UNIVERSITY *of* MARYLAND
RADIATION ONCOLOGY

4th ANNUAL
DEPARTMENT OF RADIATION ONCOLOGY
RESEARCH SYMPOSIUM

Friday, March 27, 2026 | 11:00 AM-5:45 PM

SMC Campus Center, Rooms 208 and 210

Featuring:

Poster Session

Keynote Speaker

Tarek N. Hanna, MD

Professor, Dean John M. Dennis Chair & Chief of

Diagnostic Radiology and Nuclear Medicine

University of Maryland Medical Center

Oral Research Presentations

Seed Grant Awardee Presentation

Award Presentations

Awards given out for top 3 best posters and top 3 best talks

Reception

X

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4TH ANNUAL UNIVERSITY OF MARYLAND DEPARTMENT OF RADIATION ONCOLOGY RESEARCH SYMPOSIUM

March 27, 2026

11:00 AM – 5:45 PM EST

SMC Campus Center at UMB

11:00 - 11:30 a.m.	Registration	Pre-Function Area
11:30 a.m. – 12:45 p.m.	Poster Viewing Session & Light Lunch	Elm Ballroom
12:45 – 12:55 p.m.	*Research Symposium Overview* William F. Regine, MD, FACR, FASTRO, FACRO Chair and Distinguished Professor Department of Radiation Oncology	Elm Ballroom
12:55 – 1:00 p.m.	*Director's Welcome & Speaker Introductions* Amit Sawant, PhD, Research Symposium Director Professor and Vice Chair for Medical Physics Department of Radiation Oncology	Elm Ballroom
1:00 – 1:30 p.m.	*Imaging the Future: Disruptive Innovation in Radiology* Tarek N. Hanna, MD, FASER, Keynote Speaker Dean John M. Dennis Chair and Professor Department of Diagnostic Radiology and Nuclear Medicine	Elm Ballroom
1:30 – 2:30 p.m.	BIOLOGY SESSIONS	Elm Ballroom
1:30 – 1:45 p.m.	*A Novel TOP1 Trapping Mechanism for Lurbinectedin Drives Synergy with Topotecan in Small Cell Lung Cancer* Tessa Maidens, BS Student, Graduate Program in Life Sciences	Elm Ballroom
1:45 – 2:00 p.m.	*Effect of Acute High Dose TBI on RBC Dysfunction and Erythropoiesis in C57BL/6J Mice* Sarayu Valluri, BS Student, School of Medicine	Elm Ballroom

2:00 – 2:15 p.m.	*Deciphering the Code: Biologic Pathways Underlying Multimodal Digital-Pathology Artificial Intelligence in Metastatic Prostate Cancer* Amol Shetty, PhD, MS Bioinformatics Software Engineer Manager Institute for Genome Sciences	Elm Ballroom
2:15 – 2:30 p.m.	*Prophylactic eFLASH Lung Radiotherapy Inhibits Growth of Lung Metastases and Prolongs Survival in a Murine Soft-Tissue Sarcoma Model* Yomna Khamis, MD Medical Resident Department of Radiation Oncology	Elm Ballroom
2:30 – 2:50 p.m.	**Break**	Elm Ballroom & Pre-Function Area
2:50 – 3:50 p.m.	**PHYSICS SESSIONS**	Elm Ballroom
2:50 – 3:05 p.m.	*Non-Toxic 3D Printed Shells with Tungsten BBs: A Modern Alternative to Cerrobend for Electron Cutouts* Juan Chen, PhD Medical Physics Resident Department of Radiation Oncology	Elm Ballroom
3:05 – 3:20 p.m.	*Automated Topology-Aware Lung Airway Labeling* Hairong Chen, PhD Postdoctoral Fellow Department of Radiation Oncology	Elm Ballroom
3:20 – 3:35 p.m.	*Fetal Neutron Dose Reduction by a Novel Planning Modification in Proton Pencil Beam Scanning* David Alicia Senior Dosimetrist Department of Radiation Oncology	Elm Ballroom
3:35 – 3:50 p.m.	*When the Code Looks Right but the Results Are Wrong: How AI-Assisted Debugging Caused a Hidden Error in a Medical Data Pipeline* Birjoo Vaishnav, PhD, DABR Assistant Professor Department of Radiation Oncology	Elm Ballroom
3:50 – 4:50 p.m.	**CLINICAL SESSIONS**	Elm Ballroom
3:50 – 4:05 p.m.	*Toxicity Outcomes and Patterns of Failure after Whole vs Partial Gland HDR Brachytherapy as Salvage Treatment for Recurrent Prostate Cancer* Paul Armstrong, MD Medical Resident Department of Radiation Oncology	Elm Ballroom

