song, S. Hellman, P. Booth, D. Lovelock, J. Deasy**TU-I345-IePD-F6-05 Quantitative Estimates of OSLD Dose Overresponse From Clinical KV CBCTs** - T. Banks***TU-I345-IePD-F6-06 To Evaluate the Clinical Implementation Feasibility of the Siemen's Auto-Contouring Deep-Learning Solution, AI-Rad Companion Organs RT** - L. Maduro Bustos*, L. Doyle, D. Nurbagandova, J. Noonan, A. Sarkar, K. Andreou, P. Graner, K. Saddi, F. Mourtada**Therapy Interactive ePoster Discussion**

3:45 PM - 4:15 PM

-Exhibit Hall | Forum 7

TU-I345-IePD-F7 Dose Calculation Techniques**TU-I345-IePD-F7-01 Dosimetric Characterization of a New Surface-Conforming Electron MLC** - H. Paschal*, C. Kabat, T. Martin, S. Stathakis, M. Bonnen, N. Papanikolaou, N. Kirby**TU-I345-IePD-F7-02 Development of a Treatment Technique for Photon MLC Based Electron Modulated Arc Therapy** - G. Guyer*, S. Velja, S. Mueller, D. Frei, W. Volken, M. Stampanoni, P. Manser, M. Fix**TU-I345-IePD-F7-03 Predicting Material Composition and Density From Basis-Vector Model Weights for Dual-Energy CT-Based Monte Carlo Proton-Beam Dose Calculations** - M. Medrano*, X. Chen, L. Burigo, T. Zhao, J. O'Sullivan, J. Williamson**TU-I345-IePD-F7-04 Post-Optimization Flash for Breast/chestwall VMAT Treatment Plans** - Z. Grelewicz*, K. Jones**Refreshment Break in Exhibit Hall**

3:45 PM - 4:30 PM

-Exhibit Hall

Imaging Blue Ribbon ePoster

4:30 PM - 5:30 PM

-Exhibit Hall | Forum 1

TU-J430-BReP-F1 Imaging BLUE RIBBON**TU-J430-BReP-F1-01 Dedicated Point Of Care Whole-Breast 3D Ultrasound Device** - C. Park*, J. Bax, D. Tessier, L. Gardi, A. Fenster**TU-J430-BReP-F1-02 Fluorescence Image Correction for High Spatial Resolution Dosimetry Using Deep Learning** - Y. Nomura*, M. Ashraf, M. Shi, L. Xing**TU-J430-BReP-F1-03 Raman-Encoded Molecular Imaging and Lipidomics as Predictors of Pancreatic Cancer Microenvironment Changes During Treatment with 3-Bromopyruvate** - E. Sheikh*, K. Agrawal, S. Roy, M. Gartia, H. Shukla, N. Biswal**TU-J430-BReP-F1-04 Training Search Models for in Silico Breast Imaging Trials** - M. Lago*, A. Badano**TU-J430-BReP-F1-05 Virtual Non Contrast Tomography Synthesis for Hepatocellular Carcinoma Patients Using Multimodality-Guided Synergistic Neural Network** - J. Chen, W. Li, H. Xiao*, S. Lam, J. Chen, C. Liu, A. Cheung, J. Cai**MEDICAL PHYSICS****Tuesday, July 12, 2022****Multi-Disciplinary Blue Ribbon ePoster**

4:30 PM - 5:30 PM

-Exhibit Hall | Forum 2

TU-J430-BReP-F2 Multi-Disciplinary BLUE RIBBON**TU-J430-BReP-F2-01 Incrementally Re-Trained AI-Models for Organ and Target Auto-Segmentation for Post-Prostatectomy Patients** - D. Hobbs*, K. Mund, Q. Chen, X. Feng, N. Yu, C. Vargas, S. Schild, J. Rwigema, S. Keole, W. Wong, Y. Rong**TU-J430-BReP-F2-02 Daily Adaptive Replanning with Dose Accumulation for Prostate Ultra-Hypofractionated Radiotherapy Using Machine Learning Automated Planning On CBCT** -

M. Golshan*, A. Khalifa, J. Winter, J. Xie, C. McIntosh, T. Purdie, V. Malkov, T. Tadic

TU-J430-BReP-F2-03 Statistical Evaluation of a Commercial Deep-Learning-Based Automatic Contouring Software - N. Bice*, B. Patel, P. Milien, A. McCarthy, P. Cheng, J. Rembish, J. Teruel, D. Barbee**TU-J430-BReP-F2-04 Dominant Index Prostatic Lesions Segmentation Using Deep Learning for MR-Guided Radiative Ablation** - J. Simeth*, J. Jiang, A. Nosov, A. Wimber, M. Zelefsky, N. Tyagi, H. Veeraraghavan**TU-J430-BReP-F2-05 Implementation of Super-Resolution Imaging on An MRI-Linac** - J. Grover*, P. Liu, B. Dong, S. Shan, B. Whelan, P. Keall, D. Waddington**Therapy Blue Ribbon ePoster**

4:30 PM - 5:30 PM

-Exhibit Hall | Forum 3

TU-J430-BReP-F3 Therapy BLUE RIBBON**TU-J430-BReP-F3-01 Rapid Quality Assurance for Eye Plaques Using a High-Resolution Gamma-Ray Imaging Scintigraphy System** - M. Ur Rehman*, R. Hamilton, B. Stea, T. Johnson, L. Furenlid, B. Miller**TU-J430-BReP-F3-02 GPU-Accelerated Microdosimetry** - J. Decunha*, R. Mohan**TU-J430-BReP-F3-03 Partial-Arc VMAT Planning Solution for Craniospinal Irradiation** - J. Setianegara*, J. Rolfsmeier, T. Zhang, T. Zhao, S. Perkins, F. Reynoso**TU-J430-BReP-F3-04 Motion Effects in Cardiac Ablation Radiotherapy** - J. Marcel*, R. Trevillian, N. Yegya-raman, L. Yin, Z. Zhang, H. Chen, S. Feigenberg, L. Dong, J. Arkles, B. Teo, K. Cengel, J. Zou**TU-J430-BReP-F3-05 Pulsed Wave Doppler Parameters of Bilateral Neurovascular Bundles in Patients Receiving Prostate Radiotherapy** - B. Zhou*, X. Yang, J. Wang, J. Janopaul-naylor, P. Patel, A. Jani, T. Liu**SAM Professional Symposium**

4:30 PM - 6:00 PM

-Room 206

TU-K-206 Advancing EDI at Every Level of Med Phys Part 2: For Trainees, the Workplace and Beyond

Moderator: Andrea Molineu, UT MD Anderson Cancer Center, Houston, TX

4:30 PM **A. Molineu, UT MD Anderson Cancer Center: Medical Physicist Role in Increasing Inclusion and Belonging at the Workplace**4:55 PM **L. Warner, Philips | Optimum Vobis: Your Role in Advancing Women In Leadership**5:20 PM **G. Aldosary, King Abdulaziz Medical City: How to Set Up a Sustainable and Impactful Equity, Diversity, and Inclusion Program with Your Team**5:45 PM **Q & A**

2022 Annual Meeting Calendar of Events**Tuesday, July 12, 2022****SAM Imaging Educational Course**

4:30 PM - 6:00 PM

-Room 207

TU-K-207 Imaging Disparities

Moderators: Ashley Rubinstein, Henry Ford Health System, Detroit, MI and Patricia Svolos, The University of Texas Health Science Center, Houston, TX

4:30 PM **A. Einstein, Penn State Hershey Medical Center: MRI in Resource-Limited Settings**

4:50 PM **R. Selwyn, University of New Mexico: Inequalities in Radiological Care: An Imaging Physicist's Experience in New Mexico**

5:10 PM **A. DeSimone, Brigham and Womens Hospital: Disparities in Access to Lung Cancer Screening**

5:30 PM **O. Peart, Fortis College-Landover: RAD-AID USA's Women's Health Initiative**

5:50 PM **Q & A**

SAM Imaging Scientific Symposium

4:30 PM - 6:00 PM

-Room 201

TU-K-201 Radiation plus Ultrasound: from Imaging to Therapy

Moderator: Liangzhong Xiang, University of California, Irvine, Irvine, CA

4:30 PM **S. Patch, University of Wisconsin-Milwaukee: Ionoacoustics for Proton Range Verification**

4:50 PM **S. Malliddi, Tufts: Multi-Parametric, Nanotechnology Enabled Ultrasound Guided Photoacoustic Imaging for Treatment Guidance, Dosimetry and Tumor Recurrence Prediction**

5:10 PM **P. Song, University Illinois Urban-Champaign: Super-Resolution Ultrasound: The New Frontier in Microvascular Imaging**

5:30 PM **L. Xiang, University of California, Irvine: XACT for Radiological Imaging and Radiotherapy**

5:50 PM **Q & A**

SAM Therapy Educational Course

4:30 PM - 6:00 PM

-Ballroom C

TU-K-BRC Integrating Omics in the Era of AI for Better Patient Specific Outcomes

Moderator: Issam El Naqa, Moffitt Cancer Center, Tampa, FL

4:30 PM **I. El Naqa, Moffitt Cancer Center: Introduction to AI and Multi-Omics in Outcome Models**

4:40 PM **S. Mattonen, University of Western Ontario: Radiomics for Supportive Care Interventions in Head and Neck Cancer**

4:58 PM **L. Wei, University of Michigan: The Effect of Stereotactic Body Radiation Therapy for Hepatocellular Cancer On Regional Hepatic Liver Function**

5:16 PM **S. Cui, Stanford University: Utilizing Multi-Omics Data To Improve the Prediction of Toxicities**

5:34 PM **R. Ger, Johns Hopkins University: Challenges in the Omics Landscape**

5:52 PM **Q & A**

SAM Therapy Scientific Symposium

4:30 PM - 6:00 PM

-Ballroom A

TU-K-BRA Radiotherapy and the Immune System

Moderators: Phuoc Tran, University of Maryland, Baltimore, MD and Matthew Scarpelli, Purdue University, West Lafayette, IN

4:30 PM **Introduction**

4:36 PM **C. Guha: Energy-based Immune Priming for In-situ Tumor Vaccines**

MEDICAL PHYSICS**Tuesday, July 12, 2022**

4:54 PM **J. Schoenfeld, Harvard Medical School: Radiation and Immune Checkpoint Blockade: What Can We Learn from Randomized Clinical Trials?**

5:12 PM **A. Mansoor, NIH (NCI): The Importance of Dose-Fractionation in Immuno-Radiation Oncology**

5:30 PM **Panel Discussion**

SAM Multi-Disciplinary Scientific Symposium

4:30 PM - 6:00 PM

-Ballroom B

TU-K-BRB Medical Physics in Clinical Trials: Design, Quality Assurance, and NIH Programs

Moderator: Ying Xiao, University of Pennsylvania, Philadelphia, PA

4:30 PM **B. Vikram, NIH: The National Cancer Institute's vision for radiotherapy advancements, clinical trials and clinical care**

4:40 PM **L. Shankar, National Cancer Institute: The National Cancer Institute's vision for imaging advancements in clinical trials and clinical care**

4:50 PM **J. Capala, National Cancer Institute: Theranostic clinical trials outlook and the role of medical physics**

5:00 PM **K. Kandarpa, NIH: Medical Physics in Non-Cancer Imaging and Therapy & Data Resource**

5:10 PM **S. Benedict, UC Davis Cancer Center: Quality assurance guideline development from the Center for Innovation in Radiation Oncology (NRG CIRO)**

5:20 PM **C. Glide-Hurst, University of Wisconsin-Madison: Medical physics and clinical trial design for new technologies**

5:30 PM **Y. Xiao, University of Pennsylvania: Q & A**

SAM Specialty Program The New Era of Radiopharmaceutical Therapy

4:30 PM - 6:00 PM

-Room 202

TU-K-202 Radiobiology Issues Regarding Theranostic Radiopharmaceuticals

Moderator: Joseph O'Donoghue, Memorial Sloan-Kettering Cancer Center, New York, NY

4:30 PM **J. O'Donoghue, Memorial Sloan-Kettering Cancer Center: An Overview of the Radiobiological Issues in Theranostics**

4:45 PM **R. Hernandez, University of Wisconsin-Madison: Improving Radiobiological Responses by Radiopharmaceutical Design**

5:05 PM **M. Cremonesi, European Institute of Oncology IRCCS: Clinical Radiobiology of Radiopharmaceutical Therapy**

5:05 PM **Z. Morris, University of Wisconsin School of Medicine and Public Health: New Frontiers: Interactions With the Immune System and the Abscopal Effect**

5:45 PM **Q & A**

AAPM Night Out - Smithsonian American Art Museum

7:00 PM - 10:00 PM

Wednesday, July 13, 2022**SAM Professional Symposium**

7:30 AM - 9:30 AM

-Room 206

WE-AB-206 Effective Communication About Radiation Dose and Radiation-Induced Risks for Pediatric Patients

Moderators: Da Zhang, Harvard, Boston Children's Hospital, Sharon, MA and Derek Brown, University of California, San Diego, La Jolla, CA

2022 Annual Meeting Calendar of Events**Wednesday, July 13, 2022**

- 7:30 AM Introduction
 7:35 AM T. Atwood, UC San Diego: Communicating with Pediatric Patients and their Families in the Radiation Oncology Setting
 8:00 AM L. States, CHOP: Communicating with Pediatric Patients and Their Families About Radiation Dose and Risk: A Radiologist's Perspective
 8:25 AM F. Fahey, Children's Hospital: Speaking to Pediatric Patients and Their Families About Radiation Dose and Risk from Nuclear Medicine and Radionuclide Therapy
 8:50 AM A. LaBella: Effective Communication with Pediatric Radiology Patients and Families Regarding Radiation Dose
 9:15 AM Q & A

SAM Imaging Educational Course

7:30 AM - 9:30 AM

-Room 207

WE-AB-207 ACR Updates including the new Stereotactic Breast Biopsy QC Manual

Moderator: Dustin Gress, American College of Radiology, Reston, VA

- 7:30 AM D. Gress, American College of Radiology: ACR HQ Initiatives
 7:45 AM I. Barreto, University of Florida College of Medicine: Investigating Estimation of CTDIvol Using Helical Technique
 8:05 AM P. Butler: Status of Diagnostic Reference Levels in the US
 8:25 AM O. Mawlawi, MD Anderson Cancer Ctr.: NM & PET QC Manuals
 8:40 AM W. Geiser, UT MD Anderson Cancer Center: Image Guided Breast Biopsy QC Manual
 8:55 AM M. Mahesh, Johns Hopkins University: Prioritizing Image Quality Features for Automated Measurement in CT
 9:15 AM Q & A

Imaging Scientific Session

7:30 AM - 8:30 AM

-Room 201

WE-A-201 Advances in MRI Image Formation

Moderators: Trevor Andrews, Washington University at St Louis, Saint Louis, MO and Megan Lipford, Wake Forest University School of Medicine, Winston Salem, NC

- 7:30 AM WE-A-201-01 An Open-Source Solution to Analyze and Correct MRI Distortion - P. Liu*, S. Shan, D. Waddington, B. Dong, F. Liu, M. Li, B. Whelan
 7:40 AM WE-A-201-02 ARTT GRAPPA for Accelerating Magnetic Resonance Spectroscopic Imaging - J. Weygand*, V. Franke, M. Ladd, P. Bachert, A. Korzowski
 7:50 AM WE-A-201-03 In Vivo MR Elastography of Aortic Stiffness Using Multi-Slice Spin-Echo Echo Planar Imaging Sequence: A Comparison to Gradient Recalled Echo Sequence - H. Dong*, N. Jin, R. White, A. Kolipaka
 8:00 AM WE-A-201-04 Joint K-B Space Image Reconstruction and Data Fitting for Diffusion-Weighted Magnetic Resonance Imaging - J. Deng*, X. Jia
 8:10 AM WE-A-201-05 Physics Model-Aware MR Relaxometry Using Deep Learning - S. Zhang*, Y. Gao, Y. Zhong, C. Shen, Y. Peng, J. Grandinetti, J. Deng, X. Jia
 8:20 AM WE-A-201-06 BEST in PHYSICS (IMAGING): Respiratory Motion Detection and Reconstruction Using CAPTURE and Deep Learning Phase2Phase Network for a 0.35 T MRI-LINAC System - S. Chen*, C. Eldeniz, T. Fraum, D. Ludwig, W. Gan, U. Kamilov, D. Yang, H. Gach, H. An

MEDICAL PHYSICS**Wednesday, July 13, 2022****SAM Multi-Disciplinary Scientific Symposium**

7:30 AM - 8:30 AM

-Ballroom C

WE-A-BRC From Pre-Clinical to Vet-Clinical Imaging and Therapy: Pathways to Clinical Translation

Moderators: Ken Kang-Hsin Wang, UT Southwestern Medical Center, Dallas, TX and Parminder Basran, Cornell University, Ithaca, NY

- 7:30 AM Introduction of Recent Progress in Small Animal Technology
 7:34 AM K. Wang, UT Southwestern Medical Center: Quantitative Optical Tomography-Guided System for Pre-Clinical Radiation Research
 7:46 AM J. Wong, Johns Hopkins University: FLASH Radiation Therapy: The Road to Translation
 7:58 AM Q & A
 8:00 AM P. Basran, Cornell University: AAPM Working Group on Veterinary Radiation Oncology
 8:04 AM D. Leary, Colorado State University: State of the Art in Veterinary Radiation Oncology and Medical Physics
 8:16 AM K. Selting, University of Illinois: A Veterinary Radiation Oncologist Perspective on Clinical Translation
 8:28 AM Q & A

SAM Therapy Educational Course

7:30 AM - 8:30 AM

-Ballroom A

WE-A-BRA Artificial Intelligence for QA

Moderator: Katelyn Hasse, University of California, San Francisco, San Francisco, CA

- 7:30 AM K. Hasse, University of California, San Francisco: Introduction to Artificial Intelligence for QA
 7:35 AM A. Witzum, University of California, San Francisco: Using AI To Improve Patient-Specific QA Efficiency
 7:50 AM S. Luk, University of Vermont Medical Center: Improving Quality of Care in Radiation Therapy Using AI in Physics Plan and Chart Review
 8:05 AM C. Guthrie, Brigham and Women's Hospital: Commissioning and QA of AI in Radiation Oncology: Practical Aspects
 8:20 AM Q & A

Multi-Disciplinary Scientific Symposium

7:30 AM - 9:30 AM

-Ballroom B

WE-AB-BRB WMIS/AAPM Joint Symposium on Theranostics

Moderator: John Hazle, UT MD Anderson Cancer Center, Houston, TX

- 7:30 AM Introduction
 7:40 AM M. Cremonesi, European Institute of Oncology IRCCS: Emerging Radiopharmaceuticals
 8:10 AM B. Bednarz, University of Wisconsin: Building a Clinical RPT Dosimetry Infrastructure
 8:40 AM P. Choyke, NIH (NCI): Emerging Radiopharmaceuticals for Diagnosis and Therapy
 9:10 AM Q & A

Multi-Disciplinary Scientific Session

7:30 AM - 8:30 AM

-Room 202

WE-A-202 In vivo Imaging and Dosimetry for Monitoring Therapy

Moderators: Paul Keall, University of Sydney, Sydney, NSW and Angelica Perez-Andujar, Memorial Sloan Kettering, West Harrison, NY

2022 Annual Meeting Calendar of Events**Wednesday, July 13, 2022**

- 7:30 AM **WE-A-202-01 Assessing the DNA Damaging Effectiveness of Ionizing Radiation Using Plasmid DNA** - Y. Maayah*, H. Nusrat, G. Pang, M. Tambasco
- 7:40 AM **WE-A-202-02 D-Fructose Chemically Cross-Linked PVA Fricke Gel Sheets as in Vivo Dosimeters and Boluses for Radiotherapy** - J. Cabahug*, M. Bacaling, R. Cruzpero, M. Ceballos, B. Barba, J. Madrid
- 7:50 AM **WE-A-202-03 JACK KROHMER EARLY-CAREER INVESTIGATOR COMPETITION WINNER: EPIDEEP: Predicting In-Vivo EPID Transit Images - a Deep Learning Approach** - B. Anderson*, K. Moore, C. Bojecho
- 8:00 AM **WE-A-202-04 Intra- and Inter-DNA Dosimeter Measurement Variability for Quantifying DNA Double Strand Breaks From Ionizing Radiation** - C. Valdes*, M. Tambasco
- 8:10 AM **WE-A-202-05 BEST IN PHYSICS (MULTI-DISCIPLINARY): MRI of Radiation Effects: First Images and An Investigation of a Potential Hydroxyl Radical Mechanism** - J. Wancura*, J. Egan, E. Sajo, A. Sudhyadhom
- 8:20 AM **WE-A-202-06 Single-Pulse X-Ray Acoustic Computed Tomography: Towards In-Tumor Dosimetry** - G. Gonzalez*, K. Prather, P. Pandey, L. Sun, J. Caron, S. Wang, S. Ahmad, L. Xiang, Y. Chen

Imaging Scientific Session

8:30 AM - 9:30 AM

-Room 201

WE-B-201 MRI Image Analysis and Quantitative Applications

Moderators: Qing Yuan, UT Southwestern Medical Center, Dallas, TX and Nathan Yanasak, Augusta University, Crawfordville, GA

- 8:30 AM **WE-B-201-01 Deep-Learning Based Rectal Tumor Localization and Segmentation On Multi-Parametric MRI** - Y. Zhang*, S. Hu, L. Shi, X. Sun, N. Yue, K. Nie
- 8:40 AM **WE-B-201-02 Development and Validation of a Radiomics Model to Predict Pathological Complete Response to Neoadjuvant Chemoradiation (nCRT) in Locally Advanced Rectal Cancer: A Perspective Observational Study** - Y. Zhang*, S. Hu, L. Shi, X. Sun, N. Yue, K. Nie
- 8:50 AM **WE-B-201-03 Fully Automated Segmentation of Prostatic Urethra for MR-Guided Radiation Therapy (MRgRT)** - D. Xu*, T. Ma, R. Savjani, M. Cao, Y. Yang, A. Kishan, F. Scalzo, K. Sheng
- 9:00 AM **WE-B-201-04 Measurements of Contrast Media Kinetics in Tumors and Asymmetry of Parenchymal Pharmacokinetics (kBPE Asymmetry) Predict Response to NAT** - Z. Ren*, F. Pineda, F. Howard, K. Kulkarni, H. Abe, R. Nanda, N. Jaskowiak, G. Karczmar
- 9:10 AM **WE-B-201-05 Model Based Real-Time Prediction of Gastric Contractile Motion** - Y. Zhang*, Y. Cao, J. Balter
- 9:20 AM **WE-B-201-06 Radiomics of Tuberous Sclerosis Complex for Precision Diagnosis** - F. Tixier*, D. Rodriguez, J. Jones, M. Islam, M. Hester, M. Ho

Multi-Disciplinary Scientific Session

8:30 AM - 9:30 AM

-Ballroom C

WE-B-BRC Emerging Applications of Imaging in Therapy

Moderators: Brian Winey, Massachusetts General Hospital and Harvard Medical School, Boston, MA and Christie Lin, OnLume Surgical, Madison, WI

- 8:30 AM **WE-B-BRC-01 3D Organoids as a Model to Study and Predict the Response of Pancreatic Cancer to Radiation Therapy** - J. Polf*, H. Shukla, T. Dukic, S. Roy, B. Bhandary, N. Lamichhane
- 8:40 AM **WE-B-BRC-02 A Computational Multiscale Framework for Precision Dosimetry in Radiation Therapy** - P. Inman*, J. Houry, J. Gounley, G. Agasthya, A. Kapadia

MEDICAL PHYSICS**Wednesday, July 13, 2022**

- 8:50 AM **WE-B-BRC-03 Feasibility of Image- and Emission-Guided Radiation Therapy Within a Small Animal Radiation Irradiator Integrated with Quad-Modal On-Board Imaging** - X. Li*, H. Wang, L. Xu, Y. Ren, W. Deng, H. Feng, Z. Yang, S. Ma, Q. Ni, Y. Kuang
- 9:00 AM **WE-B-BRC-04 Nanoparticle Drone Formulation for Image-Guided Radiotherapy** - M. Moreau*, G. Richards, S. Yasmin-Karim, W. Ngwa
- 9:10 AM **WE-B-BRC-05 Second-Generation Bismuth Gadolinium Theranostic Nanoparticles for MR Guidance and Radiation Dose Amplification** - N. Brown*, P. Rocchi, L. Carnes, R. Guthier, M. Iyer, T. Morris, S. Bennett, M. Lavelle, T. Doussineau, C. Williams, E. Huynh, Z. Han, E. Kaza, G. Bort, F. Lux, O. Tillement, R. Berbeco
- 9:20 AM **WE-B-BRC-06 Study of Backbone and Base Pair Bond Breaking in DNA During Proton Beam Irradiation** - J. Polf*, J. Demaree, N. Lamichhane, N. Guardala

SAM Therapy Educational Course

8:30 AM - 9:30 AM

-Ballroom A

WE-A-BRA Clinical Implementation of AI-based Auto-Segmentation

Moderator: Kelly Kisling, UC San Diego, La Jolla, CA

- 8:30 AM **J. Yang, UT MD Anderson Cancer Center: AI Auto-Segmentation: Clinical Implementation Concerns and Commissioning Guidelines**
- 8:50 AM **G. Sharp, Massachusetts General Hospital: Evaluation Methods for Auto-Segmentation and Expected Results**
- 9:05 AM **S. Elguindi, Memorial Sloan Kettering Cancer Center: End-To-End Pipeline for Clinical AI Auto-Segmentation**
- 9:20 AM **Summary and Roundtable Discussion**

Multi-Disciplinary Scientific Session

8:30 AM - 9:30 AM

-Room 202

WE-B-202 Imaging for Particle Therapy

Moderators: Lei Dong, University of Pennsylvania, Philadelphia, PA and Jingjing Dougherty, Mayo Clinic, Jacksonville, FL

- 8:30 AM **WE-B-202-01 In Vivo Range Verification Using Single Pulse Proton Induced Acoustic Signals** - J. Caron*, G. Gonzalez, P. Pandey, S. Wang, K. Prather, L. Xiang, S. Ahmad, Y. Chen
- 8:40 AM **WE-B-202-02 MRI Simulation Protocol Optimization for Ocular Melanoma Proton Therapy Treatment Planning** - M. Goette*, R. Slopsema, A. Dhabaan, L. Qiu, D. Qian, H. Shu
- 8:50 AM **WE-B-202-03 Protoacoustic Radiography: Imaging Using the Therapeutic Proton Beam** - P. Pandey*, G. Gonzalez, J. Caron, Y. Chen, L. Xiang
- 9:00 AM **WE-B-202-04 Realtime Volumetric Image for Target Localization During Proton FLASH Radiotherapy** - C. Chang, Y. Lei, T. Wang, J. Zhou, L. Lin, J. Roper, K. Higgins, T. Liu, J. Bradley, X. Yang*
- 9:10 AM **WE-B-202-05 Scatter Correction of 4D Cone Beam Computed Tomography Images for Time-Resolved Proton Dose Calculation: First Patient Application** - H. Schmitz*, M. Rabe, G. Janssens, S. Rit, K. Parodi, C. Belka, F. Kamp, G. Landry, C. Kurz
- 9:20 AM **WE-B-202-06 BEST IN PHYSICS (MULTI-DISCIPLINARY): Characterizing and Testing a Piezoelectric Film Detector for Proton Range Verification** - J. Ryser*, A. Kassae, C. Sehgal, S. Avery

2022 Annual Meeting Calendar of Events**Wednesday, July 13, 2022****Multi-Disciplinary Interactive ePoster Discussion**

9:30 AM - 10:00 AM

-Exhibit Hall | Forum 2

WE-C930-lePD-F2 Motion Compensation in Adaptive Radiotherapy**WE-C930-lePD-F2-01 Respiratory Adaptive Computed Tomography (REACT) Helical Imaging for Reducing Artifacts in 4DCT Scans** - E. Mathias*, R. O'Brien**WE-C930-lePD-F2-02 Evaluation of Patient Movement During Online Adaptive Radiotherapy with CBCT and a Surface Imaging System** - D. Stanley*, C. Cardenas, J. Belliveau, R. Popple**WE-C930-lePD-F2-03 Development of Markerless Intra-Fraction Motion Prediction in Image-Guided Radiotherapy Based On Deep Learning** - D. Zhou*, M. Nakamura, N. Mukumoto, Y. Matsuo, T. Mizowaki**WE-C930-lePD-F2-04 Adaptive Predictions of Confidence Regions During Indirect Lung Tumor Tracking** - C. Remy*, H. Bouchard**WE-C930-lePD-F2-05 Synthetic Bone and Soft-Tissue Images From a Single Exposure Using Deep Learning for Real-Time, Markerless Tracking in Radiation Oncology** - T. Nano*, C. Manwatkar, H. Lin, Y. Interian, D. Capaldi**Therapy Interactive ePoster Discussion**

9:30 AM - 10:00 AM

-Exhibit Hall | Forum 3

WE-C930-lePD-F3 Advanced Dosimetry and Monte Carlo Simulation**WE-C930-lePD-F3-01 Monte Carlo Simulation of Uniformly and Non-Uniform Loaded Generic and Notched Eye Plaques** - O. Semeniuk*, V. Malkov, R. Weersink**WE-C930-lePD-F3-02 Estimates of Fetal Dose with the Mevion S250i Proton Therapy System with HYPERSCAN** - K. Hopfensperger*, A. Paxton, V. Sarkar, F. Su, R. Price, B. Salter, S. St. James**WE-C930-lePD-F3-03 Dose Average LET of Electrons Generated Outside of 6 MV X-Ray Small Radiotherapy Field Edges** - Y. Huertajuan, N. Xicohtencatl-hernández, G. Massillon-JL***WE-C930-lePD-F3-04 A GPU-Accelerated Monte Carlo Dose Computation Engine for Precision Small Animal Radiotherapy** - Z. Liu*, Y. Yang**WE-C930-lePD-F3-05 Developing and Implementing Metaphase DNA Model for Microscopic Monte Carlo Simulation Based Radiation-Induced DNA Damage Calculation** - S. Sitmukhambetov*, B. Dinh, Y. Chi

-Exhibit Hall | Forum 4

WE-C930-lePD-F4 Monte Carlo Applications in RT - I**WE-C930-lePD-F4-01 A Comparison of Monte Carlo and TG-43 Calculated Doses for Cesium-131 Implants Used to Treat Recurrent Head and Neck Cancer** - V. Desai*, R. Taleei**WE-C930-lePD-F4-02 Study of Thread Divergence in GPU-Based Monte Carlo Particle Transport Simulations** - C. Panaino*, H. Wan Chan Tseung**WE-C930-lePD-F4-03 Dosimetric Impact of Spinal Implant Hardware Material Selection Evaluated with Monte Carlo and Collapsed Cone Calculation Algorithms** - J. Andreozzi*, L. Nardella, K. Latifi, N. Tran, G. Redler**WE-C930-lePD-F4-04 Commissioning and Clinical Implementation of the First Monte Carlo (MC) Based Secondary MU Check System for IMRT** - R. Varadhan*, S. Way, C. Overbeck, S. Varadhan, D. Kristupaitis**WE-C930-lePD-F4-05 Secondary Monte Carlo Dose Calculation for Single Isocenter Multitarget SRS QA** - B. Erickson*, Y. Cui, C. Wang, W. Giles, M. Alber, J. Adamson**WE-C930-lePD-F4-06 Modeling of Highly Spatially Fractionated Radiation Therapy (grid-RT) Through the Implementation of the Monte Carlo Software TOPAS for Optimization of Mini-GRID Design** - M. Sprenger*, S. Brundage, M. Oldham**MEDICAL PHYSICS****Wednesday, July 13, 2022****Multi-Disciplinary Interactive ePoster Discussion**

9:30 AM - 10:00 AM

-Exhibit Hall | Forum 5

WE-C930-lePD-F5 Deep Learning Image Formation and Motion Management**WE-C930-lePD-F5-01 Real-Time Liver Tumor Localization Via a Single X-Ray Projection Using Graph Neural Network and Deep Learning-Based Biomechanical Modeling (MeshRegNet-Bio)** - H. Shao*, T. Bai, J. Wang, J. Chun, J. Park, S. Jiang, Y. Zhang**WE-C930-lePD-F5-02 Improving Tumor Tracking Accuracy During MR-Guided Radiotherapy Using Pre-Trained Super-Resolution Neural Networks** - P. Liu*, D. Waddington, J. Grover, P. Keall**WE-C930-lePD-F5-03 Deep Learning Based Cine-MR Image Prediction and Analysis for Abdominal Motion** - J. Weng*, S. Bhupathiraju, T. Samant, A. Dresner, J. Wu, S. Samant**WE-C930-lePD-F5-04 Deep Learning Improves Image Quality and Radiomics Reproducibility for High-Speed Four-Dimensional Computed Tomography Reconstruction** - B. Yang*, X. Chen, S. Yuan, Y. Liu, J. Dai, K. Men**WE-C930-lePD-F5-05 Physics-Informed Deep Learning for Accurate Material Density Map Generation Using MRI and DECT** - C. Chang*, R. Marants, Y. Gao, M. Goette, J. Scholey, J. Bradley, T. Liu, J. Zhou, A. Sudhyadhom, X. Yang**WE-C930-lePD-F5-06 Spatial and Temporal Reconstruction for Low-Dose 4DCT Imaging with Neural Representation Network** - S. Ye*, L. Xing

-Exhibit Hall | Forum 6

WE-C930-lePD-F6 Deep Learning Response Prediction, Diagnosis, and Modeling**WE-C930-lePD-F6-01 A Transformer-Based Deep Learning Framework to Predict the Response of Checkpoint Blockade Immunotherapy** - J. Liu*, M. Islam, S. Sang, L. Xing**WE-C930-lePD-F6-02 A Knowledge-Based Artificial Intelligence (AI) to Perform Nested Model Selection from Dynamic Contrast Enhanced (DCE)-MRI Pharmacokinetic Analyses of Brain Tumors in An Animal Model** - H. Bagher-Ebadian*, T. Nagaraja, G. Cabral, K. Farmer, O. Valadie, P. Acharya, B. Movsas, S. Brown, I. Chetty, J. Ewing**WE-C930-lePD-F6-03 AI-Assisted Clinical Decision Making (CDM) for Radiosurgery of Brain Metastases Using Three-Path Three-Dimensional CNN** - Y. Cao*, D. Kunaprayoon, J. Xu, L. Ren**WE-C930-lePD-F6-04 Multibranch CNN with MLP-Mixer-Based Feature Exploration for High-Performance Cancer Diagnosis** - Z. Zhou*, M. Islam, L. Xing**WE-C930-lePD-F6-05 A Generative Adversarial Transfer Learning Framework for Predicting Lung Diaphragm and Rib-Cage Mechanics from Free and Forced Breathing Lung Imaging** - A. Santhanam*, B. Stiehl, M. Lauria, L. Naumann, I. Barjaktarevic, M. McNitt-Gray, D. Low**WE-C930-lePD-F6-06 Predict Voxel-Wise Active Bone Marrow Loss of Anal Cancer Patients Treated with Chemoradiation Using 3D U-Net Deep Learning of Post-Radiotherapy PET Images** - Y. Yue*, Y. Le, O. Ishaq, T. Lautenschlaeger**Therapy Interactive ePoster Discussion**

9:30 AM - 10:00 AM

-Exhibit Hall | Forum 7

WE-C930-lePD-F7 Proton Therapy III**WE-C930-lePD-F7-01 Sensitivity Analysis of Biological Washout and Depth Selection for a Machine Learning-Based Dose Verification Framework in Proton Therapy** - S. Yu*, Y. Liu, H. PENG, M. Jia**WE-C930-lePD-F7-02 Challenges and Successes of Adapting Proton Peer Review During Pandemic Travel Restrictions** - P. Taylor*, J. Lowenstein, S. Kry**WE-C930-lePD-F7-03 Evaluation of Empirical Interplay Mitigations for Proton Pencil Beam Scanning** - S. Flampouri*, A. Stanforth, M. Zhu, K. Langen, R. Slopesma

2022 Annual Meeting Calendar of Events**Wednesday, July 13, 2022**

WE-C930-lePD-F7-04 Evaluating the Impact of Deformation-Based and Scatter-Correction-Based Synthetic CT Generation Algorithms for Proton Therapy - Y. Tseng*, B. Shen, H. Lin, P. Tsai
WE-C930-lePD-F7-05 High-Efficiency Volumetric-Modulated Proton Arc Therapy (HEV-PAT): A Multi-Disease-Site Concept Study - A. Modiri*, S. Mossahebi, P. Mohindra, A. Sawant, S. Chen, R. Miller, B. Zhang, B. Yi
WE-C930-lePD-F7-06 Towards Accessible Proton Radiotherapy: Beam Optics Design for a Compact Medical Proton Accelerator - C. Lund*, P. Jung, M. Maher, J. Bancheri, T. Planche, R. Baartman, J. Seuntjens

Coffee Break in the Exhibit Hall | Visit the Vendors

9:30 AM - 11:00 AM

Multi-Disciplinary Interactive ePoster Discussion

10:00 AM - 10:30 AM

-Exhibit Hall | Forum 1

WE-C1000-lePD-F1 Quantitative Imaging
WE-C1000-lePD-F1-01 Using CycleGAN Machine Learning to Increase Accuracy of Relative Electron Density and Proton Stopping Power Ratio - J. Scholey*, L. Vinas, V. Kearney, S. Yom, P. Larson, M. Descovich, A. Sudhyadhom
WE-C1000-lePD-F1-02 A Dual-Energy Approach for Visualizing AGuIX Nanoparticle Uptake in On-Treatment KV-CBCT - M. Jacobson*, T. Harris, S. Bennett, M. Myronakis, I. Ozoemelum, O. Tillement, F. Lux, A. Sudhyadhom, R. Berbeco
WE-C1000-lePD-F1-03 Automating 4DCT-Ventilation Imaging Generation Using AI-Based Advanced Lung Contours - Y. Chen*, S. Pahlavian, P. Jacobs, F. Forghani, E. Castillo, R. Castillo, Y. Vinogradskiy
WE-C1000-lePD-F1-04 The Potential Role of Radiomic-Driven Treatment Decision-Making for Locally Advanced NPC - X. Han*, X. Teng, J. Zhang, Z. Ma, S. Lam, H. Xiao, C. Liu, W. Li, Y. Huang, F. Lee, J. Cai
WE-C1000-lePD-F1-05 On the Experimental Test of a Blurry Image Decomposition Algorithm for Correction of PET Motion Artifacts for Stereotactic Body Radiotherapy - H. Zhong*, Y. Lu, N. Morrow, E. Gore, X. Li, Y. Liu

-Exhibit Hall | Forum 2

WE-C1000-lePD-F2 MR Guidance for Motion Management
WE-C1000-lePD-F2-01 3D Ultrasound to 3D MR Image Registration for Motion Management in the Liver Using Novel MR-Compatible Ultrasound Probe - S. Jupitz*, B. Bednarz
WE-C1000-lePD-F2-02 Enhancing Image Quality of 3D View-Sharing Sequence Acquired Abdominal Free-Breathing 4D-MRI by Retrospective Motion Artifacts Suppression by Synthetic Radial K-Space (R-MASSK) - Y. Wong*, H. Chang, W. Liu, W. Wang, Y. Zhang, H. Wu, H. Lee, A. Cheung, T. Li, J. Cai
WE-C1000-lePD-F2-03 Developing In-Situ QA Tools for MRI-MV Isocenter Coincidence Check in 0.35T MRgRT - T. Kim*, H. Zhang, S. Marasini, M. Cole, G. Koenig, R. Flores
WE-C1000-lePD-F2-04 Dynamic 2D Cine From Beam Eye's View (BEV) with Projected Tumor Volume for MR-Guided Radiotherapy - X. Nie, G. Li*
WE-C1000-lePD-F2-05 Real-Time Target Tracking Enhancement in 0.35T MRgRT Using Super-Resolution Reconstruction - J. Lee, Z. Ji, S. Marasini, J. Chun*, J. Kim, T. Kim

Therapy Interactive ePoster Discussion

10:00 AM - 10:30 AM

-Exhibit Hall | Forum 3

WE-C1000-lePD-F3 Therapy External Beam Radiotherapy - Guidance and Delivery Techniques
WE-C1000-lePD-F3-01 Development of Colli-DTRT: A Non-Coplanar Intensity Modulated Arc Therapy Technique with Dynamic Collimator Rotation - J. Bertholet*, C. Zhu, P. Mackeprang, H. Loebner, G. Guyer, W. Volken, O. Elicin, D. Aebbersold, M. Stampanoni, S. Mueller, M. Fix, P. Manser

MEDICAL PHYSICS**Wednesday, July 13, 2022**

WE-C1000-lePD-F3-02 The Impact of Patient Coaching During Mask Based Treatment On the GammaKnife Icon - K. Skidmore*, C. Ramsey, J. Bowling, E. Ross, I. Pfeiffer, G. Clark, D. Hauge
WE-C1000-lePD-F3-03 Single-Shot Thermoacoustic Measurements During Conventional Delivery – Pristine VS. Planned - S. Patch*, Y. Hao, T. Zhao
WE-C1000-lePD-F3-04 Measurement of Proton Beam Triggering Latency and Resulting Dose Delivery Error - M. Delafuente*, S. Oliarie Motlagh, M. Kim, S. Feigenberg, L. Dong, E. Diffenderfer
WE-C1000-lePD-F3-05 Dosimetric Delivery Validation of Dynamically Collimated Pencil Beam Scanning Proton Therapy - N. Nelson*, W. Culberson, D. Hyer, T. Geoghegan, K. Patwardhan, B. Smith, R. Flynn, J. Yu, A. Gutierrez, P. Hill

-Exhibit Hall | Forum 4

WE-C1000-lePD-F4 Therapy Dose Calculation and Verification - I

WE-C1000-lePD-F4-01 Ionizing Radiation Acoustic Imaging for 3D Relative Dosimetry - N. Ba Sunbul*, W. Zhang, D. Litzenberg, I. Oraiqat, K. Chang, B. Rosen, S. Clarke, S. Pozzi, P. Carson, M. Matuszak, I. El Naqa
WE-C1000-lePD-F4-02 A Comparison of AAPM's TG-51 and IAEA's TRS-483 Protocols for Clinical Reference Dosimetry of the CyberKnife M6 - J. Duchaine*, D. Markel, J. Ley, D. Béliveau-nadeau, H. Bouchard
WE-C1000-lePD-F4-03 A Dosimetric Study of the Use of Hydrogel SpaceOAR™ in the Reduction of Rectal Doses for Patients Undergoing Prostate Stereotactic Body Radiotherapy - N. Gross*, R. Teboh Forbang, H. Kadji, G. Gejerman, B. Lewis
WE-C1000-lePD-F4-04 Ideal Dosimetric Leaf Gap as a Function of Equivalent Square Field Size - J. Seekamp*, D. Pearson
WE-C1000-lePD-F4-05 Investigating the Quality of Data Required to Commission a Treatment Planning System - R. Shaw*, S. Luan, M. Albuaian

Multi-Disciplinary Interactive ePoster Discussion

10:00 AM - 10:30 AM

-Exhibit Hall | Forum 5

WE-C1000-lePD-F5 3D Printing and Phantom Development
WE-C1000-lePD-F5-01 Multi-MATE: High-Throughput Automated Small Animal Radiation Platform - L. Jiang*, R. Neph, K. Sheng
WE-C1000-lePD-F5-02 Developing a Pneumatic-Driven, Dual-Modal (MR/CT) and Anthropomorphic Breathing Phantom for Image-Guided Radiotherapy - T. Chiu*, S. Ho, J. Visak, M. Willis, Y. Zhang
WE-C1000-lePD-F5-03 Implementation of 3D-Printed Electron Cutout Block Filled with Tungsten BB for Electron Therapy - S. Kim*
WE-C1000-lePD-F5-04 Development of An Extension Device for Cranial Localization On Patients with Broad Torsos for Stereotactic Radiosurgery Treatments - E. Morris*, C. Miller, K. Woods, M. Cao

