

**UNIVERSITY OF MARYLAND DEPARTMENT OF RADIATION ONCOLOGY
23rd ANNUAL DR. KARL PRADO PHYSICS & RADIOBIOLOGY REVIEW COURSE**

Physics - Monday, May 11, 2026 (day 1)

7:50 - 7:55 AM EDT	Sarah McAvoy, MD , Vice Chair for Education and Associate Professor of Radiation Oncology, University of Maryland School of Medicine	Welcome Remarks from the Vice Chair of Education
7:55 - 8:00 AM EDT	Amit Sawant, PhD , Vice Chair for Medical Physics and Professor of Radiation Oncology, University of Maryland School of Medicine	Opening Remarks - Physics Portion Course Director
8:00 - 9:00 AM EDT	Stewart Becker, PhD , Associate Professor of Radiation Oncology, University of Maryland School of Medicine	Dose Ratios and Accelerator Monitor-Unit Calculations
9:00 - 10:00 AM EDT	Michael J. MacFarlane, PhD , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Radiation Safety, Protection, Shielding and Quality Assurance
10:00 - 10:10 AM EDT	Break	
10:10 - 11:10 AM EDT	Junliang Xu, PhD , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Electron Beams and Interactions
11:10 AM - 12:25 PM EDT	Todd McNutt, MS, PhD , Associate Professor and Director of Clinical Informatics, Department of Radiation Oncology and Molecular Radiation Sciences, Johns Hopkins University School of Medicine	Advanced Treatment Planning (Advanced Dose Calculation Algorithms, MLCs, Inverse Planning, IMRT, Treatment Plan Optimization: Physical and Biological)
12:25 - 12:55 PM EDT	Lunch Break	
12:55 PM EDT	Rejoin the Meeting	
12:55 - 1:55 PM EDT	Steven Bartolac, PhD , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Photon Interactions in Matter
1:55 - 2:55 PM EDT	Stewart Becker, PhD , Associate Professor of Radiation Oncology, University of Maryland School of Medicine	Special and Advanced Treatment Procedures (SRS, SBRT, TBI)
2:55 - 3:05 PM EDT	Break	
3:05 - 4:05 PM EDT	Yushi Chang, PhD , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Brachytherapy
4:05 - 4:35 PM EDT	Sina Mossahebi, PhD , Associate Professor of Radiation Oncology, University of Maryland School of Medicine	Proton Beam Therapy
4:35 - 5:35 PM EDT	Chaitanya Kalavagunta, PhD , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Patient Simulation and Classical Treatment Planning

Physics (AM) - Wednesday, May 13, 2026 (day 2)		
8:00 - 9:00 AM EDT	Jochen Cammin, PhD , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Medical Imaging and its Applications in Radiotherapy
9:00 - 10:00 AM EDT	Birjoo Vaishnav, PhD , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Linear Accelerators and Radiation Producing Machines
10:00 - 10:10 AM EDT	Break	
10:10 - 11:25 AM EDT	Yannick Poirier, PhD , Associate Professor of Radiation Oncology, University of Maryland School of Medicine	Radiation Detection and Measurement
11:25 AM - 11:55 AM EDT	Lei Ren, PhD , Associate Chief of Physics Research and Professor of Radiation Oncology, University of Maryland School of Medicine	Clinical Applications of AI in Radiotherapy
11:55 AM - 12:00 PM EDT	Amit Sawant, PhD , Vice Chair for Medical Physics and Professor of Radiation Oncology, University of Maryland School of Medicine	Closing Remarks - Physics Portion Course Director
12:00 - 12:30 PM EDT	Lunch Break	
12:30 PM EDT	Rejoin the Meeting	
Radiobiology (PM) - Wednesday, May 13, 2026 (day 2)		
12:30 - 12:35 PM EDT	France Carrier, PhD , Director of Translational Radiation Sciences and Professor, Department of Radiation Oncology, University of Maryland School of Medicine	Opening Remarks - Radiobiology Portion Course Director
12:35 - 1:35 PM EDT	Hem Shukla, PhD , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Cancer and Molecular Signaling
1:35 - 2:35 PM EDT	Ioannis Verginadis, PhD , Research Assistant Professor of Radiation Oncology, University of Pennsylvania Perelman School of Medicine	Radiation-Induced Hereditary Effects, Teratogenesis and Radiation Protection
2:35 - 2:45 PM EDT	Break	
2:45 - 3:55 PM EDT	France Carrier, PhD , Director of Translational Radiation Sciences and Professor, Department of Radiation Oncology, University of Maryland School of Medicine	Radiosensitizers, Radioprotectors, Bio-Reductive Drugs and ChemoRadiation Strategies
3:55 - 4:55 PM EDT	Michael Kim, MD , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Immunotherapy

Radiobiology - Wednesday, May 20, 2026 (day 3)		
8:00 - 9:15 AM EDT	Elaine Zeman, PhD , Adjunct Professor of Radiation Oncology, University of North Carolina at Chapel Hill School of Medicine	Radiation Induced DNA Damage and Repair & Chromosome Aberrations
9:15 - 10:15 AM EDT	Gayle Woloschak, PhD , Associate Dean for Graduate Student and Postdoctoral Affairs, Professor of Radiation Oncology and Radiology, Feinberg School of Medicine - Northwestern University	Cell Cycle, Cell & Tissue Kinetics, SLDR/ PLDR
10:15 - 10:25 AM EDT	Break	
10:25 - 11:40 AM EDT	Elaine Zeman, PhD , Adjunct Professor of Radiation Oncology, University of North Carolina at Chapel Hill School of Medicine	The Tumor Microenvironment
11:40 AM - 12:40 PM EDT	Gayle Woloschak, PhD , Associate Dean for Graduate Student and Postdoctoral Affairs, Professor of Radiation Oncology and Radiology, Feinberg School of Medicine - Northwestern University	Cell Survival Curves
12:40 - 1:10 PM EDT	Lunch Break	
1:10 PM EDT	Rejoin the Meeting	
1:10 - 2:10 PM EDT	Theresa M. Busch, PhD , Research Professor of Radiation Oncology, Co-Director, Radiobiology and Imaging Program at Abramson Cancer Center, Vice Chair of Biology Research, University of Pennsylvania Perelman School of Medicine	Linear Energy Transfer, Relative Biological Effectiveness, and Oxygen Effect: Radiobiology Behind Hadron Radiotherapy (<i>pre-recorded</i>)
2:10 - 3:10 PM EDT	Minesh Mehta, MD , Professor and John and Mary Lou Dasburg Endowed Chair, Department of Oncological Sciences, Florida International University Herbert Wertheim College of Medicine, Deputy Director, Chief of Radiation Oncology, Baptist Health Miami Cancer Institute	Radiobiological Aspects of Alternative Delivery Strategies: Radiosurgery, Proton Therapy, Neutron Therapy
3:10 - 4:10 PM EDT	Elaine Zeman, PhD , Adjunct Professor of Radiation Oncology, University of North Carolina at Chapel Hill School of Medicine	Time, Dose, Fractionation, and the Therapeutic Ratio
4:10 - 4:20 PM EDT	Break	
4:20 - 5:20 PM EDT	Reed McDonagh, MD, PhD , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Normal Tissue Damage - Total Body Irradiation
5:20 - 5:25 PM EDT	France Carrier, PhD , Director of Translational Radiation Sciences and Professor, Department of Radiation Oncology, University of Maryland School of Medicine	Closing Remarks - Radiobiology Portion Course Director