4:05 – 4:20 p.m.	*Five-Fraction Stereotactic Partial Breast Irradiation (S-PBI) for Early-Stage Breast Cancer* **Olivia Cong, BS** Student, School of **Medicine**	Elm Ballroom
4:20 – 4:35 p.m.	*Estimating Neurocognitive Failure in the Presence of Competing Mortality: Kaplan–Meier and Competing-Risk Analyses from NRG CC001* **Reza Zarinshenas, MD** Medical Resident Department of Radiation Oncology	Elm Ballroom
4:35 – 4:50 p.m.	*Comparison of Urinary Toxicity in Prostate Cancer Patients Undergoing External Beam Radiation Therapy With High-Dose vs. Low-Dose Brachytherapy Boost* **Catherine Drovetsky, BA** Student, School of Medicine	Elm Ballroom
4:50 – 5:10 pm	**Break**	Elm Ballroom
5:10 – 5:20 p.m.	*Seed Grant Awardee* **Alexander Allen, MD** Medical Resident Department of Radiation Oncology	Elm Ballroom
5:20 – 5:45 p.m.	*Closing Remarks & Awards Presentation* **Amit Sawant, PhD, Research Symposium Director** Professor and Vice Chair for Medical Physics Department of Radiation Oncology	Elm Ballroom
5:45 p.m.	**Adjourn & Networking Reception**	2nd Floor Cafe

Keynote Speaker

Tarek N. Hanna, MD

Tarek Hanna, MD is the Dean John M. Dennis Professor and Chair of the Department of Diagnostic Radiology and Nuclear Medicine at the University of Maryland School of Medicine and Chief of Radiology at the University of Maryland Medical Center. Dr. Hanna is committed to national service and leadership in radiology. He serves on the Board of Directors of the American Society of Emergency Radiology (ASER) and Chairs of the Emergency Radiology Committee of the American College of Radiology (ACR). A dedicated educator, Dr. Hanna previously served for five years as Program Director of the Emergency and Trauma Imaging Fellowship at Emory University, mentoring numerous medical students, residents, fellows, and junior faculty throughout his academic career. Dr. Hanna has authored or co-authored more than 125 scientific abstracts and 85 peer-reviewed publications. His research focuses on emergency department imaging utilization, reducing diagnostic errors, and advancing best practices in emergency radiology.

Award Presentation

Awards will be given out to the top 3 Oral and Poster Presentations

Top 3 Oral Presentation Prizes:

1st Winner - $500

2nd Winner - $400

3rd Winner - $300

Top 3 Poster Presentation Prizes:

1st Winner - $250

2nd Winner - $150

3rd Winner - $100

A digital copy of each poster can be viewed via DropBox!

#	Presenter Name	Abstract Title - Biology	Senior Author(s)/ Principal Investigator(s)
1	Chayu Yang, PhD	Tumor Organoids Modeling Reveals Timed Responses and Interplay of Radiotherapy and Chemotherapy in Pancreatic Cancer	Lei Ren, PhD
2	Daniel Pyo	Clinical Validation of the Role of Caveolin-1 as a Biomarker for Chemoradiation Resistance in Non-Small Cell Lung Cancer	Hem Shukla, PhD
3	Hem D Shukla, PhD	Coculture of pancreatic cancer patients derived tumor organoids with cancer associated fibroblasts (CAFS) enhances radiation and chemotherapy resistance and mimic as stromal barrier.	Hem Shukla, PhD
4	Salaheldeen Elsaid, PhD	Hijacking Sodium–Glucose Cotransporters: Fructose Drives Neuronal and Microglial Dysfunction.	Sui-Seng Tee, PhD
5	Shalini Sharma, PhD	Radiolabeling of human mesenchymal stem cells for intra-arterial brain delivery	Miroslaw Janowski, MD, PhD
6	Shriya Madan, MS	Boosted Osmotic Blood-Brain Barrier Opening Enhances Intra-Arterial Trastuzumab Delivery in Breast Cancer Brain Metastases	Miroslaw Janowski, MD, PhD
#	Presenter Name	Abstract Title - Clinical	Senior Author(s)/ Principal Investigator(s)
7	Adeniyi Olabumuyi, MBBS	Pre-Treatment Multi-Sequence MRI Radiomics for Predicting Pathologic Complete Response in Sarcoma Patients Treated by Radiation Therapy	Jason Molitoris, MD, PhD
8	Alexander Allen, MD	Hypofractionated and Stereotactic Body Proton Radiotherapy for a High-Risk Lung Cancer Cohort: A Multi-Institutional Experience from the Proton Collaborative Group Prospective Registry	Matthew Ferris, MD
9	Apurva Singh, PhD	Prediction of metastasis-free survival in patients with localized prostate adenocarcinoma using delta radiomics from PSMA-PET/CT scans and dosiomics.	Lei Ren, PhD
10	Ashraf Youssef, MD	Instant 3D Dose Calculation of The Effect of 5mm of Intraprostatic Calcification on Dose Distribution in Permanent Prostate Seed Implant.	Ashraf Youssef, MD
11	Delara Rajabi Abhari, MPH	Somatic Genetic Variants as Predictors for Radiation-Induced Short and Long-Term Toxicity in Head and Neck Cancers	Jason Molitoris, MD, PhD