-Exhibit Hall | Forum 6

WE-C1000-lePD-F6 Functional Imaging in Radiation Therapy
WE-C1000-lePD-F6-01 Active Bone Marrow Delineation in a Swine Model Via Proton Density Fat Fraction MRI and Multi-Energy CT - D. Coleman*, J. Meudt, D. Shanmuganayagam, J. Shah, A. McMillan, A. Pirasteh, J. Miller, B. Bednarz, M. Lawless
WE-C1000-lePD-F6-02 Does Lung Function Imaging Modality Have a Dosimetric Impact On Functional Avoidance Treatment Planning: Assessment Using Prospective Clinical Trial Data - J. Belardo*, S. Zhang, E. Castillo, R. Castillo, C. Rusthoven, B. Jones, M. Miften, T. Guerrero, I. Grills, Y. Chen, F. Forghani, P. Sullivan, Y. Vinogradskiy
WE-C1000-lePD-F6-03 Investigating the Feasibility of CT Ventilation Imaging On Fast, Low-Dose 4DCBCT to Enable Daily Adaptive Lung Function Sparing - H. Byrne*, O. Dillon, S. Blake, J. Kipritidis, R. O'Brien, P. Keall
WE-C1000-lePD-F6-04 PET Image Quality Enhancement for Reflexion X1 Biology-Guided Radiotherapy (BGRT) System Using Patient-Specific Mean Teacher UNet (MT-UNet) - J. Fu*, Z. Zhang, L. Shi, Z. Hu, P. Dong, G. Pratz, L. Vitzthum, D. Chang, L. Xing, W. Liu

2022 Annual Meeting Calendar of Events**Wednesday, July 13, 2022****Therapy Interactive ePoster Discussion**

10:00 AM - 10:30 AM

-Exhibit Hall | Forum 7

WE-C1000-IePD-F7 Therapy Radiotherapy Planning and Delivery

WE-C1000-IePD-F7-01 Using Varian TrueBeam Developer Mode and Varian TrueBeam Couch (6-DOF) to Simulate 4D Respiratory Motion and to Counteract the Phantom Motion in Real Time - Y. Cao*, H. Malhotra

WE-C1000-IePD-F7-02 Hypofractionated Radiotherapy Regimens for Early Stage Non-Small Cell Lung Cancer - F. Liu*, M. Munley

WE-C1000-IePD-F7-03 High Definition Motion Management Safety Function Testing - Z. Pham*, C. Ramsey, K. Skidmore, J. Bowling, E. Ross, I. Pfeiffer

WE-C1000-IePD-F7-04 Improving the Delivery Efficiency of Respiratory-Gated Radiotherapy Via Model-Predictive Control - E. Salari*, T. Mazur, G. Sharp

WE-C1000-IePD-F7-05 Clinical Implementation of Knowledge-Based Planning (KBP) Reduces Inter-Planner Variations for Prostate Cancer Treatments - H. Xie*, J. Roper, J. Wolf, O. Kayode, X. Yang, T. Liu, A. Jani, J. Bradley, J. Zhang

WE-C1000-IePD-F7-06 Use of a Novel Kernel Discovery Method for KV Beam Dose Calculation in Small Animal Irradiators - X. Liu*, T. Zhu, R. Wiersma

Professional Symposium

10:15 AM - 12:15 PM

-Room 206

WE-DE-206 Surviving Change in the Reimbursement Environment

Moderators: Michele Ferenci, Penn State Cancer Institute, Hershey, PA and Amy Wexler, University of Missouri- Columbia, Columbia, MO

10:15 AM **B. Sintay**, Cone Health: Surviving Change in the Reimbursement Environment

10:35 AM **C. Mantz**, GenesisCare: Surviving Change in the Reimbursement Environment

10:55 AM **W. Fuss**, Health Policy Solutions: Surviving Change in the Reimbursement Environment

11:45 AM **Q & A****SAM Imaging Educational Course**

10:15 AM - 12:15 PM

-Room 207

WE-DE-207 Dual Energy CT - Clinical Implementations and Remaining Challenges

Moderators: Xinhui Duan, UT Southwestern Medical Center, Allen, TX and Rick Robert Layman, UT MD Anderson Cancer Center, Houston, TX

10:15 AM **X. Duan**, UT Southwestern Medical Center: Dual-Energy CT Data Acquisition: Existing Technologies and New Advances

10:50 AM **M. Jacobsen**, UT MD Anderson Cancer Center: A Guide to Dual-Energy CT Post-Processing: Updates and Ongoing Challenges

11:25 AM **T. Fleiter**, University of Maryland: Dual-Energy CT Clinical Applications

12:00 PM **Q & A****SAM Imaging Scientific Symposium**

10:15 AM - 12:15 PM

-Room 201

WE-DE-201 SIIM-AAPM Joint Symposium: Machine Intelligence in Medical Imaging

Moderators: Jeffrey Siewerdsen, Johns Hopkins University, Baltimore, MD and Paul Nagy, JHU, Baltimore, MD

MEDICAL PHYSICS**Wednesday, July 13, 2022**

10:15 AM **P. Nagy**, JHU: IT Infrastructure and Standards To Support AI Developments in Medical Imaging

10:40 AM **S. Armato**, The University of Chicago: AI Methods To Enable Advanced Computer-Assisted Detection and Diagnosis

11:05 AM **L. Ren**, University of Maryland: The Emerging Use of AI in Image-Guided Radiation Therapy

11:30 AM **E. Krupinski**, Emory University: Clinical Uses of AI in Medical Imaging

11:55 AM **Q & A****SAM Multi-Disciplinary Scientific Symposium**

10:15 AM - 11:15 AM

-Ballroom C

WE-D-BRC Machine Intelligence in Imaging for Treatment Response Assessment and Prediction: Implications for Adaptive Radiation Therapy

Moderator: Wensha Yang, University of Southern California, Los Angeles, CA

10:15 AM **J. Wang**, UT Southwestern Medical Center: Treatment Response and Outcome Prediction for Head and Neck Cancer Adaptive Radiation Therapy Using Pre- and During-Treatment Imaging

10:32 AM **S. Mattonen**, University of Western Ontario: Artificial Intelligence in Lung Cancer: Using Radiomics To Predict Tumor Recurrence

10:49 AM **W. Yang**, University of Southern California: Advanced Prediction of GBM Recurrence via Stem Cell Niche Proximity Estimation Coupled SVM for Personalized Radiotherapy

11:06 AM **Q & A****Therapy Scientific Session**

10:15 AM - 11:15 AM

-Ballroom A

WE-D-BRA FLASH – Platforms and Instrumentation

Moderators: Magdalena Bazalova-Carter, University of Victoria, Victoria, BC and Muhammad Ramish Ashraf, Stanford University, Palo Alto, CA

11:05 AM **WE-D-BRA-01** A High Spatiotemporal Resolution 2D Strip Ionization Chamber Array for Proton Pencil Beam Scanning FLASH Radiotherapy - Y. Yang*, C. Shi, C. Chen, P. Tsai, S. Huang, M. Kang, C. Lin, F. Chang, A. Chhabra, I. Choi, W. Tomé, C. Simone, H. Lin

10:15 AM **WE-D-BRA-02** A Novel Small Animal FLASH Irradiator (SAFI) Based On Distributed KV X-Ray Sources - Y. Tan*, S. Zhou, Q. Chen, T. Mazur, A. Darafsheh, T. Zhang

10:55 AM **WE-D-BRA-03** A Novel Ultra-High Dose Rate Proton Therapy Technology: Spot-Scanning Proton Arc therapy FLASH (SPLASH) - G. Liu*, L. Zhao, X. Li, S. Zhang, S. Dai, X. Lu, X. Ding

10:25 AM **WE-D-BRA-04** Calibration and Validation of a Real-Time Oximeter for FLASH-RT Experiments - K. Liang*, G. Pratz, R. Manjappa, B. Ha, C. Liu, S. Melemenidis, J. Rao, B. Loo

10:35 AM **WE-D-BRA-05** Design and Optimization of 18 MeV Accelerator for X-Ray FLASH Radiotherapy Demonstration System - S. Katsaev*, R. Agustsson, S. Boucher, A. Li, M. Ruelas, K. Sheng, A. Smirnov

10:45 AM **WE-D-BRA-06** Multi-Layer Micro-Structured Detector for Electron FLASH and VHEE - D. Brivio*, A. Liles, M. Gagne, E. Sajo, P. Zygmanski

SAM Therapy Educational Course

10:15 AM - 12:15 PM

-Ballroom B

WE-DE-BRB Eliminating Health Disparities in Clinical Trials: How can Physicists Contribute?

Moderators: Kelly Paradis, Michigan Medicine, Ann Arbor, MI and Elizabeth Covington, University of Michigan, Ann Arbor, MI

2022 Annual Meeting Calendar of Events**Wednesday, July 13, 2022**

- 10:15 AM **C. Chapman, Michigan Medicine: The Urgency of Addressing Inequity in Clinical Trials**
- 10:45 AM **P. Taylor, UT MD Anderson Cancer Center: Opportunities for Medical Physics Advocacy and Equity in Clinical Trials**
- 11:10 AM **H. Whitney, Wheaton College: Effect of Diversity of Patient Population and Acquisition Systems On Artificial Intelligence in Medical Physics**
- 11:35 AM **Z. Iqbal, University of Alabama - Birmingham: How AI Algorithms Have the Potential To Perpetuate Or Dismantle Bias**
- 12:00 PM **Q & A**

Specialty Program The New Era of Radiopharmaceutical Therapy

10:15 AM - 11:15 AM

-Room 202

WE-D-202 MPPG14a Yttrium-90 Microsphere Treatments Workshop: Recommendations and Implementation Experience

Moderator: Nathan Busse, Colorado Associates in Medical Physics, Colorado Springs, CO

- 10:15 AM **N. Busse, Colorado Associates in Medical Physics: Summary of MPPG 14a Recommendations**
- 10:27 AM **R. Hobbs, Johns Hopkins University: Imaging and Dosimetry of Y-90**
- 10:39 AM **M. Jafari, Atlantic Health System: Regulatory Compliance, Patient and Staff Safety**
- 10:51 AM **D. Alvarez, Miami Cancer Institute: Clinical Implementation of MPPG 14**
- 11:03 AM **Q & A**

SAM Educational Topic-Specific Guided Tours-Therapy

10:15 AM - 12:15 PM

-Room 209A

WE-TOUR-209A Independent Dose Verification Solutions (Limited Capacity: First Come, First Served)

Moderators: Joseph Scotto, The Ohio State University, Columbus, OH and Kelsey Bittinger, The Ohio State University James Cancer Hospital, Columbus, OH

- 10:15 AM **J. Scotto, The Ohio State University: Independent Dose Verification Solutions**
- K. Bittinger, The Ohio State University James Cancer Hospital: Independent Dose Verification Solutions**
- 10:45 AM **Group Tours to the following vendors: S Holmes with Standard Imaging, Inc.; E Jhala with Varian Medical Systems; R Sharma with MIM Software, Inc.**

SAM Educational Topic-Specific Guided Tours-Imaging

10:15 AM - 12:15 PM

-Room 209B

WE-TOUR-209B Imaging Workflow Solutions (Limited Capacity: First Come, First Served)

Moderator: Christiane Burton, St Jude Children's Research Hospital, Memphis, TN

- 10:15 AM **E. Diller, Indiana University School of Medicine: Imaging Workflow Solutions**
- 10:45 AM **Group Tours to the following vendors: K. Forgione with Siemens Healthineers; A Good with Atirix; P Pyers with Diagnostomic; B MacDougall with Quantivly**

Multi-Disciplinary Interactive ePoster Discussion

10:30 AM - 11:00 AM

-Exhibit Hall | Forum 2

WE-C1030-lePD-F2 Deep Learning for Image-guided Therapy**MEDICAL PHYSICS****Wednesday, July 13, 2022**

- WE-C1030-lePD-F2-01 Deep-Learning Method for Segmenting Head and Neck Tumours in KV Images Acquired During Radiotherapy** - M. Gardner*, A. Mylonas, M. Mueller, Y. Ben Bouchta, J. Sykes, P. Keall, D. Nguyen
- WE-C1030-lePD-F2-02 Transformer-Based Deep Learning Architecture for Improved Cardiac Substructure Segmentation** - N. Summerfield*, J. Qiu, S. Hossain, M. Dong, C. Glide-Hurst
- WE-C1030-lePD-F2-03 Realistic Respiratory Motion Simulation Using Deep Learning** - D. Lee*, S. Nadeem, Y. Hu
- WE-C1030-lePD-F2-04 DECT-Based Material Mass Density Mapping for Proton Monte Carlo Dose Calculation Using Physics-Informed Deep Learning** - C. Chang*, Y. Gao, T. Wang, Y. Lei, Q. Wang, J. Bradley, T. Liu, L. Lin, J. Zhou, X. Yang
- WE-C1030-lePD-F2-05 Deformable CT Image Registration Using Unervised Deep Learning Networks** - Y. Lei, Y. Fu, Z. Tian, T. Wang, J. Zhang, X. Dai, J. Zhou, J. Roper, M. McDonald, D. Yu, J. Bradley, T. Liu, X. Yang*

Therapy Interactive ePoster Discussion

10:30 AM - 11:00 AM

-Exhibit Hall | Forum 3

WE-C1030-lePD-F3 SBRT Planning and Outcomes

- WE-C1030-lePD-F3-01 The Spatial Accuracy of Ring-Mounted Halcyon Versus TrueBeam Linac for Single-Isocenter/Multi-Target SBRT Treatment** - R. Mallory*, D. Pokhrel
- WE-C1030-lePD-F3-02 A New Independent Outcome Predictor for Lung Stereotactic Body Radiation Therapy Patients, Plan Averaged Beam Modulation** - H. Liu*, C. Li
- WE-C1030-lePD-F3-03 Dosimetric Sensitivity of Acuros XB to Lung HU Values in Lung SBRT Planning** - W. Wang*, Y. Yang, C. Kelsey, T. Mullikin, F. Yin, Y. Cui
- WE-C1030-lePD-F3-04 Development of Automated Sphere Placement Script for Lattice SBRT Using the Eclipse Scripting Application Programming Interface (ESAPI)** - W. Tucker*, M. Schmidt, T. Mazur, J. Hilliard, M. Spraker, J. Kavanaugh
- WE-C1030-lePD-F3-05 Comparing the Analytic Anisotropic Algorithm Vs. Acuros XB for Dose Calculation in the Setting of Radioablation of Ventricular Tachycardia** - M. Prusator*, W. Tucker, T. Mazur, G. Hugo, S. Goddu, C. Robinson, P. Cuculich, P. Samson, M. Schmidt, N. Knutson

-Exhibit Hall | Forum 4

WE-C1030-lePD-F4 TBI/TSET

- WE-C1030-lePD-F4-01 Monte Carlo Simulation of Cherenkov Imaging for TSET Patients** - W. Zhong*, T. Miao, G. Ding, Y. Zhu, T. Zhu
- WE-C1030-lePD-F4-02 The Effect of Setup Uncertainties to Dose Coverage in VMAT-TBI Treatment** - K. Huang*, Y. Yue, K. Hutchins, B. Thorndyke, C. Desrosiers, C. Njeh
- WE-C1030-lePD-F4-03 Stanford VMAT TBI Technique** - N. Kovalchuk*, E. Simiele, L. Skinner, Y. Yang, N. Howell, J. Lewis, C. Hui, E. Blomain, R. Hoppe, S. Hiniker
- WE-C1030-lePD-F4-04 Updating a Total Body Irradiation Program to Allow for High Dose Treatments with Lung Blocking** - J. Huang*, K. Schaefer, M. Lawless, L. DiMaso-Myers, T. Tyson, K. Bradley
- WE-C1030-lePD-F4-05 Single Institution Experience of Total Body Irradiation (TBI) Commissioning of Four Medical Linear Accelerators (Linac)** - Y. Xie*, E. Cullom, J. Kowalski, A. Rodrigues, Q. Wu, Y. Sheng
- WE-C1030-lePD-F4-06 Evaluation of Dosimetric Effects of Patient Positioning for VMAT-Based Total Body Irradiation** - I. Duarte*, P. Galavis, S. Taneja, N. Gerber, D. Barbee, J. Teruel

SAM Therapy Scientific Symposium

11:15 AM - 12:15 PM

-Ballroom C

WE-E-BRC Outcome-driven and Risk-adapted Personalized Treatment Planning

Moderator: Arezoo Modiri, University of Maryland in Baltimore, Rosedale, MD

2022 Annual Meeting Calendar of Events**Wednesday, July 13, 2022**

- 11:15 AM **L. Specht, University of Copenhagen: Beyond Constraints - Optimizing Modern Radiation Therapy for Lymphomas in the Individual Patient**
- 11:32 AM **M. Thor, Memorial Sloan Kettering Cancer Center: Personalized Optimization of Radiotherapy Plans Using TCP and NTCP Based Constraints**
- 11:49 AM **A. Modiri, University of Maryland in Baltimore: Cardiotoxicity Avoidance Through Personalized Optimization of Radiotherapy Plans**
- 12:06 PM **Panel Discussion**

Therapy Scientific Session

11:15 AM - 12:15 PM

-Ballroom A

WE-E-BRA Novel Radiotherapy Technologies and Techniques

Moderators: Ke Sheng, UCLA School of Medicine, Los Angeles, CA and Hyejoo Kang, Loyola University Medical Center, Maywood, IL

- 11:15 AM **WE-E-BRA-01 Advancing Radioimmunotherapy For Brain Tumors Using In Vitro Assays** - Y. Walter*, O. Salas, A. Benoit, D. Jordan, E. Jank, A. Hubbard, A. Ekpenyong
- 11:25 AM **WE-E-BRA-02 Analysis of a Novel Concept for Intraocular Tumors - the Combination of Brachytherapy and Teletherapy** - H. Manke*, D. Flühs, M. Stroth, S. Müller, B. Spaan, J. Albrecht
- 11:35 AM **WE-E-BRA-03 Effect of PEGylated Gold Nanoparticles in Intraoperative Radiotherapy (IORT) Dose Enhancement in the MCF-7 Human Breast Cancer Cell Line Using Gafchromic™ EBT3 Films** - N. Seyedpour, H. Ghanbari, E. Shaabani, F. Kalantari, S. Gholami*
- 11:45 AM **WE-E-BRA-04 MRI-Only Treatment Planning (MRTP) for Interstitial Gynecologic HDR Brachytherapy** - C. Lee*, E. Kaza, T. Harris, D. O'Farrell, R. Cormack, I. Buzurovic
- 11:55 AM **WE-E-BRA-05 Prompt Gamma-Ray Spectroscopy Validation for Real-Time Proton Range Verification** - S. Tattenberg*, R. Marants, K. Niepel, T. Bortfeld, A. Sudhyadhom, G. Landry, K. Parodi, J. Verbarg
- 12:05 PM **WE-E-BRA-06 The Stereotactic Map and Compass: How to Use AFI Strategy Optimization and R50%Analytic to Find Your Way to An Excellent SRS/SRT Plan** - I. Cordrey*, D. Desai

Specialty Program The New Era of Radiopharmaceutical Therapy Scientific Session

11:15 AM - 12:15 PM

-Room 202

WE-E-202 Radioactive Microspheres and Nanoparticles

Moderators: Diane Alvarez, Miami Cancer Institute, Miami, FL and Jan Schuemann, Massachusetts General Hospital, Boston, MA

- 11:15 AM **WE-E-202-01 Does Lung Shunt Fraction Correlate to Lung Dose in Y90 Radioembolization Treatments? A Study Using Voxel-Based Monte Carlo Dosimetry** - M. Bobic*, E. Wehrenberg-klee, C. Grassberger, H. Paganetti, J. Schuemann, A. Bertolet
- 11:25 AM **WE-E-202-02 Impact of Image Registration Type and Quality On Post-Radioembolization Y90 PET/CTdosimetry** - A. Gopal*, O. Siddiqui, J. Molitoris, M. Guerrero
- 11:35 AM **WE-E-202-03 Intra-Brain Vascular Models Within the Adult Mesh-Type Reference Phantoms for Applications to External Beam Radiotherapy and Nuclear Medicine Dosimetry** - C. Correa Alfonso*, J. Withrow, S. Domal, L. McCullum, C. Grassberger, S. Xing, H. Paganetti, W. Bolch
- 11:45 AM **WE-E-202-04 Novel Dosimetric Method for Dosimetric Analysis of the Multiple Nucleus-Targeted AuPd103 Radioactive Nanoparticles for a Radionuclide Treatment** - J. Lee*, S. Wong, S. McMahon, C. Kumaradas

MEDICAL PHYSICS**Wednesday, July 13, 2022**

- 11:55 AM **WE-E-202-05 BEST IN PHYSICS (THERAPY): Precision Dosimetry in Yttrium-90 Radioembolization Through CT Imaging of Radiopaque Microspheres in a Rabbit Liver Model** - E. Henry*, M. Strugari, G. Mawko, K. Brewer, D. Liu, A. Gordon, J. Bryan, C. Maitz, R. Abraham, S. Kappadath, A. Syme
- 12:05 PM **WE-E-202-06 Variations in Activity and Dose Calculations in Pre-Treatment Planning for Hepatic Lobar Y-90 Microspheres Therapy When Using Anatomic Versus Functional Imaging Contouring Techniques** - D. Alvarez*, L. Rodriguez, R. Herrera, T. Kutuk, E. Saugar, A. Kaiser, M. Chuong, A. Gutierrez, S. Kim, R. Gandhi

Lunch Break in Exhibit Hall | Visit the Technical Exhibits

12:15 PM - 1:45 PM

Therapy Scientific Session

1:45 PM - 2:45 PM

-Room 206

WE-F-206 FLASH Radiotherapy - Radiobiology, Treatment Planning and Dosimetry - I

Moderators: Amit Sawant, University of Maryland School of Medicine, Baltimore, MD and Amy Shu-Jung Yu, Stanford University Cancer Center, Stanford, CA

- 1:45 PM **WE-F-206-01 Evaluation of a Conventionally Shielded Proton Treatment Room for FLASH Radiotherapy** - Z. Xiao*, J. Speth, Y. Zhang, E. Lee, A. Mascia, M. Lamba
- 1:55 PM **WE-F-206-02 FLASH Irradiation of Drosophila Melanogaster Using Low Energy X-Rays** - A. Hart*, J. Dudzic, J. Eby, S. Perlman, M. Bazalova-Carter
- 2:05 PM **WE-F-206-03 Measurement-Based Patient-Specific QA for Spot Scanning Proton FLASH Radiotherapy** - S. Huang*, Y. Yang, S. Wei, M. Kang, P. Tsai, C. Chen, C. Simone, H. Lin
- 2:15 PM **WE-F-206-04 Plastic Scintillation Detector for Dosimetric Characterization of Mobetron Ultra-High Dose Rate Electron Beam** - G. Famulari*, K. Zerouali, O. Piron, J. Aubry, F. DeBlois, J. Carrier
- 2:25 PM **WE-F-206-05 Quantifying Reactive Species and Oxygen Consumed in FLASH Radiotherapy in Vitro to Assess Mechanisms of Tissue Damage Reduction** - J. Sunnerberg*, A. Petusseau, M. Rahman, X. Cao, P. Bruza, S. Vinogradov, B. Pogue
- 2:35 PM **WE-F-206-06 Radiobiological Effects of Ultra-High FLASH Dose Rate Using X-Rays Generated by the Small Animal Radiation Research Platform** - D. Goia*, K. Shoniyozov, A. Velalopoulou, I. Verginadis, M. Kim, E. Diffenderfer, L. Dong, C. Koumenis

SAM Imaging Educational Course

1:45 PM - 3:45 PM

-Room 207

WE-FG-207 Gonadal & Fetal Shielding Updates

Moderator: Rebecca Milman, University of Colorado School of Medicine, Denver, CO

- 1:45 PM **J. Elee, LA Dept of Environmental Qual: Regulatory Implications of Changes in Patient Shielding Practices**
- 2:10 PM **Y. Thakur, Vancouver Coastal Health Authority: Implementing Change in Patient Shielding Practices**
- 2:40 PM **Q. Moore, Mercy College of Ohio: A Technologist's View of Patient Shielding**
- 3:10 PM **R. Milman, University of Colorado School of Medicine: Patient Shielding: What's Next?**
- 3:30 PM **Q & A**

-Room 201

WE-F-201 Fundamentals of Photon-Counting CT

Moderator: Xiangyang Tang, Emory University, Johns Creek, GA

- 1:45 PM **J. Maltz, GE Healthcare: Deep Silicon Detectors for High Spatial and Spectral Resolution Photon Counting CT**

2022 Annual Meeting Calendar of Events**Wednesday, July 13, 2022**

- 2:03 PM **K. Rajendran, Mayo Clinic: Photon-Counting Detector CT: Fundamentals, Technical Considerations, and Clinical Applications**
- 2:21 PM **X. Tang, Emory University: Preconditioning for Material Decomposition in Photon-Counting CT**
- 2:39 PM **Q & A**

SAM Multi-Disciplinary Scientific Symposium

1:45 PM - 2:45 PM

-Ballroom C

WE-F-BRC Advances in Image-Guided RT: Towards Real-Time and Biological Adaptation

Moderator: Catherine Coolens, Princess Margaret Hospital, Toronto, ON

- 1:45 PM **T. Stanescu, Princess Margaret Cancer Centre: Online & Offline Adaptive Dose Accumulation for MRgRT**
- 2:00 PM **B. Cai, University of Texas Southwestern Medical Center: Biological Emission-Guided RT**
- 2:15 PM **C. Coolens, Princess Margaret Hospital: Requirements of Molecular Imaging for Biological Description of the Tumor Micro-Environment Using Transport Modeling**
- 2:22 PM **C. Grassberger, Massachusetts General Hospital: Considerations of Biological Effectiveness in Proton and Targeted Therapy**
- 2:37 PM **Q & A**

SAM Therapy Educational Course

1:45 PM - 3:45 PM

-Ballroom A

WE-FG-BRA Enhancing a Physicist's Role in Radiation Therapy Treatment Plan Assessment

Moderators: Lindsey Olsen, Memorial Hospital - UHealth, Colorado Springs, CO and Stephanie Parker, Wake Forest Baptist Health High Point Medical Center, Winston-Salem, NC

- 1:45 PM **D. Jacqmin, University of Wisconsin-Madison: Enhancing a Physicist's Role in the Assessment of Treatment Plan Quality**
- M. Kim, University of Washington: Enhancing a Physicist's Role in the Assessment of Treatment Plan Quality**
- 2:35 PM **S. Parker, Wake Forest Baptist Health High Point Medical Center: Getting It Right the First Time: Moving Checks Upstream in the Treatment Planning Process**
- 2:50 PM **B. Juneja, MD Anderson Cancer Center at Cooper: Scripting and Automation for Efficient and Effective Chart Checks in a Pinnacle/Mosaic Environment**
- 3:02 PM **G. Kim, UC San Diego: Lessons Learned from Upstream Physics Peer Review of Plan Quality with the Eclipse Treatment Planning System**
- 3:14 PM **L. Rankine, The University of North Carolina at Chapel Hill: Experience with Upstream Plan Quality Checks Using the Raystation Treatment Planning System**
- 3:26 PM **Q & A**

SAM Professional Symposium

1:45 PM - 3:45 PM

-Ballroom B

WE-FG-BRB Ethics and AI in Radiology and Radiation Oncology

Moderators: Adam Riegel, Northwell Health, Lake Success, NY and Joel St-Aubin, University of Iowa, Iowa City, IA

- 1:45 PM **K. Osterman, NYU Langone Health: Bioethics Basics for AI in Medicine**
- 2:05 PM **D. Zheng, University of Rochester: Uses of AI in Radiology and Radiation Oncology**

MEDICAL PHYSICS**Wednesday, July 13, 2022**

- 2:25 PM **M. Hyun, University of Nebraska Medical Center: Moral Dilemmas in the Clinical Use of Medical AI**
- S. Langer, Mayo Clinic: Moral Dilemmas in the Clinical Use of Medical AI**
- 2:55 PM **M. Hyun, University of Nebraska Medical Center: Moral Dilemmas in Medical AI Research and Development**
- S. Langer, Mayo Clinic: Moral Dilemmas in Medical AI Research and Development**
- 3:25 PM **Q & A**

SAM Therapy Scientific Symposium

1:45 PM - 3:45 PM

-Room 202

WE-FG-202 Biologically Weighted Robust Planning of Proton Therapy: Knowledge Gaps, Controversies and Solutions

Moderators: Wei Liu, Mayo Clinic Arizona, Phoenix, AZ and Reinhard Schulte, Loma Linda University, Grand Terrace, CA

- 1:45 PM **W. Liu, Mayo Clinic Arizona: LET-Guided Adverse Event Initialization Study and LET-Guided Robust Optimization in Proton Therapy**
- 2:05 PM **R. Schulte, Loma Linda University: Introduction: The Clinical and Radiobiological Perspective**
- 2:25 PM **R. Mohan, UT MD Anderson Cancer Center: Overview of Biologically Weighted Robust Planning of Proton Therapy: Knowledge Gaps, Controversies, and Solutions**
- 2:45 PM **K. Parodi, Ludwig-Maximilians-Universitat Munchen: Mitigation of Proton Range Uncertainties With Image Guidance and Implications On Treatment Planning**
- 3:05 PM **A. McNamara, Harvard/MGH: Variable Proton RBE Modeling Developments for Treatment Planning**
- 3:25 PM **Panel Discussion**

Therapy Scientific Session

2:45 PM - 3:45 PM

-Room 206

WE-G-206 Advanced Preclinical and Clinical RT Strategies and Techniques

Moderators: Jordan Slagowski, University of Wisconsin - Madison, Madison, WI and Michele Kim, University of Pennsylvania, Philadelphia, PA

- 2:45 PM **WE-G-206-01 A Platform for Murine Whole Thoracic Lung Irradiation with Electron FLASH Radiotherapy at Variable Dose Rates** - K. Byrne, A. Gerry, J. Xu, Y. Poirier, A. Sawant, I. Jackson, K. Jiang*
- 2:55 PM **WE-G-206-02 Design and Optimization of a Patient-Specific Ridge Filter for FLASH Proton PBS Delivery** - J. Pakela*, F. Vander Stappen, L. Hotoiu, R. Labarbe, B. Burgdorf, B. Teo, E. Diffenderfer, L. Dong, A. Lin, J. Zou
- 3:05 PM **WE-G-206-03 Detailed Investigation of the Faraday Cup, a Dosimetry Device for Proton Therapy Up to Ultra-High Dose Rates** - C. Winterhalter*, J. Ehwald, M. Togno, A. Lomax, D. Weber, S. Safai
- 3:15 PM **WE-G-206-04 Dosimetric Characterization of the ARIEL 10 MV X-Ray Ultrahigh Dose-Rate (FLASH) Irradiation Platform at TRIUMF** - N. Esplen*, L. Egoriti, T. Planche, A. Hart, B. Paley, C. Hoehr, A. Gottberg, M. Bazalova-Carter
- 3:25 PM **WE-G-206-05 Increased Flexibility and Efficiency of a Double-Scattering FLASH Proton Beamline Configuration for In-Vivo SOBP Radiotherapy Treatments** - R. Hachadorian*, E. Cascio, T. Ruggieri, M. Bussiere, J. Schuermann
- 3:35 PM **WE-G-206-06 Optimization of Target Design and Dose Rates for FLASH-RT of an 18 MV Medical Linear Accelerator Model Via GEANT4 Monte Carlo Simulation** - A. Li*, K. Sheng, S. Boucher

2022 Annual Meeting Calendar of Events**Wednesday, July 13, 2022****Imaging Scientific Session**

2:45 PM - 3:45 PM

-Room 201

WE-G-201 Advances in Photon-Counting Imaging

Moderators: Maryam Bostani, University of California, Los Angeles, Los Angeles, CA and Adam Wang, Stanford University, Stanford, CA

2:45 PM **WE-G-201-01 Compton Scatter Events Improve Both Density and Spectral Dose Efficiency in Edge-On-Irradiated Silicon Photon-Counting CT** - F. Gronberg, Z. Yin*, J. Maltz, M. Persson

2:55 PM **WE-G-201-02 Experimental Optimization of Photon-Counting Dual-Energy Angiography** - S. Aubert*, J. Tanguay

3:05 PM **WE-G-201-03 BEST IN PHYSICS (IMAGING): First Experimental Demonstration of Inter-Detector Row X-Ray Scattering in Edge-On Silicon Photon Counting CT: Impacts On Detective Quantum Efficiency** - C. De Caro*, K. Li

3:15 PM **WE-G-201-04 Improved Spectral Imaging with More Energy Bins for Realistic Photon Counting Detectors** - A. Wang*, Y. Yang, S. Wang, Z. Yin

3:25 PM **WE-G-201-05 Metal Artifact Correction Using High-Energy Data in Photon-Counting CT** - D. Richtsmeier*, J. O'Connell, P. Rodesch, K. Iniewski, M. Bazalova-Carter

3:35 PM **WE-G-201-06 Reduction of Device Induced Artifacts in Novel Bioresorbable Flow Diverters Using Ultra High Resolution Photon Counting Detector CT** - E. Koons*, A. Oliver, D. Kallmes, C. McCollough, S. Leng

Multi-Disciplinary Scientific Session

2:45 PM - 3:45 PM

-Ballroom C

WE-G-BRC Machine Intelligence for Treatment Planning and Segmentation

Moderators: Maria Chan, Memorial Sloan Kettering Cancer Center, Basking Ridge, NJ and Casey Bojecho, University of California San Diego, La Jolla, CA

2:45 PM **WE-G-BRC-01 A Data-Driven Fluence Map Optimization Approach to Mitigate the Risk of Deep Learning Tumor Segmentation Misclassification** - R. Li*, N. Ebadi, J. Boutilier, P. Rad, J. Buatti, M. de Oliveira, N. Kirby, N. Papanikolaou, M. Bonnen, A. Roy

2:55 PM **WE-G-BRC-02 Cascaded Learning-Based Cone Beam CT Head-And-Neck Multi-Organ Segmentation** - Y. Lei, X. Dai*, Z. Tian, T. Wang, J. Zhou, J. Roper, B. Ghavidel, M. McDonald, D. Yu, J. Bradley, T. Liu, X. Yang

3:05 PM **WE-G-BRC-03 Deep Learning-Based Dose Prediction for Automated, Individualized Quality Assurance of Head and Neck Radiotherapy Plans** - M. Gronberg*, S. Gay, B. Beadle, A. Garden, H. Skinner, T. Netherton, W. Cao, I. Vazquez, A. Olanrewaju, C. Chung, C. Cardenas, C. Fuller, C. Peterson, A. Jhingran, R. Howell, T. Lim, M. Yang, R. Mumme, L. Court

3:15 PM **WE-G-BRC-04 Evaluation of Commercial AI Segmentation Software** - J. Roper*, T. Wang, Y. Lei, S. Dresser, B. Ghavidel, L. Qiu, J. Zhou, O. Kayode, K. Luca, J. Bradley, T. Liu, X. Yang

3:25 PM **WE-G-BRC-05 Performing Fully Automated Treatment Planning Using Meta-Optimization** - C. Huang*, Y. Nomura, Y. Yang, L. Xing

3:35 PM **WE-G-BRC-06 A Deep Learning U-Net Based Model to Automatically Correct Inaccurate Auto-Segmentation for MR-Guided Adaptive Radiotherapy** - J. Ding*, Y. Zhang, A. Amjad, C. Sarosiek, N. Dang, X. Li

Refreshment Break | Level 3 | Convention Center

3:45 PM - 4:30 PM

MEDICAL PHYSICS**Wednesday, July 13, 2022****Professional Symposium**

4:30 PM - 6:00 PM

-Room 206

WE-H-206 Medical Physics and the Journal of Applied Clinical Medical Physics: The Evolving World of Publishing

Moderators: Michael Mills, James Graham Brown Cancer Center, Louisville, KY and John Boone, UC Davis Medical Center, Fair Oaks, CA

4:30 PM **M. Mills, James Graham Brown Cancer Center: An Emerging Consensus On Research Publishing in An Open Access Environment**

4:50 PM **J. Boone, UC Davis Medical Center: The Scope and Model of Medical Physics**

5:10 PM **S. Benedict, UC Davis Cancer Center: Taxonomy and Statistics in Medical Physics**

5:30 PM **S. Hedrick, Provision Center for Proton Therapy: Equity and Diversity in the AAPM and Journal of Applied Clinical Medical Physics**

5:50 PM **Q & A**

SAM Multi-Disciplinary Scientific Symposium

4:30 PM - 6:00 PM

-Room 207

WE-H-207 The Developing Role of Medical Physics and Imaging in Digital Pathology

Moderator: Kristy Brock, The University of Texas MD Anderson Cancer Center, Houston, TX

4:30 PM **A. Ward, University of Western Ontario: Integration of Imaging and Histopathology for Diagnosis and Therapy Guidance in Oncology**

4:50 PM **A. Contreras, MD Anderson Cancer Center: Challenges and Opportunities in Making Pathology Digital**

5:10 PM **K. Brock, The University of Texas MD Anderson Cancer Center: Radiographic-Pathologic Correlation**

5:30 PM **M. Yaffe, Sunnybrook Research Institute: Quantitative Multiplexed Imaging of Biomarkers and Radio-Histo-Genomic for Precision Cancer Management**

5:50 PM **Q & A**

SAM Imaging Educational Course

4:30 PM - 6:00 PM

-Room 201

WE-H-201 Ultrasound Performance Assessment and Quality Control

Moderator: Zheng Feng Lu, University of Chicago, Chicago, IL

4:30 PM **Z. Long, Mayo Clinic: ACR Accreditation Required Ultrasound QC Tests**

4:45 PM **J. Fowlkes, University of Michigan Health Systems: Doppler Ultrasound Applications and QC Tests**

5:00 PM **I. Rosado-Mendez, University of Wisconsin - ADCL: Ultrasound Elastography, Quantitative Ultrasound, and QIBA Initiatives**

5:15 PM **T. Liu, Emory University School of Medicine: Ultrasound-guided procedure: Real-Time Guidance in Prostate Brachytherapy**

5:30 PM **S. Dekker, Cablon Medical: Automated Ultrasound QC Methods**

5:45 PM **Q & A**

SAM Therapy Educational Course

4:30 PM - 6:00 PM

-Ballroom C

WE-H-BRC Building a Better Safety Net

Moderators: Eric Ford, University of Washington, Seattle, WA and Suzanne Evans, Yale University, New Haven, CT

2022 Annual Meeting Calendar of Events**Wednesday, July 13, 2022**

- 4:30 PM J. Meyer, University of Washington: Role of SGRT for Patient Safety (International ILS Analysis and Illustrative Case Studies)
- 4:50 PM Y. Rong, Mayo Clinic Arizona: Standardization of Clinical Workflows and Procedures and Its Impact on Safety
- 5:10 PM M. Wells, Piedmont Healthcare: Chart Checks Practice
- 5:30 PM S. Evans, Yale University: UCLA - Lessons Learned From RO-ILS: Building a Better Safety Net
- 5:50 PM Q & A

SAM Therapy Scientific Symposium

4:30 PM - 6:00 PM

-Ballroom A

WE-H-BRA AI-Empowered Clinical Decision Support for Personalized Radiation Therapy

Moderator: Jun Deng, Yale University School of Medicine, New Haven, CT

- 4:30 PM C. Shen, University of Texas Southwestern Medical Center: Toward Real-Time Adaptive Radiotherapy With AI
- 4:45 PM X. Qi, UCLA School of Medicine: AI-Driven Outcome Modeling and Response Prediction for Personalized Radiotherapy
- 5:00 PM Q. Wu, Duke University Medical Center: AI-Empowered Autosegmentation, Dose Prediction and Beyond
- 5:15 PM J. Deasy, Memorial Sloan Kettering Cancer Center: Radiomics and Radiobiological Optimization for Personalized Radiotherapy
- 5:30 PM J. Deng, Yale University School of Medicine: Digital Twins of Cancer Patients: A New Perspective To Support Clinical Decisions
- 5:45 PM Panel Discussion

SAM Imaging Scientific Symposium

4:30 PM - 6:00 PM

-Ballroom B

WE-H-BRB Photon-counting CT: Image Quality Optimization, Novel Algorithms, and Emerging Clinical Applications

Moderator: Xiangyang Tang, Emory University, Johns Creek, GA

- 4:30 PM K. Taguchi, Johns Hopkins University: Emerging Approaches for Improved Image Quality in Photon-Counting CT
- 4:50 PM X. Pan, University of Chicago: Quantitative Dual/Multi-Spectrum Computed Tomography
- 5:10 PM L. Yu, Mayo Clinic: Opportunities and Challenges in Clinical Applications of Photon-Counting CT
- 5:30 PM A. Wang, Stanford University: Image Quality Assessment Methods for Photon Counting CT
- 5:50 PM Q & A

SAM Therapy Educational Course

4:30 PM - 6:00 PM

-Room 202

WE-H-202 Cardiac Radioablation: Expanding Access Across Many Centers via Outreach and Collaboration

Moderator: Nels Knutson, Washington University School of Medicine, St. Louis, MO

- 4:30 PM N. Knutson, Washington University School of Medicine: Cardiac Radioablation: A Look Back of Lesions Learned from the First 50 Patients
- 5:00 PM G. Hugo, Washington University School of Medicine: Targeting in Cardiac Radioablation: Outreach for New Centers Starting Their Cardiac Radioablation Program
- 5:30 PM A. Weiner, University of North Carolina-Chapel Hill: Treating Our First Cardiac Radioablation Patient, the Radiation Oncologist's Perspective

MEDICAL PHYSICS**Wednesday, July 13, 2022****AAPM Annual Business Meeting | Town Hall Meeting**

6:15 PM - 7:30 PM

-Ballroom B

Thursday, July 14, 2022**Multi-Disciplinary Scientific Session**

7:30 AM - 8:30 AM

-Room 206

TH-A-206 Advances in Anatomic, Biologic, and Functional Image Guidance

Moderators: Yevgeniy Vinogradskiy, Thomas Jefferson University, Philadelphia, PA and Esther Vicente, University of Maryland School of Medicine, Baltimore, MD

- 7:30 AM **TH-A-206-01 JACK FOWLER EARLY-CAREER INVESTIGATOR COMPETITION WINNER: A Method for Clinical Gadolinium-Based Nanoparticle Quantification Using MRI** - S. Bennett*, C. Verry, E. Kaza, X. Miao, R. Berbeco, A. Sudhyadhom
- 7:40 AM **TH-A-206-02 Effect of Various DCE-MRI Image Parameters on AI Assessment of Breast Parenchymal Enhancement** - L. Douglas*, A. Edwards, H. Abe, M. Giger
- 7:50 AM **TH-A-206-03 BEST IN PHYSICS (MULTI-DISCIPLINARY): Feasibility of Biology-Guided Radiation Therapy Using a Long-Lived Antibody PET Tracer** - A. Natarajan*, S. Khan, D. Anders, N. Malik, H. Nguyen, O. Oderinde, F. Chin, E. Rosenthal, G. Pratz
- 8:00 AM **TH-A-206-04 Quantifying Robustness of CT-Ventilation Biomarkers to Image Noise** - M. Flakus*, A. Wuschner, E. Wallat, J. Meudt, D. Shanmuganayagam, G. Christensen, J. Reinhardt, J. Bayouth
- 8:10 AM **TH-A-206-05 Towards Finding the Right Liver Vasculature Model for Estimating Dose to Circulating Blood During Radiotherapy in Hepatocellular Carcinoma Patients** - S. Xing*, C. Correa Alfonso, J. Shin, J. Pursley, N. Depauw, L. McCullum, S. Domal, J. Withrow, W. Bolch, C. Grassberger, H. Paganetti
- 8:20 AM **TH-A-206-06 Primary Outcomes of the BRAVEHeart Clinical Trial – a Prospective Randomised Comparison of Chest Surface and Abdominal Block Monitoring Systems for Deep Inspiration Breath Hold Breast Cancer Radiotherapy** - H. Byrne*, C. Stanton, B. Zwan, M. Gargett, E. Steiner, K. Makhija, J. Atyeo, K. Richardson, L. Ambrose, M. Carr, R. Bromley, J. Booth, M. Morgia, G. Lamoury, P. Keall

Imaging Scientific Session

7:30 AM - 8:30 AM

-Room 207

TH-A-207 Multimodality, Optical, and Emerging Technologies

Moderators: Tess Reynolds, University of Sydney, Eveleigh, AU and Sabee Molloi, University of California, Irvine, CA

- 7:30 AM **TH-A-207-01 Detector and Beam Flux Optimization for X-Ray Fluorescence Emission Tomography** - H. Smith*, L. Meng, P. La Riviere
- 7:40 AM **TH-A-207-02 Development of a Photon-Counting Based Multi-Energy Small Animal CBCT to Improve Radiation Dose Calculation Accuracy in Preclinical Radiation Research** - X. Hu*, Y. Zhong, K. Yang, X. Jia
- 7:50 AM **TH-A-207-03 Effect of Realistic Pulsatile Flow Versus Constant Flow on Contrast Visualization for 1000 Fps High-Speed Angiography (HSA) in Patient-Specific 3D-Printed Models** - E. Vanderbilt*, A. Shields, X. Wu, S. Setlur Nagesh, D. Bednarek, S. Rudin
- 8:00 AM **TH-A-207-04 Fluorescence Tomography-Guided System for Pre-Clinical Radiotherapy Research** - Y. Tseng*, L. Hardy, X. Xu, I. Iordachita, J. Wong, K. Wang

2022 Annual Meeting Calendar of Events**Thursday, July 14, 2022**

- 8:10 AM **TH-A-207-05 Three Dimensional (3D) X-Ray Fluorescence (XRF) Imaging with An Experimental Benchtop XRF Imaging System Adopting a Commercial Pixelated Cadmium Telluride (CdTe) Detector System** - H. Moktan Tamang*, S. Jayarathna, S. Cho
- 8:20 AM **TH-A-207-06 BEST IN PHYSICS (IMAGING): Diffusion-Relaxation Correlation Spectroscopic Imaging (DR-CSI) in In-Vivo Body: Feasibility Study on Liver and Prostate** - D. Kim*, J. Chen, J. Xiao, Z. Fan

SAM Imaging Scientific Symposium

7:30 AM - 9:30 AM

-Room 201

TH-AB-201 New Technologies in Breast Imaging

Moderator: Alejandro Sisniega, Johns Hopkins University, Baltimore, MD

- 7:30 AM **S. Shakeri, UC Davis: Clinical Perspectives on Emerging Breast Imaging Technologies**
- 7:55 AM **W. Zhao, SUNY Stony Brook: Novel Detectors for Dual-Energy Contrast Enhanced Breast Imaging**
- 8:15 AM **A. Sisniega, Johns Hopkins University: Multi- and Distributed-source Breast Tomosynthesis**
- 8:40 AM **M. Yaffe, Sunnybrook Research Institute: Hybrid imaging/biology approaches to earlier detection and therapy optimization of breast cancer**
- 9:05 AM **Q & A**

SAM Therapy Educational Course

7:30 AM - 9:30 AM

-Ballroom C

TH-AB-BRC Automated Planning: What Do Physicians Want?

Moderator: Eduard Schreibmann, Emory University, Atlanta, GA

- 7:30 AM **K. Moore, UC San Diego: Personalized Automation: How To Maximize Standardization While Optimizing Physician/Patient Preference**
- 8:00 AM **L. Court, UT MD Anderson Cancer Center: Automated Contouring and Planning: What Is "Clinically Acceptable"?**
- 8:30 AM **N. Kovalchuk, Stanford University Cancer Center: Automating Treatment Planning Process: Stanford Experience**
- 9:00 AM **M. Schmidt, Washington University School of Medicine in St. Louis: Implementation of Template-Based Automated Treatment Planning and Indications of Expansion Potential**

SAM Therapy Scientific Symposium

7:30 AM - 8:30 AM

-Ballroom A

TH-A-BRA Don't Miss a Beat: Addressing Cardiotoxicity in Cancer Therapies

Moderator: Carri Glide-Hurst, University of Wisconsin-Madison, Middleton, WI

- 7:30 AM **C. Glide-Hurst, University of Wisconsin-Madison: State of the Art in Imaging for Cardiotoxicity**
- 7:45 AM **J. Harms, University of Alabama at Birmingham: Advanced Planning Strategies in Cardiothoracic Radiation Therapy**
- 8:00 AM **R. Howell, UT MD Anderson Cancer Center: Radiation Therapy-Related Cardiac Disease in Childhood Cancer Survivors**
- 8:15 AM **Panel Discussion**

MEDICAL PHYSICS**Thursday, July 14, 2022****SAM Professional Symposium**

7:30 AM - 9:30 AM

-Ballroom B

TH-AB-BRB Contingency Planning: Can You Handle a Ransomware Attack?

Moderator: Ramon Alfredo Siochi, West Virginia University, Morgantown, WV

7:30 AM **Introduction to Session**7:35 AM **T. Ma, Virginia Commonwealth University: Primer on Cybersecurity Threats**8:00 AM **R. Siochi, West Virginia University: Principles of Business Continuity**8:25 AM **J. Donaghue, Cleveland Clinic Fairview: Business Continuity in a Mixed Environment**8:50 AM **M. Tallhamer, Centura Health: Business Continuity in An All Varian Environment**9:15 AM **Q & A****Therapy Scientific Session**

7:30 AM - 8:30 AM

-Room 202

TH-A-202 FLASH Radiotherapy - Radiobiology, Treatment Planning and Dosimetry - II

Moderators: Malcolm McEwen, National Research Council, Ottawa, ON and Rongxiao Zhang, Dartmouth-Hitchcock Med. Ctr., Lebanon, NH

7:30 AM **TH-A-202-01 BEST IN PHYSICS (THERAPY): Comparing Ultra-High Dose Rate Proton Delivery Techniques from Radiophysical, Radiochemical, and Radiobiological Perspectives** - R. Yang*, L. Dong, E. Diffenderfer7:40 AM **TH-A-202-02 BEST IN PHYSICS (THERAPY): Dose and Dose Rate Optimization for FLASH Proton Therapy with Automated Bragg Peak and Shoot-Through Beam Selection** - P. Ramesh*, W. Gu, D. Ruan, K. Sheng7:50 AM **TH-A-202-03 Dosimetric Study of a Rotating Anode X-Ray Tube for Laboratory FLASH Radiotherapy Research** - D. Miles*, D. Sforza, J. Wong, M. Rezaee8:00 AM **TH-A-202-04 Effect of Heterogeneity and Re-Diffusion On the Measured Depletion of Oxygen During FLASH RT** - S. Cui*, G. Prax8:10 AM **TH-A-202-05 Measurement of the Time Structure of FLASH Irradiation Using Prompt Gamma Rays and Secondary Neutrons as Surrogates** - S. Charyyev*, R. Liu, X. Yang, J. Zhou, W. Dynan, C. Oancea, L. Lin8:20 AM **TH-A-202-06 The Impact of Ultra-High-Dose Rate (FLASH) Proton Therapy On Radiation Dose to Circulating Lymphocytes** - A. Hammi***Multi-Disciplinary Scientific Session**

8:30 AM - 9:30 AM

-Room 206

TH-B-206 MR- and CT-Guided Adaptive Radiotherapy

Moderators: Yue Cao, The University of Michigan, Ann Arbor, MI and Andrea McNiven, Princess Margaret Cancer Centre, Toronto, ON

8:30 AM **TH-B-206-01 A Novel Process for Clinical Commissioning of An Online Adaptive Radiotherapy Platform: Results and Recommendations** - K. Kisling*, T. Keiper, D. Branco, G. Kim, K. Moore, X. Ray8:40 AM **TH-B-206-02 Fast Adaptive Replanning by Constrained Reoptimization for Intra-Fractional Non-Periodic Motion During SBRT of the Prostate** - S. Gerlach*, T. Hofmann, C. Fuerweger, A. Schlaefel8:50 AM **TH-B-206-03 Integrated Multi-Task MR for Abdominal Radiation Therapy: Towards Adaptive Planning and Treatment Monitoring** - J. Chen*, P. Han, Y. Tian, W. Yang, Y. Yang, D. Li, A. Christodoulou, K. Nayak, Z. Fan

2022 Annual Meeting Calendar of Events**Thursday, July 14, 2022**

- 9:00 AM **TH-B-206-04 Segmentation by Test-Time Optimization for CBCT-Based Adaptive Radiation Therapy** - X. Liang*, T. Bai, J. Chun, H. Morgan, D. Nguyen, J. Park, S. Jiang
- 9:10 AM **TH-B-206-05 Technical Results for the First Multi-Institutional Stereotactic MR-Guided Adaptive Radiation Therapy (SMART) Trial in Pancreas Cancer** - J. Kim*, P. Parikh, P. Lee, M. Chuong, M. Fuss, D. Low
- 9:20 AM **TH-B-206-06 Web-Based Fully Automatic 2nd Check for Online Adaptive Radiotherapy: Beam Modeling and Auto-Commissioning** - M. Chen*, Y. Lai, J. Lin, M. Lin, R. Reynolds, J. Park, X. Jia, W. Lu

Imaging Scientific Session

8:30 AM - 9:30 AM

-Room 207

TH-B-207 CAD, Radiomics, and Quantitative Applications of X-Ray Imaging and CT

Moderators: Izabella Barreto, University of Florida College of Medicine, Gainesville, FL and Michael McNitt-Gray, David Geffen School of Medicine at UCLA, Los Angeles, CA

- 8:30 AM **TH-B-207-01 Evaluation of Shear Forces Within Stenotic Vessel Models Using 1000 Fps X-Ray Particle Image Velocimetry (X-PIV)** - A. Shields*, D. Bednarek, S. Rudin
- 8:40 AM **TH-B-207-02 Motion-Compensated Quantitative Digital Subtraction Angiography (qDSA) in Noisy Image Sequences** - J. Whitehead*, S. Periyasamy, C. Hoffman, P. Laeseke, M. Speidel, M. Wagner
- 8:50 AM **TH-B-207-03 Phase-Resolved Lung Ventilation Imaging Method Based on Four-Dimensional Computed Tomography** - Y. Huang*, G. Ren, H. Xiao, Y. Li, Z. Chen, X. Teng, Z. Ma, J. Cai
- 9:00 AM **TH-B-207-04 Quantifying COPD Disease Severity with CT-Derived Perfusion Imaging** - A. Nowacki*, G. Nair, Y. Liu, C. Stevens, E. Castillo
- 9:10 AM **TH-B-207-05 Reproducibility of a Dynamic CT Pulmonary Perfusion Technique Using Only Two Volume Scans** - Y. ZHAO*, N. Luu, S. Molloy
- 9:20 AM **TH-B-207-06 Segmentation of High-Resolution Blood Vascularity Trees in CT** - D. Yang*, Y. Hao, Y. Duan

Therapy Scientific Session

8:30 AM - 9:30 AM

-Ballroom A

TH-B-BRA Clinical Dosimetry, Calibration, Shielding

Moderators: Paige Taylor, UT MD Anderson Cancer Center, Houston, TX and Arthur Lalonde, Massachusetts General Hospital / Harvard Medical School, Boston, MA

- 8:30 AM **TH-B-BRA-01 A Shielding Design for the First U.S. Carbon Multi-Ion Hybrid Synchrotron Facility** - J. Dougherty*, D. Bolst, S. Guatelli, A. Rosenfeld, C. Beltran
- 8:40 AM **TH-B-BRA-02 Investigation of Low and Medium Energy X-Ray Calibrations for Survey Meters** - S. Jollota*, N. Nelson, A. Khan, L. DeWerd
- 8:50 AM **TH-B-BRA-03 Development of Scintillator-Based Real-Time Dosimetry for Dosimetric and Mechanical Evaluations of IMRT** - D. Lee*, S. Kim, H. Cho, Y. Han
- 9:00 AM **TH-B-BRA-04 Examination of Stability and Heat Transfer Effects of a Graphite Probe Calorimeter** - N. MacKay*, F. Keszi, J. Seuntjens, A. Sarfehnia, J. Renaud
- 9:10 AM **TH-B-BRA-05 Investigating Dosimetry for Individual Proton Beamlets** - N. Nelson*, W. Culberson, D. Hyer, L. Bennett, T. Geoghegan, K. Patwardhan, B. Smith, R. Flynn, J. Yu, A. Gutierrez, P. Hill
- 9:20 AM **TH-B-BRA-06 Temporally Stable UHDR LINAC Is Favorable for Clinical Translation of FLASH RT** - M. Rahman, A. Sloop, J. Sunnerberg, D. Gladstone, C. Dexter, L. Thompson, P. Bruza, B. Pogue, R. Zhang*

MEDICAL PHYSICS**Thursday, July 14, 2022****Specialty Program The New Era of Radiopharmaceutical Therapy Scientific Session**

8:30 AM - 9:30 AM

-Room 202

TH-B-202 Imaging and Dosimetry for Radiotheranostics

Moderators: Sara St. James, Huntsman Cancer Institute, Salt Lake City, UT and Michael Silosky, University of Colorado School of Medicine, Aurora, CO

- 8:30 AM **TH-B-202-01 Effect of PET Image Discretization on Radiomic Features of Patients Undergoing Definitive Radiotherapy for Oropharyngeal Cancer** - B. Riley*, C. Wang, Z. Yang, Y. Mowery, D. Brizel, F. Yin, K. Lafata
- 8:40 AM **TH-B-202-02 Novel SPECT/CT Phantom with Active and Passive Dosimeters for Targeted Radionuclide Therapy Dosimetry** - A. Bertinetti*, M. Rodrigues, T. Garcia, B. Palmer, C. Hammer, H. Vija, W. Culberson
- 8:50 AM **TH-B-202-03 Performance Evaluation of a GE Discovery NM/CT 870 DR and a GE Discovery 670 CZT for Radium-223 Digital SPECT/CT Imaging** - A. Kulkarni*, L. Zimmermann, P. Wojtylak, S. Deng, R. Al Helo, N. Harris, D. Jordan, A. Kardan
- 9:00 AM **TH-B-202-04 Personalized Dosimetry for Thyroid Metastatic Cancers: An Ancillary Study of the MERAIODE Clinical Trial (NCT 03244956) Using OEDIPE Software** - S. Lamart*, N. Anizan, A. Legrand, M. BENSIALI, D. Broggio, S. Leboulleux
- 9:10 AM **TH-B-202-05 PET Quantification in 50% Counts DDG-PET/CT: Noise, Motion Correction, And Misregistration Effects** - A. Thomas*, J. Meier, O. Mawlawi, P. Sun, T. Pan
- 9:20 AM **TH-B-202-06 Time-Dependent Monte Carlo Simulation for Patient-Specific Dosimetry in Radioactive Iodine Therapy** - J. Shin*, Y. Seo, Y. Li, R. Flavell, C. Kitahara, C. Lee

Coffee Break | Level 3 | Convention Center

9:30 AM - 10:00 AM

Professional Symposium

10:00 AM - 12:00 PM

-Room 206

TH-CD-206 Meet the New Boss: Transforming Medical Physics Practice with Surgeons, Entrepreneurs, and Bankers

Moderators: Dee Wu, University of Oklahoma Health Science Center, Oklahoma City, OK and Pankaj Patel, Henry Ford Hospital, Detroit, MI

- 10:00 AM **D. Wu, University of Oklahoma Health Science Center: Transforming Practice: The Expanding Role of Medical Physics in Neurosurgery for Movement Disorders**
- 10:20 AM **F. Bova, University of Florida: Transforming Practice: Building a Clinical Medical Physics Service in Image Guided Surgery**
- 10:40 AM **K. Schoppe, Radiology Associates of North Texas: The Transforming Practice Environment: Healthcare Consolidation - Lessons From Radiology Private Practice**
- 11:10 AM **M. Curry, Apex Physics Partners: The Transforming Practice Environment: Private Equity Investment and the Evolution of Medical Physics Service Groups**
- 11:30 AM **L. Genovese, Krueger-Gilbert Health Physics: The Transforming Practice Environment: Working and Leading in An Evolving Consulting Medical Physics Practice**
- 11:50 AM **D. Jordan, University Hospitals Cleveland Medical Center: Audience Q & A**

2022 Annual Meeting Calendar of Events**Thursday, July 14, 2022****SAM Imaging Educational Course**

10:00 AM - 11:00 AM

-Room 207

TH-C-207 Assessment of Deep-Learning Technologies in Medical Imaging: From Imaging Science to Clinical Practice

Moderator: Hua Li, Washington University School of Medicine, Champaign, IL

10:00 AM V. Kelkar, University of Illinois at Urbana-Champaign: Assessing Generative Models to Learn Canonical Medical Imaging Statistics

10:18 AM L. Yu, Mayo Clinic: Image Quality Assessment of Deep-Learning Reconstruction and Noise Reduction in CT

10:36 AM F. Liu, Massachusetts General Hospital: Deep Learning Reconstruction for Improving MRI and MRI-Based Tissue Quantification

10:54 AM Q & A

Imaging Scientific Session

10:00 AM - 11:00 AM

-Room 201

TH-C-201 Radiography, Fluoroscopy, and Tomosynthesis

Moderators: Katie Hulme, The Cleveland Clinic, Chagrin Falls, OH and Kevin Wunderle, Cleveland Clinic Foundation, Broadview Hts, OH

10:00 AM TH-C-201-01 1000 Fps High Speed Angiography (HSA) of Contrast Injections in An In-Vitro Model with Pulsatile Flow Using Simulated Cardiac Gating Techniques - X. Wu*, S. Setlur Nagesh, E. Vanderbilt, A. Shields, C. Ionita, D. Bednarek, S. Rudin

10:10 AM TH-C-201-02 Catheter Tracking Using Gated Continuous-Sweep Limited Angle (CLA) Fluoroscopy - M. Wagner*, S. Periyasamy, P. Laeseke, A. Raval, M. Speidel

10:20 AM TH-C-201-03 Evaluating X-Ray Source Arrays for Tomography and Tomosynthesis in Lung Cancer Radiotherapy - O. Dillon*, R. O'Brien

10:30 AM TH-C-201-04 BEST IN PHYSICS (IMAGING): Implementation of 1000 Fps CdTe Photon-Counting Detectors (PCD's) for Simultaneous Biplane High-Speed Angiography (HSA) - E. Vanderbilt*, X. Wu, A. Shields, S. Setlur Nagesh, D. Bednarek, S. Rudin

10:40 AM TH-C-201-05 Local Diagnostic Reference Levels in Digital Radiography Examinations Based On Patient Thickness and Age - M. Akerele*, B. Schwarz, L. Rill

10:50 AM TH-C-201-06 Ongoing Exposure Index Analysis in Digital Radiography: Establishing a Performance Baseline - X. Li*, E. Doyle, K. Hulme

SAM Multi-Disciplinary Scientific Symposium

10:00 AM - 11:00 AM

-Ballroom C

TH-C-BRC Multi-Scale Modeling in Imaging and Therapy

Moderators: Wojciech Zbijewski, Johns Hopkins University, Baltimore, MD and Jan Schuemann, Massachusetts General Hospital, Boston, MA

10:00 AM A. Badal, U.S. Food & Drug Administration (CDRH/OSEL): Geometrical Models for Anatomical Phantoms and Their Use in X-Ray Imaging and Nuclear Medicine Simulations

10:12 AM X. Jia, The University of Texas Southwestern Medical Ctr: Microdosimetric Simulations of Radiolysis and DNA Damage in X-Ray and Radiotherapy Applications

10:24 AM S. Abbasinejad Enger, Medical Physics Unit, McGill University, Montreal, QC, Canada: Modeling of Brachytherapy Treatments

10:36 AM A. McNamara, Harvard/MGH: Outcomes Modeling from Microscopic to Macroscopic Scales

10:48 AM Q & A

MEDICAL PHYSICS**Thursday, July 14, 2022****SAM Therapy Educational Course**

10:00 AM - 12:00 PM

-Ballroom A

TH-CD-BRA State of the Art of Adaptive Radiotherapy

Moderator: Laura Cervino, Memorial Sloan Kettering Cancer Center, New York, NY

10:00 AM R. Mak, Brigham and Women's Hospital: Adapt to Change - A New Era in Precision Radiation Therapy

10:30 AM R. Kashani, Seidman Cancer Center /UH Cleveland & CWRU, OH: Advances in KV Based Adaptive Radiation Therapy

11:00 AM K. Mittauer, Miami Cancer Institute: MR-Guided Adaptive Radiation Therapy: Current State of Art

11:30 AM B. Han, Stanford University School of Medicine: PET Based Biological Adaptive Radiation Therapy: Current State of Art

SAM Joint Imaging|Therapy Educational Course

10:00 AM - 12:00 PM

-Ballroom B

TH-CD-BRB Bridging Diagnostic Imaging and Radiotherapy: A Pediatric Focus

Moderators: Chia-Ho Hua, St. Jude Children's Research Hospital, Memphis, TN and Samuel Brady, Cincinnati Children's Hospital Med Ctr, Mason, OH

10:00 AM C. Hua, St. Jude Children's Research Hospital: Imaging for Cancer Radiotherapy: Introduction and Opportunities

10:10 AM S. Brady, Cincinnati Children's Hospital Med Ctr: State of the Art CT Dose Reduction and Protocol Optimization Approaches for Children

10:40 AM J. Uh, St. Jude Children's Research Hospital: Engaging MR and RT Physicists in Implementation, Operation, and Optimization of Pediatric MR Simulation

11:10 AM J. Parthasarathy, Nationwide Children's Hospital: 3D Printing at Point of Care With Multimodal Imaging for Pediatric Cancer Treatment

11:40 AM Panel Discussion and Q & A

Multi-Disciplinary Scientific Session

10:00 AM - 11:00 AM

-Room 202

TH-C-202 Imaging Data Science for Treatment Assessment

Moderators: Martha Matuszak, University of Michigan, Ann Arbor, MI and Geoffrey Hugo, Washington University School of Medicine, St. Louis, MO

10:00 AM TH-C-202-01 A Feasibility Study of Ultrasound Assessment of Radiation-Induced Pneumonitis Following Lung Radiotherapy - B. Zhou*, J. Wang, Y. Lei, K. Higgins, J. Bradley, J. Zhang, J. Zhou, J. Roper, X. Yang, T. Liu

10:10 AM TH-C-202-02 Correlation of Metabolic Tumor Response with Pulmonary Toxicity Following Risk-Adaptive Chemoradiation for Unresectable Non-Small Cell Lung Cancer: Inherent Radiosensitivity Or Immunogenicity? - E. Gates*, D. Hippe, H. Vesselle, J. Zeng, S. Bowen

10:20 AM TH-C-202-03 Delta Radiomic Features Predict Failure and Survival Outcomes for Surgically Resected Pancreatic Cancer Patients Treated with Neoadjuvant Therapy - K. Wang*, A. Elamir, J. Karalis, S. Enrico, P. Polanco, T. Aguilera, M. Ligorio, J. Wang

10:30 AM TH-C-202-04 Ultrasound Radiomics-Based Machine Learning to Evaluate Radiation-Induced Acute Breast Toxicity in Breast Radiotherapy - J. Wang*, B. Zhou, X. Yang, J. Lin, K. Godette, S. Kahn, M. Torres, T. Liu

10:40 AM TH-C-202-05 Voxel-Based Estimation of Microstructure Characteristics of Head and Neck Cancers Using Time-Dependent MR Diffusion Weighted Imaging and a Random Walk with Barriers Model - S. Nejad-Davarani*, M. Mierzwa, T. Feiweier, K. Casper, Y. Cao

2022 Annual Meeting Calendar of Events**Thursday, July 14, 2022**

10:50 AM **TH-C-202-06 Streamlined MR-Linac Daily QA Using Cherenkov Imaging: Longitudinal Performance Assessment After 16 Months of Clinical Use** - D. Alexander*, R. Zhang, J. Mayer, P. Bruza, B. Pogue, D. Gladstone

Imaging Scientific Session

11:00 AM - 12:00 PM

-Room 207

TH-D-207 AI in Imaging

Moderators: Heather Whitney, Wheaton College, Wheaton, IL and Samuel Armato, The University of Chicago, Chicago, IL

11:00 AM **TH-D-207-01 4D-MRI Enhancement Via 2.5D Adversarial Network** - Y. Wang*, S. Zhi, H. Xiao, T. Li, J. Cai

11:10 AM **TH-D-207-02 Comparing Normalizing Flow and Generative Adversarial Networks to Mitigate Effects of Variations in CT Acquisition and Reconstruction** - L. Wei, A. Yadav, W. Hsu*

11:20 AM **TH-D-207-03 Deep Learning Prostate Segmentation in 3D Ultrasound and the Impact of Image Quality and Training Dataset Size** - N. Orlando*, I. Gyackov, D. Gillies, D. Cool, D. Hoover, A. Fenster

11:30 AM **TH-D-207-04 Explainable GRU-Survnet Using Longitudinal Quantitative Imaging Biomarkers from MRI and PET for Local Failure in Poor-Prognosis Head and Neck Cancer** - L. Wei*, M. Mierzwa, C. Lee, Y. Cao

11:40 AM **TH-D-207-05 Hybrid Adversarial Network for Ultra-Quality Pulmonary Anatomy Imaging from Cone-Beam CT Images** - J. Zhu*, W. Chen, A. Nicol, Y. Lam, J. Cai, G. Ren

11:50 AM **TH-D-207-06 Texture Transformer Super-Resolution (TTSR) for Patient CT Images** - S. Zhou*, L. Yu, M. Jin

-Room 201

TH-D-201 Performance Assessment and Clinical Implementation of Photon-Counting CT

Moderators: Lifeng Yu, Mayo Clinic, Rochester, MN and Xiang Li, The Cleveland Clinic, Beachwood, OH

11:00 AM **TH-D-201-01 Comprehensive Size- and Kernel-Dependent Comparison of Image Quality Between Photon-Counting and Energy Integrating CT** - M. Bhattarai*, S. Bache, E. Abadi, E. Samei

11:10 AM **TH-D-201-02 Edge-On Silicon Photon-Counting CT: Assessment of Diagnostic Value in a Virtual Imaging Trial** - R. Panta*, M. Bhattarai, Z. Yin, E. Abadi, P. Segars, E. Samei

11:20 AM **TH-D-201-03 Evaluation of Geometric Accuracy and Iodine Quantification of High-Pitch Multi-Energy Cardiac Imaging with Dual-Source Photon-Counting Detector CT** - Z. Ahmed*, D. Campeau, H. Gong, K. Rajendran, P. Rajiah, C. McCollough, S. Leng

11:30 AM **TH-D-201-04 Photon Count Rates Measured From 1,980 Clinical CT Scans** - T. Szczykutowicz*, R. Bujila, Z. Yin, S. Slavic, J. Maltz

11:40 AM **TH-D-201-05 Incorporating a Photon Counting CT System into Routine Clinical Use** - S. Bache*, J. Solomon, E. Samei

11:50 AM **TH-D-201-06 Quality Control of Photon-Counting Detector CT: Tips and Caveats** - Z. Ahmed*, L. Ren, T. Vrieze, K. Rajendran, A. Ferrero, C. Favazza, L. Yu, M. Bruesewitz, C. McCollough, S. Leng

Multi-Disciplinary Scientific Session

11:00 AM - 12:00 PM

-Ballroom C

TH-D-BRC Personalized Treatment via Outcome Modeling

Moderators: Joseph Deasy, Memorial Sloan Kettering Cancer Center, New York, NY and Jennifer Pursley, Massachusetts General Hospital, Salem, MA

11:00 AM **TH-D-BRC-01 A Novel Probabilistic Approach for Personalized Radiotherapy: Integrating Machine Learning and Optimization** - A. Ajdari*, T. Bortfeld

MEDICAL PHYSICS**Thursday, July 14, 2022**

11:10 AM **TH-D-BRC-02 Applications of a CT-Mesh Hybrid Computational Phantom for Patient-Specific Risk Prediction of Radiation-Induced Second Cancer in Proton Therapy** - E. Kollitz*, M. Roew, H. Han, M. Pinto, F. Kamp, C. Kim, M. Schwarz, C. Belka, W. Newhauser, G. Dedes, K. Parodi

11:20 AM **TH-D-BRC-03 Dynamic Brain Blood Flow Modeling Using Detailed Vasculature to Investigate Lymphocyte Depletion During External Beam Radiotherapy** - L. McCullum*, S. Xing, J. Shin, C. Beekman, C. Correa Alfonso, S. Domal, J. Withrow, W. Bolch, H. Shih, H. Paganetti, C. Grassberger

11:30 AM **TH-D-BRC-04 Measuring Acute and Chronic Fibrosis Over the Course of Radiation Therapy in Gynecological Cancer Patients Using Ultrashort Echo Time (UTE) MRI** - K. Sheikh*, J. Lee, R. Seethamraju, T. Benkert, H. Bhat, B. Daniel, D. Song, A. Viswanathan, E. Schmidt

11:40 AM **TH-D-BRC-05 Normal Tissue Complication Modeling for Radiation-Induced Lymphopenia After Abdominal Radiotherapy** - B. Kim*, H. Byun, W. Sung

11:50 AM **TH-D-BRC-06 Outcome Prediction for Metastatic Lung Cancer Patients After Radiotherapy and Immunotherapy Using Patient, Tumor, Treatment, and Immunologic Factors** - Y. Kim*, I. Chamseddine, C. Grassberger, Y. Cho, W. Sung

Therapy Scientific Session

11:00 AM - 12:00 PM

-Room 202

TH-D-202 Radiobiology of Particle Therapy

Moderators: John Eley, Vanderbilt University School of Medicine, Nashville, TN and Kai Jiang, University of Maryland, Baltimore, MD

11:00 AM **TH-D-202-01 Biological Optimization of Proton Radiotherapy Through Glutaminase 1 Inhibition** - D. Flint*, S. Bright, R. Kolachina, D. Martinus, M. Manandhar, M. Ben Kacem, P. Marinello, T. Su, S. Shaitelman, G. Sawakuchi

11:10 AM **TH-D-202-02 Comparison of Variable Proton RBE Model Predictions in the Treatment Plans of Patients Who Developed Radiation-Induced Necrosis** - D. Flint*, T. Zhang, P. Yepes, A. Adair, Q. Wang, C. Ruff, G. Engeseth, B. Gunn, S. Shaitelman, G. Sawakuchi

11:20 AM **TH-D-202-03 Mechanistic Calculation of Relative Biological Effectiveness of Proton Irradiation Via Microscopic Monte Carlo Simulations** - M. Xing*, Y. Lai, Y. Chi, X. Jia

11:30 AM **TH-D-202-04 Study of Linear Energy Transfer Effect On Rib Fracture in Breast Patients Receiving Pencil-Beam-Scanning Proton Therapy** - Y. Yang*, K. Gergelis, A. Afzal, T. Mullikin, C. Vargas, L. McGee, S. Ahmed, S. Park, D. Shumway, K. Corbin, R. Mutter, W. Liu

11:40 AM **TH-D-202-05 Therapy-Related Investigations On the DNA Degrading Effect of Noble Metal Nanoparticles in Proton Therapy Using Liquid and Gel-Based Phantoms** - S. Zwiehoff*, A. Hensel, C. Behrends, C. Rehbock, C. Bäumer, S. Knauer, B. Timmermann, S. Barcikowski

11:50 AM **TH-D-202-06 Investigating Immune Response Induced in Breast Cancer Cells Across Varying Radiation Type, PARPi Concentration, and BRCA Status** - E. Moran*, M. Ben Kacem, D. Flint, D. Martinus, S. Bright, M. Manandhar, S. Shaitelman, G. Sawakuchi

Lunch Break | Level 3 | Convention Center

12:00 PM - 12:50 PM

2022 Annual Meeting Calendar of Events**Thursday, July 14, 2022****SAM Professional Symposium**

1:00 PM - 3:00 PM

-Room 206

TH-EF-206 Multidisciplinary Teamwork: Skills Required Success

Moderator: Wei Luo, University of Kentucky, Lexington, KY

1:00 PM Introduction: Teamwork-A Key to Succeed

1:10 PM C. Ma, Fox Chase Cancer Center: Multidisciplinary Teamwork: Medical Physics Challenges and Future Opportunities

1:40 PM L. Marks, University of North Carolina at Chapel Hill: What Physicians Want Vs. Need from Their Clinical Physicist Colleagues

2:10 PM A. Cetnar, The Ohio State University - James Cancer Hospital: What Is My Role? - Behind the Scenes or Member of the Team

2:30 PM P. Sandwall, OhioHealth: Systems Thinking for Success, Teamwork in Radiation Oncology

2:50 PM Q & A

SAM Imaging Educational Course

1:00 PM - 3:00 PM

-Room 207

TH-EF-207 Radiography & Fluoroscopy Task Group Updates

Moderator: Katie Hulme, The Cleveland Clinic, Chagrin Falls, OH

1:00 PM K. Hulme, The Cleveland Clinic: Overview of the Current Activities of the AAPM Radiography and Fluoroscopy Subcommittee

1:15 PM P. Lin, Virginia Commonwealth University: The AAPM TG-272 Report and the Stories Behind It

1:50 PM K. Strauss, X-Ray Computations, Inc.: TG-251 - Measuring Maximum Fluoroscopic Air Kerma Rates Provides No Assurance of Proper Performance of the Fluoroscope During Pediatric Fluoroscopic Examinations: The Importance of the Measurement Protocol of AAPM TG-251

2:25 PM W. Bolch, University of Florida: Estimation of Patient Skin Dose in Fluoroscopy: Summary of a Joint Report by AAPM TG357 and EFOMP

Imaging Scientific Session

1:00 PM - 2:00 PM

-Room 201

TH-E-201 New Technologies in CBCT

Moderators: Grace Jianan Gang, Johns Hopkins University, Baltimore, MD and John Boone, UC Davis Medical Center, Fair Oaks, CA

1:00 PM TH-E-201-01 A Simulation Platform to Evaluate the Effect of 2D Antiscatter Grid Primary Transmission on CBCT Image Quality - M. Eldib*, F. Bayat, M. Miften, C. Altunbas

1:10 PM TH-E-201-02 Continuous Dual-Isocenter Imaging: Simultaneously Extending the Longitudinal and Lateral Intraoperative 3D CBCT Field-Of-View for Assessing Musculoskeletal Trauma - T. Reynolds*, S. Hatamikia, O. Dillon, Y. Ma, A. Kanawati, J. Stayman, R. O'Brien

1:20 PM TH-E-201-03 BEST IN PHYSICS (IMAGING): Deep Learning-Based Motion Compensation for 4D-CBCT Reconstruction - Z. Zhang*, J. Liu, D. Yang, U. Kamilov, G. Hugo

1:30 PM TH-E-201-04 Mitigating X-Ray Focal Spot Induced Blurring in Small Animal Cone Beam CT Resolution Via Deconvolution - X. Hu*, Y. Zhong, Y. Huang, C. Shen, X. Jia

1:40 PM TH-E-201-05 Perovskite Direct Conversion Detector Design Optimisation and Characterisation for Truebeam KV-, MV-CBCT and Koning Breast-CT - J. O'Connell*, M. Bazalova-Carter

MEDICAL PHYSICS**Thursday, July 14, 2022**

1:50 PM TH-E-201-06 Sensitivity Analysis of Acquisition Precision in Fast Low-Dose 4DCBCT - B. Lau*, O. Dillon, S. Vinod, R. O'Brien, T. Reynolds

Multi-Disciplinary Scientific Session

1:00 PM - 2:00 PM

-Ballroom C

TH-E-BRC Machine Intelligence in Image Processing and Motion Correction I

Moderators: Steve Jiang, UT Southwestern Medical Center, Dallas, TX and Alejandro Sisniega, Johns Hopkins University, Baltimore, MD

1:00 PM TH-E-BRC-01 A Systematic Comparison of DNN-Based Lung CT Elastography Using Auto-Encoder, U-Net, Conditional and Cycle Generative Adversarial Network Techniques - B. Stiehl*, M. Lauria, L. Naumann, D. O'Connell, P. Boyle, I. Barjaktarevic, D. Low, A. Santhanam

1:10 PM TH-E-BRC-02 Deep Learning-Based Fast Volumetric Imaging for Treatment Setup During Lung Radiotherapy - Y. Lei*, M. Axente, Z. Tian, T. Wang, J. Roper, A. Kesarwala, K. Higgins, J. Bradley, T. Liu, X. Yang

1:20 PM TH-E-BRC-03 Longitudinal Unervised Deformable Image Registration Network for Adaptive Radiotherapy - D. Lee*, Y. Hu, S. Alam, J. Jiang, L. Cervino, P. Zhang

1:30 PM TH-E-BRC-04 MRIGRT - 4D Motion Modeling and Real-Time Online 3D Motion Tracking - y. zhang, X. Wu, H. Gach, J. Ginn, D. Yang*

1:40 PM TH-E-BRC-05 Real-Time Cardiac Motion Tracking During Radiation Therapy Using Cine MRI and Deep Learning - B. Hunt*, G. Russo, D. Alexander, S. Streeter, B. Zaki, B. Pogue, D. Gladstone, R. Zhang

1:50 PM TH-E-BRC-06 Synthesizing Iodine Map From Non-Contrast Enhanced CT Via Deep-Learning Network - H. Xie*, Y. Lei, T. Wang, J. Roper, B. Ghavidel, M. McDonald, D. Yu, X. Tang, J. Bradley, T. Liu, X. Yang

SAM Therapy Educational Course

1:00 PM - 2:00 PM

-Ballroom A

TH-E-BRA Modern Single Room Proton Therapy Installations: Challenges and Opportunities for the Medical Physicist

Moderator: Sara St. James, Huntsman Cancer Institute, Salt Lake City, UT

1:00 PM A. Paxton, University of Utah - Huntsman Cancer Institute: Implementing Proton Therapy at the University of Utah

1:17 PM Y. Lin, Kansas University Medical Center: Implementing Proton Therapy at the University of Kansas

1:34 PM M. Bussiere, Massachusetts General Hospital: The MGH Experience with a Single Room Proton Therapy System

1:51 PM Q & A

SAM Specialty Program The New Era of Radiopharmaceutical Therapy

1:00 PM - 2:00 PM

-Ballroom B

TH-E-BRB Novel Interventional Procedures Involving Microspheres

Moderator: William Dezarn, Wake Forest University School of Medicine, Siloam, NC

1:00 PM M. Lam, Utrecht Medical Center: Clinical Relevance of Microsphere Characteristics for Radioembolization Treatment

1:12 PM S. Manupipatpong, Johns Hopkins University: Y-90 Transarterial Radioembolization for the Treatment of Brain Tumors in a Canine Model

2022 Annual Meeting Calendar of Events**Thursday, July 14, 2022**

- 1:24 PM **W. Erwin, UT MD Anderson Cancer Center: Intra-Tumoral Infusion of P-32 Radiolabeled Microspheres for Localized Radiotherapy of Pancreatic Tumors**
- 1:36 PM **S. Abbasinejad Enger, Medical Physics Unit, McGill University, Montreal, QC, Canada: Current State of Dosimetry With 90Y Microspheres**
- 1:48 PM **Q & A**

SAM Therapy Educational Course

1:00 PM - 2:00 PM

-Room 202

TH-E-202 Clinical Implementation of Spatially Fractionated Radiotherapy (SFRT)

Moderator: Heng Li, Johns Hopkins Medicine, Washington, DC

- 1:00 PM **H. Li, Johns Hopkins Medicine: Introduction**
- 1:02 PM **D. Owen, Mayo Clinic (Rochester): Spatially Fractionated Radiotherapy: A Physician's Perspective**
- 1:22 PM **J. Kavanaugh, Washington University in St. Louis: Clinical Implementation of SFRT: VMAT-Based Lattice Radiotherapy for Large Tumors**
- 1:37 PM **D. Pokhrel, University of Kentucky: Clinical Implementation of SFRT: Same Day Treatment of Conebeam CT-Guided Novel MLC-Based SFRT for Very Large Bulky Masses**
- 1:52 PM **Q & A and Discussion**

Imaging Scientific Session

2:00 PM - 3:00 PM

-Room 201

TH-F-201 Dual Energy Radiography, CT, and CBCT

Moderators: Jessica Miller, University of Wisconsin-Madison, Madison, WI and Wojciech Zbijewski, Johns Hopkins University, Baltimore, MD

- 2:00 PM **TH-F-201-01 A Generalizable, Vendor-Neutral Framework for Kidney Stone Composition Characterization Using Dual-Energy CT** - P. Shunhavanich*, S. Hsieh, A. Ferrero, C. McCollough
- 2:10 PM **TH-F-201-02 A Novel Methodology for Assessing Material Differentiation in Dual-Energy Computed Tomography** - C. Schaeffer*, S. Leon, M. Arreola
- 2:20 PM **TH-F-201-03 CT-Guided and Sparsity-Constrained Multi-Material Decomposition for Dual Energy CBCT** - Q. Wang*, H. Xie, T. Wang, J. Roper, X. Tang, J. Bradley, T. Liu, X. Yang
- 2:30 PM **TH-F-201-04 Experimental Validation of Single-Shot Quantitative X-Ray Imaging Using Primary Modulation and a Dual-Layer Detector** - L. Shi*, N. Bennett, A. Wang
- 2:40 PM **TH-F-201-05 Real-Time Registration for Fast KV-Switching 2D Dual-Energy Angiography** - E. Nikolau*, M. Wagner, P. Laeseke, M. Speidel
- 2:50 PM **TH-F-201-06 Validation of Dual-Energy CT Based Composition Analysis Using Fresh Animal Tissues and Novel, Non-Epoxy Tissue Equivalent Samples** - K. Niepel*, S. Tattenberg, R. Marants, T. Bortfeld, J. Verburg, G. Landry, A. Sudhyadhom, K. Parodi

Multi-Disciplinary Scientific Session

2:00 PM - 3:00 PM

-Ballroom C

TH-F-BRC Machine Intelligence in Image Processing and Motion Correction II

Moderators: Xiaofeng Yang, Emory University School of Medicine, Atlanta, GA and Laura Cervino, Memorial Sloan Kettering Cancer Center, New York, NY

- 2:00 PM **TH-F-BRC-01 A Geometry-Guided Multi-Beamlet Deep Learning Technique for CT Reconstruction** - K. Lu*, L. Ren, F. Yin

MEDICAL PHYSICS**Thursday, July 14, 2022**

- 2:10 PM **TH-F-BRC-02 Feasibility of CycleGAN Enhanced Low Dose CBCT Imaging for Prostate Radiotherapy Dose Calculation** - Y. Chan*, M. Li, K. Parodi, C. Belka, G. Landry, C. Kurz
- 2:20 PM **TH-F-BRC-03 BEST IN PHYSICS (MULTI-DISCIPLINARY): Motion-Corrected Image Reconstruction with Unrolling Networks on an MRI-Linac** - S. Shan*, Y. Gao, P. Liu, T. Reynolds, B. Dong, H. Sun, M. Li, G. Liney, F. Liu, P. Keall, D. Waddington
- 2:30 PM **TH-F-BRC-04 MRI Wavelet-Based Machine Learning Classifier to Automatically Determine OLAR Necessity During MRgART** - H. Nasief*, E. Omari, A. Parchur, Y. Zhang, X. Chen, E. Paulson, W. Hall, B. Erickson, X. Li
- 2:40 PM **TH-F-BRC-05 MUsculo-Skeleton-Aware Deep Learning-Based Deformable Registration for Head-And-Neck CT with a Relaxed Rigidity Constraint on Bony Structures** - H. Liu*, E. McKenzie, Q. Xu, D. Ruan, K. Sheng
- 2:50 PM **TH-F-BRC-06 Understanding and Modeling Human-Robot Interaction of Artificial Intelligence (AI) Tool in Real Radiation Oncology Clinic Using Deep Neural Network: A Feasibility Study Based on Three Year Prospective Clinical Data** - D. Yang*, C. Murr, S. Yoo, F. Yin, Q. Wu, Y. Sheng

SAM Therapy Educational Course

2:00 PM - 3:00 PM

-Ballroom A

TH-F-BRA Proton Therapy in Clinical Trials

Moderator: Stella Flampouri, Emory University, Atlanta, GA

- 2:00 PM **S. Gulliford, University College Hospital London: Clinical Trials Comparing Photons and Protons - UK Approach**
- 2:30 PM **S. Flampouri, Emory University: Inclusion of Protons in Large Scale Clinical Trials - US Approach**

SAM Specialty Program The New Era of Radiopharmaceutical Therapy

2:00 PM - 3:00 PM

-Ballroom B

TH-F-BRB Novel Interventions and Focused Cancer Radiation Therapy

Moderator: Ande Bao, University Hospitals Cleveland Medical Center, Solon, OH

- 8:30 AM **A. Bao, University Hospitals Cleveland Medical Center: Therapy of Glioblastoma Using Locoregional Administration of 186Re-Liposomal Nanoparticles**
- 8:50 AM **J. Humm, Memorial Sloan-Kettering Cancer Center: Dosimetry of Intrathecally Administered 131I-Labeled Omburtamab**
- 9:10 AM **S. Graves, University of Iowa: Intra-Arterial Administration of Receptor Targeted Agent, 90Y-DOTATOC**

SAM Therapy Educational Course

2:00 PM - 3:00 PM

-Room 202

TH-F-202 Safety and Quality Improvements in Brachytherapy

Moderator: Wenzheng Feng, Saint Barnabas Medical Center, Tenafly, NJ

- 2:00 PM **Introduction**
- 2:05 PM **Z. Shen, University of Southern California: Importance of Quality Control Checklists for HDR Brachytherapy Procedures**
- 2:21 PM **J. Zhou, University of Maryland Shore Medical Center at Easton: Clinical Efficiency Improvements of Brachytherapy in Community Sites**
- 2:37 PM **M. Rivard, Rhode Island Hospital / Brown University: An Overall Perspective on Risk Management and Dosimetric Uncertainties in HDR**
- 2:54 PM **Q & A**

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

General ePoster Viewing (GePV)

ePosters are available for viewing via:

- ePoster Forum locations during exhibit hall hours:
 - Sunday | 12:30 pm – 5:00 pm
 - Monday/Tuesday | 9:00 am – 5:00 pm
 - Wednesday | 9:00 am – 2:00 pm
- Annual Meeting website

Education General ePoster Viewing

-ePoster Forums

PO-GePV-E-01 A Virtual Physics Lab to Educate the Public About Radiation - J. Jing*, H. Lin

PO-GePV-E-02 A Free Educational Website - Encyclopedia of Medical Physics, Edition II - S. Tabakov*, P. Sprawls, F. Milano, M. Stoeva, S. Tipnis, T. Underwood

PO-GePV-E-03 The Genesis Course: Developing Highly Effective Physics Knowledge for Radiology Residents - P. Sprawls*

PO-GePV-E-04 Medical Physics Escape Room – Unlock the Discovery of the Physics in Medicine - O. Villarreal*, A. Vignati, O. Rampado, M. Abujami, D. Bersani, P. Cerello, E. Data, V. Ferrero, E. Fiorina, C. Galeone, S. Giordanengo, F. Mas Milian, E. Medina, V. Monaco, D. Montalvan Olivares, V. Monti, F. Pennazio, R. Sacchi, M. Vallero, R. Cirio

PO-GePV-E-05 Mentorship in a Medical Physics Residency Program: Setting Goals and Evaluating Results - B. Keller*, A. Elzibak, G. Pang, M. Nielsen, B. Zhang, S. Breen, A. Hsu

PO-GePV-E-06 A Team Learning Initiative in Undergraduate Medical Physics - B. Loughery*, J. Mcbrady, M. Joiner

PO-GePV-E-07 A Multi-Modal Deep Learning-Based Decision Support System for Individualized Radiotherapy of Non-Small Cell Lung Cancer - A. Niecikowski*, S. Gupta, G. Suarez, J. Kim, H. Chen, F. Guo, W. Long, J. Deng

PO-GePV-E-08 Strategies to Increase Data Science and Artificial Intelligence Curriculum and Practical Skills in Medical Physics Graduate and Residency Programs - R. McBeth*, T. Li, S. O'Reilly

PO-GePV-E-09 Formal Simulation-Based Training on DIBH Technique Is Effective for Clinical and Physics Staff - A. Copeland*, M. Niazi, L. Schubert, N. Simone, S. Rudoler, S. Wan

PO-GePV-E-10 Development and Implementation of Interactive ELearning Content for Medical Physics Education - P. Ravindran*

PO-GePV-E-11 Introductory Patient Communication Curriculum for Medical Physics Graduate Students: Multi-Institutional Experience - L. Padilla*, L. DeWeese, M. Kishore, V. Bry, N. Kirby, A. Rodrigues

PO-GePV-E-12 Physicist Brachytherapy Training in 2021 - A Survey of Therapeutic Medical Physics Residency Program Directors - M. Aima*, S. Simiele, S. Richardson, C. Melhus

PO-GePV-E-13 Contrast Thresholds for Detection of Various Iodine Concentrations in Subtraction CT and Dual Energy CT Systems - A. Heshmat*, I. Barreto, L. Rill, M. Arreola

PO-GePV-E-14 Global Virtual Mentoring Program for Medical Physicists: Guidance Provided by An Online Survey - J. Van Dyk*, L. Schreiner, R. Jeraj, M. Jalink

Professional General ePoster Viewing

-ePoster Forums

PO-GePV-P-01 Quantitative Value for Radiotherapy Department Operation Optimization with Binary Stakeholder Model - K. Li*

PO-GePV-P-02 Retrospective Study of the Intraoperative Radiation Therapy (IORT) for Treatment of the Early-Stage Breast Cancer - K. Dou*

PO-GePV-P-03 To Provide a New Method for Early Alert of the Radiation Dose Change Due to Patient's Physical Change for Adaptive Radiation Therapy (ART) - Y. Wang*

PO-GePV-P-04 Quantitative Study on the Changes of Brain White Matter Before and After Radiotherapy Applying Multi-Sequence MR Radiomics - M. Chen*, L. Wang, G. Gong, Y. Yin

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-P-05 Uncertainty Determination of Dose Due to Repository Movement in Proton Therapy of Non-Small Cell Lung Cancer Using the GATE Monte Carlo Technique - H. Taleshi Ahangari, R. Shamohamadi*

PO-GePV-P-06 Application of Artificial Intelligence Automatic Delineation in 1.5T MR Linac Online Adaptive Radiotherapy for Esophageal Carcinoma - Z. Li, Y. Yin, H. Wang*

PO-GePV-P-07 Differences in Dosimetric Performances of Compared URT-Linac 506c with TrueBeam - Y. Liang*, L. Yu, B. Yang, T. Pang, X. Liu, J. Qiu

PO-GePV-P-08 Evaluation of Table Transmission with Different Couch Tops Available at the Clinic - S. Davis*, R. Tolakanahalli, S. George

PO-GePV-P-09 Transitioning from Computed Radiography to Digital Radiography by Redesigning the Clinical Workflow for Total Body Irradiation with Lung Blocks - K. Verdecchia*, M. Shah, A. Doemer, I. Chetty

PO-GePV-P-10 Determinant for a Successful Practice Quality Improvement Projects in Radiation Oncology Department - C. Njeh*, B. Thorndyke, S. Ng, Y. Yue, L. Fanelli, H. Ai, R. Zellars

PO-GePV-P-11 Evaluation of QA Crosschecker for Monthly QA On Linac; One Year of Experience - M. Yaqoub*, S. Sharma, A. Al-Kaissi, R. Corns, K. Yang, R. Connor, A. Ju

PO-GePV-P-12 Estimation of Monte Carlos Algorithm with MapCHECK2 Diode Array for Electron Beam Radiotherapy - K. Li*

PO-GePV-P-13 Effect of Inconsistent Virtual Bolus Thickness on Superficial Dose Distribution - R. Cattell*, J. Kim, A. Hsia, X. Qian

PO-GePV-P-14 Comparison of Different Software for Quality Assurance of Diagnostic Display Monitors - B. Fric*

PO-GePV-P-15 Beam Commissioning An Elekta Versa HD Linear Accelerator Using Accelerated Go Live Data - N. Bassiri*, P. Park, T. Yamamoto, L. Sensoy, S. Palefsky, M. Keohane, S. Benedict

PO-GePV-P-16 Utilization of Response Surface Methodology in Optimization of CT Low-Contrast Detectability - s. alani*

PO-GePV-P-17 Evaluation of Fractional Variations of Delineated Volumes and Dosimetric Parameters for Patients Treated with HDR Multi-Channel Vaginal Cylinders - T. Giaddui*, B. Wang, J. Price, C. Heese, C. Miyamoto, B. Micaily, S. Li

PO-GePV-P-18 Experience with Dose Validation for a New Planning System - B. Wang*, T. Giaddui, S. Li

PO-GePV-P-19 Quantitative Look into Ultrasound Quality Assurance - B. Fric*

PO-GePV-P-20 Robustness and Reproducibility of Radiomics in T2 Weighted Images from Magnetic Resonance Image Guided Linear Accelerator in a Phantom Study - Z. Li, X. Liu, B. Li, J. Zhu, M. Sun*

Imaging General ePoster Viewing

-ePoster Forums

PO-GePV-I-01 Comparing Effective Doses for Hip Imaging Using Cone Beam CT (CBCT) and Multidetector CT (MDCT) - J. Dave, X. Jiang*, P. Machado, C. Roth, T. Minch

PO-GePV-I-02 Short-Scan Cone-Beam Dedicated Breast CT: Self-Supervised Denoising from Single Image - Z. Fu*, H. Tseng, A. Karellas, S. Vedantham

PO-GePV-I-03 Evaluation of the IVIScan Detector for Regulatory Dosimetric Quality Control Including Wide Radiation Beam for Computed Tomography and Cone-Beam Computed Tomography in Radiotherapy - C. Popotte*, M. Munier, C. Devic, N. Guillochon, D. Paul

PO-GePV-I-04 Methodology to Estimate CTDI100(center) for Dental Cone Beam CT Based on Radiation Dose at the Input Surface of the Image Receptor - J. Dave*

PO-GePV-I-05 Effective Doses for Extremity Imaging Using Cone Beam CT Scanners - J. Dave*, T. Minch

PO-GePV-I-06 An Approach to Convert Dose Quantities From CT- and CBCT-Imaging - M. Borowski*, L. Pirl, S. Ketelhut, M. Kuhlmann, L. Büermann

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-I-07 Optimizing Dual-Energy CT Technique for Iodine-Based Compound Contrast-To-Noise Ratio - E. Sidky*, F. Terzioğlu, J. Phillips, G. Bal, I. Reiser, X. Pan

PO-GePV-I-08 Study on Image Quality Influenced by Two Decomposition Algorithms of Dual Energy Cone Beam CT - Z. Dong*, C. Li

PO-GePV-I-09 Segmentation of Tumor and Organs at Risk for CBCT-Based Online Adaptive Radiotherapy Using Recurrent Neural Networks with Multi-Scale Memory - H. Zhao*, X. Liang, B. Meng, M. Dohopolski, B. Choi, B. Cai, M. Lin, T. Bai, D. Nguyen, S. Jiang

PO-GePV-I-10 Development of a Deformable Image Registration Technique for Abdominal Cone-Beam CT Using Deep Learning with Generative Adversarial Network - Y. Zhang*, Y. Liu, T. Lv, H. Gong, W. Zhao, G. Zhang, S. Xu

PO-GePV-I-11 Generation of Synthetic CBCT with Artifacts Caused by Peristaltic Movement from Planning CT - T. Onishi*, M. Nakamura, D. Zhou, Y. Tsuruta, M. Sasaki, N. Matsushita, A. Ogawa, R. Ashida, T. Mizowaki

PO-GePV-I-12 A Hybrid Scatter Correction Algorithm for CBCT to Incorporate System-Specific Information with a Deep Learning-Based Scatter Correction Algorithm - H. Lee*, A. Lalonde, B. Winey, G. Sharp, H. Paganetti

PO-GePV-I-13 Comparison of Patient-Specific Deep Learning Models for Enhancing 4D-CBCT Image for Radiomics Analysis - Z. Zhang*, M. Huang, Z. Jiang, Y. Chang, K. Lu, Z. Qiao, F. Yin, P. Tran, D. Wu, C. Beltran, L. Ren

PO-GePV-I-14 A Historical Review of CBCT QA Performance on One Truebeam LINAC - K. Episcopia*, D. Lovelock, P. Klages, H. Kuo, S. Lim, J. Sillanpaa

PO-GePV-I-15 CT Simulation Realism: What Are the Impacts of Simulation Parameters? - I. Montero*, S. Sotoudeh-paima, E. Abadi, E. Samei

PO-GePV-I-16 Sequential Cone-Beam Computed Tomography-Based Radiomics Analysis for Improving the Prediction of Radiation Pneumonitis - Z. Song*, H. Liu, C. Li, Y. Zhang, Y. Jiang

PO-GePV-I-17 Evaluation of Automatic Prostate Volume Generation for Cone-Beam CT-Based Delta-Radiomics of Prostate Cancer - A. Deana*, R. Delgadillo, R. Schmidt, B. Spieler, J. Ford, D. Kwon, M. Studenski, K. Padgett, M. Abramowitz, A. Dal Pra, R. Stoyanova, N. Dogan

PO-GePV-I-18 Low-Dose Cone-Beam Dedicated Breast CT: Self-Supervised Denoising from Single Image - Z. Fu*, H. Tseng, A. Karellas, S. Vedantham

PO-GePV-I-19 Image Reconstruction from Limited-Angular-Range Data Acquired with an Offset-Detector - D. Xia*, Z. Zhang, B. Chen, E. Sidky, X. Pan

PO-GePV-I-20 Real-Time 3D CT Reconstruction and Tumor Segmentation Based on Single X-Ray Image at Any Gantry Angle - M. Zhang*, B. Liu, r. wei, F. Zhou

PO-GePV-I-21 Theoretical Examination of Lag Suppression in Detectors Employing Polycrystalline HgI₂ Converters Through Incorporation of Frisch Grid Structures for Digital Breast Tomosynthesis - L. Shen*, Y. El-Mohri, Q. Zhao, L. Antonuk

PO-GePV-I-22 A Qualitative Study of Improving Megavoltage Computed Tomography Image Quality and Dose Calculation Using CycleGAN-Based Image Synthesis for Helical Tomotherapy of Head and Neck Cancer - T. Lv*, C. Xie, X. Dai, W. Zhao, G. Zhang, B. Qu, S. Xu

PO-GePV-I-23 Whole-Brain Arterial Cerebral Blood Volume (CBVa) Measurement Using 3D Inflow-Based Vascular-Space-Occupancy (iVASO) MRI - C. Gu*, D. Cao, X. Miao, A. Paez, J. Cai, Y. Li, W. Li, J. Pillai, P. Van Zijl, J. Hua

PO-GePV-I-24 The ACR MRI QC Low-Contrast Detectability Test and the Rose Model - H. Gach*

PO-GePV-I-25 Real-Time Quality Control of RF Coils Using Clinical MRI Data - T. McKeown*, S. Robertson, E. Samei

PO-GePV-I-26 Comparison Between EPI DWI and PROPELLER DWI in MR Brain Imaging - P. Mavroidis*, E. Giankou, M. Papaioannou, V. Roka, A. Tsikrika, S. Kostopoulos, D. Glotsos, G. Sakkas, E. Dardiotis, D. Chaniotis, S. Stathakis, E. Kapsalaki, E. Lavdas

General ePoster Viewing (GePV)

PO-GePV-I-27 Implementation and Testing of Intermolecular Multiple Quantum Coherence MRI On Clinical 3T MRI for Brown Adipose Tissue Detection - R. Dugan*, K. Kirby, O. Carmichael

PO-GePV-I-28 3D-MRI Reconstruction from Single Cine-MRI Using Transfer Learning - R. Wei*, B. Liang, K. Men, J. Dai

PO-GePV-I-29 Contrast-Enhanced Dynamic MRI of Brain Lymphatic Vessels: A Feasibility Study - R. Gabr*, J. Lincoln, K. Hasan, L. Kramer

PO-GePV-I-30 Pharmacokinetic Modeling for Hyperpolarized MRI of 13C Urea - K. Michel*, C. Walker, S. Lai, M. Merritt, J. Bankson

PO-GePV-I-31 Quantifying the Influence of a Vendor DL Reconstruction Algorithm on MR Image Quality - J. Sanders*, R. Stafford, C. Walker

PO-GePV-I-32 Compensating for Integer Truncation When Measuring the SNR of Low Noise MR Images - M. Nesaiver*, E. Nesaiver*, A. Nesaiver

PO-GePV-I-33 The 'BEST' Method of Measuring SNR of MRI QA Images - M. Nesaiver*, E. Nesaiver, S. Nesaiver, A. Nesaiver

PO-GePV-I-34 MRI-Based Radiomics Model Improves Prognosis Prediction in Advanced Rectal Cancer Undergoing Neoadjuvant Chemoradiotherapy and Surgical Resection - Q. Zhao*

PO-GePV-I-35 MRS and Diffusion MRI in a Maternal Obesity Model of Developmental Programming in Baboon Offspring - J. Vasquez*, G. Clarke

PO-GePV-I-36 Epicardial Fat: Evaluating Measurement Methodology of An Imaging Biomarker - G. Clarke*, A. Moody, J. Curran, J. Blangero

PO-GePV-I-37 Delta-Radiomics Features of T2 Weighted Images From MR-Linac for Response Evaluation in Radiotherapy for Local Advanced Esophageal Squamous Cell Carcinoma - M. Sun*, B. Li, Z. Li

PO-GePV-I-38 Radiomic Analysis of Tumor Heterogeneity in HCC Post-Chemotherapy Using MRI - Q. Zhao*

PO-GePV-I-39 Developing a 3D Printed Phantom for Multi-Institutional Radiomic Studies and Assessment Software to Evaluate a Radiomic Software - S. Duong, D. Lee*, S. Oh, X. Chen, M. Hwang, H. Li, Y. Cui, M. Boss, Y. Xiao, J. Sohn

PO-GePV-I-40 Survival Prediction of Nasopharyngeal Carcinoma Using Radiomics Nomogram Derived from Multiple Sequences Magnetic Resonance Imaging - Q. Qiu*, K. Liu, Y. Yin, R. Wang

PO-GePV-I-41 3D Super-Resolution Reconstruction for Hippocampus Sparing in Brain Radiotherapy (in Silico Study) - J. Lee*, J. Chun, J. Kim, T. Kim

PO-GePV-I-42 Importance of Determining the Maximum Magnetic Displacement Forces for Implanted Devices Everywhere Within the Magnet Bore: A 3T-7T Comparison Study - L. Bardwell Speltz*, K. Kirby, P. Trester, I. Langenfeld, M. Bernstein, A. Fagan

PO-GePV-I-43 Thermal Risks Induced by Active Implantable Medical Devices in MRI Exams with Fast Gradient Field Switching - Y. Lu*, D. Ragan, Y. Liu

PO-GePV-I-44 Gd-Doped Gel Phantom Recipe Calculator for 3T MRI - Z. Razi*, A. Bumin, H. Gao, Z. Zhang, M. Arreola

PO-GePV-I-45 A New Method for Determining Patient Dose from Tube Current Modulated CT Examination Based On Measured Dose Profile in TCM Phantom - H. Liu*, Y. Yang, W. Shao, C. Wang, W. Zhuo

PO-GePV-I-46 Machine Learning Algorithms Accurately Predict Organ and Effective Dose in Pediatric Computed Tomography - Y. Gao*, U. Mahmood, W. Tang, L. Dauer, Y. Erdi

PO-GePV-I-47 Development of a Web-Based Tool for the Estimation of Organ Doses in Pediatric and Adult Chest CT Examinations - J. Damilakis*, J. Stratakis, M. Myronakis

PO-GePV-I-48 Investigation of Patient Understanding And Communication Preferences Associated With Radiation Exposure From CT Scans - M. Supanich*, H. Ho, L. Sclamborg

PO-GePV-I-49 Leapfrog CT DLP Data Collection Without Using Dose Monitoring Software for a Pediatric Hospital - W. Wang*

PO-GePV-I-50 The Effect of Beam Overlapping in Dual-Energy Volume CT Scans and Single-Energy Helical Scans - N. Correa*, I. Barreto, M. Arreola

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

General ePoster Viewing (GePV)

PO-GePV-I-51 Development and Verification of a Subregional Radiomic Framework for Image Segmentation - J. Gu*, B. Li, J. Zhu
PO-GePV-I-52 Influence of Abnormal Right Coronary Artery Originating from the Left Coronary Sinus in Hemodynamic Environment - H. Zhao*, M. Cong, J. Qiu, S. Sun
PO-GePV-I-53 MATU-Net: A Deep Learning-Based Pipeline for Auto Segmentation of Pelvic Lymph Nodes During Brachytherapy of Locally Advanced Cervical Cancer - E. Showkatian*, Z. Siavashpour, S. Sadeghi
PO-GePV-I-54 Optimized Practice for Metal Artifact Reduction - J. Dumas*, A. Bruget, R. Dal, L. De Marzi, V. Calugaru, R. Ferrand
PO-GePV-I-55 Photon Counting Detector: The First Human Images - I. Bechwati*, D. Lee, D. Kim, J. Park
PO-GePV-I-56 Development of An Ultra-Low Dose Computed Tomography Protocol for Detection of Inhaled Foreign Bodies in Pediatric Patients - C. Kofler*, I. Reiser, E. Marshall, Z. Lu, K. Feinstein, M. Zaritzky
PO-GePV-I-57 Analysis of Computed Tomography Radiation Dose in Southern California Hospitals - J. Deslongchamps*, J. Wang, J. Clements
PO-GePV-I-58 Organ Dose Reduction with a Limited Scan range CT Protocol for Evaluation of Appendicitis - E. Tonkopi*, A. Dowhanik, A. Costa
PO-GePV-I-59 Variability of Radiomics Features with O-MAR Iterative Reconstruction - J. Foy*
PO-GePV-I-60 Assessing the Variability of Quantitative Imaging Features Across a Range of CT Acquisition and Reconstruction Parameters: Investigating Whether Data from One Scanner Can Be Used to Represent the Range of Data from Other Scanners - G. Melendez-Corres*, G. Kim, M. Wahi-Anwar, M. McNitt-Gray
PO-GePV-I-61 Personalized Patient-Adaptive Sparse-View CT Deep Reconstruction - B. Song*, L. Shen, L. Xing
PO-GePV-I-62 Evaluation of a Direct-Ion Storage Dosimeter in Personnel Radiation Dosimetry - N. Quails*, J. Zhang, X. Yang, D. Hintenlang
PO-GePV-I-63 Multimodal Image Translation Via Deep Learning Inference Model Trained in Video Domain - j. fan*, D. Yang, J. Wang, W. Hu
PO-GePV-I-64 Assessment of the Generalizability of Organ Segmentation CNNs Across CT Scanner Manufacturers - A. Weisman*, M. La Fontaine, O. Lokre, R. Munian-govindan, T. Perk
PO-GePV-I-65 Standardizing Radiotherapy Structure Names with Multimodal Data: Deep Learning Approach - P. Bose*, S. Srinivasan, P. Turner, W. Sleeman, J. Palta, R. Kapoor, P. Ghosh
PO-GePV-I-66 Comparison of Automatic and Manual QC Luminance Measurements in Primary Monitors (PDMs) Over the 2-Year Period - A. Ruuge*, Y. Erdi
PO-GePV-I-67 The Use of Volume Expansion Approach on Quantitative Estimation of Total Organ Activity in Clinical Quantitative SPECT/CT - J. Bian*, J. Halama
PO-GePV-I-68 Robustness of Radiomic Features for 4D-CT of Liver Cancer - J. Duan*
PO-GePV-I-69 Investigating the Effect of Reducing Radiation Dose On Quantitative Imaging Features Extracted From CT Renal Perfusion Protocol - M. Daly*, M. Wahi-Anwar, G. Melendez-Corres, G. Kim, S. Raman, M. McNitt-Gray
PO-GePV-I-70 Bridging the Gap Between Machine Learning and Clinicians Through Interpretable AI in Head and Neck Cancer Assessment - Y. Wang, W. Duggar*, T. Thomas, P. Roberts, R. Gatewood, S. Vijayakumar, L. Bian, H. Wang
PO-GePV-I-71 CT-Dose: Software Interface to Calculate Dose to Organ in Medical Imaging - S. Morató Rafet*, R. Miró Herrero, B. Juste Vidal, S. Oliver Gil, J. Vijande, F. Ballester, G. Verdú Martín, A. Santos, M. Mille
PO-GePV-I-72 Integrated Dosimetry Software for Azedra I-131 Therapy - D. Sheftman*, D. Hintenlang
PO-GePV-I-73 Automated Maximum Standardized Uptake Value Determination On FDG-PET for Diffuse Large B-Cell Lymphoma - R. Kuker*, J. Alderuccio, A. Rincon, W. Zhao, C. Moskowitz, F. Yang

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-I-74 Review of [18F]FDG PET-CT Protocol Trends in Response to Advancements in PET Technology in the Past 15-Years - N. Kasraie*, J. Gallet, M. Park
PO-GePV-I-75 Internal Dose Assessment for the Patient in 131I Misadministration Accident Based on the Individual-Specific Biokinetics and Korean Reference Models - T. Kwon*, M. Park, M. Cho
PO-GePV-I-76 Predicting Later Time Frame Images in Dynamic PET Using Deep Learning - M. Mokri*, M. Safari, J. Dasilva, S. Kaviani, L. Archambault, J. Carrier
PO-GePV-I-77 Feasibility of Implementing Standardized Fluorodeoxyglucose and Florbetapir Brain PET Processing Pipelines - M. Naseri*, S. Ramakrishnapillai, L. Bazzano, O. Carmichael
PO-GePV-I-78 Comparison of 18F-Choline and 18F-PSMA Performance on Detecting Malignant Lesions Using Fuzzy C-Means Segmentation On PET-CT Images of Patients with Recurrent Prostate Cancer - M. Katsikakis, I. Gatos, N. Papathanasiou, S. Tsantis, D. Apostolopoulos, K. Papadimitropoulos, M. Spiliotopoulou, E. Liatsikos, D. Mihailidis, G. Kagadis*
PO-GePV-I-79 Evaluating Reconstruction Parameter for Improving Quantitative Accuracy in PET - K. Saha*, C. Cheney
PO-GePV-I-80 Impact of PSF Modeling On PET/CT Reconstructed Phantom Images - C. Cheney*, K. Saha
PO-GePV-I-81 Segmentation in Quantitative Dynamic Nuclear Medicine: The Insufficiency of the TG-211 of the AAPM - P. Laporte*, J. Carrier
PO-GePV-I-82 Predicting F-18 FMISO PET Hypoxia Measurements From F-18 FDG PET Scan Using a Generative Adversarial Network - W. Zhao*, M. Grkovski, N. Lee, H. Schöder, J. Humm, H. Veeraraghavan, J. Deasy
PO-GePV-I-83 3D Printed Capillary Tube Holder to Support AAPM Task Group Report 126 - J. Grice*
PO-GePV-I-84 Color Cherenkov Imaging Can Correct for Variations in Skin Melanin Concentration When Monitoring Radiation Dose Delivery - V. Wickramasinghe*, S. Decker, R. Zhang, P. Bruza, D. Gladstone, D. Alexander, B. Pogue
PO-GePV-I-85 Chest X-Ray Enhancement Based On Bone-Suppression Model Using Multi-Dilated-Rate Strategy - H. Sun*, L. Song, G. Ren, J. Yang, J. Cai
PO-GePV-I-86 Navigation of Frameless Fixation for Gammaknife Radiosurgery Using Fixed Augmented Reality - H. Moon*, Y. Dho
PO-GePV-I-87 A Comprehensive Physical Characterization of Commercially Available 3D Printing Materials for Use in Creating Patient-Specific Treatment Devices and Phantoms - M. Kozee*, J. Weygand, D. Hunt, G. Redler, J. Graham
PO-GePV-I-88 Standardizing Radiotherapy Structure Names: A Federated Learning Based Approach - A. Cherevko, S. Srinivasan*, W. Sleeman, P. Bose, P. Turner, P. Ghosh, R. Kapoor, J. Palta
PO-GePV-I-89 Preclinical Tumor Growth Delay Is More Reliably Derived From Imaging-Based Volume Measurements Than Manual Caliper Measurements - M. Shottbolt*, J. Castro, B. Spieler, S. Welford, I. Mihaylov
PO-GePV-I-90 Robust Method for X-Ray Beam Alignment Testing of Fluoroscopy Equipment - A. LaBella*, D. Kim
PO-GePV-I-91 Fewer Samples, Equally Confident: An Adaptive Sampling Method for Estimating the Coefficient of Variation with Sample Size Based QC Limits - H. Chen*, W. Siman, R. Milman
PO-GePV-I-92 Initial Evaluation of a Low-Focus Grid Versus Air Gap for Lateral Hip Digital Radiography Using a Phantom - K. Kirby*, B. Schueler, S. Broski, T. Daly, Z. Long
PO-GePV-I-93 Characterization of the Modified Solid-State Detector, RTI R-100M, in the Diagnostic Energy Range Compared Against Production Model RTI R-100 and Ionization Chamber - A. Aljabal*, P. Lin, M. Ghita
PO-GePV-I-94 Characterization of Patient Dose Distribution and Probabilistic Risk Analysis in Cardiac Catheterization Laboratories - V. Weir*, J. Zhang, M. Khan
PO-GePV-I-95 Impact of Anatomical Phantoms On Organ Dose Estimates for Patients Undergoing Fluoroscopically-Guided Interventions (FGIs) - S. Streitmatter*, J. Shin, C. Lee

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

General ePoster Viewing (GePV)

PO-GePV-I-96 Measurement and Assessment of Dose-Area-Product in Dual-Energy X-Ray Absorptiometry - A. Thomas*, J. Jimenez, S. Fahrenholtz, K. Hamdani, W. Erwin
PO-GePV-I-97 Detection of Coronary Artery Inflammation Using Dual Energy CT - S. Nie*, S. Molloy
PO-GePV-I-98 Automatic Detector QC and Image Quality Assessment in Digital Radiography - R. DiTusa*, J. So, Y. Liu, B. Peng, H. Hsu, P. Chaudhary, T. Lin, S. Jambawalikar
PO-GePV-I-99 Structure Boundary Preserving U-Net for Prostate Ultrasound Images Segmentation - H. Bi*, J. Sun, G. Liugang, N. Xinye
PO-GePV-I-100 Attention U-Net Segmentation of Indeterminate Nodules on Thyroid Ultrasound - J. Genender*, J. Fuhrman, H. Li, K. Memeh, J. Conn Busch, J. Williams, L. Lan, D. Sarne, B. Finnerty, P. Angelos, T. Fahey, X. Keutgen, M. Giger
PO-GePV-I-101 Thyroid Nodule Classification in Ultrasound Imaging Using Contrastive Learning Based on ViT - J. Sun*, H. Bi, G. Liugang, X. Kai, C. Qian, N. Xinye

Multi-Disciplinary General ePoster Viewing

-ePoster Forums

PO-GePV-M-01 Impact of Germline Genomic Alterations on Normal Tissue and Tumor Response to Radiation Therapy in Head and Neck Squamous Cell Carcinoma - A. Hopper, L. Sutton, P. Sanghvi, X. Ray, L. Krockenberger, I. Deichaite, V. Moiseenko*
PO-GePV-M-02 Improving Three-Dimensional Dose Prediction with Ordinal Regression - Y. Yuan*, T. Tseng, Y. Lo
PO-GePV-M-03 Automated Field-In-Field Integrated with Aperture Prediction for Whole Brain Radiotherapy - K. Huang*, Y. Xiao, S. Hernandez, C. Nguyen, C. Wang, T. Briere, C. Cardenas, L. Court
PO-GePV-M-04 Domain Knowledge Driven 3D Dose Prediction Using Moment-Based Loss Function - G. Jhanwar*, N. Dahiya, P. Ghahremani, M. Zarepisheh, S. Nadeem
PO-GePV-M-05 Geometric and Dosimetric Evaluation of An Atlas - Based Autosegmentation Software on Organs-At-Risk (OARs) for Tomotherapy Planning of Nasopharyngeal Carcinoma (NPC) Patients - P. Cheung*, J. Lui, F. Lee, L. Wing Sum, H. Yiu, J. Cai
PO-GePV-M-06 Deep-Learning Auto-Segmentation Vs. Manually Segmented Delineations for Head and Neck Cancer Patients - T. Bejarano*, V. Leandro Alves, K. Ward, D. Cousins, E. Nesbit, E. Asare, C. Luminais, B. Walker, J. Siebers
PO-GePV-M-07 Performance Evaluation of AI-Based Automatic Segmentation Modules for Head and Neck Cancer Patients - Y. Liao*, R. Injerd, G. Tolekidis, N. Joshi, J. Turian
PO-GePV-M-08 A Randomized Blinded Assessment of a Machine Learning Based Autosegmentation Tool for Breast Cancer Radiotherapy Compared to Peer-Reviewed Radiation Oncologist Contours - M. Kucharczyk*, K. Chytk-Praznik, J. Giambattista, C. Kolbeck, G. Bala, J. Robar, N. Chng, A. Beam
PO-GePV-M-09 Auto Segmentation Model for Head and Neck Cancer Patients Using U-Net with Convolutional Block Attention Modules - K. Yamamoto*, R. Nakagami, M. Nakano, Y. Tanaka, H. Ishiyama, T. Hasegawa, M. Hashimoto
PO-GePV-M-10 Clinical Target Volume Analysis from a Web-Based, AI Platform - T. Netherton*, R. Mumme, A. Olanrewaju, R. Douglas, L. Zhang, D. Rhee, C. Cardenas, H. Simonds, A. Jhingran, B. Beadle, L. Court
PO-GePV-M-11 Assessing Machine Learning Generated Auto-Segmentation - S. Gupta*, L. Dong, R. McBeth, S. Philbrook
PO-GePV-M-12 Correlations of Evaluation Metrics in Deep Learning-Based Segmentation - H. Tan*, Y. Xiao, R. McBeth, S. Lee
PO-GePV-M-13 Exploring the Combination of Deep-Learning Based Direct Segmentation and Deformable Image Registration for Cone-Beam CT Based Auto-Segmentation for Adaptive Radiotherapy - X. Liang*, H. Morgan, T. Bai, M. Dohopolski, D. Nguyen, S. Jiang
PO-GePV-M-14 Multi-Organ Auto-Segmentation of Abdominal Structures on Contrast-Enhanced CT Images with Escalating Training Data Size - C. Yu*, C. Anakwenze, Y. Zhao, R. Martin, J. Niedzielski, E. Ludmir, J. Yang, L. Court, C. Cardenas

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-M-15 A Clinical-Friendly Deep Interactive Segmentation Algorithm for Volumetric Image - T. Bai*, M. Lin, X. Liang, B. Wang, M. Dohopolski, B. Cai, D. Nguyen, S. Jiang
PO-GePV-M-16 Evaluation of a Commercial Convolution Neural Network Based Auto-Segmentation Software - M. Leyva*, D. Wang, N. Mcallister, A. Gutierrez, R. Tolakanahalli
PO-GePV-M-17 Evaluation of Automated and Manual Contours for Head and Neck Cancers - J. Buatti*, N. Kirby, R. Li, M. de Oliveira, C. Kabat, N. Papanikolaou, P. Paragios, S. Stathakis
PO-GePV-M-18 Contrast-Enhanced CT Based Radiomics in the Preoperative Prediction of Perineural Invasion for Patients with Gastric Cancer - H. Zheng*, X. Jin
PO-GePV-M-19 Differentiate Thyroid Follicular Adenoma from Carcinoma with Combined Ultrasound Radiomics Features and Clinical Sonographic Features - B. Yu*, X. Jin
PO-GePV-M-20 A Hybrid Tumor Model for Ultra-Large-Scale Heterogeneous Vascular Tumor Growth - J. Du*, Y. Zhou, L. Jin, K. Sheng
PO-GePV-M-21 Gell: A GPU-Powered Ultra-Large-Scale Cell-Based Simulator - J. Du*, Y. Zhou, L. Jin, K. Sheng
PO-GePV-M-22 Personalization of Patient Specific Radiation Dose and Dose Fractionation Using Volumetric Tumor Dynamics - H. Enderling*, M. Zahid, E. Moros, J. Caudell, A. Mohamed, C. Fuller
PO-GePV-M-23 SiCERR: An Extension for 3D Slicer to Execute CERR Analysis Routines - E. LoCastro*, H. Veeraraghavan, T. Kapur, A. Iyer, C. Pinter, G. Sharp, J. Deasy, A. Apte
PO-GePV-M-24 Information Security Needs and Practices for Cloud Based Healthcare Software-As-A-Service Model - P. Turner*, W. Sleeman, S. Srinivasan, P. Bose, P. Ghosh, J. Palta, R. Kapoor
PO-GePV-M-25 Anatomy-Specific Classification of Medical Imaging Data Hosted by Medical Imaging and Data Resource Center (MIDRC) - N. Shusharina*, D. Krishnaswamy, P. Kinahan, A. Fedorov
PO-GePV-M-26 Standardization Process of Nomenclature Application in Head and Neck Tumor in Multi-Center for Radiotherapy - w. zheng*, s. Huang, L. Ye, X. Zhang, Y. Duan, X. Yang
PO-GePV-M-27 Initial Utilization of An Outcomes Database to Determine the Effects of Planning Technique Change on Patient Outcomes - A. Du*, B. Morris, P. Lewiz, A. Beggs, S. Hedrick
PO-GePV-M-28 Determination of Optimal MR Scheduled Exam Slot Time by Retrospective Analysis of Performed Exam Durations - C. MacLellan*, S. Berkowitz, B. Scherrer, R. MacDougall, S. Dahlstedt, I. Cabral-goncalves, L. Tsai
PO-GePV-M-29 What Matters the Most to Early- and Late-Stage Patients with Lung Cancer? A Dynamic Topic-Modeling Analysis of Big Data in Online Cancer Communities - A. Shah, W. Muhammad*
PO-GePV-M-30 Scalable De-Identification Pipeline for Radiation Therapy Machine Learning Research - D. Moseley*, S. Seetamsetty, E. Tryggstad, S. Shiraishi
PO-GePV-M-31 Automated Treatment Plan Evaluation - T. Lee*
PO-GePV-M-32 Creation of a NoSQL Relational User Model Database for Head and Neck Patients - M. de Oliveira*, J. Buatti, R. Li, P. Paragios, N. Kirby, N. Papanikolaou, S. Stathakis
PO-GePV-M-33 A Deep Learning Method Approach for Machine Modeling of Elekta Linear Accelerator from Limited Beam Data - S. Ahn*, C. Kim, M. Han, S. Han, Y. Lee, H. Kim, C. Hong, J. Kim, J. Kim
PO-GePV-M-34 Clinical Implementation of the Pancreatic Cancer Fast CT-CBCT Registration Network Model - E. LoCastro*, J. Hong, Y. Hu, X. Han, A. Apte, G. Mageras
PO-GePV-M-35 Convolutional Neural Networks for the Automated Segmentation of Malignant Pleural Mesothelioma: Analysis of Performance Based on Probability Map Threshold - M. Shenouda*, E. Gudmundsson, F. Li, C. Straus, H. Kindler, A. Dudek, T. Stinchcombe, X. Wang, A. Starkey, S. Armato
PO-GePV-M-36 RAIdiation Protection Co-Pilot: A Machine Learning Aided Radiation Scenario Prediction Tool - E. Derugin*, K. Kröninger, O. Nackenhorst, F. Mentzel, J. Walbersloh, J. Weingarten
PO-GePV-M-37 Small Beams, Fast Predictions - Comparison of Modern Machine Learning Models for Microbeam Radiation Therapy - F. Mentzel*, M. Barnes, K. Kröninger, M. Lerch, O. Nackenhorst, J. Paino, A. Rozenfeld, A. Tsoi, J. Weingarten, M. Hagenbuchner, S. Guatelli

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

General ePoster Viewing (GePV)

PO-GePV-M-38 Gamma Passing Rate Predictions Based on Automatic Feature Extraction of Modulation Maps and Monitor Unit Profiles: A Machine Learning Approach for Virtual Specific-Plan Verification - P. Quintero*, D. Benoit, Y. Cheng, C. Moore, A. Beavis

PO-GePV-M-39 A Deep Learning Approach for Progression Prediction Using Morphological Changes in GTV During Treatment with MR-Guided Radiation Therapy - P. Ghasemi Saghand*, I. El Naqa, S. Rosenberg, J. Bryant, K. Latifi, J. Frakes, S. Hoffe, E. Moros

PO-GePV-M-40 Attention-Based Multiple Instance Learning AI in the Prediction of Treatment for COVID-19 Patients - J. Fuhrman*, C. Wei, B. Katsnelson, E. Katsnelson, H. Li, Z. Luo, Z. Dong, F. Lure, Z. Cheng, M. Giger

PO-GePV-M-41 OrXnet: Extracting Lung Projection from Composite X-Ray Projection with High Fidelity - Q. Xu*, D. Xu, D. Ruan, K. Sheng

PO-GePV-M-42 A Partial Convolution Generative Adversarial Network to Synthesize Liver Lesions for Enhanced Tumor Segmentation - Y. Liu*, F. Yang, Y. Yang

PO-GePV-M-43 Survival Prediction in Glioblastoma Using Combination of Deep Image Features, Hand-Crafted Image Features and Clinical Factors - Y. Zhuge*, H. Ning, J. Cheng, P. Mathen, K. Camphausen, R. Miller, A. Krauze

PO-GePV-M-44 Active Learning for Deep Learning Dose Prediction as a Radiotherapy QA Tool in Radiotherapy - M. Huet Dastarac*, A. Barragan Montero, J. Lee

PO-GePV-M-45 Reference-Guided Contrastive Learning for Overall Survival Prediction in Glioma Patients Using Pre-Operative MRIs - Z. Yang*, M. Chen, S. Stojadinovic, Z. Wardak, R. Timmerman, T. Dan, W. Lu, X. Gu

PO-GePV-M-46 Region Specific Optimization (RSO)-Based Deep Interactive Registration - T. Bai*, M. Lin, X. Liang, B. Wang, M. Dohopolski, B. Cai, D. Nguyen, S. Jiang

PO-GePV-M-47 IBSI-Compatible Convolutional Image Texture Filters in CERR - A. Iyer*, E. LoCastro, H. Veeraraghavan, J. Deasy, A. Apte

PO-GePV-M-48 Automatic Quantification of Organ at Risk Contour Overlap and Separation in Radiotherapy - J. Brooks*, A. Anand, R. Foote, D. Hobbs, A. Jackson, J. Lucido, J. Ma, D. Pafundi, S. Patel, Y. Rong, D. Routman, B. Stish, E. Tryggestad, S. Yaddanapudi, D. Moseley

PO-GePV-M-49 Evaluating the Use of Software Parallelism for DVH Calculations - W. Sleeman*, P. Turner, P. Bose, S. Srinivasan, P. Ghosh, J. Palta, R. Kapoor

PO-GePV-M-50 A Radiomics Application of the Two-Stage Clustering Algorithm for Finding Classes from a Large Sample with Many Variables - Y. Watanabe*, N. Gopishankar

PO-GePV-M-51 Machine Learning Model for Diagnosis of Non-Displaced Fractures on Emergency Department Hip Radiographs - K. Drukker*, A. Siegel, B. Anderson, N. Sundaram, L. Lan, M. Giger

PO-GePV-M-52 The Dataset Heterogeneity Matters: A Machine Learning Study of Dataset Conformation Effects on Model Performance for Dose Deliverability Prediction - P. Quintero*, D. Benoit, Y. Cheng, C. Moore, A. Beavis

PO-GePV-M-53 Optimizing the Combination of Radiotherapy with Immunotherapy Using Reinforcement Learning - M. Bleile*, Y. Xing, D. Nguyen, H. Nguyen, C. Timmerman, D. Saha, B. Chen, M. Story, D. Heitjan, R. Timmerman, S. Jiang

PO-GePV-M-54 Computational Triage of Severe Patients Caused by Coronavirus Disease 2019 Pneumonia on CT Images with Radiomic Signatures - T. Iwasaki*, H. Arimura, K. Ninomiya, H. Iwanaga

PO-GePV-M-55 Machine Learning-Generated Radiomic and Clinical Data for Lung Cancer Survival Prediction - L. Tu*, H. Choi, H. Clark, S. Lloyd

PO-GePV-M-56 Predicting 3D Gamma Passing Rates of Head-And-Neck Volumetric Modulated Arc Therapy Using Machine and Deep Learning Models - S. Sivabaskar*, R. Li, J. Buatti, M. de Oliveira, M. Bonnen, A. Roy, N. Kirby, S. Stathakis, N. Papanikolaou

PO-GePV-M-57 Prostate Cancer Malignancy Detection and Localization from MpMRI Using Auto-Deep Learning: One Step Closer to Clinical Utilization - W. Zong, E. Carver*, S. Zhu, E. Schaff, D. Chapman, J. Lee, I. Chetty, W. Wen

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-M-58 Cost and Design of a Compute- and Data-Intensive Research Program in Medical Physics - B. Thorndyke*

PO-GePV-M-59 Brain Metastasis Stereotactic Radiosurgery Radiomics-Based Outcome Prediction Accuracy Is Dependent on Metastasis Volume and MRI Scanner - D. DeVries*, F. Lagerwaard, J. Zindler, T. Yeung, G. Rodrigues, G. Hajdok, A. Ward

PO-GePV-M-60 Assessing Role of Feature Selection in Deep Transfer Classification of Indeterminant Thyroid Nodules - J. Cozzi*, H. Li, J. Williams, J. Conn Busch, L. Lan, X. Keutgen, M. Giger

PO-GePV-M-61 STRATIS: A Cloud-Enabled Software Toolbox for Radiotherapy and Imaging Analysis - A. Apte*, A. Iyer, E. LoCastro, H. Veeraraghavan, J. Oh, J. Deasy

PO-GePV-M-62 Novel Quantitative Tool for Assessing Pulmonary Disease Burden in COVID-19 Using Ultrasound - H. Sagreiya*, M. Jacobs, A. Akhbardeh

PO-GePV-M-63 Investigating the Expected Impact of Auto-Contouring in Clinical Practice: A Cohort Analysis - D. Boukerroui*, J. Baker, Y. McQuinlan, A. Riegel, Y. Cao, M. Gooding, L. Potters

PO-GePV-M-64 Investigating Disease-Stage Dependence of MR-Based Radiomic Feature Reproducibility Against Image Perturbations in Nasopharyngeal Carcinoma - T. Cheung*, S. Lam, J. Zhang, J. Cai

PO-GePV-M-65 A Comparative Evaluation of Radiomic Feature Selection and Machine Learning Models for Clinical Outcome Prediction in Lung Cancer - G. Ge*, J. Zhang