#	Presenter Name	Abstract Title	Senior Author(s)/ Principal Investigator(s)
12	Jay Clark, DO	A Precision Medicine Navigator Can Mitigate Disparities Associated with Utilization of Genomic Tests: A Multi-Institutional	Jason Molitoris, MD, PhD
13	Olivia Cong	Single Fraction Boost Prior to Whole Breast Radiation Using Stereotactic Partial Breast Irradiation (S-PBI) for Early-Stage Breast Cancer	Elizabeth Nichols, MD
14	Patrick McGinnis, BS	End-of-Life Ethics Consultations in Radiation Oncology: An Analysis of Decision-Making, Medical Futility, and Goals of Care	Henry Silverman, MD, MA
15	Sarayu Valluri, BS	Genomic Analysis of Clinical Outcomes in p16-Postive Oropharyngeal Cancer and Identification of Low Frequency High-Risk Mutations	Jason Molitoris, MD, PhD
16	Travis Hoover, MD	Predictors of Heterotopic Ossification After Acetabular Fixation: Secondary Analysis of a Randomized Trial of Prophylactic Radiation	Mark Mishra, MD
17	Travis Hoover, MD	Proton therapy for definitive treatment of laryngeal and hypopharyngeal cancer: a report from the Proton Collaborative Group (PCG) registry	Matthew Ferris, MD
18	Yomna Khamis, MD	Preoperative radiation therapy with concurrent superficial hyperthermia for soft tissue sarcoma: long-term outcomes, toxicity, and surgical complications	Jason Molitoris, MD, PhD
#	Presenter Name	Abstract Title - Physics	Senior Author(s)/ Principal Investigator(s)
19	Ajay Banskota, CMD	Impact of Energy Layer Spacing on Treatment Delivery Time and Plan Quality in Intensity-Modulated Proton Therapy for Breath-Hold Cancer Patients	Sina Mossahebi, PhD
20	Arezoo Modiri, PhD	Scalability of Quantum Optimization for Proton Therapy Planning	Robabeh Rahimi, PhD & Amit Sawant, PhD
21	Birjoo Vaishnav, PhD	Understanding the Impact of Real World CT Variations on Deep Learning Dose Prediction for Head and Neck Treatment	Birjoo Vaishnav, PhD

22	Dennis Herschbach	An Automated Film Analysis Pipeline Using a 3D-Printed Phantom to Verify Dose Calculations in Breast Stereotactic Radiotherapy	Stewart Becker, PhD
23	Dennis Herschbach	Comparison of Delivery-Based Strategies for Reducing Voxel-Wise Dose Rate in Pencil Beam Scanning Proton Therapy	Sina Mossahebi, PhD
24	Ershad Hassanpour Golagani	Wavelet-Regularized Subspace Reconstruction for Highly Accelerated Multi-Echo ASL MRI	Ze Wang, PhD
25	Farshad Safavi, PhD	Clinical Integration of a Nozzle-Mounted Quad-Camera Prompt Gamma Imaging for Proton Range Verification	Lei Ren, PhD
26	Hajar Moradmand, PhD	Impact of Class-Imbalance Handling on Discrimination and Calibration in Multicenter Radiomic Survival Models	Lei Ren, PhD
27	Huijun Xu, PhD	Leadership-Driven, Multi-Physicist Teaching Model to Enhance Radiation Oncology Resident Physics Education and Faculty Development	Sarah McAvoy, MD
28	Jie Zhang, PhD	Sparse-View 4D-CBCT Enhancement via Deep Learning with Integrated Interpolation and Motion Compensation	Lei Ren, PhD
29	Rahim Chowdhury, DABR	Adversarial Perturbation Analysis for Robustness Testing of Deep Learning–Based Radiation Therapy Dose Prediction	Birjoo Vaishnav, MD
30	Rahim Chowdhury, DABR	Efficient Uncertainty Aware Evaluation of Radiation Therapy Plans with Surrogate Models	Birjoo Vaishnav, MD
31	Sina Mossahebi, PhD	Direct Proton-Measurement Validation of Dual Energy CT-Derived SPR Across a Wide Range of Ex-Vivo Biological Tissues	Sina Mossahebi, PhD & Jason Molitoris, MD, PhD
32	Sina Mossahebi, PhD	Initial Evaluation of the RAVIN CAM System for Identification of Proton-Induced Activation in a Clinical Proton Therapy Facility	Sina Mossahebi, PhD

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