PO-GePV-M-66 Evaluation of Repeatability and Reproducibility of Radiomic Features Produced by The Fan-Beam KV-CT On A Novel Ring Gantry-Based PET/CT Linear Accelerator Using Two IBSI-Compliant Software Packages - T. Ketcherside, A. Sundquist, C. Han, W. Watkins, L. Court, C. Huntzinger, Q. Chen, T. Williams, A. Liu*

PO-GePV-M-67 Impact of Training with Data from Multiple Disease Types On Lesion Detection Performance in Two CNN Architectures - A. Weisman*, M. La Fontaine, O. Lokre, R. Munian-govindan, T. Perk

PO-GePV-M-68 Stability of Radiomics Features Using 4D-CT Across Radiomics Platforms and Contour Variations for Lung and Liver Tumors - X. Wang*, C. Ma, Y. Li, Y. Zhang, Y. Zhang, N. Yue, K. Nie

PO-GePV-M-69 Imputation of Truncated Tumor Growth Data Via Bayesian Mixed Modeling - M. Bleile*, Y. Xing, C. Timmerman, D. Nguyen, B. Chen, M. Story, D. Saha, S. Jiang, D. Heitjan

PO-GePV-M-70 Development of An Integrative Digital and Physical Phantom Bladder for Optimized Prostate Radiation Treatment Planning - S. Badih*, T. Johnson, Y. Khokhar, E. Salter, J. Chen, A. Deb, D. Ruan

PO-GePV-M-71 A Novel Dose-Volume Constraint to Reduce Toxicity Rates of the Parotid Glands for Head-And-Neck Cancer Patients - H. Choun*, J. Son, S. Kang, H. Jin, E. Yoon, H. Wu, J. Park

PO-GePV-M-72 Progression-Free Survival Analysis for Head and Neck Cancer with Multi-Modality Radiomics Using PET/CT Images - T. Alfonzetti*, R. Sheu, J. Junn, R. Bakst, Y. Yuan

PO-GePV-M-73 Predicting Indirect Radiation-Induced Damage Using Parametric Response Mapping and Dosimetric Analysis - A. Wuschner*, E. Wallat, M. Flakus, G. Christensen, J. Reinhardt, J. Bayouth

PO-GePV-M-74 Electroacoustic Tomography for the Guidance of Electroporation - Y. Xu*, S. Wang, R. Lu, L. Sun, T. Kim, L. Xiang

PO-GePV-M-75 Monte-Carlo Dose Calculation System for Interventional Radiology (McDCIR) - Development and First Test - H. Han*, S. Moon, G. Son, C. Kim, S. Song

PO-GePV-M-76 Evaluation of Deep Learning Based Auto-Contouring of Liver Segments - A. Gupta*, B. Rigaud, S. Yedururi, E. Kirimli, C. Yu, Y. He, G. Cazoulat, C. Oconnor, B. Odisio, E. Koay, K. Brock

PO-GePV-M-77 3D Surface Imaging of Pleural Cavity for Light Fluence Modeling During PDT - D. Sourvanos*, H. Sun, J. Fiorellini, K. Cengel, T. Zhu

PO-GePV-M-78 A Real time IR Navigation System for Pleural Photodynamic therapy - H. Sun*, M. Kim, K. Cengel, T. Zhu

PO-GePV-M-79 Clinical Implementation of the Philips Orthopedic Metallic Artifact Reduction (OMAR) Algorithm for Proton Radiotherapy CT Simulations - N. Miksys*, C. Curley, R. Tokarz

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

General ePoster Viewing (GeV)

PO-GePV-M-80 Beam Path Length from Isocenter to Skin on Cone-Beam CT Images as An Adaptive Planning Indicator in Proton Therapy for Extremity Tumors - N. Biswal*, B. Zhang, E. Nichols, M. Witek, W. Regine, B. Yi

PO-GePV-M-81 Optimal QACT Frequency During Proton Therapy: A Single Institution Study - N. Biswal*, E. Nichols, R. Mogilnay, M. Witek, B. Yi

PO-GePV-M-82 The Pearson Correlation Coefficient of Target and the Beam Path Length Using Cone-Beam CT Images as Adaptive Planning Indicators of Head and Neck Patients Undergoing Proton Therapy - D. Han*, N. Biswal, B. Zhang, M. Witek, B. Yi

PO-GePV-M-83 MRI-Based Synthetic CT Images Generated Using 3D Conditional GAN for IMPT Treatment Planning - S. Chen*, A. Qin, Y. Peng, Y. Liu, C. Zhao, X. Deng, R. Deraniyagala, X. Ding

PO-GePV-M-84 Feasibility Study of Proton Scanning System with Perpendicular Magnetic Field by Open MRI - H. Ueda*, Y. Fujii, T. Takayanagi, K. Nishioka, T. Hashimoto, H. Aoyama, K. Umegaki, T. Matsuura

PO-GePV-M-86 Determining the Feasibility of Integrating Laser Plasma Accelerated Proton Beams and Thermoacoustic Dose Imaging into a Small Animal Image-Guided Therapy Platform - M. Vieceli*, A. Almalki, K. Stantz

PO-GePV-M-87 Intensity and Range Modulated Proton Radiography Using High Energy Therapeutic Proton Scanning Pencil Beams - C. Pelas*, N. Alsobou, S. Ahmad, I. Ali

PO-GePV-M-88 Development of a Quality Assurance Phantom for Proton Radiography Using High Energy Therapeutic Beams from Proton Radiotherapy Machines - C. Pelas*, N. Alsobou, S. Ahmad, I. Ali

PO-GePV-M-89 Using Proton Induced Acoustic Signals as a Means for Proton Radiography Imaging: A Feasibility Study - P. Pandey, J. Caron*, L. Xiang, S. Ahmad, Y. Chen

PO-GePV-M-90 Proton Radiography as a Quality Control Tool for 3D and 4D Thorax Synthetic CTs - C. Seller Oria*, A. Thummerer, J. Free, G. Guterres Marmitt, A. Meijers, A. Knopf, J. Langendijk, S. Both

PO-GePV-M-91 Simulations and Measurements of Proton Radiography Images with Pixelated Silicon Detectors - M. Hötting*, E. Beyreuther, S. Gantz, K. Kröninger, A. Lühr, J. Pawelke, I. Schilling, J. Schlingmann, H. Speiser, J. Weingarten

PO-GePV-M-92 Proton Radiography with FLASH Dose Rates - A. Stanforth*, S. Charyyev, J. Arrue, M. Duce, A. Erickson, A. Dhakaan

PO-GePV-M-93 Stable Isotopes as Prompt Gamma Rays Enhancement Agents in Proton Therapy - P. Galanakou*, T. Leventouri, W. Muhammad

PO-GePV-M-94 New Automated Data-Driven Gated (DDG) CT for Radiation Treatment Planning - T. Pan*, A. Thomas, D. Luo

PO-GePV-M-95 Investigation of Concentric Rings Artifact Near the Diaphragm Region On 4DCT - D. Wang*, P. Klages, J. Sillanpaa, D. Lovelock, U. Mahmood

PO-GePV-M-96 Assessing the Ability to Detect Lung Target Amplitude Changes Between 3D CBCT and 4D CBCT by Geometric and Dosimetric Evaluation - C. Bailey*, N. Kirby, S. Stathakis, N. Papanikolaou, D. Saenz

PO-GePV-M-97 A Comprehensive Quality Assurance Procedure for 4DCT Commissioning - M. Polizzi*, S. Kim, M. Rosu-Bubulac

PO-GePV-M-98 An Improved 4DCT Reconstruction Algorithm for Patients with Irregular Breathing - A. Harnage*, C. Ramsey, M. Ratner, J. Bowling, I. Pfeiffer

PO-GePV-M-99 Study the Dosage Difference Between EB-PBI Dynamic Accumulation Plan Based On 4DCT and Static Plan Based 3DCT - Y. Cui*, C. Ma

PO-GePV-M-100 Deformation-Based Internal Margin Design for Radiotherapy Planning of Lung Cancer - B. Spieler*, B. Rich, L. Young, M. Monterroso, Y. Yang, F. Yang

PO-GePV-M-101 Can Gating Percentiles Selected from the Phase-Based Planning 4DCT Be Applied for Amplitude-Gated Treatments? - L. Lu*, C. Poduska, P. Qi, K. Stephans, P. Xia

PO-GePV-M-102 MR-Guided Stereotactic Body Radiation Therapy for Unresectable Primary Liver Cancer: A Six-Year Experience - R. Chin*, J. Schiff, A. Bommireddy, K. Kang, N. Andruska, A. Price, O. Green, Y. Huang, K. Korenblat, P. Parikh, J. Olsen, P. Samson, L. Henke, H. Kim, S. Badiyan

MEDICAL PHYSICS

General ePoster Viewing (GeV)

PO-GePV-M-103 Preferred MRI Registration Techniques for Deformable Dose Accumulation in Abdomen - K. Kainz*, J. Garcia-Alvarez, H. Zhong, A. Tai, E. Ahunbay, X. Li

PO-GePV-M-104 Prediction of Mucositis in Head and Neck VMAT and Judgment for Adaptive Radiotherapy - T. Rachi*

PO-GePV-M-105 Potential Benefit of a Library of Plans Strategy for Pre-Operative Gastric Cancer Radiotherapy - M. Bleeker*, M. Hulshof, K. Goudschaal, A. Bel, J. Sonke, A. van der Horst

PO-GePV-M-106 Online Plan Adaptation in Intensity-Modulated Proton Therapy Based on Planned Versus Cumulative Dose Indices - M. Bobic*, K. Nesteruk, H. Lee, A. Lalonde, B. Winey, A. Lomax, H. Paganetti

PO-GePV-M-107 A New Metric of Contour and Dose Accuracy Applied to Automated Adaptation Features in a Commercial TPS - M. Bogue*, J. Patrick, R. Munbodh

PO-GePV-M-108 Transformation of a 6DoF Robotic Couch Position to Account for Intrafraction Variation for a Proton Therapy System - M. Shang*, Y. Yuan, D. Pang, Y. Chen

PO-GePV-M-109 Predictive Maintenance Model for Early Detection of Plan Adaptation in Proton Head and Neck Treatment - D. Bohannon*, C. Chang, J. Janopaul-naylor, C. Ma, Z. Diamond, L. Lin, J. Bradley, T. Liu, X. Yang, M. McDonald, J. Zhou

PO-GePV-M-110 Assessing the Accuracy of Target Contours Derived from Ethos ICBCT Images for Online Adaptive Prostate SBRT - D. O'Connell*, M. Xiang, T. Ma, S. Yoon, L. Valle, R. Savjani, J. Lamb

PO-GePV-M-111 Analysis of Patient-Specific Quality Assurance for Ethos Pre-Plan and Adaptive Plan Following TG-218 Recommendation - E. Inam*, L. Chen, Y. Gonzalez, D. Parsons, A. Godley, S. Jiang, W. Lu, R. Reynolds, B. Cai, M. Lin

PO-GePV-M-112 Three-Dimensional Dose Super-Resolution Using Implicit Neural Representation - V. Vasudevan*, O. Pastor-serrano, C. Huang, C. Chuang, Z. Perkó, P. Dong, L. Xing

PO-GePV-M-113 The Planning Target Volume Change During SBRT Lung Treatment for Adaptive Radiation Therapy - C. Ding*, M. Lin, A. Godley

PO-GePV-M-114 A Dosimetric Comparison for Adaptive Cone-Beam CT and MRI Based Radiotherapy for Stereotactic Partial Breast Irradiation - D. Parsons*, L. Chen, H. Lee, Y. Zhang, B. Cai, T. Zhuang, B. Hrycushko, C. Park, Y. Gonzalez, X. Zhong, J. Visak, C. Nwachukwu, N. Kim, P. Alluri, A. Rahimi, M. Lin

PO-GePV-M-115 Correlation Between Angular Dependent Dose Projections and Field Shape Changes in Adapted VMAT Plans - P. Kessler*, K. Kirschbaum, F. Schwab, K. Bratengeier

PO-GePV-M-116 Adaptive Radiation Therapy Post Cystoprostatectomy - I. Gallagher*, C. Coughlin, J. Riess, I. Chetty, B. Movsas, A. Kretzler

PO-GePV-M-117 Toward Offline Adaptive Therapy for Prostate Patients Using Velocity - E. Bacon*, S. Wisnoskie, M. Hyun

PO-GePV-M-118 Variations in Rectal Volume and Dose as Estimated on Daily CBCT and the Association with Radiation Proctitis During IMRT for Prostate Cancer - W. Martin*, W. Bodner, V. Cardozo, L. Goddard, J. Tang, S. Kalnicki, M. Garg, W. Tomé, P. Brodin

PO-GePV-M-119 DVH Distortion in Deformably Propagated Dose Grids - a Practical Challenge for Adaptive Radiotherapy - J. Kipritidis*, A. Quinn, T. Morgas, S. Kuckertz, N. Papenberg, S. Heldmann, T. Coradi, F. Franco, J. Kieselmann, C. Huang, J. Booth

PO-GePV-M-120 Clinical Toxicity Analysis for the Locally Advanced Lung Cancer with Atelectasis and Dosimetry Analysis of Adaptive Radiotherapy - H. Chen*

PO-GePV-M-121 The Dosimetric Performance of Online Adaptive Radiotherapy Based On CT-LINAC for Cervical Cancer - D. JIANG*, C. Yang, Z. Mei, J. Gong, H. Liu, H. Qiu, X. Wang

PO-GePV-M-122 Evaluating Changes in Monitor Units of Online Adaptive Radiotherapy (ART) Plans - A. Cooney*, A. Yock

PO-GePV-M-123 Feasibility of Novel Low Dose Radiation Treatment of Polymetastatic Disease in Stage IV NSCLC Patients Receiving Systemic Immunotherapy to Improve Response - N. Nasser*, B. Perez, J. Penagaricano, K. Latifi, E. Moros, J. Caudell, G. Redler

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-M-124 A Study on Monitor Unit (MU) Variability Over Adaptive Treatment Courses for CBCT-Guided Online Adaptive Radiation Therapy - O. Dona Lemus*, D. Zheng, M. Pacella, M. Cummings, H. Qiu, N. Joyce, M. Webster, H. Jung, J. Yoon, N. Burns, E. Hagenbach, R. Badzinski, S. Tanny

PO-GePV-M-125 Evaluation of a Deep-Learning Auto-Segmentation Model Trained with Planning CT On Regular CBCT and ICBCT Images for Prostate Online Adaptive Therapy - J. Duan*, X. Feng, J. Latorre, Q. Chen

PO-GePV-M-126 Metal Artifact Reduction in Cone-Beam Computed Tomography for Ultrasound-Guided Cardiac Radioablation Using Protons - S. Puvanasuntharajah*, S. Camps, M. Wille, P. Ramachandran, D. Fontanarosa

PO-GePV-M-127 Deep Learning for MRI-Generated Synthetic CT: Dosimetric Evaluation for RT Planning in Head and Neck Cancers - J. Antunes*, D. Pittock, P. Jacobs, A. Nelson, J. Piper, T. Young, S. Deshpande

PO-GePV-M-128 Evaluation of the Clinical Impact of the Differences Between Planned and Delivered Doses in Prostate Cancer Radiotherapy Based on Daily IGRT and Patient-Reported Outcome Scores - P. Mavroidis*, J. Hammers, G. Narayanasamy, S. Sud, D. Lindsay, X. Tan, J. Dooley, S. Stathakis, L. Marks, R. Chen, S. Das

PO-GePV-M-129 A Single-Phantom Study of the 2D/3D Auto-Match On ARIA-TrueBeam Platform - D. Wang*

PO-GePV-M-130 A Comparison Study for Electronic Portal Image Enhancement Between Different Image Processing Algorithms - M. Tavakoli*, H. Ghaempanah, M. Deevband, A. Alvar, M. Najafi

PO-GePV-M-131 Evaluation of a Real-Time Method for Motion-Induced Dose Error Reporting for Pancreas Stereotactic Body Radiotherapy - M. Gargett*, A. Ahmed, A. Briggs, T. Ravkilde, S. Skouboe, P. Poulsen, G. Hruby, A. Kneebone, P. Keall, J. Booth

PO-GePV-M-132 Analysis of Intra-Fractional Motion in Prostate Stereotactic Body Radiation Therapy - R. Cattell*, A. Hsia, J. Kim, X. Qian, S. Lu, A. Slade, K. Mani, S. Ryu, Z. Xu

PO-GePV-M-133 IGRT Registration Errors Comparisons and the Effects on the Dosimetric Analysis for IMRT in Nasopharyngeal Carcinoma - J. Lian*, S. Huang, W. Zheng, E. Li, T. Wen, X. Yang

PO-GePV-M-134 Clinical Experience of ExacTrac to Guide Six Degree of Freedom Fiducial Marker Based Patient Positioning for Hypo-Prostate Fractionation - R. Sandhu*, C. Knill, B. Loughery, L. Lin, Z. Seymour

PO-GePV-M-135 Integration of Deformable Image Registration and Dose Accumulation for Gynaecological Re-Irradiation in a Clinical Set-Up: A Feasibility Study - J. Jain*, J. Mulani, A. Gupta, S. Paul, P. Mittal, S. Panda, L. Gurram, S. Chopra

PO-GePV-M-136 Cranial Dose Calculation on Synthetic CT for Gamma Knife Radiosurgery - F. Li*, A. Xu, O. Dona Lemus, T. Wang, M. Sisti, C. Wu

PO-GePV-M-137 Evaluation of How Daily Variation of Organs at Risk Changes Organ Doses and Immune Suppression from the Treatment Plan During SBRT Treatment to Lung - B. Walker*, C. Nguyen, T. Showalter, J. Lerner, K. Wijesooriya

PO-GePV-M-138 Feasibility of a Second-Generation Dual-Layer Spectral CT System for Stopping Power Prediction and Dose Calculation in Particle Therapy - F. Longarino*, A. Kowalewski, T. Tessonier, S. Mein, B. Ackermann, J. Debus, W. Stiller, A. Mairani

PO-GePV-M-139 Feasibility Study of Using a Built-in KVCT Imaging System on a Novel Radiotherapy Machine with Integrated Dual-Imaging Systems for Radiotherapy Treatment Planning - C. Han*, O. Oderinde, Z. Sun, A. Maniyedath, S. Shirvani, A. Liu

PO-GePV-M-140 Dose Calculation Using Dual Energy CT in Photon Radiation Therapy - Y. Qin*, A. Bunker, R. Foster, M. Xu, J. Soen, M. Pankuch

PO-GePV-M-141 Restoration of Body Outside Field-Of-View on CT Images Using Cycle-Consistent Generative Adversarial Networks - K. Arimoto*, M. Nakamura, H. Hirashima, M. Nakao, T. Mizowaki

PO-GePV-M-142 Neural-Network Based Rib Removal on Simulated Thoracic Radiography - Q. Xu*, D. Xu, D. Ruan, K. Sheng

PO-GePV-M-143 Informed Treatment Planning Using Content Based Image Retrieval - C. Huang*, M. Badiei, Y. Nomura, V. Vasudevan, Y. Yang, L. Xing

General ePoster Viewing (GePV)

PO-GePV-M-144 Generation of Synthetic CT From CBCT Images to Reconstruct Dose for Lung Cancer Radiotherapy - D. Patel*, T. Stanescu, J. Bissonnette

PO-GePV-M-145 Reducing Metal Artifacts Caused by Screw Fixation in Radiotherapy: Based on the Virtual Monoenergetic Images of Dual Energy CT Scanning - Y. Cui*, C. Ma, Z. Li, Y. Yin

PO-GePV-M-146 Minimizing Alignment Errors in SBRT Patients on CTOR Unit - R. Sadagopan*, R. Martin, C. Peeler, P. Nitsch, X. Wang, J. Pollard-Larkin

PO-GePV-M-147 Retrospective Analysis of Treatment Setup Errors in Abdominal Stereotactic Body Radiotherapy (SBRT) - C. Kumaran Nair*, G. Khelashvili, I. Das, P. Yadav

PO-GePV-M-148 Retrospectively Evaluating CBCT Target Localization with MIP-Based Alignment and Comparing with AIP-Based Alignment - L. Wang*

PO-GePV-M-149 Evaluating Displacement of Breast Tissue Expander During Radiation Treatment Course Using Pre-Treatment CBCTs - E. Huang*, R. Gonzales, B. Shen, L. Lin, S. Alcorn, F. Asrari, V. Croog, S. Stinson, A. Walker, J. Wright

PO-GePV-M-150 Feasibility of Using the Planning CT (pCT) Electron Density Calibration Curve for Prostate Cancer Adaptive Planning Based on Daily Cone-Beam CT - P. Shukla*, D. Mynampati, P. Brodin, A. Lukaj, R. Yarpalvi, A. Basavatia, W. Tomé

PO-GePV-M-151 Evaluation of Efficacy of Iterative Metal Artifact Reduction Algorithm with the Beam Hardening Correction in Image Quality and Radiation Therapy - C. Kim*, N. Vassell, Y. Na

PO-GePV-M-152 Evaluation of CT-On-Rails Image Quality Reproducibility for Intensity Modulated Proton Adaptive Therapy - Y. Hao*, W. Smith, A. Darafsheh, B. Sun, T. Zhang, T. Zhao

PO-GePV-M-153 Using StyleGAN for Unpaired Image Translation Between CBCT and CT for Adaptive Proton Treatment - D. Tang*, T. Bortfeld, S. Yan

PO-GePV-M-154 During-Treatment Imaging Feasibility for Intrafraction Stereotactic Spine Treatment Evaluations - M. Liu*, D. Drake, D. Lack, M. Sigler, J. Sliwinski, K. Barton, D. To, I. Grills, J. Liang

PO-GePV-M-155 Imaging Performance of the Onboard Kilo-Voltage Fan-Beam Computed Tomography for Ring Gantry Therapy Unit - G. Gibbard, J. Tan, Y. Park, M. Lin, K. Wang, W. Lu, R. Reynolds, A. Godley, A. Pompos, S. Jiang, B. Cai, T. Zhuang*

PO-GePV-M-156 Evaluation of An Auto-Segmentation Tool on Full Field-Of-View and Limited Field-Of-View Cone Beam Computed Tomography - J. Marasco*, S. Hendley, J. Wong, A. Granatowicz, A. Besemer, S. Zhou, S. Wang

PO-GePV-M-157 Unervised CBCT-CT Synthesis for Prostate Radiotherapy Treatment with Contrastive Learning - Y. Pang*, X. Chen, T. Royce, A. Wang, G. Szalkowski, S. To, P. Yap, J. Lian

PO-GePV-M-158 Does Off-Centering of Treatment Isocenter Impact on CBCT Image Quality for Brain-Met Patients? - N. Mail*, F. Li, M. diMayorca, R. Lalonde, M. Huq

PO-GePV-M-159 Impact of Parameter Selection and Setup Conditions on Image Quality of a Novel On-Board Helical KVCT - R. Tegtmeier*, W. Ferris, J. Bayouth, W. Culberson

PO-GePV-M-160 Simulating Head Motion in a Planning CT for Data Augmentation of Head and Neck Based Deep-Learning Networks - M. Gardner*, Y. Ben Bouchta, J. Sykes, P. Keall

PO-GePV-M-161 Interfractional Motion and Setup Errors for Compression-Belt-Immobilized Lung-SBRT Quantified with CBCT - B. Rudek*

PO-GePV-M-162 Variation in Relative Left and Right Diaphragm Positions Across Imaging Sessions Using CT Simulation and Cone-Beam CT Images - M. Lauria*, K. Singhrao, J. Lewis, D. O'Connell, W. Lin, A. Santhanam, L. Naumann, B. Stiehl, P. Boyle, P. Lee, D. Low

PO-GePV-M-163 Daily Coverage Assessment Using Deep Learning Generated Synthetic CT for Lung SBRT Patients - L. Qiu*, Y. Lei, J. Shelton, K. Higgins, J. Bradley, W. Curran, T. Liu, A. Kesarwala, X. Yang

PO-GePV-M-164 Evaluation of the Dose Delivered by Cone-Beam CT Patient Positioning Exams During Prostate VMAT Treatments with An Innovative Plastic Scintillating Detector - C. POPOTTE*, R. Letellier, P. Retif, M. Munier, D. Paul

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

General ePoster Viewing (GePV)

PO-GePV-M-165 Evaluation of GE CT Simulator Extended Field-Of-View MaxFOV Algorithm for LINAC-Based Treatments - D. McIlrath*, M. Sullivan, S. Ahmad, S. Martinez

PO-GePV-M-166 Alignment Accuracy RS Patients Treated on True Beam STx: Assessment of Online and Offline 6D Couch Shifts - N. Mail*, F. Li, M. diMayorca, D. Clump, R. Lalonde, M. Huq

PO-GePV-M-167 Feasibility Study of Quantifying the Dosimetric Discrepancies of Planned Dose in Comparison to Delivered Dose Utilizing Daily Cone-Beam Computed Tomography (CBCT) - T. Cuthbert*, S. Stathakis, P. Mavroidis, N. Papanikolaou, W. Jones

PO-GePV-M-168 Feasibility Study of Deep Learning Based ITV Prediction in Cone Beam CT Images & It's Dosimetric Study of Lung SBRT - S. Zhang, Z. Li, E. Yang, Y. Li, L. Zhang, X. Zheng, J. Qiu*

PO-GePV-M-169 Development of An Image-Plan-Treat Workflow on An Integrated KVCT and Linac System - G. Chen*, A. Tai, K. Kainz, Y. Zhang, A. Amjad, H. Jassar, X. Li

PO-GePV-M-170 A Voxel-By-Voxel Motion Modeling Algorithm Using Deformable Image Registration and 4D-CT Imaging - T. Meyers*, N. Alsou, O. Algan, S. Ahmad, I. Ali

PO-GePV-M-171 Assessment of Elements' MRI Distortion Correction Function with the Use of a Virtual Anthropomorphic Phantom - G. Nunez*, R. Diaz Moreno, R. Isoardi, C. Venencia

PO-GePV-M-172 Matching Accuracy Comparison Between Five Different Deformable Image Registration Algorithms - M. Horita*, N. Hayashi, I. Kato, D. Yamanaka, K. Yasui, A. Takemura

PO-GePV-M-173 Evaluation of Anatomical and Dose Variations in Stereotactic Body Radiotherapy of Early-Stage Lung Cancer Using a GPU-Based Deformable Image Registration Framework - C. Han*, A. Santhanam, B. Stiehl, L. Naumann, S. Seshan, A. Liu

PO-GePV-M-174 Evaluation of Deformation Image Registration Algorithms Based on Deformation Vector Field for Radiotherapy - E. Li*, Z. Zhong, Y. An, s. Huang, w. zheng, J. Lian, X. Yang

PO-GePV-M-175 A Comparative Evaluation of Deformable Image Registration Algorithms Based on the Jacobian - E. Li*, Z. Zhong, Y. An, s. Huang, w. zheng, J. Lian, X. Yang

PO-GePV-M-176 Functional Map in Biomechanical Studies - R. He, K. Wahid*, M. McCulloch, A. Mohamed, B. McDonald, M. Naser, G. Cazoulat, K. Hutcheson, K. Brock, S. Lai, C. Fuller

PO-GePV-M-177 Determination of the Elastostatic Force Exerted in the Lungs During Breathing from Image Registration - S. Bhandari*, A. Bain, J. Jung

PO-GePV-M-178 Lymphocyte-Sparing Radiotherapy: Reducing Dose to Lymphocyte-Related Organs at Risk in Locally Advanced Lung Cancer - N. Bassiri*, M. Daly, T. Yamamoto

PO-GePV-M-179 Consistency Between Two Independent Methods of Lobe-Wise Ventilation Calculation from Free-Breathing CT - M. Lauria*, B. Stiehl, D. O'Connell, A. Santhanam, L. Naumann, P. Boyle, I. Barjaktarevic, D. Low

PO-GePV-M-180 Multimodality Image Registration and Fusion Using Deep Learning for Radiotherapy Planning - A. Ratke*, E. Darsht, C. Bäumer, B. Spaan, K. Kröniger

PO-GePV-M-181 MR-CT Image Registration by Using Unervised Deep Learning Model - M. Tavakoli*, S. Abbasi, H. Hamid Reza Boveiri, M. Mosleh-Shirazi, A. Mehdizadeh

PO-GePV-M-182 Automated Multimodality Image Registration for Application in Brachytherapy Using U-Net Based Organ Segmentation - K. Qing*, X. Feng, S. Glaser, W. Watkins, D. Du, Y. Chen, C. Han, J. Liang, J. Liu, B. Liu, Q. Chen, A. Liu

PO-GePV-M-183 A Hybrid Framework to Quantitatively Assess Deformable Image Registration Accuracy with a Complete Implementation of TG-132 Based Validation - L. Naumann*, B. Stiehl, M. Lauria, P. Boyle, D. Low, A. Santhanam

PO-GePV-M-184 Development of Proton Digitally Reconstructed Radiographs for Image Guided Proton Radiotherapy - I. Ali*, N. Alsou, S. Ahmad

PO-GePV-M-185 Imaging Dose from Radixact ClearRT Kilovoltage Imaging - E. Ehler*, P. Alaei

PO-GePV-M-186 Quantitative Evaluation and Feasibility Study of Using AI Denoising Technique to Minimize Image Dose of 2.5MV Beam - H. Kuo*, S. Lim, S. Lin, J. Sillanpaa, L. Cervino

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-M-187 Determination of In-Vivo 2D Correction Factors to Convert Cherenkov Imaging to Dose for TSE Patients - T. Zhu*, W. Zhong, H. Sun, Y. Zhu, T. Miao, A. Dimofte, I. Paydar, A. Maity, L. Dong, J. Plastaras

PO-GePV-M-188 How Fiducial Bracketing Affects Lung Tumor Tracking - W. Belcher*, J. Jung, A. Ju, K. Yang, S. Sharma

PO-GePV-M-189 Comparison of Accuracy and Stability of Target Position Prediction Between External- and Internal Surrogate-Based Correlation Model - Y. Sakurai*, M. Nakamura, H. Iramina, Y. Iizuka, T. Mitsuyoshi, Y. Matsuo, T. Mizowaki

PO-GePV-M-190 Deep Learning 2D Rigid Registration with a Confidence Measure: Training Experience and Preliminary Results of Developing a Registration Network That Knows When It Does Not Know - F. Li*, W. Cai, X. He, J. Moran, T. Li, X. Li

PO-GePV-M-191 Intra-Treatment Motion Management for Patients Receiving Accelerated Partial Breast Irradiation (APBI) and the Dosimetric Benefit of Reducing PTV Volume - T. Tseng*, S. Green, C. Starrs, Y. Lo

PO-GePV-M-192 Predictability of Prostate Tumor Motion by Using Autoregressive Model for Real-Time Adaptive Radiation Therapy - A. Hayami*, K. Ichiji, N. Homma

PO-GePV-M-193 Investigation of Registration Uncertainty Caused by DRR Resolution for Motion Tracking in Spinal Treatments - W. Cai*, X. He, F. Li, P. Zhang, L. Cervino, J. Moran, T. Li, X. Li

PO-GePV-M-194 Feasibility of PTV Margin Reduction for Pelvic Oligometastatic Disease Treated Using MRI-Guided Adaptive Radiotherapy - J. Snyder*, J. St-Aubin, D. Dunkerley, D. Hyer

PO-GePV-M-195 Feasibility of PTV Margin Reduction for Prostate SBRT Treated Using MRI-Guided Radiotherapy - J. Snyder*, J. St-Aubin, D. Dunkerley, D. Hyer

PO-GePV-M-196 Effect of Scattered X -Rays from Megavoltage Photon Beam on Markerless Tumor Tracking in Dual Energy Imaging - M. Kaur*, J. Luce, H. Mostafavi, M. Lehmann, D. Morf, L. Zhu, H. Kang, M. Walczak, M. Harkenrider, J. Roeske

PO-GePV-M-197 Evaluation of Internal Vs External Surrogate Motions During Pancreatic SBRT Treatments - L. Madden*, A. Briggs, M. Gargett, R. Brown, E. Hewson, A. Ahmed, D. Chrystall, G. Hruby, A. Kneebone, J. Booth

PO-GePV-M-198 Evaluation of Deep Learning-Based Algorithms for Tracking of Implanted Fiducial Markers in Pancreatic Cancer Patients - A. Ahmed*, A. Mylonas, M. Gargett, L. Madden, D. Chrystall, R. Brown, A. Briggs, D. Nguyen, P. Keall, A. Kneebone, G. Hruby, J. Booth

PO-GePV-M-199 Efficiency of Real-Time Monitored SBRT for Accelerated Partial Breast Irradiation (APBI) Using 3D Bioabsorbable Marker - S. Shen*, C. Veale, E. Thomas, M. Bredel, K. Keene, M. Dobelbower, H. Krontiras, H. Boggs

PO-GePV-M-200 Assessment of Clinical Impact on Treatment Planning of the Use of Deep-Learning Model for Organ-At-Risk Autosegmentation for Head and Neck Cancer - J. Lucido*, T. DeWees, T. Leavitt, A. Anand, C. Beltran, M. Brooke, J. Buroker, R. Foote, O. Foss, T. Hodge, C. Hughes, A. Hunzeker, N. Laack, T. Lenz, M. Morigami, D. Moseley, Y. Patel, E. Tryggstad, L. Undahl, M. Willson, A. Zverovitch, S. Patel

PO-GePV-M-201 Automatic Segmentation of Rectal Tumor On Magnetic Resonance Images Via A Deep Discriminative Model Consisting of U-Net and Conditional Random Field Based Post-Processing - H. Chen*, X. Li, X. Qi

PO-GePV-M-202 A Clinical and Time Savings Evaluation of a Commercial Deep Learning Automatic Contouring Algorithm - J. Ginn*, H. Gay, J. Hilliard, J. Shah, N. Mistry, C. Möhler, G. Hugo, Y. Hao

PO-GePV-M-203 Automated Segmentation of Vestibular Schwannomas from MRI with Deep Neural Network - H. Wang*, t. qu, K. Bernstein, D. Barbee, D. Kondziolka

PO-GePV-M-204 Integration of Color Diffusion Tensor Tractography Images into Contouring Workflows with Commercial Software - Z. Grelewicz*, K. Tatebe

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

General ePoster Viewing (GePV)

PO-GePV-M-205 A Prospective Multicenter Assessment of a Consensus-Guidelines-Based Auto-Contouring Method for OARs in Head & Neck and Thorax for Radiation Therapy Planning - G. Pednekar*, J. Udupa, S. Nag, Y. Tong, T. Liu, J. Lukens, A. Berman, D. Mihailidis, J. Stambaugh, C. Simone, I. Choi, R. Press, C. Robinson, W. Thorstad, S. Jabbour, S. Kim, M. Reyhan, J. Camaratta, S. Owens, D. Torigian

PO-GePV-M-206 Evaluation of Maximum Permissible OAR Delineation Error That Avoids Clinical Impact Pancreatic Cancer Cases - F. Badry*, H. Rashad, V. Leandro Alves, J. Siebers

PO-GePV-M-207 Automated Framework for Qualitative Review of Autosegmented Organs-At-Risk - E. Tryggstad*, A. Anand, R. Foote, O. Foss, T. Hodge, A. Hunzeker, D. Moseley, A. Ridgway, L. Undahl, S. Patel

PO-GePV-M-208 Quantitative Analysis of Artificial Intelligence-Generated Contours In Comparison With Physician-Generated Contours for Patients with Cancer of The Brain - W. Godwin*, D. McDonald, J. Peng, M. Maynard, G. Owen, A. Rapchak, S. Roles, J. Winiecki

PO-GePV-M-209 Automated Clinical Target Volume (CTV) Delineation Using Deep 4D Neural Networks with Enhanced OAR Sparing in Radiation Therapy of Non-Small Cell Lung Cancer (NSCLC) - Y. Xie*, K. Kang, Y. Wang, M. Khandekar, H. Willers, F. Keane, T. Bortfeld

PO-GePV-M-210 Clinical Implementation of AI Generated Contouring - Assessment of Accuracy of AI Generated Organ Contours Using Two Commercial Systems - M. Zaman*, C. Kota

PO-GePV-M-211 Clinical Equivalency of Alternate Head-And-Neck OAR Delineations - H. Rashad*, F. Badry, V. Leandro Alves, H. Nourzadeh, W. Choi, J. Siebers

PO-GePV-M-212 Application of a Convolutional Neural Network to the Segmentation of Lungs in Mice - E. Criscuolo*, R. Sali, E. Graves, L. Soto

PO-GePV-M-213 Intrafractional Accuracy and Efficiency of a Surface Imaging System for Deep Inspiration Breath Hold During Ablative Gastrointestinal Cancer Treatment - C. Zeng*, W. Lu, M. Reyngold, J. Cuaron, X. Li, L. Cervino, T. Li

PO-GePV-M-214 Evaluation of a Tattoo-Less Setup with Surface Guidance On Breast Radiation Therapy -- A Single Institution Study - L. Zhuang*, C. Breit

PO-GePV-M-215 Evaluation of Surface Guided Radiation Therapy (SGRT) for Prone Breast Cancer External Beam Radiation Therapy - M. Mashayekhi*, A. Gopal, E. Kowalski, L. Douglass, C. Tindall, H. Xu, J. Zhou, S. Lee, M. MacFarlane

PO-GePV-M-216 Reproducibility of Chestwall and Heart Position Using AlignRT-Guided Vs. RPM-Guided DIBH Radiotherapy for Left Breast Cancer - W. Lu*, G. Li, L. Hong, E. Yorke, X. Tang, J. Mechalakos, P. Zhang, L. Cervino, S. Powell, S. Berry

PO-GePV-M-217 Initial Clinical Experience with Surface Guidance for Treating Breast Patients On Halcyon - K. Kisling*, L. Padilla, G. Kim

PO-GePV-M-218 SpyGRT: An Open-Source Low-Cost Surface Guidance System for Radiotherapy Research - Y. Ben Bouchta*, C. Sengupta, M. Gardner, T. Reynolds, P. Keall

PO-GePV-M-219 Comprehensive Evaluation of AlignRT V6.3 "Send to Couch" Function for SGRT Applications - X. Zhai*, Y. Liang, B. Mueller, G. Li, Y. Song

PO-GePV-M-220 Surface Guided Imaging Versus Orthogonal X-Ray Imaging for Initial Setup and Position Verification at Couch Angles with An Anthropomorphic Head Phantom - K. Rasmussen*, V. Bry, M. Bonnen, D. Saenz, N. Papanikolaou

PO-GePV-M-221 Clinical Implementation of InBore Real-Time Monitoring for Adaptive Radiotherapy On Ethos - T. Keiper*, G. Kim

PO-GePV-M-222 Determination of Population-Based Anisotropic Margin for Uterus and Cervix During a Course of Magnetic Resonance-Guided Intensity-Modulated Radiation Therapy - Y. Kishigami*, M. Nakamura, M. Nakao, H. Okamoto, A. Takahashi, H. Igaki

PO-GePV-M-223 Dosimetric Validation of An Intra-Fraction Stop-Scan-Adapt Protocol for 0.35T MRI-Guided Radiotherapy - J. Lamb*, R. Lotey, M. Bellon, S. Tenn, I. Kawrakow, J. Dempsey

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-M-224 A Two-Step Deep Learning Method for Accurate Synthetic CT From Abdominal MRI - E. Ahunbay*, J. Xu, A. Parchur, D. Thill, E. Paulson, X. Chen, E. Omari, X. Li

PO-GePV-M-225 An MR-Based Method to Evaluate the Dosimetric Effect of Set Up Based on Stent Vs Soft Tissue Alignment in Pancreas SBRT - Z. Han*, A. Sudhyadhom, Y. Hu, S. Hsu, R. Mak, M. Huynh, R. Van Dams, S. Tanguturi, V. Venkatachalam, J. Leeman

PO-GePV-M-226 Characterization of Image Quality During MR-Guided Radiotherapy (MRgRT) Localization: Impact of Coil Sensitivity Mapping - R. Herrera*, J. McCulloch, P. Shipman, A. Gutierrez, T. Romaguera, D. Alvarez, I. Aizpurua, M. Chuong, M. Mehta, J. Bayouth, K. Mittauer

PO-GePV-M-227 Evaluation of Delivered Dose Using Synthetic CT for MR-Guided and CT-Guided Radiotherapy - H. Wang*, X. Chen, Y. Zhao, X. Wang, E. Han, T. Lim, Z. Yu, S. Prajapati, J. Yang

PO-GePV-M-228 The Use of Dual Isocenter MR-Guided Adaptive Radiation Therapy for Large Field Sarcomas - T. Tyson*, J. Crosby, Z. Morris, C. Glide-Hurst

PO-GePV-M-229 Cross-Validation of MRI Distortion Assessment Using Fiducial and Harmonic Analysis Phantoms - P. Yan*, C. Velten, Y. Alvarado, J. Anias, Q. Peng, W. Tomé

PO-GePV-M-230 Dosimetric Evaluation of Respiratory Gating On a 0.35 T Magnetic Resonance Guided Radiotherapy Linac - J. Charters*, Y. Abdulkadir, D. O'Connell, Y. Yang, J. Lamb

PO-GePV-M-231 A Novel 3D Water Phantom System Designed for Measurements in MR Linear Accelerators - T. Lee*, M. Yu, J. Wu, Y. Wang

PO-GePV-M-232 Microstructure Analysis and Dosimetry with EBT Film in MR-Linac - P. Yadav*, C. Corbella, M. Keidar, I. Das

PO-GePV-M-233 Impact of 0.35 T Magnetic Field On Surface Dose - I. Das*, P. Yadav

PO-GePV-M-234 Comparative Evaluation of ATP and ATS in Daily Online Adaptive MR-Guide Radiation Therapy for Liver Tumors - Y. Chen*, Y. Yin, Z. Li

PO-GePV-M-235 Correcting Geometric Image Distortion and Isocenter-Shift at Various Gantry Angles On a 0.35T MRgRT - S. Marasini*, B. Quinn, M. Cole, R. Flores, T. Kim

PO-GePV-M-236 End-To-End Deviation Validation of Image Registration in MR-Linac Online Adaptive Radiotherapy - p. yin*, Z. Li, Y. Yin

PO-GePV-M-237 Online Adaptative Radiotherapy for Cervical Cancer On 1.5T MR-Linac - S. Ding*, J. Li, H. Liu, Y. Li, B. Wang, X. HUANG

PO-GePV-M-238 Dosimetric Advantages of Online Adaptive MR-Guided SBRT of Kidney Cancers - S. Ding*, H. Liu, R. Liu, B. Liu, Y. Li, B. Wang, Y. Liu, L. He, X. HUANG

PO-GePV-M-239 Dosimetric Feasibility of Craniopharyngioma Radiation Therapy Using An MR-Guided Linac - K. Mooney*, M. Mistro, C. Ainsley, A. Harrison, A. Kubli, H. Liu, H. Nourzadeh, W. Shi

PO-GePV-M-240 Deep Learning-Based Synthetic CT Generation for MR-Only Adaptive Radiation Therapy On MR-Linacs - B. Hunt, B. Zaki, G. Russo, G. Asher*, G. Gill, C. Thomas, T. Prioleau, D. Gladstone, B. Pogue, R. Zhang

PO-GePV-M-241 A Fast 3D Contour Editing Tool with 3D paintbrush and Edge Detection for MRI-Guided Adaptive Radiation Therapy - A. Amjad*, M. Moreau, A. Parchur, E. Ahunbay, D. Cooper, X. Li

PO-GePV-M-242 MRI-Guided Adaptive Head and Neck Radiotherapy On a 1.5T MR Linac System - E. Aliotta*, J. Hesse, E. Subashi, P. Godoy Scribes, M. Aristophanous, J. Mechalakos, L. Cervino, N. Tyagi, K. Zakeri, N. Lee

PO-GePV-M-243 Impact of Image Distortion on Target Tracking in 0.35T MRgRT - H. Zhang*, S. Marasini, T. Kim

PO-GePV-M-244 Toxicity Correlations of Per-Fraction Delivered Organ Dose in an MRI-Guided Prostate Radiotherapy Clinical Trial - J. Lamb*, G. Ibrahim, Y. Abdulkadir, M. Cao, T. Ma, M. Casado, Y. Gao, V. Basehart, H. Wilhalme, K. Sheng, Y. Yang, D. Low, M. Steinberg, A. Kishan

PO-GePV-M-245 Dosimetric Analyses of Stereotactic MR-Guided Adaptive Radiotherapy for Kidney Tumors - S. Hsu*, Z. Han, A. Sudhyadhom, Y. Hu, R. Mak, M. Huynh, R. Van Dams, S. Tanguturi, V. Venkatachalam, D. Cagney, J. Leeman

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

General ePoster Viewing (GePV)

PO-GePV-M-246 Feasibility of Stereotactic Radiotherapy for Base of Tongue Cancers On the MR-Linac - H. Wang*, E. Han, J. Phan, T. Lim, J. Yang, M. Pham, X. Wang

PO-GePV-M-247 Koopman Theory-Based Dynamic Mode Decomposition for Dynamic Contrast-Enhanced HNC MRI Motion Correction - R. He*, K. Wahid, A. Mohamed, B. McDonald, Y. Ding, M. Naser, J. Wang, K. Hutcheson, C. Fuller, S. Lai

PO-GePV-M-248 Automatic Segmentation of Salivary Glands and Skeletal Muscles for MR-Based Daily Adapted Head and Neck Cancer Radiotherapy - C. Cardenas*, T. Ermongkonchai, D. Xing, Z. Iqbal, A. McDonald, A. Mohamed, B. Harris, R. Khor, H. Bahig, C. Fuller, S. Ng

PO-GePV-M-249 Improving Target Dose Coverage with Patient's Comfort Arms-Down Planning in 0.35T MRgRT - S. Marasini*, D. Holloway, J. Park, T. Kim

PO-GePV-M-250 Target Volume Contouring and Dosimetry Comparison for Primary Liver Cancer Cases Based On 3DCT, 4DCT and Multiple Parameter MR Image - J. Duan*

PO-GePV-M-251 Investigation of the Water Equivalent Depth Method for Rapid Evaluation of the Dosimetric Accuracy of Synthetic CT - J. Choi*, B. Asadi, J. Welsh, S. Chalup, J. Dowling, J. Simpson, P. Greer

PO-GePV-M-252 Feasibility of MRI Zero TE Imaging for Interstitial Brachytherapy Needles Reconstruction - H. Alsaleh*, S. Aldelajian, C. Constantinescu, B. Mofteh

PO-GePV-M-253 MR-Based Treatment Planning and Plan Adaptation for Treating Cardiac Metastases with MR-Linac - J. Yang*, P. Castillo, A. Sobremonte, B. Lee, M. Pham, N. Hughes, M. Mohammadsaid, X. Wang, P. Lee

PO-GePV-M-254 Optimizing MR Sequences to Visualize Adrenal, Pancreas, Rectum and Liver Tumors for MR-Guided Online Plan Adaptation on Elekta Unity MR-Linac - D. Lee*, P. Renz, A. Kirichenko, S. Oh, M. Hwang, D. Pavord, J. Sohn

PO-GePV-M-255 Feasibility of Using AI Generated Synthetic CT Images from a Commercially Available MRI Simulator for Proton Therapy Planning in the Prostate - M. Saki*, P. Johnson, C. Liu

PO-GePV-M-256 Surrogate-Based Dynamic Tumor Motion Management Using Cine MRI in Radiotherapy - Z. Ji*, N. Knutson, M. Schmidt, T. Kim

PO-GePV-M-257 Evaluating Cine MRI in Terms of Tumor Tracking Using 0.35T MRgRT Simulator - Z. Ji*, T. Kim, S. Marasini

PO-GePV-M-258 Inter-Observer and Intra-Observer Variability of Pelvic Organs at Risk Delineation in Multiple Magnetic Resonance Imaging Sequences - W. Zheng, S. Huang, E. Li, J. Lian, X. Yang*

PO-GePV-M-259 Commissioning Elekta Unity MR Imaging Sequences for MRI-Guided Brachytherapy - W. Massock*, Y. Kim, J. St-Aubin

PO-GePV-M-260 Large Field of View (FOV) MR Image QA in 0.35T Clinical MRgRT - S. Marasini, H. Zhang, B. Gu, B. Quinn, M. Cole, R. Flores, T. Kim*

PO-GePV-M-261 Optimizing MRI Readout of Fricke Gel Dosimeters On a 1.5T MR-Linac - M. MacCallum*, I. Malajovich, S. Serai, T. Salzillo, A. Dresner, G. Ibbott, L. Kim

PO-GePV-M-262 Experimental Verification of the Electron Return Effect in Lung Heterogeneity Measurements On Elekta Unity MR-Linac - N. Tyagi*, J. Liang, P. Godoy Scribes, E. Subashi, J. Moran, M. Chan, S. Lim

PO-GePV-M-263 Feasibility study: Polymer Gel Dosimetry On 0.35T MR-Linac System - L. Marage*, J. Boudet, L. Aubignac, I. Bessieres, A. Petitfils

PO-GePV-M-264 Development of Quality Assurance Metrics for Synthetic CT Image Generation of Treatments Utilizing MRI-Only Simulation for External Beam Radiotherapy - K. Singhrao*, C. Calvin, M. Lauria, T. Nano, J. Lewis, J. Scholey, A. Sudhyadhom

PO-GePV-M-265 Intrafractional Anatomic and Dosimetric Variations of MR-Guided SBRT Treatment of Prostate Bed After Radical Prostatectomy - Y. Gao*, S. Yoon, T. Ma, Y. Yang, K. Sheng, D. Low, M. Steinberg, L. Ballas, A. Kishan, M. Cao

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-M-266 Quantifying Setup Uncertainties in Treating Intramuscular Metastases with Image-Guided Radiation Therapy - S. Prajapati*, Z. Yu, Y. Zhao, T. Lim, H. Wang, X. Wang, B. Lee, P. Castillo, A. Sobremonte, A. Farooqi, D. Mitra, R. Kudchadker, C. Tang, J. Yang

PO-GePV-M-267 End-To-End Validation of Fiducial Marker Tracking Accuracy in Robotic Radiosurgery Utilizing MRI-Only Simulation - K. Singhrao*, T. Nano, J. Scholey, M. Descovich

PO-GePV-M-268 Gating Parameters for MR-Guided Radiotherapy: When One Tracks Not What One Treats - C. Ainsley*

PO-GePV-M-269 Generation of Precise Patient-Specific Electron Cutout Block by Using 3D Printing Technique - S. Kim*

PO-GePV-M-270 Improved Tissue Equivalent Material for 3D Printing Model - W. Jiao, F. Zhang, J. Qiu, H. Zhao*

PO-GePV-M-271 A Preliminary Study on the Use of 3D Printing in Radiation Oncology - P. Ravindran*, S. Das, T. Medeo

PO-GePV-M-272 A Novel 3D-Printed Device for Linear Accelerator Quality Assurance: Comparison to Purchasable Vendor Solutions - J. Winiecki*, S. Roles, A. Rapchak, J. Peng, D. McDonald, G. Owen, M. Maynard, W. Godwin

PO-GePV-M-273 Electron Radiation Effect on Freon Treated CdTe Solar Cell - S. Cho*, J. Song

PO-GePV-M-274 Finite Element Analysis of Customized Alternating Electric Fields Transducers for Small Animal Applications - H. Nguyen*, Y. Zeng, C. Pohling, V. Bashkurov, Y. Nie, E. Chang, V. Yamamoto, K. Schubert, C. Patel, R. Schulte

PO-GePV-M-275 Gold Nanoparticle Radiosensitization Effect On Pancreatic Cancer Co-Culture - A. Alhussan*, J. Smazynski, D. Chithrani

PO-GePV-M-276 A Hybrid Approach to Improve the Accuracy and Clinical Utility of Physical Anthropomorphic Phantoms - S. Shrestha*, S. Simiele, D. Hancock, E. Ludmir, S. Smith, C. Lee, R. Howell

PO-GePV-M-277 Leveraging Global Mask for Structure Segmentation in Medical Images - M. Kazemimoghdam*, M. Chen, W. Lu, X. Gu

PO-GePV-M-278 Evaluation of Auto Contouring Accuracy for a Commercial Software Compared to Physician Contouring - X. Liu*, Y. Zheng

PO-GePV-M-279 Risk Assessment of the Acceptance Test Process for the New PET-Guided Linear Accelerator - M. Tavakoli*, A. Saoudi, D. Dimitriadou, J. Chang, R. Lalonde, M. Huq

PO-GePV-M-280 Head Motion Tracking for Frameless Stereotactic Radiosurgery Using MR-Compatible 1D Lidar - B. Boroomandisorkhabi*, S. Montazeri, T. Kim, M. Esmaeelpour

PO-GePV-M-281 A Framework for Effective Radiotherapy Treatment Plan Reporting in a Visual Programming Language - M. Schmidt*, W. Keranen, J. Labrash, B. Bikki, P. Szentivanyi, J. Aho, V. Gedei, A. Balogh, F. Reynoso, G. Hugo, N. Knutson

PO-GePV-M-282 Fast and Sensitive Antibiotic Susceptibility Testing Using Interferometry - A. Krueger*

PO-GePV-M-283 A Portable Real-Time Image-Guided 6DoF Robotic Positioning System for Canine FLASH Trials - A. Sakaamini*, X. Liu, R. Wiersma

PO-GePV-M-284 Auto-Contouring of Gadolinium-Based Nanoparticle Uptake in Brain Metastases - S. Bennett*, C. Verry, E. Kaza, X. Miao, R. Berbeco, A. Sudhyadhom

PO-GePV-M-285 Comparison of Denoising Methods On Dynamic Contrast-Enhanced MRI - R. He*, Y. Ding, K. Wahid, A. Mohamed, B. McDonald, M. Naser, J. Wang, K. Hutcheson, C. Fuller, S. Lai

PO-GePV-M-286 Accurate and Robust Quantification of Calcium Mass in Coronary Artery Calcium Using the Integrated Hounsfield Technique - D. Black*, S. Molloy, X. Xiao, Y. Shen, S. Nie

PO-GePV-M-287 A Two-Step Method to Improve Image Quality of CBCT with Phantom-Based Supervised and Patient-Based Unervised Learning Strategies - Y. Liu*, X. Chen, J. Zhu, B. Yang, R. Wei, R. Xiong, H. Quan, Y. Liu, J. Dai, K. Men

PO-GePV-M-288 Stereotactic Centralized Ablative Radiation Therapy- A Novel Methodology in Treating Bulky Tumor and Its Technical Realization - J. Yang*, W. Yan, W. Qi, Q. Lu, L. Han

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

General ePoster Viewing (GePV)

PO-GePV-M-289 Development of a Radiomics-Base Glioblastoma Prognosis Prediction Model Using CycleGAN - H. Yoshimura*, D. Kawahara

PO-GePV-M-290 Optimized Small-Field Model for Linac-Based SRS On Varian TrueBeam with Millennium MLC 120 Yields Improved QA Results - L. Fanelli*, C. Njeh, H. Ai, X. Lu

PO-GePV-M-291 A Semi-Supervised Learning Method Using Soft-Label for Cell Nuclei Segmentation on Immunohistochemistry Images - J. Zhou*, Z. Yan, J. Polf, H. Zhang, B. Zhang, M. MacFarlane, D. Han, M. Zakhary, A. Gopal, J. Xu, S. Lee, H. Xu, G. Lasio, S. Chen

PO-GePV-M-292 Predicting the Complexity of Head and Neck VMAT Planning Using a TPS Quality Assurance Software - M. Sasaki*, Y. Nakaguchi, S. Ueda, Y. Endo, A. Kajino, D. Sato, H. Ikushima

PO-GePV-M-293 Evaluating the Relationship Between MR Image Quality Measures and Deep Learning-Based Brain Tumor Segmentation Accuracy - R. Muthusivarajan*, A. Celaya, J. Yung, S. Viswanath, D. Marcus, C. Chung, D. Fuentes

PO-GePV-M-294 Cross-Comparison of Multi-Platform AI Auto-Segmentation Tools Using Independent Multi-Institutional Datasets for Head and Neck Cancer - Y. Rong*, Q. Chen, L. Yuan, X. Qi, K. Latifi, X. Yang, B. Cai, H. Al-Hallaq, Q. Wu, Y. Xiao, S. Benedict

PO-GePV-M-295 Estimation of Tumor Progression for Pediatric Patient with Craniopharyngioma After Surgery and Radiation Therapy Using Machine Learning and Deep Learning Radiomics - W. Yang*, C. Wang, C. Hua, T. Davis, J. Uh, T. Merchant

PO-GePV-M-296 Study On the Method and Accuracy of Volume Delineation and Motion Amplitude Measurement Based On Four-Dimensional CT Images Under Different Breathing Motion Modes - Q. Ni*

PO-GePV-M-297 Dosimetric Evaluation of the Treatment Goals Effectiveness of VMAT / Cyber Knife Versus IMPT When LET / Variable RBE Are Taken into Consideration for Brain Tumors - J. Fan, H. Kamal Sayed*, Q. Xu

PO-GePV-M-298 Multi-Site Evaluation of the AI-Assisted Auto Segmentation Quality for a CBCT Based Online Adaptive Radiotherapy System - B. Meng*, M. Dohopolski, S. Jiang, M. Lin, B. Cai

PO-GePV-M-299 A Practical Approach to Transmission and Dosimetric Leaf Gap Selection for Two Identical Linacs for Stereotactic Radiosurgery Treatments - H. Xie, E. Elder*, B. Ghavidel, S. Charyyev, R. Liu, Y. Liu, J. Zhang, K. Luca, K. Godette, X. Yang, T. Liu, J. Roper

PO-GePV-M-300 A Quality Assurance Tests for 3D Printing Lab in Biomedical Physics Department - E. Elsaiedy, A. Nobah, S. Alhzani, B. Mofteh, E. Elsaiedy*

PO-GePV-M-301 Predicting Radiotherapy Induced Anatomic Change for Head Neck Cancer Patients Using Vision Transformer - K. Wang*, A. Andrade, M. Dohopolski, J. Wang

PO-GePV-M-302 Investigating Blockchain Technology for HealthCare CyberSecurity - D. Davis*

PO-GePV-M-303 A Tumor Template-Based Cross-Feature Map Attention Method for Small Liver Tumor Segmentation in CT Images - S. Sang*, L. Xing

PO-GePV-M-304 AutoMO-Mixer: Towards a Balanced, Safe and Robust Prediction Model in Medicine - Z. Zhou*, J. Lv, X. Chen, D. Feng, X. Wang, X. Mou, L. Bai, S. Zhang

PO-GePV-M-305 Hippocampus Avoidance Whole Brain Volumetric Modulated Arc Therapy (VMAT) Using A Knowledge Based Treatment Planning Model - Y. Fu*, J. Wolf, J. Zhang, J. Roper, J. Bradley, T. Liu, X. Yang

PO-GePV-M-306 Automated Segmentation of Adnexal Ovarian Metastases Using Joint Distribution Wasserstein Distance Loss Metric - A. Nazib*, K. Boehm, V. Paroder, S. Shah, Y. Lakhman, H. Veeraraghavan

PO-GePV-M-307 Predicting Distant Metastasis Through a Principal Component Analysis Based Belief Rule Base in Oropharyngeal Cancer - J. Wu, X. Xing, Q. Wang, T. Wu, Z. Zhou*

PO-GePV-M-308 Cardiac Substructure Segmentation Using Self-Configuring NnUNet and NnFormer for Cardiac-Sparing Lung Cancer Radiotherapy - S. Lee*, D. Wang, J. Natarajan, N. Yegya-raman, T. Kegelman, S. Feigenberg, G. Kao, Y. Xiao

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-M-309 Deep Learning-Based Hippocampus Substructure Segmentation Using a Mutually Enhanced Strategy - Y. Fu, Y. Lei, J. Roper, J. Wolf*, J. Bradley, T. Liu, H. Mao, X. Yang

PO-GePV-M-310 Dose Mimicking of Carcinoma Cervix Treatment Plans Using a Novel Convolutional Deep Neural Network - G. Singh*, H. HIMANI, A. Oinam, D. Thaper, R. Kamal, B. Rai, V. Kumar

PO-GePV-M-311 Characterization of Carbon Beams Interactions with Tissue Towards Adaptive Radiotherapy Applications - A. Bey*, J. Johnson, J. Ma, C. Beltran

PO-GePV-M-312 One-Stop-Shop for End-To-End Patient-Specific QA: A Glimpse into the Future - M. DiMascio, L. Bohorquez*

PO-GePV-M-313 Quantitative Modeling on Tissue-Specific Stem Cell Amounts for Radiation Induced Normal Tissue Complications - K. Wang*, M. Huq

PO-GePV-M-314 Monte-Carlo Study of Dose Contribution from Secondary Particles in MRI-Guided Proton Therapy - A. BEN ALI*, M. Majoros, X. Zhang, E. Collings, N. Gupta, M. Sumption, L. Lu

PO-GePV-M-315 Utilizing a 3D-Printed Chamber Holder to Improve Setup Uncertainty in the Calibration of a Superficial Radiotherapy Machine - L. Ku, B. Casto, J. Ying*

PO-GePV-M-316 Artifacts Reduction of CBCT Based on Self-Supervised Learning - G. Liugang*, X. Kai, J. Sun, C. Qian, H. Bi, N. Xinye

PO-GePV-M-317 One-Key Automating Quality Assurance of a New Linac Machine Using a Cylindrical Phantom and EPID Images - W. Sun*, Z. Shi, C. Liao, W. Zhang, X. Huang

PO-GePV-M-318 A New Kinetic Interpretation of PSA for Diagnosis and Treatment-Response Assessment of Prostate Cancer - S. Li*, B. Wang, T. Giaddui, J. Price, C. Miyamoto

PO-GePV-M-319 Artificial Intelligence-Aided Morphological Design for PET-Guided Radiotherapy - K. Wang*, M. Huq

PO-GePV-M-320 TransCBCT: Improving the Image Quality of Cone-Beam Computed Tomography with Transformer - X. Chen*, Y. Liu, B. Yang, J. Zhu, Y. Liu, J. Dai, K. Men

PO-GePV-M-321 A Plan Verification Platform for Online Adaptive Proton Therapy Using Deep Learning-Based Monte-Carlo Denoising - G. Zhang, X. Chen, J. Dai, K. Men*

PO-GePV-M-322 Deep Learning Based Patient-Specific Auto-Segmentation of Target and Organs at Risk on Daily Fan-Beam CT Images - B. Han*, Y. Chen, S. Butler, L. Yu, Y. Zhou, L. Shen, N. Kovalchuk, H. Bagshaw, M. Gensheimer, L. Xing

PO-GePV-M-323 Auto-Segmentation for Limited Field of View CBCT in Male Pelvic Region Using Deep Learning Method - H. Hirashima*, M. Nakamura, K. Imanishi, M. Nakao, T. Mizowaki

PO-GePV-M-324 A Study of Sub-Volume Segmentation for Radiotherapy of Non-Enhancing Low-Grade Gliomas Guided by Three-Dimensional Arterial Spin Labeling - z. zhu*, G. Gong, L. Wang, Y. Su, Y. Yin

PO-GePV-M-325 A Study of Dose Painting Radiotherapy Guided by Three-Dimensional Arterial Spin Labeling Perfusion Magnetic Resonance Imaging for Non-Enhancing Low-Grade Gliomas - Z. Zhu*, G. Gong, L. Wang, Y. Su, Y. Yin

PO-GePV-M-326 Endoscopic OCT Image Texture Analysis for Identifying Early-Stage Pancreatic Cancers - L. Lu*, X. Zhang, L. Luo, M. Sumption

PO-GePV-M-327 Inpainting Truncated Areas of CT Images Based on Generative Adversarial Networks with Gated Convolution for Radiotherapy - X. Kai*, X. Qianyi, G. Liugang, J. Sun, C. Qian, N. Xinye

PO-GePV-M-328 Applying Failure Mode and Effect Analysis (FMEA) and Risk Matrix (RM) in Determining the Frequency of Quality Control for a Radiotherapy Machine - m. ma*, J. Dai

PO-GePV-M-329 Expanding Access to SGRT-Based Patient Alignment Using Mixed Reality Visualization - P. Johnson*, S. Lampotang, D. Lizdas, W. Johnson, A. Jackson

PO-GePV-M-330 Diameter Variation of Rectum and Bladder for Prostate Cancer Radiotherapy Under Bowel Preparation Regime - T. Li, Y. Guo, X. Dai, L. He, X. Yang, s. Huang*

PO-GePV-M-331 Dual-Energy Radiography for Improved Detection of Retained Foreign Objects - H. Zhang*, L. Hahn, H. Guo, A. Wang

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

General ePoster Viewing (GePV)

PO-GePV-M-332 Deep-Learning-Based Lesion Segmentation On 18F-Fluciclovine PET/CT - T. Wang*, Y. Lei, E. Schreibmann, J. Roper, D. Schuster, T. Liu, A. Jani, X. Yang
PO-GePV-M-333 Multi-Organ Segmentation on Female Pelvic CT Images Using Hierarchical Target Activation Network - T. Wang*, Y. Lei, J. Roper, J. Shelton, T. Liu, X. Yang
PO-GePV-M-334 A Feasibility Study of Various Data Classifiers on Automatically Identifying Free Text Journal Notes in Radiation Oncology - R. Ma*, L. Yu, P. Zhang, J. Xiong, S. Liu, Y. Zhou, S. Berry
PO-GePV-M-335 Automated Delineation of CTVs for Nasopharyngeal Cancer - C. Sjogreen*, T. Netherton, C. Cardenas, A. Lee, B. Beadle, D. Rhee, S. Gay, C. Nguyen, R. Mumme, J. Duryea, L. Court
PO-GePV-M-336 A New Approach for Skeletal Dose Estimate for Large-Scale Radiotherapy Patients in Epidemiological Studies - Y. Yeom*, L. Braunstein, L. Morton, K. Bolton, H. Ju, H. Choi, N. Greenstein, C. Lee
PO-GePV-M-337 A 2D/3D Integrated Network for Breast Tumor Classification - X. Chen*, X. Wang, J. Lv, Z. Zhou
PO-GePV-M-338 Establishing Reliable Medical Prediction Model Based on Uncertainty Estimation - D. Feng, X. Chen*, X. Wang, Z. Zhou
PO-GePV-M-339 Noncoplanar Volumetric Modulated Arc Therapy (VMAT) for Hepatocellular Carcinoma Based on a Cage-Like Radiotherapy System: A Simulation Study - m. ma*, J. Dai
PO-GePV-M-340 AI-Assisted TCP/NTCP Prediction Model for HNSCC Patients to Aid Treatment Plan Evaluation - A. Saad Bin Saeed*, M. Pudasaini, A. Khan, W. Muhammad
PO-GePV-M-341 Mapping Tissue Oxygenation in Vivo with MRI - Z. Zhang*
PO-GePV-M-342 Preliminary Study on Design X-Ray Blood Irradiator Using Monte Carlo N-Particle - D. Tran*, J. Back, H. Park, j. kim, S. Park
PO-GePV-M-343 Similarity/Dissimilarity of Image (Signal) Comparison with Changing Random Variable Distributions - A. Chu*, Q. Peng, M. Garg, W. Tomé
PO-GePV-M-344 Evaluation of Diversity in the Medical Imaging and Data Resource Center (MIDRC) Open Data Commons - H. Whitney*, N. Baughan, K. Drukker, K. Myers, M. Giger, M. Bdwg
PO-GePV-M-345 Automatic Segmentation Algorithms Improve the Efficiency and Inter-Observers Agreement of Gross Target Volumes Contours - E. Czeizler*, J. Pajula, H. Pölönen, K. Antila, K. Lehtiö, J. Lehto, A. Tiulpin, A. Maslowski, M. Hakala, E. Kuusela
PO-GePV-M-346 Predicting Overall Survival for Patients with Oropharyngeal Cancer Using An Interpretable Machine Learning Algorithm - X. Pan*, T. Feng, C. Liu, X. Qi
PO-GePV-M-347 A Multi-Objective Radiomic Model for Predicting Survival in Patients with Oropharyngeal Cancer - X. Pan*, C. Liu, T. Feng, X. Qi
PO-GePV-M-348 Interpretable Feature-Specific Generative Adversarial Network Model for 3D CBCT Image Enhancement for Radiomics - Z. Qiao*, Z. Zhang, Z. Jiang, Y. Lai, J. Lee, D. Wu, C. Beltran, L. Ren, M. Huang
PO-GePV-M-349 Quantitative Evaluation of Radiodermatitis Following Whole-Breast Radiotherapy with Various Color Space Models: A Feasibility Study - S. Park*, J. Kim, C. Choi, J. Park, J. Kim
PO-GePV-M-350 Correlation Between Metabolic Uptake in Planning PET and End-Of-RT Tumor Change in Lung Cancer - P. Zhang*, S. Alam, M. Thor, A. Rimner, J. Deasy, W. Lu
PO-GePV-M-351 Three-Dimensional Dose-Function Data-Based Deep Convolutional Neural Network for Predicting Pulmonary Toxicity After Radiotherapy for Lung Cancer - Y. Fujita*, Y. Nakajima, D. Kawahara, T. Kimura, T. Yamamoto
PO-GePV-M-352 The Intrinsic Significance of Proton FLASH-Mediated Sparing Effect on Benign Pancreatic Cells - Y. Lee*
PO-GePV-M-353 Real Time Intracellular Oxygen Mapping in Vivo during FLASH-RT Using Delayed Fluorescence of Protoporphyrin IX - A. Petusseau, A. Petusseau*, M. Rahman, P. Bruza, S. Vinogradov, B. Pogue

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General ePoster Viewing (GePV)

PO-GePV-M-354 4DCT Based Ventilation Imaging Correlation to Pulmonary Function Test for SBRT Lung Patients - T. Lin*, J. Piskorski, M. Blau, A. Ritter, J. Shah, C. Ma
PO-GePV-M-355 Breast Cancer Patient-Specific Reaction-Diffusion from Spatial Spectral Analysis of Immunohistochemistry Slides - S. Pasetto*, M. Zahid, R. Diaz, M. Rosa, R. Gatenby, H. Enderling
PO-GePV-M-356 A Practical Approach for Improving Quantitative Assessment of Native Renal Recovery Using Multi-View Tc-99m DTPA Renal Scintigraphy for SLK Patients with 3+ Kidneys - J. Zhang*, B. Tang, M. Natwa, I. Woelfel, E. Appiah-kubi, A. Schenk, D. Hintenlang

Therapy General ePoster Viewing

-ePoster Forums

PO-GePV-T-01 An Evaluation of Five Commercially Available Models for Autosegmentation of Organs at Risk in Genitourinary Malignancies - S. Yaddanapudi*, A. Anand, J. Brooks, M. Fatyga, R. Foote, D. Hobbs, A. Jackson, J. Lucido, J. Ma, D. Moseley, D. Pafundi, S. Patel, Y. Rong, D. Routman, B. Stish, E. Tryggstad
PO-GePV-T-02 A Comprehensive Database on Electron Backscattering from Solids for Energy Ranges 0.1 KeV – 15 MeV - F. Akbari*, D. Shvydka, E. Parsai
PO-GePV-T-03 Clinical Analysis of a Dual-Energy CT Joint Statistical Image Reconstruction Method in Proton Therapy - X. Chen*, M. Medrano, T. Ge, R. Liao, D. Politte, B. Whiting, Y. Hao, J. Williamson, J. O'Sullivan, T. Zhao
PO-GePV-T-04 Simulation of 4DCT Phase-Based Measurement Errors in Tumor Size and Motion - L. Naumann*, R. Savjani, M. Lauria, B. Stiehl, P. Boyle, A. Santhanam, D. Low
PO-GePV-T-05 Evaluation of Initial and Online Adapted Plan Quality in Ethos for Head and Neck Patients - N. Nasser*, G. Yang, J. Caudell, E. Moros, V. Feygelman, G. Redler
PO-GePV-T-06 Dosimetric Evaluation of Ethos IMRT Versus Eclipse VMAT Plans for Cervical Cancer ART - D. Branco*, K. Kisling, R. Manger, D. Rash, K. Moore, X. Ray
PO-GePV-T-07 Difference of Pseudo Fluences - a Novel Concept for VMAT Plan Adaption - K. Kirschbaum*, P. Kessler, E. Jung, B. Hahnrigaud, K. Bratengeier
PO-GePV-T-08 Assessment of Inter-Fractional Adaptive Planning Techniques of Spine SBRT Treatments Treated Using the Elekta Unity MRLinac and Monaco Treatment Planning System - B. Smith*, M. Howard, J. Snyder, D. Dunkerley, D. Hyer, J. St-Aubin
PO-GePV-T-09 Evaluating Accuracy of Biology-Guided Radiotherapy Using QUASAR 4D Motion Phantom - G. Bal*, P. Olcott, D. Zaks, S. Khan, J. Burns, J. Schmall, L. Shao, T. Laurence, O. Oderinde, M. Surucu, M. Narayanan, G. Kuduvali
PO-GePV-T-10 Web-Based Fully Automatic 2nd Check for Online Adaptive Radiotherapy: Design and Workflow - J. Lin*, M. Lin, M. Chen, Z. Trivedi, J. Wu, Y. Yan, A. Godley, A. Pompos, S. Jiang, X. Jia, W. Lu, R. Reynolds
PO-GePV-T-11 Illustration of a DNA-Damage Induction Model for FLASH Proton Irradiation - F. Van den Heuvel*, F. Fiorini
PO-GePV-T-12 Contrast-Enhanced Liver MR Synthesis Using Multi-Modal Sparse Attention Fusion Network - C. Jiao*, Z. Fan, D. Ling, Z. Zhu, W. Yang
PO-GePV-T-13 A Preliminary Dosimetry Evaluation Study for the New Treatment Planning System On All-In-One (AIO) of Nasopharyngeal Carcinoma (NPC) - X. Yang*, s. Huang, W. Sun, J. Du, Y. Du, L. Lin, K. Zhang, J. Tang, Y. Sun, X. HUANG
PO-GePV-T-14 Comparison Between Partition Model and 3D Dosimetry for 90Y-Microspheres Treatment Based On 99Tc-MAA SPECT Examination - M. Wong*, F. Lee
PO-GePV-T-15 A Machine Learning Prognostic Model for the Assessment of 177-Lu-DOTATATE Therapy Using Dose and Radiomics Features Analysis - D. Plachouris, V. Eleftheriadis, T. Nanos, P. Papadimitroulas, L. Vergnaud, N. Papathanasiou, D. Sarrut, G. Kagadis*

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

General ePoster Viewing (GePV)

PO-GePV-T-16 Quantitative Relationship of CT Hounsfield Units to Iodine Concentration for Radioactive Iodine Treatment - X. Kong*, M. Georgiou, S. Gulec, A. McGoron, X. Wu

PO-GePV-T-17 Administration of 177Lu-PSMA-617 as Compared to 177Lu-Dotatate - P. Patel*, K. McCall

PO-GePV-T-18 Commission a 3D Printed Applicator System for Skin Brachytherapy Treatment - M. Ashenafi*, K. Aujla

PO-GePV-T-19 Automated Physics Chart Checking for Brachytherapy - H. Xu*, M. MacFarlane, M. Guerrero, A. Gopal, S. Chen, B. Zhang

PO-GePV-T-20 Miniaturized Scintillator Detector for in Vivo Dosimetry in HDR Brachytherapy - M. Gonod*, M. Suarez, C. CHACON, J. Crouzilles, S. Laskri, J. Vinchant, T. Grosjean

PO-GePV-T-21 In-Vivo Detection of Strut Deformation in Partial Breast Irradiation - M. Walls*, C. Ramsey, I. Pfeiffer

PO-GePV-T-22 An Autoradiograph-Free Method for the Commissioning and QA of Elekta Interstitial MR/CT HDR Tandem and Ring Applicators - J. Wu*, A. Schwarz, S. Sun, L. Maloney, G. Yan, B. Lu

PO-GePV-T-23 A Novel Quality Assurance System to Evaluate MR-Only Workflow for Interstitial and Intracavitary Gynecological HDR Brachytherapy - S. Aldelaijan*, H. Alsaleh, C. Constantinescu, S. Devic, I. Buzurovic, B. Mofteh

PO-GePV-T-24 Utilization of Phosphorescent Materials During Quality Assurance of HDR Afterloaders - D. Sterling*, E. Ehler, X. Tang, D. Mathew

PO-GePV-T-25 Distribution of Interfractional Dosimetric Variation of HRCTV in Cervix HDR Brachytherapy - B. Washington*, M. Randall, D. Fabian, D. Cheek, C. Wang, W. Luo

PO-GePV-T-26 Development of An Original Multi-Modality Gynecologic Brachytherapy Phantom - B. Eckroate*, J. Raffi, R. Venkataraman, Y. Kim, D. Ayala-peacock, O. Craciunescu

PO-GePV-T-27 Impact of SAVI Catheter Digitization Variability on Dosimetric Parameters of HDR Brachytherapy Breast Treatment Plans - V. Chaswal*, M. Morcos, T. Romaguera, U. Abraham, S. George, J. McCulloch, A. Llanes Lopez, J. Contreras, M. Rodrigues, A. Gutierrez, R. Tolakanahalli

PO-GePV-T-28 Clinical Evaluation of Dosimetric Impact of Applicator Displacements On 3D Gynecological High Dose-Rate Brachytherapy Treatments - S. Jayarathna*, A. Hoover, J. Clarke, R. Badkul

PO-GePV-T-29 Use Monte Carlo Simulations to Investigate the Energy Dependence of EBT-3 Film Dosimetry for a Y-90 Disc Source for Episcleral Brachytherapy - X. Chang*, L. Huang, Y. Cao, J. Liu, J. Chang

PO-GePV-T-30 Commissioning of Varian Horizontal HDR Leipzig-Style Surface Applicator - A. Amoush*, N. Vassell, N. Kalach

PO-GePV-T-31 Optimisation of Point A Based Cervix Cancer HDR Brachytherapy - S. Acharya*

PO-GePV-T-32 Source Position Uncertainty in the Venezia Advanced Gynecological Applicator for High-Dose-Rate Brachytherapy - X. Li*, Y. Huang, K. Hopfensperger, S. Bhagroo, H. Zhao, J. Kunz, G. Nelson, F. Su

PO-GePV-T-33 Impact of Adding Free Needles and Optimization to Tandem and Ovoids in High Dose Rate Brachytherapy Treatment for Cervical Cancer - H. Liu*, J. Sohn, Y. Zhang, E. Fields, D. Todor

PO-GePV-T-34 Evaluation of the Dosimetric Quality of MRI-Only HDR Brachytherapy Planning with Titanium Ring-And-Tandem Applicators - I. Veltchev*, T. Lin, X. Chen, R. Price, K. Howell, C. Ma

PO-GePV-T-35 A Statistical Analysis of Correlations Between HRCTV Dose and OAR Doses for Cervix HDR - B. Washington*, M. Randall, D. Fabian, D. Cheek, C. Wang, W. Luo

PO-GePV-T-36 Deep-Learning-Based Automated HDR Applicator Digitization for GYN Brachytherapy - S. Momin*, Y. Lei, T. Wang, M. Axente, J. Roper, J. Shelton, J. Bradley, T. Liu, X. Yang

PO-GePV-T-37 Are We Improving? The Learning Curve for Implementing Intraoperative Ultrasound-Guided Prostate High Dose Rate (HDR) Brachytherapy - A. Besemer*, J. Wong, S. Wang, M. Hyun, S. Wisnoskie, D. Schott, D. Zheng, Y. Lei, K. Gallagher, S. Hendley

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-T-38 Probability of Radiation Induced Maculopathy and Optic Neuropathy Following I-125 Eye Plaque Brachytherapy - M. Studenski*, V. Peters, A. Gurayah, W. Jin, D. Kwon, W. Zhao, Z. Correa, J. Harbour, S. Samuels

PO-GePV-T-39 Dose Reduction and Tumor Coverage in Small Uveal Melanoma Tumors Treated with Eye Plaque Brachytherapy When Normalizing to An Alternative Prescription Point - S. Tan*, E. Schnell, D. Zuro, S. Ahmad, S. Martinez

PO-GePV-T-40 Novel Film Calibration Method Directly Using Low Energy Brachytherapy Sources with a Custom Phantom - C. Oare, A. Alshreef*, C. Ferreira

PO-GePV-T-41 Realization and Traceability for the Intrabeam System in Terms of Absorbed Dose to Water - T. Schneider*, J. Solc

PO-GePV-T-42 Dosimetric Impact of Source Displacement in GammaTile Surgically Targeted Radiation Therapy for Gliomas - S. Ng*, Y. Yue, K. Shiue, Y. Le

PO-GePV-T-43 End-To-End Test for GammaTile Permanent Brain Implants - A. Alshreef*, B. Rogers, P. Alaei, P. Bolan, C. Ferreira

PO-GePV-T-44 The Challenge of Base Depth Needle Placement in Prostate Brachytherapy: Video Documentation, Phantom Simulation, Manual and Mechanical Solutions - P. McLaughlin*, C. Evans, G. Hixon, V. Narayana

PO-GePV-T-45 Dosimetric Evaluation of Surgically Targeted Radiation Therapy (STaRT) Brain Implants with GammaTile - R. Badkul*, H. Li, F. Wang

PO-GePV-T-46 Interstitial Brachytherapy Basal Dose Calculations Utilizing Paris System - K. Afrin*, S. Ahmad

PO-GePV-T-47 Evaluate Atlas-Based Auto-Segmentation in MR Images for Liver Yttrium-90 Selective Internal Radiation Therapy - J. Li*, R. Anne

PO-GePV-T-48 Parameterization of Backscatter Contributions in HDR Brachytherapy with Surface Applicators - X. Shen*, M. Bhagwat

PO-GePV-T-49 Radiobiological Comparison of Prostate LDR Brachytherapy with and Without Simultaneously Integrated Boost to the Dominant Intra-Prostatic Lesion Defined by 68Ga-PSMA PET / MpMRI - R. Holden*, J. Lian, S. To, T. Royce, P. Mavroidis

PO-GePV-T-50 Determination of Material Contours for ACE: Advanced Collapsed Cone Engine Heterogeneity-Corrected Brachytherapy Dose Calculations Using Gafchromic EBT3 Film - D. McIlrath*, S. Ahmad, E. Schnell

PO-GePV-T-51 Effects of Multichannel Cylinder System (MCC) Rotation on Plan Robustness in Asymmetric Vaginal Tumors - L. Huang*, E. Suarez, Z. Wang, M. Naik, J. Greskovich, T. Djemil

PO-GePV-T-52 On the Impact of High-Density Plastics On The Dose Calculations for Vaginal Cylinder Brachytherapy: A Benchmark Study - M. Meftahi*, W. Song

PO-GePV-T-53 A Benchmark Study on BrachyVision ACUROS TPS in Modeling a Direction Modulated Brachytherapy Tandem Applicator - M. Meftahi*, W. Song

PO-GePV-T-54 Method to Assess the Need for Re-Planning HDR Tandem/ring Treatments Subsequent to the Initial Fraction - T. Gray*, S. Cherian, A. Sudha, B. Guo, P. Xia, D. Wilkinson

PO-GePV-T-55 Integrated Optimization of Needle Path and Dwell Time for Individual Template Guided Interstitial Brachytherapy - y. wang*, B. Liu, H. Sun, F. Zhou

PO-GePV-T-56 Graphical User Interface (GUI) Development for Deep Learning Assisted Algorithm for Catheter Reconstruction During MR-Only Gynecological Interstitial Brachytherapy - K. Guo*, A. Shaaer, M. Paudel

PO-GePV-T-57 Simulating Seed Carrier Resorption to Generate Carrier-Specific TG-43 Tables for Post-Permanent Implant Dosimetry - M. Trager*, D. Aramburu Núñez, A. Damato, G. Cohen

PO-GePV-T-58 Better Identification of Dose Constraints for Use in HDR in the Treatment of Locally Advanced Cervix Cancer - S. Choudrie*, R. Crilly, J. Kahn

PO-GePV-T-59 Ring to Tandem Total Reference Air Kerma (TRAK) Ratio: A Novel Quality Metric to Spare Ureters in HDR Brachytherapy for Cervical Cancer? - E. Doraisamy*, T. Baig, S. Koerner, C. Houser, H. Kim

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

General ePoster Viewing (GeV)

PO-GePV-T-60 Monte Carlo Simulation of the 224Ra Decay Chain and the Diffusion of 220Rn for Diffusing Alpha-Emitters Radiotherapy - V. Diaz Martinez*, S. Abbasinejad Enger, L. Carroll
PO-GePV-T-61 Retrospective Evaluation of Per-Fraction Vs. Per-Implant HDR Brachytherapy Planning of Locally Advanced Cervical Cancer Patients Delivered with a Combined Intracavitary/interstitial Technique - M. Maynard*, G. Owen, J. Peng, A. Rapchak, W. Godwin, D. McDonald, S. Roles, J. Winiacki, S. Cooper, H. Eldredge-hindy
PO-GePV-T-62 Dosimetric Characteristics of Two Skin Collimation Materials for 6MeV and 9MeV Electron Beams - M. Chan*, X. Liu, J. Park, S. Lim, D. Wang
PO-GePV-T-63 Clinical Implementation and Comparison of QA for Electron Therapy - T. Peng*, H. hu, Z. Li, Y. Zheng
PO-GePV-T-64 Dosimetric Evaluation of Plastic Scintillation Detector for Skin Collimation in Electron Beam Radiation Therapy - K. Yang*, S. Sharma, A. Ju
PO-GePV-T-65 Commissioning of the FLASH Mobetron System - E. Schueler*, A. Palmiero, A. Glick, K. Liu, N. Chopra, D. Neill, S. Massia, S. Beddar
PO-GePV-T-66 Stability of the FLASH Mobetron System - A. Palmiero*, A. Glick, K. Liu, N. Chopra, D. Neill, S. Massia, E. Schueler, S. Beddar
PO-GePV-T-67 Investigating Dose Calculation Algorithms in Electron Radiation Therapy with Tissue Equivalent Material - F. Mostafaei*, T. Lavin, D. Jacobs, M. Rocque, C. Huh
PO-GePV-T-68 Evaluation of the Influence of Plan Modulation Factor On IMRT/VMAT Dose Calculation Sensitivity - S. Gardner*, S. Wang, K. Snyder, C. Smith, B. Miller, I. Chetty
PO-GePV-T-69 Validating Small Beam Output Factor of Macro Electron Monte Carlo Dose Calculation - I. Yeo*, W. Nie, Q. Xu
PO-GePV-T-70 A Study On the Feasibility of a Scattering-Foils Free Electron Beam for TSET - G. Ding*, Z. Chen, K. Homann
PO-GePV-T-71 Quality Assurance for Mixed Electron-Photon Beam Radiation Therapy Using Treatment Log Files and MapCHECK - Y. Tai*, V. Heng, M. Renaud, M. Serban, J. Seuntjens
PO-GePV-T-72 A Surface-Conforming Flexible Collimator for Improving Electron Radiotherapy - H. Paschal*, C. Kabat, S. Stathakis, M. Bonnen, N. Papanikolaou, N. Kirby
PO-GePV-T-73 Commissioning Total Skin Electron Therapy and Monte Carlo Verification of Patient Skin Dose - W. Nie*, I. Yeo, K. Huynh, S. Tong, J. Fan
PO-GePV-T-74 Evaluation of Radiotherapy Enhanced by Cherenkov Photo-Activation of Psoralen (AMT) - B. Koch*, M. Oldham, S. Floyd
PO-GePV-T-75 Monte Carlo Investigation of Planar Electron Mimbeams Created by a Single Halbach Cylinder - G. McAuley*, J. Slater
PO-GePV-T-76 A Fast and Accurate Contour Tracing (FACT) Method for Custom Electron Cutout Using a Beam's Eye View (BEV) Camera - J. Sohn*, J. Park, S. Kim
PO-GePV-T-77 Development of An Automated Region of Interest Selection Algorithm for Surface Guided Radiation Therapy of Breast Cancer - S. Cui*, G. Li, H. Kuo, B. Zhao, A. Li, L. Cervino
PO-GePV-T-78 Evaluation of Patient Motion During Mask Based Treatment On the GammaKnife Icon - E. Ross*, C. Ramsey, J. Bowling, I. Pfeiffer, G. Clark, D. Hauge
PO-GePV-T-79 Comparison of Setup Uncertainty and Efficiency Between Klarity SBRT System and BlueBAG System for Spine SBRT - E. Quan*, S. Krafft, M. Vaccarelli, T. Briere, E. Han
PO-GePV-T-80 Evaluation of a Mini 6DoF Plate for End-To-End Test of Surface-Guided Radiation Therapy (SGRT) - J. Sohn*, M. Polizzi, S. Kim
PO-GePV-T-81 Dosimetric Effects of a Prone Breast Board System - G. Jensen*, D. Pearson
PO-GePV-T-82 Determination of Correction Factor for Holder Used in IAEA/WHO Postal Dosimetry Audit Service Using Monte Carlo Simulations - D. HAN*, A. Dimitriadis, K. Chelminski, P. Kazantsev, G. Azangwe, J. Swamidas
PO-GePV-T-83 The Use of the IAEA Directory of Radiotherapy Centres (DIRAC) in Scientific Literature - M. Carrara*, W. Elisabeth

MEDICAL PHYSICS

General ePoster Viewing (GeV)

PO-GePV-T-84 Development of In-Air Film Dosimetry Approach for Quality Assurance of Cs-137 Blood Irradiators - H. Moktan Tamang, S. Cho*
PO-GePV-T-85 Outcome of Unconventional Pattern of Treatment for Esophageal Cancer Patients - A. Dey, T. Biswas, T. Podder*
PO-GePV-T-86 Implementation a Hybrid Tele-Oncology Program in Sub-Saharan Africa - N. Ade*, P. Mobit, P. Imandi
PO-GePV-T-87 An Education Bot for Radiation Safety in Radiotherapy - J. Chow*, L. Sanders, S. Siddique, L. Xu, S. Ali, R. Nathanael, K. Li
PO-GePV-T-88 Initial Evaluation of Varian Identify System (Version 2.3) - H. Zhao*, C. Haacke, R. Price, M. Szegedi, Y. Huang, P. Rassiah-Szegedi, A. Paxton, F. Su, V. Sarkar, B. Salter
PO-GePV-T-89 Eclipse Scripting API: An Automated Plan-Check to Improve Efficiency - C. Chang*, Y. Wu, M. Yang
PO-GePV-T-90 Improving Treatment Plan Workflow with Automated Eclipse Scripting API - Y. Wu*, D. Bhatti, C. Chang
PO-GePV-T-91 Study on Correction Accuracy of Couch Sag in CT-Linac - L. Yu*, B. Yang, X. Liu, T. Pang, Y. Liang, J. Qiu
PO-GePV-T-92 Feasibility Study of a Deep Learning-Based Model Trained on Adults for Auto-Segmentation of Head-And-Neck OARs in Pediatric CT Images - Z. Shen*, A. Olch, N. Bai, K. Wong, E. Chang, W. Yang
PO-GePV-T-93 Our 3D Printing Experience in Fabricating An Anthropomorphic Phantom for Radiotherapy Film Dosimetry - H. Chen*, F. Mourtada
PO-GePV-T-94 Investigation of KV Imaging Dose in Accelerated Partial Breast Irradiation (APBI) - Y. Song*, X. Zhai, Y. Liang, B. Mueller, D. Guttmann, D. Roth O'brien, L. Braunstein
PO-GePV-T-95 Tracking a Moving Gold Implant Using Cherenkov Light - K. Okazaki, E. Brost, Y. Watanabe*
PO-GePV-T-96 Clinical Assessment of Commercially Available Software for Composite Hypofractionated Treatment Plans - C. Esquivel*, T. Roberts, A. Tipton, O. Calvo, L. Patton
PO-GePV-T-97 An Investigation of Novel Treatment Approaches Using GRID Therapy on the Xstrahl Small Animal Radiation Research Platform - S. Brundage*, P. Sansone, M. Oldham
PO-GePV-T-98 Simulating Clinical Protocol Accrual in the Radiotherapy Outcomes Estimator (ROE) - A. Iyer*, E. Yorke, J. Shin, A. Apte, A. Rimner, A. Wu, M. Thor, J. Deasy, D. Gomez, A. Jackson
PO-GePV-T-99 Use of Natural Language Processing for Assisted Review of Clinical Trial Protocols - X. Liu*, M. Hazoglu
PO-GePV-T-100 Time Is Money: An Investigation on the Use of Copper and Aluminum Electron Plates for TG-142 Monthly Energy Checks - T. Binder*, W. Weaver, Z. Pearson
PO-GePV-T-101 The Effect of AI Contouring on Head and Neck Patient Treatment Plan Optimization - M. Jones*, P. Mavroidis, T. Wagner, S. Stathakis
PO-GePV-T-102 Machine-Learning Prediction of the Gel Dosimetry Calibration Curve Equation Based on the Non-Irradiated Gel Magnetic Resonance Imaging - K. Tozzi, J. Lizar, J. Pavoni*
PO-GePV-T-103 Assessment of the Effect of Time On the Density, Volume, and Shape of Two Custom Bolus Materials - S. Parker*, C. Whiddon, S. Kidd, L. Messenger, A. Towers
PO-GePV-T-104 Development of a Novel 4D-Quality Assurance Technique to Consider Patient Respiratory Motion for Adaptive Radiation Therapy - T. Meyers*, N. Alsou, O. Algan, S. Ahmad, I. Ali
PO-GePV-T-105 Comparison of Heart Sparing Capability of Continuous Positive Airway Pressure and Deep-Inspirational Breath-Hold in Left-Sided Breast Cancer Radiation Therapy - C. Choi*, J. Chang, J. Lee, R. Park, Y. Cho, J. Kim, J. Kim
PO-GePV-T-106 Development of a Remote Training System for Quality Control of Medical Electronic Linear Accelerators Based On Virtual Reality and Augmented Reality Technology - J. Chen*, X. Weng, F. Fu, L. Jiang, F. Dong, F. Zheng, L. Guo, B. Xu, X. Li
PO-GePV-T-107 Effect of Different Atomistic DNA Models On Relative Biological Effectiveness of Electron and Proton Based On Geant4-DNA Low-Energy Physical Model - H. Lin*, H. Luo, Y. Zhao, R. Lu, J. Dai, H. Li, J. Jing, X. Guo

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

General ePoster Viewing (GePV)

PO-GePV-T-108 A Multi-Centre Multi-Omics Study of Critical Weight Loss Prediction in Nasopharyngeal Carcinoma Patients Undergoing Chemo-Radiotherapy - J. SUN*, S. Lam, X. Teng, J. Zhang, Z. Ma, C. Liu, W. Li, H. Xiao, Y. Huang, X. Han, F. Lee, W. Yip, A. Cheung, H. Lee, K. Au, J. Cai

PO-GePV-T-109 A Novel Technique to Evaluate Skin Toxicity in Breast Cancer Radiotherapy - R. Culcasi*, M. Vlachaki, M. Snyder

PO-GePV-T-110 Development and Validation of Treatment-Specific Prediction Models for Critical Weight Loss in Nasopharyngeal Carcinoma Patients – A Multi-Centre Study - J. SUN*, S. Lam, X. Teng, J. Zhang, Z. Ma, Y. Huang, H. Xiao, C. Liu, W. Li, X. Han, F. Lee, W. Yip, A. Cheung, H. Lee, K. Au, J. Cai

PO-GePV-T-111 Improvements On Acute Gastrointestinal Toxicity Modeling by Using Deep-Learning Auto-Segmentation - R. Salazar*, J. Duryea, A. Leone, S. Nair, R. Mumme, H. Baroudi, T. Netherton, E. Holliday, T. Whitaker, K. Hoffman, L. Court, J. Niedzielski

PO-GePV-T-112 An Interpretable Machine Learning Model for Predicting Overall Survival for Malignant Mesothelioma Patients Following Radiotherapy - Z. Wang*, V. Li, X. Qi

PO-GePV-T-113 Evaluation of Radiotherapy Treatment Characteristics for Patients in the Kaiser Permanente Breast Cancer Survivors Study - M. Mille*, L. Veiga, R. Curtis, S. Smith, R. Howell, C. Lee, A. Berrington De Gonzalez

PO-GePV-T-114 Dosimetrics in the Prediction of Local Recurrences of Non-Small Cell Lung Cancers Treated with Stereotactic Body Radiation Therapy - M. diMayorca*, T. Wilhite, M. Tavakoli, K. Nie

PO-GePV-T-115 NTCP Modeling of Dysphagia 12 Months After Radiotherapy for Oropharyngeal Cancer Using the EAT10, CTCAE and PRO-QoL Scoring Systems - A. Tzikas*, E. Lavdas, D. Kehayas, R. Amdur, W. Mendenhall, N. Sheets, S. Stathakis, R. Green, L. Marks, S. Das, B. Chera, P. Mavroidis

PO-GePV-T-116 Building Convolutional Neural Networks for Abdominal Aorta-Iliac Calcification Assessment and Cardiovascular Risk Prediction of Prostate Patients Undergoing Stereotactic Radiotherapy - H. Lin*, W. Chen, J. Baal, T. Upadhaya, J. Barrios Ginart, M. Roach, III, J. Hong, O. Morin

PO-GePV-T-117 Tumor Control Probability for Stereotactic Body Radiotherapy of Early Stage Hepatocellular Carcinoma - F. Liu*, M. Munley

PO-GePV-T-118 Sparing Salivary Function Following Submandibular Gland Transfer in Head and Neck Cancer Patients: Preliminary Results of a Prospective Trial - V. Moiseenko*, T. Atwood, C. Coffey, L. Blumenfeld, P. Hua, B. Tuma-marcella, P. Sanghvi

PO-GePV-T-119 Pattern of Treatment and Outcome for Esophageal Adenocarcinoma in the United States: Longitudinal Analysis of a Large Hospital Based Registry - A. Dey, T. Biswas, T. Podder*

PO-GePV-T-120 A Radiomics-Based Light Gradient Boosting Machine to Predict Radiation-Induced Toxicities in Nasopharynx Cancer Patients Receiving Chemoradiotherapy - Z. Jiang*, Y. Liang, X. Wang, Z. Min, M. Feng, Y. Kuang

PO-GePV-T-121 Electrostatic Field Simulations and Dynamic Monte Carlo Simulations of a Nanodosimetric Detector - I. Kempf*, T. Staeuble, U. Schneider

PO-GePV-T-122 Radiobiological Comparison of 3D Conformal Proton Therapy and Intensity Modulated Proton Therapy (IMPT) for Metastatic Brain Cancer - M. Sullivan*, H. Jin, S. Ahmad

PO-GePV-T-123 Radiobiological Comparison of Volumetric Modulated Arc Therapy, 3D Conformal Proton Therapy and Intensity Modulated Proton Therapy for Lung Cancer - M. Sullivan*, H. Jin, S. Ahmad

PO-GePV-T-124 Treatment Planning to Suppress Sublethal-Damage Repair by Modulating Spatio-Temporal Patterns of Spot-Scanning Proton Dose Delivery: An Initial Study - H. Hosoi*, K. Kasamatsu, K. Miyazaki, S. Takao, S. Tanaka, Y. Chen, N. Miyamoto, H. Aoyama, K. Nishioka, T. Hashimoto, T. Matsuura

PO-GePV-T-125 Computerized Risk Modeling of Imaging Changes and Radionecrosis After Proton Beam Therapy for Childhood Brain Tumors - F. Heinzelmann*, C. Bäumer, S. Peters, A. Stock, S. Schulze-schleithoff, S. Frisch, B. Timmermann

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-T-126 Application of Extracted Proton Energy Spectrum from Measured Integrated Depth Dose to Validating the Linear Energy Transfer Calculation in a Commercial TPS - W. Yao*

PO-GePV-T-127 An Exploration Toward the Superior Hyperfractionated Schedule in the Intensity Modulated Proton Therapy for Pharyngeal Cancer Under the Variable Relative Biological Effectiveness - K. Kasamatsu*, T. Matsuura, K. Yasuda, K. Miyazaki, S. Takao, H. Aoyama

PO-GePV-T-128 Dose Enhancement in DNA with Gold Nanoparticle Irradiated by Proton Beams: A Monte Carlo Study - J. Chow*, N. Huynh

PO-GePV-T-129 Dose Enhancement Effects of High-Z Foils in Proton Radiation Therapy - K. Duke*, S. Ahmad, A. Lau

PO-GePV-T-130 Small Dataset-Applicable Proton Pencil Beam Algorithm Boost Model: AA-Net - Y. Liu*, X. Shang, G. Zhang, X. Le, W. Zhao, Z. Wang, C. Fang, B. Qu, S. Xu

PO-GePV-T-131 RBE-Weighted Dose Calculation Based On Dual-Layer Spectral CT in Carbon Ion Therapy with Monte Carlo Simulation Using TOPAS - E. Yoon*, W. Shin, B. Kim, J. Son, C. Choi, J. Kim, S. Jung, J. Park

PO-GePV-T-132 Dose Calibration and Integral Depth Dose Correction of An Analytical Dose Calculation Algorithm for Collimated Pencil Beam Scanning Proton Therapy - L. Bennett*, K. Erhart, N. Nelson, J. Yu, A. Gutierrez, S. Rana, B. Smith, P. Hill, D. Hyer, T. Geoghegan, K. Patwardhan, W. Culberson, R. Flynn

PO-GePV-T-133 Stray Neutron Radiation Exposures from Proton Therapy: Physics-Based Analytical Models of Neutron Spectral Fluence, Kerma and Absorbed Dose - S. Shrestha*, W. Newhauser, W. Donahue, A. Perez-Andujar

PO-GePV-T-134 Implementation of a Track-Repeating Fast Monte Carlo Method for the MD Anderson Proton Therapy Center II - Q. Wang*, F. Poenisch, U. Titt, R. Mohan, P. Yepes

PO-GePV-T-135 The TOPAS Extension for Secondary Cancer Risk Evaluation After Radiotherapy - G. Tamborino*, H. Lee, A. Bertolet, J. Schuemann, C. Lee, H. Paganetti

PO-GePV-T-136 Neutron Ambient Dose from Proton Irradiation of ICRU Tissue Calculated Via Monte Carlo Simulation - A. Gearhardt*, Y. Chen, S. Ahmad, M. Newpower

PO-GePV-T-137 Validation of a Fast Monte Carlo Code for Patient QA with Clinical Mini and Standard Proton Beams - V. Moskvina*, A. Faught, F. Pirlepesov, S. Al-Ward, S. Wilburn, M. Lowe, M. Cohilis, K. Souris, C. Hua

PO-GePV-T-138 Implementation of An Octree-Based CT Compression for GPU-Based Monte Carlo Dose Calculations - C. Panaino*, H. Wan Chan Tseung

PO-GePV-T-139 Application of Monte Carlo Simulation for Treatment Planning System Commissioning and Dose Calculation for a Pencil Beam Scanning Proton Therapy System - H. hu*, H. Liu, Y. Jia, Y. Zheng, S. Ding, B. Wang, Y. Li, X. Huang, Z. Li

PO-GePV-T-140 Beamline-Model Parameters of TOPAS Code for Proton Pencil-Beam-Scanning - S. Thompson*, W. Hsi

PO-GePV-T-141 Evaluation of the Accuracy of Proton Dose Calculations When Using DirectSPR Data - V. Sarkar*, A. Paxton, F. Su, R. Price, G. Nelson, M. Szegedi, S. St. James, B. Salter

PO-GePV-T-142 Development of A Collision Model for Advanced Proton Treatment Planning and Delivery - S. Chen*, L. Zhao, W. Zheng, A. Qin, R. Deraniyagala, X. Ding

PO-GePV-T-143 Multi-Isocenter Congruence Tracking with a Custom In-House Software Package - A. Faught*, J. Zhang, L. Wilson, S. Al-Ward, E. Batin

PO-GePV-T-144 Attachment Reproducibility of the Accessory Tray-Mounted Proton Dynamic Collimation System - T. Geoghegan*, K. Patwardhan, L. Bennett, J. Yu, A. Gutierrez, P. Hill, R. Flynn, D. Hyer

PO-GePV-T-145 Adaptation of a Commercial Daily QA Device for Daily Proton Depth Verification - J. Kraus, J. Dobelbower, K. McConnell*, J. Harms, R. Cardan

PO-GePV-T-146 Implementation of the Predictive Models for Autocorrelated Time Series Data Using ARIMA and Artificial Neural Network Algorithms - J. Lah*, D. Shin

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

MEDICAL PHYSICS

General ePoster Viewing (GeV)

PO-GePV-T-147 Compact Radiation Detector for Wireless Thermoacoustic Range Verification Detects Pulse-To-Pulse Variations During Conventional Proton Therapy - S. Patch*, Y. Hao, T. Zhao, S. Pauly

PO-GePV-T-148 Positioning Accuracy of Multiple Leaves Collimation in a Compact Pencil Beam Scanning System - H. Azmy*, W. Smith, Y. Hao, T. Zhao, T. Zhang, B. Sun

PO-GePV-T-149 Statistical Tolerances on Daily Quality Assurance for Proton Spot Width Using a Sphinx Compact Device - S. St. James*, V. Sarkar, R. Price, A. Paxton, F. Su, B. Salter

PO-GePV-T-150 Summary of Six Months of Daily Data Collected using the Sphinx Compact on a Mevion Hyperscan System - V. Sarkar*, F. Su, A. Paxton, S. St. James, R. Price, B. Salter

PO-GePV-T-151 Developing a 3D-Printed Phantom for Daily Proton QA of Two Energies - J. Ryser*, R. Wiersma, S. Avery, X. Liu, A. Kassae

PO-GePV-T-152 Dosimetric Impact of Esophageal and Biliary Stents in Intensity Modulated Proton Therapy - P. Sabouri, G. Kim, S. Chen, P. Darwin, S. Mossahebi*

PO-GePV-T-153 Comparative Clinical Pencil Beam Scanned Proton Flash Therapy: Transmission Beams Vs. Range Stopping Beams - J. Farr*, A. Kolano, T. Gray, C. Liu, P. Xia

PO-GePV-T-154 The Effect of Non-Ionizing Excitations on the Diffusion of Ion Species and Inter-Track Correlations in FLASH Ultra-High Dose Rate Radiotherapy - R. Abolfath*, A. Baikalov, S. Bartsch, N. Afshordi, R. Mohan

PO-GePV-T-155 Feasibility of Dose Rate Calculation with Machine Log File and Monte-Carlo Simulation in FLASH Radiation Therapy - C. Jeon*, S. Ahn, Y. Han

PO-GePV-T-156 Ultra-High Dose Rate Radiation Production and Delivery Systems Intended for FLASH - J. Farr*, V. Grilj, M. Victor, S. Srinivasan, J. Schippers

PO-GePV-T-157 Designing Customized In-Vitro Experimental Setups for Proton FLASH Preclinical Studies - U. Titt*, L. Wang, M. Yang, X. Wang, K. Iga, N. Sahoo, X. Zhu, A. Koong, S. Lin, S. Frank, R. Mohan

PO-GePV-T-158 Feasibility of Customized Hole Filters for FLASH Irradiation - X. Zhao*, F. Reynoso, A. Darafsheh, T. Zhao

PO-GePV-T-159 Towards Conformal FLASH PBS Proton Therapy: Beam Model Verification and Plan Characteristics - Y. Zhang*, Z. Xiao, J. Speth, E. Lee, A. Mascia

PO-GePV-T-160 Investigation of the Workload Limitation for Proton Beam FLASH Delivery Based On Survey Results - G. Yu*, Y. Yang, H. Lin

PO-GePV-T-160 The Characteristics of Upright Treatment Workflow Using Two Chair-Positioners for Head/neck and Intra-Cranial Cancers - W. Hsi*, M. Gao, J. sun, A. Schreuder

PO-GePV-T-161 Optimization of a Pelletron Accelerator for Radiobiologic Experiments Using Proton FLASH Radiation - Z. Kaffey*, S. Rooks, M. Mccurdy, J. Eley

PO-GePV-T-162 Proton Pencil Beam Scanning Proton Vs Photon Stereotactic Body Radiotherapy for Ventricular Tachycardia: A Comparative Planning Study - M. Ruth*, B. Hartl, J. Marcel, J. Arkles, K. Cengel, E. Diffenderfer, M. Kim

PO-GePV-T-163 Comparative Proton Therapy Treatment Quality Between the Upright and Supine Position for Three Pelvic Indications - W. Kozłowska*, A. Zemanova, W. Larsen, O. Sevela, P. Segars, J. Farr

PO-GePV-T-164 Assessment of Fetal Dose During Breast Radiotherapy Using a 3DCRT, IMRT, and Proton PBS Approach - S. Domal*, F. Giap, P. Johnson, M. Artz, K. Kirby, C. Williams, W. Bolch

PO-GePV-T-165 Oblique Beam Angles Lead to Better Rectal Protection But Worse Bladder Sparing in Prostate Cancer Receiving Pencil-Beam-Scanning Proton Therapy (PBS) - Y. Yang, J. Rwigema, C. Vargas, N. Yu, S. Keole, W. Wong, S. Schild, M. Bues, W. Liu, J. Shen, J. Shen*

PO-GePV-T-166 Feasibility of Intensity Modulated Proton Therapy for Treating Pancreatic Cancer Using a Hypofractionated Approach - F. Alsanea*, T. Williamson, F. Poenisch, R. Martin, S. Beddar, G. Sawakuchi, L. Perles, E. Ludmir, A. Koong, P. Das, C. Taniguchi, E. Koay, J. Niedzielski

General ePoster Viewing (GeV)

PO-GePV-T-167 Evaluation of a Novel Monte Carlo Based Plan Validation Software for Proton Therapy - J. Spano*, A. Kassae, D. Bollinger

PO-GePV-T-168 Validation of a CBCT-Based Online Evaluation Workflow for Proton Therapy - C. Chang, R. Nilsson, S. Andersson, D. Bohannon, L. Lin, S. Patel, P. Patel, K. Langen, J. Bradley, T. Liu, X. Yang, J. Zhou*

PO-GePV-T-169 Dosimetric Characteristics and Its Impact On Plan Quality of the Adaptive Aperture of the HyperScan System - A. Silvus*, T. Zhao, T. Zhang

PO-GePV-T-170 In Silico Study of Proton Adaptive Prostate SBRT Radiation Therapy - B. Maraghechi*, Y. Hao, A. Price, T. Zhao, T. Zhang, B. Sun, A. Darafsheh, E. Laugeman, N. Knutson, G. Hugo, L. Henke, B. Baumann, S. Perkins, T. Mazur

PO-GePV-T-171 Assessing Plan Robustness for IMPT Using a Machine Learning Model - M. Newpower*, Y. Chen, S. Ahmad

PO-GePV-T-171 Searching for Practical Monte Carlo Dose Calculation Parameters of Line-Scanning Proton Beam Therapy in a Commercial Treatment Planning System - H. Kim, K. Chung*, Y. Han, W. Park, H. Park, D. Lim, D. Choi

PO-GePV-T-172 Treatment Planning of Total Marrow Irradiation with Intensity-Modulated Spot-Scanning Proton Therapy - D. Zuro*, G. Vidal, C. Henson, Y. Chen, C. Han, S. Hui, S. Ahmad, I. Ali

PO-GePV-T-173 Effect of Different Spot Spacings On the Dose Homogeneity and Penumbra in Proton Therapy - F. Pirlepesov*, V. Moskin, A. Faught

PO-GePV-T-173 A Novel Deep Learning-Based Framework for Adaptive Particle Therapy - G. Zhang*, L. Zhou, W. Zhao, H. PENG

PO-GePV-T-174 Evaluation of the Utility of Rescans in the Treatment of Prostate and Pelvic Nodes with Pencil Beam Scanning Protons - S. Laub*, S. Schmidt, L. Campbell, B. Hartsell

PO-GePV-T-175 Patient-Specific Duodenal Hydrogel Spacer as a Dosimetric Buffer for Proton Therapy for Locally Advanced Pancreatic Cancer - D. Han*, H. Hooshangnejad, J. Jatczak, W. Yao, J. Xu, K. Ding

PO-GePV-T-176 A Workflow to Accurately Delineate Implanted hardware in Proton Planning - F. Su*, A. Paxton, S. St. James, X. Li, R. Price, B. Salter, V. Sarkar

PO-GePV-T-177 Clinical Significance of High-Risk Prostate Nodal Margin Reduction for PBS Proton Therapy - S. Mahan*, S. Hedrick, B. Morris, S. Petro, T. Jacobson

PO-GePV-T-178 Investigating Dose-Average Linear Energy Transfer (LETd) in Prostate Cancer Patients with Unilateral and Bilateral Metallic Hips - S. Rana*, S. Pokharel, M. Kasper, W. Hsi

PO-GePV-T-179 Proton Lattice Planning Strategy Using Primary and Robust Complimentary Beams - S. Mossahebi*, J. Jatczak, B. Zhang, J. Molitoris, P. Mohindra, W. Regine, B. Yi

PO-GePV-T-180 Can Proton Linear Accelerator Beams and Minibeams Achieve Superior Plan Quality Over Cyclotron-Generated Proton Beams and Photons in the Treatment of Lung Tumors? - T. Gray, C. Liu*, A. Kolano, J. Donaghue, J. Farr, K. Stephans, G. Videtic, J. Suh, P. Xia

PO-GePV-T-181 Can Proton Linear Accelerator Beams and Minibeams Achieve Superior Plan Quality Over Cyclotron-Generated Proton Beams and Photons in the Treatment of Head and Neck Tumors? - T. Gray*, S. Ahmed, C. Liu, A. Kolano, J. Donaghue, J. Farr, J. Suh, P. Xia

PO-GePV-T-182 Efficient Pencil Beam Scanning Proton Treatment for Cranial-Spinal Irradiation - M. Zhu*, A. Stanforth, W. LePain, M. Pasha, K. Langen

PO-GePV-T-183 Proton PBS Treatment for Prostate in Seated Position - S. Koren*, D. Benjamin, Y. Braude, A. Guemnie Tafo, J. Kindler, M. Marash

PO-GePV-T-184 Autocalibration of Linear Positioners in a Dynamic Collimation System for Pencil Beam Scanning Proton Therapy - K. Patwardhan*, T. Geoghegan, R. Flynn, D. Hyer

PO-GePV-T-185 Evaluation and Short-Term Outcomes of Proton SBRT Using Pencil Beam Scanning for Solitary NSCLC - C. Shang*, G. Evans, M. Rahman, T. Williams

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

General ePoster Viewing (GeV)

PO-GePV-T-186 How Much Momentum Acceptance Is Required to Track Breathing Variability in NSCLC Patients? - A. Giovannelli*, A. Koethe, A. Duetschler, S. Safai, D. Meer, D. Weber, A. Lomax, G. Fattori

PO-GePV-T-187 Proton Stereotactic Radiosurgery with Shoot-Through Proton Arc Beams: Planning Feasibility and Dosimetry - W. Gu*, J. Zou, B. Teo, L. Dong, S. Nagda, M. Alonso-Basanta, T. Li

PO-GePV-T-188 Accommodating a Proton PBS System in a Common Linac Vault- a Shielding Simulation - D. Fedorchenko, s. alani, S. Koren*

PO-GePV-T-189 Developing a Compact Proton Dielectric Wall Accelerator: Characterizing Pulse Delivery and Electromagnetic Dispersion in Annular Parallel-Plate Waveguides - M. Maher*, C. Lund, J. Bancheri, J. Seuntjens

PO-GePV-T-190 Acceptance Testing and Commissioning of Two Multiple Room Proton Units in China: Challenges and Lessons - Y. Zheng*, Z. Li, Y. Jia, Y. Yang, Z. Li

PO-GePV-T-191 Dosimetric Impacts of Couch Moving Rails on Proton Treatment Using Pencil-Beam Scanning - Y. Zhang, J. Park*, J. Blalock, R. Stevens, P. Johnson

PO-GePV-T-192 Estimation of Uncertainties in the Distal Edge of Proton Beams Introduced by Inherent Variations in the Thickness of Plates Used to Perform Radiobiology Experiments - D. Martinus*, D. Flint, S. Bright, U. Titt, S. Shaitelman, G. Sawakuchi

PO-GePV-T-193 Miniature Optical Hydrophone for Detecting Proton Beam Range at Clinical Dose: An Initial Study - S. Sueyasu*, Y. Sakuyama, K. Miyazaki, M. Unlu, Y. Kuriyama, Y. Ishi, T. Uesugi, M. Fujii, M. Kobayashi, N. Kudo, Y. Chen, T. Matsuura

PO-GePV-T-194 Event Severity, Self-Report Rate, and Textual Analysis from a Radiation Oncology Incident Learning System - R. McGurk*, D. Gu, J. Dooley, A. Amos, B. Chera, K. Adapa, L. Marks, L. Mazur

PO-GePV-T-195 Departmental Quality, Safety and Health: Predicting Dosimetry Staff Stress Levels and RO-ILS Events as a Function of Planning and Scheduling Metrics - R. Price*, Y. Huang, B. Salter

PO-GePV-T-196 Challenges of Patient Immobilization and Setup for Head Neck Cancer Patients Undergoing External Beam Radiation Therapy - N. Yu*, N. Woody, S. Koyfman, P. Xia

PO-GePV-T-197 A Clinically Relevant Online Patient QA Solution for Adaptive Radiation Therapy with Daily CT Scans and EPID-Based in Vivo Dosimetry: A Feasible Study On Rectal Cancer - L. Chen*, J. Wang, B. Feng, L. Yu, j. zhao, W. Hu, Z. Zhang

PO-GePV-T-198 A Novel Workflow Utilizing 3D-Printing to Reduce Errors Associated with Creating Electron Blocks - C. Mart*, D. McDonald, N. Anderson, J. Peng

PO-GePV-T-199 Development of the Prediction Model of Multi-Leaf Collimator Position Errors Using the Characteristics of Error-Related Patterns in Non-Heterogeneous Conditions - H. Sheen*, H. Shin, H. Kim, C. Kim, J. Kim, J. Kim, C. Hong

PO-GePV-T-200 A Lung Motion Phantom for Free Breathing and DIBH (Deep Inspiration Breathing Hold) - J. Kwag*

PO-GePV-T-201 Analysis of IGRT QA Image Accuracy Over One Year - S. Roy*, B. Sarkar, A. Pradhan

PO-GePV-T-202 The Deliverability of Dynamic Conformal Arc Therapy (DCAT) and Its Influence On Patient Dose - C. Kim*, H. Kim, D. Jung, D. Kim, J. Kim

PO-GePV-T-203 Improving Quality and Consistency in HARVEST Clinical Trial for Breast Cancer Patients Receiving Hypofractionated Intensity-Modulated Radiotherapy Via Knowledge-Based Planning - M. Chen*, L. Cao, C. Xu, J. Chen

PO-GePV-T-204 Implementation of a Daily QA Program for Clinically-Deployed Custom Software in Radiation Oncology - Z. Iqbal*, R. Cardan, R. Popple, C. Cardenas

PO-GePV-T-205 Quantifying Accuracy of Optical Imaging Surface Dosimetry - A. Niver*, B. Pogue

PO-GePV-T-205 Prediction of Portal Dosimetry Gamma Passing Rates of VMAT Using Machine Learning - J. Lizar, J. Pavoni*

PO-GePV-T-206 Evaluating Radiotherapy Infrastructure and Staffing in a Lower-Middle Income Country (LMIC) Setting Using Failure Mode and Effects Analysis (FMEA) - A. Yorke*, E. Addison, S. Tagoe, E. Ford

MEDICAL PHYSICS

General ePoster Viewing (GeV)

PO-GePV-T-207 Radiation Dose Tolerance of a Medtronic Deep Brain Stimulator Based on OSLD Measurement - M. Klash*, S. Klash, E. McClelland, L. Brennan, J. Grubic

PO-GePV-T-208 Quantitative Risk Assessment for a Newly Opened Hospital by AAPM TG-100 - J. Son*, M. Cho, S. Choi, K. Park, C. Hong

PO-GePV-T-209 Prospective Risk Analysis of Intracranial Stereotactic Radiosurgery Using Failure Mode Effect Analysis and Cost Benefit Analysis of the Use of Flattening Filter Free Beams - G. Mamballikalam*, K. Ganesh, S. Kumar, J. Pattaloor Mana, C. CO, J. Calister, A. Basith

PO-GePV-T-210 Feasibility of Reducing Bone Marrow Dose for Esophageal and Lung Radiotherapy - N. Papanikolaou, N. Kirby, P. Myers, J. Patel*

PO-GePV-T-211 Advanced Physics Chart Check Automation Method to Increase Safety and Efficiency - M. Cho*, J. Son, S. Choi, C. Hong, K. Park

PO-GePV-T-212 Radiation Dose Tolerance Assessment of the Zio Heart Monitor - S. Klash*, L. Brennan, J. Graham

PO-GePV-T-213 Black Swans in Radiation Therapy - K. Maloney*, L. Myers

PO-GePV-T-214 Development of Effective Specialized Checklists for Radiotherapy Special Procedures: Image-Guided Volumetrically Modulated Total Body Irradiation (TBI) - P. Galavis*, C. Hitchen, J. Teruel, S. Ayyalasomayajula, M. Malin, S. Taneja

PO-GePV-T-215 A Practical Workflow to Determine Patient-Specific Critical Organ Dose Constraints Considering Organ-Specific Radiobiological Effect for Reirradiation Planning - A. Tai*, E. Quashie, K. Kainz, E. Paulson, E. Gore, J. Bovi, M. Awan, M. Straza, X. Li

PO-GePV-T-216 On Margins for Ultra-Hypo Fractionated EBRT Prostate - F. Van den Heuvel*, I. Jacobs, T. Harthoorn, I. De Marco, B. Mous - Van Der Wegen, V. Coen

PO-GePV-T-216 A Systems-Based Operational Assessment of External Beam Radiotherapy - L. Wong*, T. Pawlicki

PO-GePV-T-217 EPID-Based 3D In-Vivo Dose Verification Using Deep Learning Inference Modelling - D. Yang*, j. fan, J. Wang, W. Hu

PO-GePV-T-218 Comparison of TrueBeam Portal Dosimetry Results Across a Large Health System - J. Donaghue*, S. Gajdos, L. Muhieddine Mossolly

PO-GePV-T-218 Using Statistical Process Control for Active Monitoring of An Incident Learning System - T. Pawlicki*, J. Hoisak, G. Kim, R. Manger

PO-GePV-T-219 A Deep Neural Network Approach for Enhancing Signal-To-Noise Ratio of MV EPID Images Using Optimized KV-To-MV Image-Regression Models - M. Ahmed*, H. Nourzadeh

PO-GePV-T-220 A Transportable Hypoxic Phantom for DNA Irradiation Damage Studies - D. Johnson*, M. Tambasco

PO-GePV-T-221 Application Research of Position Calibration Function of Octavius®-4D System in Oncology Radiotherapy Dose Verification - L. Duan*, W. Qi, Y. Chen, W. Shen, J. Chen

PO-GePV-T-222 Investigating a Correlation Between MLC Positional Errors and IMRT QA Passing Rate - A. Yousif*, M. Abdelgawad, A. Eldib, S. El-sayed, M. Talaat

PO-GePV-T-223 Gradient Compensation Versus TG-218 Gamma Analysis for Patient-Specific Quality Assurance - G. Defillippo*, S. Mashouf, P. Teo, J. Foy, P. Yadav, G. Khelashvili, I. Das

PO-GePV-T-223 The Improvement of the Detect Precision in Dose Delivering for Volumetric Modulated Arc Therapy Using EPID Segmentation Measurement - X. Lin*, T. Sun, Y. Yin

PO-GePV-T-224 On Mitigating the Effects of Imaging Dose During Patient Specific QA On a Moving ArcCheck Phantom Using the Accuray Radixact Real Time Tracking System - R. Teboh Forbang*, B. Lewis, A. Ndlovu

PO-GePV-T-225 The Plan Complexity of VMAT for the Pelvic Region of Halcyon Linac Using Dual-Layer Multi-Leaf Collimator - Q. Zhu*, Z. Wang, B. Yang, Y. Liang, H. Zhu, W. Zhang, J. Qiu

PO-GePV-T-226 Dosimetric Analysis on the Effect of Tumor Motion in IMRT for Liver Cancer: Comparison of TomoTherapy and VMAT Using the Delta4 Hexa-Motion System - J. Song*, S. Cho

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-T-226 A Shifted Setup Method of Patient-Specific QA for Off-Centered Targets Treated on an MR-Linac - S. Thrower*, M. Vaccarelli, M. Muruganandham, J. Yang

PO-GePV-T-227 Evaluation of the True Composite and Field-By-Field QA Methods in Detecting Systematic MLC Positioning Errors - H. Aldawood*, D. Shvydka, E. Salari

PO-GePV-T-228 Validating TG119 VMAT Commissioning On a Volumetric Phantom - J. Delgado, D. Brito, D. Garcia, S. Serrano-aguirre, Y. Rodriguez-gago, J. Delgado*

PO-GePV-T-229 Comparison of Sun Nuclear ArcCHECK and IBA MatriXX Resolution for Patient Specific IMRT QA - A. Boria*, Z. Su, P. Sabouri, G. Narayanasamy, F. Kalantari

PO-GePV-T-230 Patient-Specific Quality Assurance Multi-Leaf Collimator Error Detection: Comparison of EPID and Array-Based Methods - S. Roles*, J. Winiecki, A. Rapchak, G. Owen, C. Mart, D. McDonald, W. Godwin, M. Maynard, J. Peng

PO-GePV-T-231 Evaluation and Improvement of Angular Response for a Commercial 2D Detector Array for Patient Specific QA - S. Wang*, Y. Zheng

PO-GePV-T-232 Comparative Analysis of the MU/dose Verification of SBRT Patient between the C-Arm and Ring Gantry Linear Accelerator in "best of the Plan" Scenario - K. P*, C. Sureka, B. Sarkar, S. Biswal, S. Chattopadhyay, S. Mondal, S. Roy Chowdhury, K. George, J. Bhattacharya, P. Soren, T. Shahid

PO-GePV-T-233 Detector Response in the Dosimetry of Small Modulated Arc Fields: An Experimental Study - J. Larraga-Gutierrez*, O. Garcia-Garduno, J. Herrera-gonzalez

PO-GePV-T-234 Clinical Implementation of Logfile Based Patient Specific QA - S. Stathakis*, T. Cuthbert, P. Mavroidis

PO-GePV-T-235 A Synthesized Gamma Map-Based Patient-Specific VMAT QA Using a Generative Adversarial Network - T. Matsuura*, D. Kawahara, A. Saito, K. Yamada, S. Ozawa, Y. Nagata

PO-GePV-T-236 Radiotherapy Treatment Verification of Overlapping Multi-Isocenter Irradiations by Internal and External Measures - M. Bach*

PO-GePV-T-237 Using a Commercially Available System for MLC Logfile Based Delivery Verification and Plan Evaluation - S. Stathakis*, T. Cuthbert, W. Jones, P. Mavroidis

PO-GePV-T-238 Towards Real-Time Patient Dosimetry During MR-Guided Radiotherapy - R. Toquero*, H. Nusrat

PO-GePV-T-239 Per-Fraction Deviation in Logfile Parameters Reported in a Single VMAT Arc - M. Snyder*, D. To, D. Drake, J. Liang, D. Lack

PO-GePV-T-240 IMRT QA Result Prediction by MLC Transmission Decomposition - J. Stasko*, W. Ferris, D. Adam, W. Culbertson, S. Frigo

PO-GePV-T-241 A Simple and Cost-Effective System for Pre-Delivery Patient-Specific and Weekly Quality Assurance Based On Log File Analysis - A. Fomujong*, P. Imandi, R. Teboh Forbang, P. Mobit

PO-GePV-T-242 Identifying Poor SBRT Plan Performance Using IMRT QA and Complexity Metrics - M. Glenn*, E. Ford, M. Kim

PO-GePV-T-243 Process Based Tolerance and Action Limits for IMRT/SBRT Delivery On a Novel Biology-Guided Radiotherapy System - M. Ashraf*, N. Kovalchuk, J. Fu, M. Shi, S. Cui, B. Han, M. Surucu

PO-GePV-T-244 Initial Evaluation of ArcCHECK Integration with the SunCHECK QA Platform - C. Stambaugh*, E. Meyer, C. Melhus

PO-GePV-T-245 Dependence of Log File Based IMRT QA of Lung SBRT Plans On TPS Dose Algorithm - G. Baltz*, R. Manigold, S. Kirsner

PO-GePV-T-246 Does Down-Sampling Trajectory File Data to the DICOM-RT Control Points Compromise Dosimetric Accuracy? - Y. Wu, Y. Zhang, B. Erickson, L. Lay, M. Alber, J. Adamson*

PO-GePV-T-247 Energy Dependence of NanoDot Optically Stimulated Luminescence Dosimeters in the Superficial Radiation Therapy Energy Range - Y. Lee*, S. Davis, R. Tolakanahalli, A. Gutierrez

PO-GePV-T-248 Using 3D Printing to Design Reusable Boluses for Patient OSLD Measurements - C. Kabat*, I. Alecu, H. Paschal, N. Kirby, S. Stathakis, N. Papanikolaou

General ePoster Viewing (GePV)

PO-GePV-T-249 Evaluation of Surface Dose Prediction Accuracy of Precision Radixact Tomotherapy Treatment Planning System Using OSL Nanodots - A. Alphonse*, S. Pokharel, M. Kasper, S. Richter, S. Rana

PO-GePV-T-250 In Vivo Dosimetry with GAFCHROMIC EBT3 Film in Twice-A-Day Total-Body Irradiation Radiotherapy - X. Zhang*, Y. Zhang, R. Alibazi Behbahani, J. Kilian-Meneghin, X. Wang, E. Simiele, Y. Zhang, K. Nie, N. Yue

PO-GePV-T-251 Exploration of One-Step Auto Planning: Tomotherapy MLC Sequence Prediction - Y. Liu*, X. Shang, G. Zhang, X. Le, W. Zhao, C. Xie, B. Qu, S. Xu

PO-GePV-T-252 Reinforcement Learning to Speed Up Conjugate Gradient Optimization in IMRT - M. Hakala*, S. Basiri, E. Kuusela

PO-GePV-T-253 Hippocampal Sparing Whole Brain: RapidPlan Model V2.0 Validation Process - R. Foster*, R. Clark, A. Magliari

PO-GePV-T-254 Transformer Network Assisted VMAT Optimization - P. Dong*, L. Xing

PO-GePV-T-255 Intensity Based Optimization Using Monte Carlo Dose Distribution for VMAT Plans - N. Miri*, A. Pant, S. Bhagroo, J. Mathews, D. Nazareth

PO-GePV-T-256 Radiotherapy Planning with Monte Carlo Dose Calculation and Intensity Optimization on Control Points - N. Miri*, A. Pant, S. Bhagroo, J. Mathews, D. Nazareth

PO-GePV-T-257 Dose Predictions Facilitate Efficient Optimization of High-Quality Prostate Treatment Plans - S. Robertson*, D. Lasher, B. Kassas

PO-GePV-T-258 A Novel Two-Step Optimization Method Incorporating Knowledge-Based Planning for Head-And-Neck Radiotherapy - H. Liu*, B. Sintay, D. Wiant

PO-GePV-T-259 A Novel Planning Method to Mitigate Effects of Shoulder Setup and Positioning Variations for Volumetric Modulated Arc Therapy (VMAT) of Head and Neck Cancer - Y. Yang*, J. Peng, X. Liu, Z. Li, Y. Zheng

PO-GePV-T-260 Case-Based Reasoning Optimization Algorithm for Inverse Planning in Head and Neck Radiotherapy - R. Reiazi*, S. Prajapati, A. Mohamed, C. Fuller, M. Salehpour

PO-GePV-T-261 Hybrid Forward and Inverse Planning Approach for Lattice Radiation Therapy - G. Shukla*, A. Mahadevan

PO-GePV-T-262 Learning DVH Criteria in Radiation Therapy Treatment Planning - F. Ahmadi*, T. McNutt, K. Ghobadi

PO-GePV-T-263 Evaluation of a Deep-Learning-Based Planning Solution for Rectal Cancer - j. Peng, j. Peng*, J. Wang

PO-GePV-T-264 Implementation of a Static and Dynamic MLC Model in a GPU-Accelerated Monte Carlo Engine - E. Brost, H. Wan Chan Tseung, J. Antolak*

PO-GePV-T-265 Electronic Portal Imaging Device (EPID) Modeling in EGSnrc/DOSXYZnrc with Effective Atomic Number Scaling - J. Yoon*, H. Jung, D. Zheng, I. Yeo

PO-GePV-T-266 Initial Assessments of Delta4 TPV, a Monte Carlo-Based Second Check Software - F. Su*, X. Li, H. Zhao, S. Bhagroo, P. Rassiah-Szegedi, B. Salter, V. Sarkar

PO-GePV-T-267 Validation of Breast Radiotherapy Planning Using PENELOPE Code - G. de Souza Faés, V. Botelho, M. Alva-Sánchez, F. Brünig, T. Pianoschi, A. Marques da Silva*

PO-GePV-T-267 A Novel Method to Protect Heart Substructures in Radiation Therapy for Esophageal Cancer - Y. Shao*, Z. Xu

PO-GePV-T-268 Combining Multi-Isocenter VMAT and Auto-Planning Technique for Treatment Planning - C. Gong*, Y. Zhang

PO-GePV-T-268 Block Modeling for Pediatric Patients Treated By Co-60 Radiotherapy in the National Wilms Tumor Study Cohort - J. Jung, M. Nikakhtar*, M. Mille, M. Gopalakrishnan, C. Lee, J. Kalapurakal, C. Lee

PO-GePV-T-269 Dose Uncertainties of Polymer Gel Dosimeter May Not Be Influenced by Temperature Variation During Transportation - S. Kurokawa*, H. Tachibana, T. Akimoto

PO-GePV-T-270 Orthovoltage to Monoenergetic Photon Beam Energy Correction Factor for HyperScint Scintillation Dosimeter - B. Insley*, D. Bartkoski, L. Che Fru, M. Salehpour

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-T-271 Update of the GEANT4-DNA Software for Simulation of Radiation Chemical Yield for Reactive Water Radiolysis Species at Different Temperature and PH - J. Bian*, J. Duran, W. Shin, J. Ramos-Mendez, L. Childress, J. Sankey, J. Seuntjens, S. Abbasinejad Enger

PO-GePV-T-272 Optimizing the CBCT Technique for Linac Synchronized NIPAM 3D Dosimetry - K. Lakrad*, M. Oldham, J. Adamson

PO-GePV-T-273 Evaluation of a Novel Plastic Scintillation Detector Performance in MR-LINAC - K. Yun*, M. Hwang, D. Lee, S. Oh, M. Feijoo, S. Beron, D. Pavord

PO-GePV-T-274 Comparative Dosimetric, Setup Margin and Treatment Time Analysis Between Ring Gantry and C-Arm Linear Accelerators for VMAT Based Craniospinal Irradiation Plans - S. Biswal*, B. Sarkar, M. Goyal

PO-GePV-T-275 Breast Conformal Radiotherapy with Sequential Boost Versus Intensity-Modulated Radiation Therapy with a Simultaneously Integrated Boost - G. Komisopoulos*, P. Mavroidis, F. Simopoulou, G. Kyrgias, N. Papanikolaou, K. Theodorou

PO-GePV-T-276 Assessment of Varian Ethos Intelligent Optimization Engine (IOE) for Stereotactic Body Radiation Therapy (SBRT) Treatment Plans for Lung Metastases - A. Pacheco*, S. Pokhare, C. Cross

PO-GePV-T-277 Calculated Vs In-Vivo Film Surface Dose-Area Comparison for Breast Radiotherapy - A. Malhotra*, E. Carpentier, C. Duzenli

PO-GePV-T-278 Free Breathing or Breath Hold for Pancreas Treatment Planning? - T. Lin*, C. Ma

PO-GePV-T-279 Are Auto-Generated Organ-At-Risk Contours Good Enough in Head-And-Neck Radiotherapy? - H. Liu*, B. Sintay, D. Wiant

PO-GePV-T-280 The Optimal Photon Energy for Prostate Cancer Radiation Therapy- a Systematic Literature Review - C. Njeh*, S. Ng, B. Thorndyke, L. Fanelli, K. Huang, K. Hutchins

PO-GePV-T-281 Modeling and Validation of Knowledge-Based Planning for Prostate with Simultaneous Integrated Boost to Dominant Intra-Prostatic Lesion - S. Kuznetsova*, A. Lui, T. Seibert, K. Moore

PO-GePV-T-282 Impact of Leaf Position Error on Multileaf Collimator in Volumetric Modulated Arc Therapy Planning and Delivery - M. Palanisamy*, H. Manohar, P. Munusamy, P. Duraikannu, N. Bhalla, A. Puri

PO-GePV-T-282 Evaluation of VMAT & IMRT Planning Strategies for Advanced Prostate Cancer Patients with Bilateral Hip Prostheses - J. Xu*, T. Cosely, T. Bouton, B. Zhang, D. Han, J. Zhou, S. Chen

PO-GePV-T-283 Adaptive Radiation Therapy Planning Using Daily CBCT Image Sets in Head and Neck Cancer Treatment - A. Beqiri*, R. He, C. Yang

PO-GePV-T-284 Skin Dose Evaluation from Three Different IMRT Planning Technique On Breast Cancer Radiotherapy - R. He*, J. Martinez, C. Yang

PO-GePV-T-285 A Study to Evaluate Optimal Energy Through Different Combination of Energy in Oesophageal Intensity Modulated Radiotherapy - V. HRIDYA*, D. Khanna, A. Raj, S. Padmanabhan, M. Palanisamy

PO-GePV-T-285 Dosimetric Study of Hippocampal-Sparing Prophylactic Cranial Irradiation with VMAT for an O-Ring Linear Accelerator - T. Sun*, X. Lin, Y. Yin

PO-GePV-T-286 The Study of Volumetric Modulated Arc Therapy for Bilateral Breast Cancer in Halcyon - T. Sun*, X. Lin, Y. Yin

PO-GePV-T-286 Evaluation of An Angle Optimization Algorithm in Breast Cancer Treatment Planning - Y. Guo*, J. Wang

PO-GePV-T-287 Evaluation of Dose Distribution Difference Between Plan and Delivery Using Kilovolt CT-Linac in Total Marrow and Lymphoid Irradiation - D. JIANG*, D. Deng, Y. Xiong, J. Gong, Y. Wei, H. Liu, X. Wang

PO-GePV-T-288 A Treatment Planning Feasibility Study for Cranio-Spinal Irradiation (CSI) Using RefleXion X1 - D. Pham*, T. Ngo, B. Han, M. Surucu, S. Hiniker, N. Kovalchuk

General ePoster Viewing (GePV)

PO-GePV-T-289 Model Based Setting Optimization for Patient Specific Quality Assurance of Clinical Plans Calculated Using Acuros XB - T. Chen*, H. Wang, J. Xue, J. Teruel, A. McCarthy, P. Galavis, D. Barbee

PO-GePV-T-290 Stereotactic Body Radiotherapy on a Ring-Gantry Based Linac with Novel Image Guiding System (Reflexion): Plan Quality Comparison with TrueBeam and Tomotherapy - B. Liu*, C. Han, T. Reilly, Y. Dorsainvil, K. Qing, Y. Chen, T. Williams, A. Liu

PO-GePV-T-291 Correlation Between Modulation Indices and Gamma Passing Rate for Different Treatment Sites - E. Salari*, N. Sperling, E. Parsai

PO-GePV-T-292 Can AI Auto-Segmentation Affect Treatment Plan Approval Decisions? - M. Jones*, K. Mcghee, P. Mavroidis, S. Stathakis

PO-GePV-T-293 Dosimetric Analysis of Volumetric Modulated Arc Therapy for Extensive Skin Field Cancerization of the Scalp - A. Hafeez, T. Nurusev, A. Iwinski Sutter, T. Fox, B. Koontz, W. Curran, P. Potrebko*

PO-GePV-T-294 A Multi-Institutional Multi-Platform Inter-Comparison of Dose Volume Histograms Construction Differences on Eight Commercial Treatment Planning and Dose Reporting Systems - G. Penoncello*, Y. Gao, L. Sensoy, M. Pepin, T. DeWees, M. Voss, M. Cao, S. Herchko, S. Benedict, Y. Rong

PO-GePV-T-295 Experimental Determination of Breast Skin Dose on Anthropomorphic Phantom Using VMAT and Field-In-Field Treatment Techniques - A. Cardona*, J. Rojas Lopez, P. Murina, A. Germanier, C. Venencia

PO-GePV-T-296 Automatic Generation of Planning Volumes in Radiotherapy Using the Eclipse Scripting Application Programming Interface (ESAPI) - A. Ruiz*, M. Almada, C. Pfaff, F. Munoz, C. Venencia

PO-GePV-T-297 Towards an Ultra-Fast Deep-Learning-Based Dose Engine for Prostate VMAT Using Knowledge Distillation - W. Tseng*, H. Liu, Y. Yang, C. Liu, B. Lu

PO-GePV-T-297 Measurements of the Blurred Dose Distributions in Radiation Therapy of Lung Tumor Using a Dynamic Thorax Phantom - M. Tajik, M. Akhlaqi, F. Kalantari, S. Gholami*

PO-GePV-T-298 Evaluation of the Dosimetric Difference Between Eclipse 16.1 and Eclipse 15.6 - L. Zhuang*, Y. Qin

PO-GePV-T-299 Title:Automated Testing Platform Within a Software Development Governance Framework for Treatment Planning System User Scripts - J. Lucido*, S. Seetamsetty, D. Ellerbusch, S. Shiraishi, J. Antolak, D. Moseley

PO-GePV-T-300 An Atlas-Based Method to Predict Radiotherapy Dose distributions - S. Yoganathan, R. Zhang*

PO-GePV-T-301 Significant Decrease of Low-Dose to Normal Tissue Through the Optimization of Collimator Angles and Dynamic Gantry Range in Cervical Cancer VMAT Plan - C. Chen*, J. Shen, D. JIANG, C. Xie, Y. Zhong, X. Wang, H. Liu, H. Yu

PO-GePV-T-302 To Study the Dosimetric Difference Between Helical Tomotherapy Radiotherapy and Conventional Intensity Modulated Radiotherapy in the Whole Brain and Spinal Cord of Children and the Protection of Thyroid and Spleen - X. Liu, X. Lin, Y. Yin*

PO-GePV-T-302 Dosimetric Comparison Between TMR Based Algorithm and Collapsed Cone Algorithm for Radiodynamic Therapy Treatment Planning Using 45MV Beams - A. Eldib*, J. Liu, J. Panetta, M. Sherif, C. Ma

PO-GePV-T-303 Quality and Safety Control with Eclipse Scripting for Dose Calculation Using Acuros XB Algorithm - J. Teruel, J. Rembish*, I. Duarte, H. Wang, J. Xue, P. Galavis, D. Barbee, T. Chen

PO-GePV-T-304 Determination of Optimal Indicators for Anatomy-Based Automated Beam Setup in Breast Cancer - E. Costa, A. Gobert, D. Dagot, Y. Jiang, J. Vu-Bezin*

PO-GePV-T-305 Lessons Learned from the Commissioning of Acuros XB Dose Calculation Algorithm - J. Xue*, H. Wang, J. Teruel, D. Barbee, P. Galavis, A. McCarthy, T. Chen

PO-GePV-T-306 Quantification of Dose Perturbation Using the DirectDensity Algorithm with Metallic Implants - M. Schwer*, A. Geiersbach, J. Shah, A. Ritter, E. Klein

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General ePoster Viewing (GePV)

PO-GePV-T-307 Comparison of Manual, Isodose-Based, and Projection-Based PTV Contouring Methods for 3D Conformal Breast Cancer Treatment Planning - P. Jensen*, Z. Chen

PO-GePV-T-308 Anatomic Optimization of VMAT Field Arrangement and Isocenter Placement for Cardiac Sparing Whole-Lung Radiation Therapy - J. Teruel*, P. Galavis, A. McCarthy, B. Cooper, D. Barbee

PO-GePV-T-309 Impact of CT-To-Density Table on Plan Quality - C. Yan*

PO-GePV-T-310 Implementation and Validation of a Couch Model in RayStation TPS - E. DeLuca*, E. Cichewicz

PO-GePV-T-311 Independent Beam Modeling of a Closed Ethos System in RayStation TPS - C. Foote*, D. McClatchy, J. Pursley

PO-GePV-T-312 Clinical Plan Sensitivity to TPS Parameters and the Complexity Metrics That Best Capture This Relationship - F. Brooks*, M. Glenn, J. Pollard-Larkin, R. Howell, C. Peterson, C. Nelson, C. Clark, S. Kry

PO-GePV-T-313 Limited Dataset Transfer Learning for Deep Learning Dose Prediction on Head and Neck Cancer Patients Treated with Involved Nodal Radiation Therapy Using Artificial Intelligence-Based Radiomics (INRT-AIR) - H. Wang*, M. Lin, D. Sher, S. Jiang, D. Nguyen

PO-GePV-T-314 Development and Validation of Knowledge Based Planning Model for Prostate Node Positive Stereotactic Body Radiation Therapy - R. Phurailatpam*, D. Patil, V. Raveendran, K. Joshi, J. Pk, P. Maitre, V. Murthy

PO-GePV-T-315 Assess the Impact of Expanding the CT Calibration Curve on the Quality of Dose Calculation - K. Alhamad*, A. Alhazmi, F. Hadi

PO-GePV-T-316 Pre-Clinical Validation of Volumetric Modulated Arc Therapy Based Total Bone Marrow Irradiation in Halcyon™ Ring Gantry Linear Accelerator - B. Sarkar*, T. Shahid, S. Mondal, S. Biswal, A. De, M. Mukherjee, S. Roy Chowdhury, J. Bhattacharya, K. George, T. Ghosh, P. Soren, A. Banik, P. Das, S. Ghosh, I. Gunturu, C. Pusarla, A. Mishra, S. Mitra

PO-GePV-T-317 The Comparison of Collapsed Cone and Monte Carlo Tangential Breast EBRT Plans - M. Goss*, M. Trombetta, V. Eisen, V. Demartino

PO-GePV-T-318 Effects of Swelling and Automated Flash on IMRT Vulva Planning - M. Goss*, K. Dara, K. Yun, D. Pavord

PO-GePV-T-319 Sensitivity Analysis of Central and Peripheral Dosimetric Leaf Gap for a Double-Stacked Multileaf Collimator - M. BaradaranGhahfarokhi*, A. Yock

PO-GePV-T-320 Critical Structure Dose Limit Simplification for Pandemic-Related Hypofractionation of Treatment Naive Head and Neck Cancer Patients - R. Price*, T. Galloway, C. Ma

PO-GePV-T-321 Evaluation of Dose Level Differences Across a Range of Target Sizes for Two Commercial Dose Calculation Algorithms - S. Gardner*, S. Wang, K. Snyder, Y. Huang, C. Smith, I. Chetty, B. Miller

PO-GePV-T-322 Missing Link Found: Trending Flatness On Both Axes in SNC Daily QA 3 - A. Lippuner*, H. Li

PO-GePV-T-323 Open Source Tool to Compare MR-Linac Logfiles with Monaco RT Plans - M. Kusters*

PO-GePV-T-324 Towards a Halcyon Proactive Maintenance Program Based on MPC-BGM Data Trend Analysis - J. Morales Monzon*, P. Taylor, J. Reed, C. Rosen, F. Lerma

PO-GePV-T-325 Dosimetric Comparison of 10 Commissioned Elekta VersaHD Linear Accelerators - J. Berzanske*, D. Campos, A. Soldner, J. Sohn, S. Oh, B. Coopey, M. Johnson, D. Pavord, B. King, M. Goss

PO-GePV-T-326 Institutional 18 MV Reference Beam Data for Varian TrueBeam Linacs - S. Bhagroo*, K. Hopfensperger, R. Price, J. Kunz, F. Su, G. Nelson, A. Paxton

PO-GePV-T-327 A Practical Tool for Light-To-Radiation Field Coincidence Linear Accelerator Quality Assurance - D. Van Elburg*, G. Pierce, P. Martinez, J. Madamesila

PO-GePV-T-328 Automation of Clinical Trial Credentialing Letter Upload - L. Acuna Scafati*, P. Taylor, J. Lowenstein, P. Boise

PO-GePV-T-329 A Critical Analysis of Adaptive Therapy Guidelines for Patient Safety, Treatment Quality and System Safety Tests - J. Hindmarsh*, S. Dieterich, J. Booth, P. Keall

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-T-330 Linear Accelerator Head Leakage Testing Via XR-SP2 Radiochromic Film - Z. Xia*, D. Johnson

PO-GePV-T-331 General Interface with Scripting on Human Interactive Device for PSQA Automation - J. Zhang*, J. Baker, Y. Cao, J. Chang

PO-GePV-T-332 Role of MR-Scanning Water Tank in Commissioning of MR-Linac Unit - P. Yadav*, I. Das

PO-GePV-T-333 Sensitivity of Small Field Beam Profiles to Gantry Tilt - A. Mangat*

PO-GePV-T-334 Measurement of Photon Beam Energy Changes on An Elekta Versa HD Using 5 Methods - D. Pavord*, K. Yun, J. Berzanske, M. Goss, S. Denhoff

PO-GePV-T-335 One Year Quality Assurance Experience of the First Reflexion System - B. Han*, M. Shi, S. Cui, C. Chuang, N. Kovalchuk, L. Xing, M. Surucu

PO-GePV-T-336 Prediction of the Output Fluctuation of Monitor Chamber Using the Accumulated Dose Drift - R. Alibazi Behbahani*, X. Zhang, J. Kilian-Meneghin, Y. Zhang, T. Cui, E. Simiele, K. Nie, N. Yue, X. Wang

PO-GePV-T-337 Extending the Lifetime of Optically Stimulated Luminescent Dosimeters for Use in Output Checks at IROC-Houston - H. Scott*, P. Alvarez, R. Howell, A. Riegel, S. Kry

PO-GePV-T-338 Improving Imaging-Based Winston-Lutz Results with Synthetic CT Phantoms - M. Fan*, D. Quiring, P. Sansourekidou, Y. Natsuaki

PO-GePV-T-339 Development of Supplemental Pre-Treatment Daily Quality Assurance on the Radixact Real-Time Tumor Tracking System - R. Teboh Forbang*, B. Lewis, A. Ndlovu

PO-GePV-T-340 Reference Dosimetry Incorporating Lateral Dose Distribution, Prp - S. Kucuker Dogan*, M. Gopalakrishnan, I. Das

PO-GePV-T-340 The Analysis of MLC Positioning Deviations of Trilogy, TrueBeam and Halcyon Using Log Files - X. Lin*, T. Sun, Y. Yin

PO-GePV-T-341 Geometric Analysis of Room Laser Alignment Using a 3D Printed Tool - N. Otero*, M. Braswell, S. Sutlief

PO-GePV-T-342 Investigation of Smoothing Filter Effects on Beam Scanning Data - S. Lee*, J. Cammin, B. Zhang, K. Jiang, M. MacFarlane, J. Zhou, B. Yi, S. Chen

PO-GePV-T-343 Evaluation of the New Independent Dose Calculation SciMoCa as Patient-Specific Quality Assurance in the CyberKnife Treatment of Brain Metastases and Lung Cancer - K. Sakai*, Y. Nakajima, Y. Suda, S. Kito, Y. Sato, K. Yasui, Y. Arai, T. Takizawa, M. Sato, Y. Fujita

PO-GePV-T-344 Evaluation of a Collapsed Cone Second Check Algorithm Using TG-219 Methodologies - J. Donaghue*, S. Gajdos, L. Muhieddine Mossolly

PO-GePV-T-345 Logfile Based Dose Delivery Verification Using a 3rd Party 3D Dose Calculation Software - A. Alvarez*, K. Kelly, M. Naessig, M. Bonnen, N. Papanikolaou, S. Stathakis

PO-GePV-T-346 Dosimetric and Radiobiological Evaluation of the Dose Distributions from the Treatment Plan and Logfiles in Head & Neck Radiotherapy - T. Cuthbert*, P. Mavroidis, W. Jones, S. Stathakis

PO-GePV-T-347 Long-Term Stability Analysis of TomoTherapy Dose Output - X. Liu, Y. Yin*

PO-GePV-T-347 Secondary Monitor Unit Verification Comparison Between Single Point and 3D Dose Calculations - K. Kelly*, A. Alvarez, M. Naessig, T. Wagner, N. Papanikolaou, S. Stathakis

PO-GePV-T-348 Comparison of Monte Carlo Computed Gamma Indices and Measured Patient Specific IMRT QA Results - K. Kelly*, M. Naessig, A. Alvarez, M. Bonnen, N. Papanikolaou, S. Stathakis

PO-GePV-T-349 Independent 3D Dose-Volume Verification for Brainlab Elements MultiMet Patients - M. Naessig*, K. Kelly, A. Alvarez, T. Wagner, E. Galvan, N. Papanikolaou, S. Stathakis

PO-GePV-T-350 Variation of SpaceOAR Density and Volume Throughout the Course of Prostate Radiation Therapy Treatments - B. King*, A. Harpley, A. Dare, D. Campos, M. Hwang, M. Goss, J. Sohn

PO-GePV-T-351 A Dosimetric Evaluation of 3D-Printed Thermoplastic Polyurethane (TPU) for Use as a Custom Breast Bolus - K. Bittinger*, G. Graeper

PO-GePV-T-352 Characterization of a Brass Bolus - M. Hajduk*, E. Cichewicz

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General ePoster Viewing (GePV)

PO-GePV-T-353 Study on the Possibility of An Intensity Modulation Technique Using a Scanning X-Ray Pencil Beam Based On Monte Carlo Simulation - C. Guo*, K. Men, Y. Hu
PO-GePV-T-354 A New Generation Co-IMRT Device for Low- and Middle-Income Countries: The Effect of Co-Source Size on IMRT Plan Quality for Head and Neck Cases - B. Sengupta*, A. Shulman, K. Oh, P. Sponseller, C. Cardenas, L. Court, E. Ford
PO-GePV-T-355 Implementation and Comparison of Manual Field in Field Technique with Compensator Based Technique in Total Body Irradiation - P. Bharath*, D. Khanna, M. Palanisamy, E. Rajadurai, N. Hima, T. Vivek, J. Saro
PO-GePV-T-356 Exploring Use Cases of Non-Isocentric Dynamic Trajectory Radiotherapy Enabled Through Dynamic Table Translations - G. Guyer*, S. Mueller, C. Koechli, D. Frei, W. Volken, J. Bertholet, P. Mackeprang, H. Loebner, D. Aebbersold, P. Manser, M. Fix
PO-GePV-T-357 External Beam Alternatives to Vaginal Cuff Brachytherapy - Z. Carter, J. Fang*
PO-GePV-T-358 Design and Construction of a Total Body Irradiation (TBI) Apparatus with Lung Blocking for Implementation of a Decubitus High Dose TBI Program - K. Schaefer*, J. Huang, M. Lawless, L. DiMaso-Myers, L. DiMaso-Myers, T. Tyson, K. Bradley
PO-GePV-T-359 A Simple Rule of Thumb to Decide Between Head-First Supine (HFS) Or Feet-First Supine (FFS) for Certain Patients Undergoing Radiotherapy - H. Kadji*, B. Lewis, T. Besso, J. Volpe, R. Teboh Forbang
PO-GePV-T-360 Developing a Web Based Virtual Environment to Enhance Radiation Therapy Education During COVID-19 and Beyond - R. Sheu*, M. Dimopoulos, S. Skubish
PO-GePV-T-361 Beam Characteristics and Reproducibility of a Compact Linac Assembly with Rapid Gantry Rotation Feature Designed for a PET-Linac Platform - J. Tan*, G. Gibbard, J. Visak, T. Zhuang, Y. Park, M. Lin, A. Godley, A. Pompos, S. Jiang, B. Cai
PO-GePV-T-362 Robust Planning for ITV-Based Lung VMAT SBRT - S. Peca*, A. Buczek, S. Peca
PO-GePV-T-363 Compact System for 4D Treatment Planning and Dose Verification Based on Flexible Movement - C. Nunes*, E. Jiménez-ortega, R. Linares-Doblado, A. Leal Plaza
PO-GePV-T-364 4D-CT Prediction of Inter- and Intrafraction Lung Tumor Motion During Fractionated Stereotactic Body Radiation Therapy - A. Rashid*, Y. Niu, D. Pang
PO-GePV-T-365 Impact of Flattening Filter on Output Correction Factor of MicroDiamond Detector in Small-Field Stereotactic Radiosurgery Beams - Y. Arai*, Y. Sato, T. Takizawa, K. Fujii, K. Yasui, K. Sakai, M. Sato, Y. Nakajima, Y. Fujita
PO-GePV-T-366 SRS/SBRT Patient-Specific QA Device Comparison - D. Epstein*, T. Shacham, D. Levin
PO-GePV-T-367 Evaluation of a Novel-Integrated Quality Assurance Phantom for Winston-Lutz Test - A. Rushak*, E. Klein, Y. Yang
PO-GePV-T-368 Validation of a Beam Model for Single Isocenter Multi-Mets Treatment Using SRS MapCheck - J. Xue*, J. Teruel, N. Bice, P. Galavis, M. Malin, A. Rea, D. Barbee
PO-GePV-T-369 A Multi-Detector Comparison of the Measured Relative Output Factors for Elekta Gamma Knife ICON - D. Shrestha*, M. Lowe, S. Herchko, S. Yaddanapudi, S. Stojadinovic
PO-GePV-T-370 The Impact of Applying TRS 483 Recommendations Correction Factor for Cyberknife Cones Output with Different Types of Detectors - M. Alfshavy*, I. Al Amri, M. Gurumani, N. Babu
PO-GePV-T-371 Bleaching Times of OSLDs Using High Intensity LEDs - J. Larraga-Gutierrez, O. Garcia-Garduno*
PO-GePV-T-372 Evaluation of a Submillimeter-Resolution Detector Array for SRS Dosimetry - P. Sabouri*, A. Boria, F. Kalantari, N. Shrestha, G. Narayanasamy, M. O'neil, Z. Su
PO-GePV-T-373 Evolution and Cause of Rotation-Induced Couch Shift for a New SRS-Capable Linac - X. Zhai*, Y. Liang, M. Zhang, L. Voros, H. Zhang, B. Mueller, Y. Song
PO-GePV-T-374 Use of An Extended-Length Phantom for Varian PitchPerfect 6DoF Couch Tilt Verification Measurements - J. Setianegara*, H. Li, Y. Hao
PO-GePV-T-375 Backlash of a Multileaf Collimator - A. Kulmala, T. Paasonen*, L. Koivula, A. Rintala, M. Tenhunen

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-T-376 Small Field Dosimetric Characterization of 7MV FFF Photons for Stereotactic MR-Guided Adaptive Radiotherapy Using the Unity MR-Linac - M. Hwang*, X. Chen, S. Oh, D. Lee, D. Pavord, B. Coopey, J. Sohn
PO-GePV-T-377 Exploration of a Monte Carlo-Powered 3D Dose Verification of Single-Isocenter Multiple-Target SRS Plans - G. Cui*, J. Duan, F. Yin
PO-GePV-T-378 End-To-End Validation of Single-Isocentric SRS for Multiple Brain Metastases Utilizing a High-Definition Detector Array - R. Badkul*, H. Li, S. Awan, F. Wang, H. Jiang
PO-GePV-T-379 Assessment of Commercial Patient Specific Quality Assurance (PSQA) Devices for LINAC-Based Stereotactic Radiotherapy Plans - S. James*, E. Elder, C. Huh, A. Al-Basheer, J. Barrett, A. Maghsoodpour, F. Mostafaei
PO-GePV-T-380 3D Printed ABS Breast Phantom for GammaPod - S. Becker*, K. Stump, W. Culbertson, Y. Poirier, H. Zhang, M. Guerrero, B. Yi, E. Nichols
PO-GePV-T-381 Dose Rate Versus Gantry Speed Performance Evaluation for SRT/SBRT Treatment Deliveries Using DICOM RT Plans - A. Bredikin*, M. Walsh
PO-GePV-T-382 Comparison of IMRT Quality Assurance for SRS Plans Using MapCheck2 in High-Density Mode Versus MyQA SRS - C. Thropp*, L. Buchanan, Y. Yang, G. Cardarelli
PO-GePV-T-383 Evaluation of the Sun Nuclear SRSMAPCHECK for Patient-Specific Quality Assurance On the ZAP-X Radiosurgery Machine - Y. Lei*, C. Jenkins, M. Halfman, Q. Xu, P. Rojas Castillo, X. Yan, S. Wang
PO-GePV-T-384 Role and Adequacy of SRS MapCheck and NanoDots in Data Validation and End-To-End Testing of Stereotactic Radiosurgery (SRS) Cone Planning System - S. Awan*, S. Gupta-burt, R. Badkul, H. Li, A. Meigooni
PO-GePV-T-385 Comparison of SRS QA Tools for Single and Multiple Target SRS Plans - C. Teng*, E. Sudentas, L. Fu, M. Chao, Y. Lo
PO-GePV-T-386 Cross-Validation of Patient Positioning Systems Using an Optical Surface Image Guidance Platform - D. Pinkham*, S. Hancock
PO-GePV-T-387 Evaluation of 4Pi Arc Positioning for Cranial VMAT SRS in Elements - B. Loughery*, C. Knill, R. Sandhu, L. Lin, Z. Seymour
PO-GePV-T-388 Knowledge Based Planning (KBP) as a Clinical Solution for Stereotactic Radiosurgery Cases (SRS) for Multiple Brain Metastases - K. Guida*, F. Wang, G. Gan, J. Patel, O. Trejo, H. Li, H. Jiang
PO-GePV-T-389 Dosimetric Comparison of Original Gamma Knife Plans and Optimized Gamma Knife Plans for Metastatic Brain Tumors - B. Delacruz*, E. Calugaru, B. Garcia, J. Chang, A. Goenka
PO-GePV-T-390 Optimal Method of Radixact Treatment Planning for IROC Lung Phantom with Motion Table to Meet VALOR Protocol Constraints - S. Klash*, E. McClelland, C. Sobotka, S. Corbett
PO-GePV-T-391 Evaluation of the Leksell Gamma Knife Lightning Optimizer for Stereotactic Radiosurgery of Postoperative Resection Cavities - R. Tolakanahalli*, Y. Lee, V. Chaswal, M. Tom, M. Hall, M. McDermott, M. Mehta, A. Gutierrez, R. Kotecha, D. Wiczorek
PO-GePV-T-392 Association of Fiducial Marker Position with TargetVolume in Stereotactic Lung Irradiation: A Cross-Sectional Study - H. Akasaka*, K. Mizonobe, Y. Oki, K. Uehara, S. Tamura, Y. Munetomo, A. Harada, M. Nakayama, H. Kawaguchi, H. Mayahara
PO-GePV-T-393 Evaluation of the Effects of Energy and Planned Dose Grid On Plan Quality Metrics for Treatment of Single Isocenter Multiple Target Brain Lesions - E. Salari, E. Parsai*, N. Sperling
PO-GePV-T-394 Analysis of Dose Drop Off Distance From Planning Target Volume Edge to 50% for Small Volume Tumors with Different Techniques - A. Raj*, D. Khanna, V. HRIDYA, M. Palanisamy, S. Padmanabhan
PO-GePV-T-395 Phantom Evaluation of Dose Calculation Accuracy Comparing BrainLab and Eclipse Treatment Planning Systems (TPS) for Brain Stereotactic Radiosurgery (SRS) with Simulation and Film Dosimetry - J. Yoon*, H. Jung, M. Milano, K. Usuki, S. Hardy, D. Zheng

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

General ePoster Viewing (GePV)

PO-GePV-T-396 Dosimetric Evaluation of Two Modern Planning Techniques for Single-Isocenter, Multiple Brain Metastases Fractionated-Stereotactic Radiosurgery with >20 Lesions - H. Jung*, J. Yoon, M. Milano, K. Usuki, S. Hardy, D. Zheng

PO-GePV-T-397 Standardized Open-Source Volume Calculations for Small Voxelized Volumes - R. Cardan*, R. Popple

PO-GePV-T-398 Dosimetric Evaluation of Patient Setup Errors in Cervical Spine Stereotactic Radiotherapy - A. Magnelli*, B. Guo, P. Qi, Y. Cho, T. Gray, S. Chao, J. Suh, P. Xia

PO-GePV-T-399 Dosimetric Comparison Between a Single Isocenter Dynamic Conformal Arc Treatment Technique and the CyberKnife System for Multiple Brain Metastases SRS - J. Liu*, L. Wang, X. Chen, T. Lin, C. Ma

PO-GePV-T-400 Conformity Distance Measure for Stereotactic Radiosurgery of Brain Metastases - Y. Cho*

PO-GePV-T-401 Small Field MLC SRS DCA Plan Verification with Brainlab Elements - C. Geraghty*

PO-GePV-T-402 Validation of Automatic Planning Scripts for Prostate SBRT with and Without Lymph Nodes - C. Venencia*, M. Almada, O. Apaza Blanco, I. Marquez, O. Muriano, P. Murina

PO-GePV-T-403 Dosimetric Impact of Multileaf Collimator Leaf Width for Single Isocenter Multiple Metastases Radiosurgery Treatments and the Rotational Impact by Genetic Algorithm in Brainlab Elements™ - C. Venencia*, J. Rojas Lopez, R. Diaz Moreno, S. Zunino

PO-GePV-T-404 Genetic Algorithm and Neural Networks in Radiosurgery for Multiple Metastases - J. Rojas Lopez*, C. Venencia, M. Chesta, F. Tamarit

PO-GePV-T-404 Novel Planning Strategy May Reduce the Risk of Heart Diseases and Radiation Pneumonia: Avoiding the Specific Heart Substructures - A. Feng*, Z. Xu

PO-GePV-T-405 Effect of Dose Calculation Resolution On Monitor Unit in Stereotactic Radiosurgery Planning - H. Jiang*, N. Demez, D. Johnson, D. Soutan, D. Craft, H. Li, R. Badkul

PO-GePV-T-406 Clinical Implementation of BrainLAB's Element Planning System for Intracranial SRS Treatments of Arteriovenous Malformations - N. Shrestha*, G. Narayanasamy, P. Sabouri, F. Kalantari, F. Xia, Z. Su

PO-GePV-T-407 Differences Between AcurosXB and AAA On Collimator Angle in VMAT-SBRT for Lung Tumor - Y. Yamanaka*, K. Inoue, Y. Suetsugu, M. Tateishi, T. Hirose, J. Fukunaga, T. Yoshitake, T. Sasaki, K. Atsumi

PO-GePV-T-408 Impact of Vertex Size in Lattice Spatially Fractionated Radiation Therapy for Pelvic Bulky Tumors - A. Magnoni, E. Donnelly, H. Zhang*

PO-GePV-T-409 Single-Isocenter Multi-Target SRS VMAT Treatment Planning Strategy: When Targets Compete for Limited MLC Beam Apertures - J. Duan*, G. Cui, N. Walls, I. Wang, F. Yin

PO-GePV-T-410 Python Scripting to Identify Target Grouping Optimizations for Multiple Metastasis Treatment Planning - D. Johnson, Z. Xia*

PO-GePV-T-411 A Comparative Dosimetric Study of Spine SABR Using Two MLC Delivery Systems with Pencil Beam and Monte Carlo Algorithms - J. Rahimian*, J. Zhang, J. Vinci

PO-GePV-T-412 Lowering Modulation Factor in Lung SBRT Plans While Observing RTOG Constraints - A. Boria*, G. Narayanasamy, M. Bimali, D. Desai, F. Kalantari, P. Sabouri, Z. Su

PO-GePV-T-413 Calculated Target Dose Differences for Brain Stereotactic Radiosurgery (SRS) Between Two Advanced Dose Algorithms - D. Zheng*, H. Jung, M. Milano, K. Usuki, S. Hardy, S. Tanny, J. Yoon

PO-GePV-T-414 Utility of a Traditional CT Simulation in the Frameless Leksell Gamma Knife (LGK) Icon Workflow - S. Herchko*, S. Yaddanapudi

PO-GePV-T-415 Comparisons of the Dose Calculation Algorithms and the Dosimetric Impact of Titanium Implants in Spinal SBRT Using Three Commercial Treatment Planning Systems - C. Liu*, A. Magnelli, Y. Cho, L. Angelov, E. Balagamwala, S. Chao, P. Xia

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-T-416 Validation and Implementation of a Dedicated Spine Stereotactic Radiosurgery Treatment Planning System - C. Knill*, R. Sandhu, B. Loughery, L. Lin, Z. Seymour, P. Chinnaiyan, T. Quinn, M. Almahariq, R. Deraniyagala

PO-GePV-T-417 A 3D Superposition Approximation for Gamma Knife Dose Calculation - P. Stone*, R. Ramirez, D. Neck, C. Chu, J. Dey, D. Solis

PO-GePV-T-418 Evaluation of Two Treatment Planning Systems for Single Isocenter Multiple Metastases Stereotactic Radiosurgery Treatment Planning and Delivery - W. Johansson, D. Opp, C. Tichacek, B. Libby*, G. Zhang, G. Redler, L. Nardella, S. Wasserman, D. Oliver, T. Robinson, H. Yu, J. Graham

PO-GePV-T-419 A Deep Learning Dose Calculation Model for CyberKnife Circular Beams - H. Li*, F. Zhou, B. Liu, S. Xu, Q. Wu

PO-GePV-T-420 Field Size Definition and Output Factors in Small Field Dosimetry - G. Ding*, I. Das

PO-GePV-T-421 A Comparison of Primary and Secondary Dose Calculation Algorithms for Lung SBRT Targets - J. Pogue*, R. Popple, J. Stahl, R. Sullivan

PO-GePV-T-422 Investigating Shot Within Shot Technique with a Rotating Gamma Machine - A. Eldib*, H. Liu, L. Chen, M. Abdelgawad, M. Sherif, C. Ma

PO-GePV-T-423 Dosimetric Comparison Between Brainlab Elements Planning system 1.5 and 3.0 with Jaw Tracking and Collimator Optimization for Intracranial SRS Treatments - N. Shrestha*, G. Narayanasamy, M. Bimali, P. Sabouri, F. Kalantari, Z. Su

PO-GePV-T-424 Automated Review of MR-Guided Stereotactic Body Radiation Therapy Treatments Using MR-Linac Delivery Log Files - B. Hunt*, G. Gill, M. Rose, P. Schaner, G. Russo, B. Zaki, D. Gladstone, R. Zhang

PO-GePV-T-425 Development of An Elekta VersaHD MLC-Based Trigeminal Neuralgia Program - N. Miksys*, C. Curley, R. Tokarz

PO-GePV-T-426 Adaptive Workflow for Prostate, Seminal Vesicle, and Nodal Volume SBRT On a CBCT Adaptive AI Driven System - E. Laugeman*, A. Price, L. Henke, B. Baumann

PO-GePV-T-427 Institutional Review On Evaluating 6-Degree of Freedom Treatment Couches for Disease-Specific SBRT - K. Lyons*, D. Spratt, V. Colussi, R. Kashani, C. Langmack

PO-GePV-T-428 Dosimetric Comparison of Adaptive Breast SBRT On ETHOS Platform - K. McConnell*, C. Cardenas, J. Belliveau, H. Boggs, R. Popple, D. Stanley

PO-GePV-T-428 Active Breathing Control and Four-Dimension Cone-Beam CT Guided SBRT for Mono-Isocenter Multiple Pulmonary Metastases Using Target-Tracking-Optimization Technique - C. Gong*, Y. Zhang

PO-GePV-T-429 Volume Staging for Arteriovenous Malformation SRS Treatment Using Volumetric Modulated Arc Therapy - C. Mendez*, E. Gete

PO-GePV-T-430 Dosimetric Accuracy of 6DoF Robotics for SRS Motion Management - D. Holloman*, A. Sakaamini, X. Liu, S. Yoon, T. Li, R. Wiersma

PO-GePV-T-431 Motion Dose Application (MoDoC) to Calculate Dosimetric Impact of Intra-Fraction Motion for SBRT Prostate Patients - L. Happersett*, S. Burleson, M. Zelefsky, P. Zhang, P. Wang, L. Jacobs, A. Damato

PO-GePV-T-432 Using Kilovoltage Triggered Imaging to Improve Intrafraction Motion Management for Free Breathing and Breath Hold Lung Stereotactic Body Radiation Therapy - M. Moazzezi*, P. Xia, K. Stephans, B. Guo

PO-GePV-T-433 Comparison of the Dose Distribution to Organs at Risk for Right and Left Lung Tumors From SBRT Radiation Treatments Created for Trilogy and Radixact Treatment Machines - A. Kumari*, S. Klash

PO-GePV-T-434 Development of a Program to Perform Automatic Shielding Evaluation Using Patient Data - D. Choi*, S. Ahn, D. Kim, S. Choi, Y. Jang, N. KWON, J. Seok, S. Park, W. Ahn, J. Kim

PO-GePV-T-435 Quantification of Reactive Oxygen Species Using Polyvinyl Alcohol Coated Gold Nanoparticles - N. Charchi*, P. Nath, K. Xie, E. Parsai, A. Ray, D. Shvydka

2022 Annual Meeting Calendar of Events (General ePoster Viewing)

MEDICAL PHYSICS

General ePoster Viewing (GePV)

PO-GePV-T-436 Cell Morphometry for Advancing Nanoparticle-Mediated Radiotherapy Against Glioblastoma - E. Jank*, O. Salas, A. Benoit, Y. Walter, A. Hubbard, A. Ekpenyong
PO-GePV-T-437 Nanoparticles Enhance Radiosensitivity and Improve Chemoradiotherapy for Brain Tumors - A. Hubbard*, O. Salas, E. Jank, A. Benoit, D. Jordan, Y. Walter, C. Thiels, A. Ekpenyong
PO-GePV-T-438 Characterization of a Novel Irradiation Method for Small Animal Radiotherapy Using a Monte Carlo Method - A. Entezam*, A. Fielding, D. Fontanarosa
PO-GePV-T-439 Applying Optical Reporters of Radiation Damage to Ex Vivo Tissue Models - W. Thomas*, J. Sunnerberg, M. Reed, B. Pogue
PO-GePV-T-440 Dosimetry Equivalence Between X-Ray and Gamma-Ray Irradiation with Validated Monte Carlo Simulations - J. Caravaca Rodriguez*, R. Peter, J. Camara Serrano, C. Nostrand, V. Steri, C. Gunther, Y. Seo, J. Yang
PO-GePV-T-441 Effect of High-Dose-Rate Irradiation on Cell Survival: Simple Investigation of Cultured Cells - M. Kurimoto*, K. Yasui, T. Watanabe, H. Yanagi, Y. Saito, S. Ogawa, N. Hayashi, S. Hayashi
PO-GePV-T-442 X-Ray Beam Characterization of the CellRad X-Ray Irradiator Using Plane-Parallel Ionization Chamber and X-Ray Beam Analyzer - J. Cabahug*, S. Tatu, B. Lo, C. Feliciano
PO-GePV-T-443 Commissioning of a Commercial Orthovoltage Small-Animal and Cell Irradiator - J. Van Schelt*, K. Jones, B. David, Y. Liao, E. Blazek
PO-GePV-T-444 Evaluation of Normal Tissue Response to Pulsed Low-Dose-Rate Radiotherapy (PLDR) - T. Dos Santos*, D. Cvetkovic, D. Yang, L. Chen, C. Ma
PO-GePV-T-445 New Role of Therapy for Deceleration of Tumor Phenotype Progression - J. Joo*
PO-GePV-T-446 A Simulation Study on the Radiation-Induced Immune-Response of Tumor After Radiosurgery Using an Improved Cellular Automata Model - D. Kawahara*, Y. Nagata, Y. Watanabe

General ePoster Viewing (GePV)

PO-GePV-T-447 Computational Modelling of Impedance Based Cell Migration for Improved Chemotherapy and Radiotherapy - M. Schwengler*, B. Ibrinke, K. Lemke, A. Walther, A. Ekpenyong
PO-GePV-T-448 The Use of the Normal Tissue Non-Complication Probability (NTCP0) in the Safety Evaluations as a New Alternative of Assessing the Side-Effects of the Radiation Oncology Treatments - T. Frometa-Castillo*, A. Pyakuryal, G. Narayanasamy, A. Mesbahi
PO-GePV-T-449 Characterization of the Relative Biological Effectiveness of a Range of Photon Energies for Irradiation of HeLa and PC-3 Cell Lines - N. Chabaytah*, J. Babik, B. Behmand, R. Ruot, T. Connell, Y. Poirier, M. Evans, S. Abbasinejad Enger
PO-GePV-T-450 High Resolution XACT Imaging for Precision Radiotherapy - K. Bjegovic*, S. Wang, R. Liu, A. Liu, T. Kim, L. Xiang
PO-GePV-T-451 Non-Contact Detection of Radiation-Induced Acoustic Emissions - K. Kim*, T. Kim, N. Katta, K. Duong, S. Bobba, T. Milner, L. Xiang
PO-GePV-T-452 Acute Breast Toxicity Evaluations with a Breast Ultrasound Scoring Scheme - J. Wang*, B. Zhou, X. Yang, J. Lin, K. Godette, S. Kahn, M. Torres, T. Liu
PO-GePV-T-452 An Apparatus for High Dose Rate Brachytherapy Irradiation of Microcentrifuge Tubes - T. Klender*, S. David, C. Cochran, K. Mayer, N. Kirby
PO-GePV-T-465 Patient-Specific Dosimetry, by Using Dose Point Kernel of 177Lu/90Y Cocktail Radionuclide - M. Peer-Firozjaei, M. Tajik-Mansoury*
PO-GePV-T-466 Dosimetric Evaluation of Tumor Therapy Using 177Lu and 90Y - M. Peer-Firozjaei, M. Tajik-Mansoury*, A. Rahmim
PO-GePV-T-467 Real-Time Per-Voxel Constraints Can Efficiently and Effectively Minimize Hot Spots in Linear-Energy-Transfer-Guided Robust Optimization for Base-Of-Skull Patients in IMPT - H. Feng*, J. Shan, J. Anderson, W. Wong, S. Schild, R. Foote, C. Patrick, K. Tinnon, M. Fatyga, M. Bues, S. Patel, W. Liu

Abstracts accepted for the 2022 AAPM Annual Meeting may be viewed via the AAPM Annual Meeting website and the online June issue of *Medical Physics*.