

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

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

7:55 - 8:00 AM EDT	<b>Amit Sawant, PhD</b> , 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	<b>Stewart Becker, PhD</b> , Associate Professor of Radiation Oncology, University of Maryland School of Medicine	Dose Ratios and Accelerator Monitor-Unit Calculations
9:00 - 10:00 AM EDT	<b>Michael J. MacFarlane, PhD</b> , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Radiation Safety, Protection, Shielding and Quality Assurance
10:00 - 10:10 AM EDT	<b>Break</b>	
10:10 - 11:10 AM EDT	<b>Junliang Xu, PhD</b> , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Electron Beams and Interactions
11:10 AM - 12:25 PM EDT	<b>Todd McNutt, MS, PhD</b> , 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	<b>Lunch Break</b>	
12:55 PM EDT	<b>Rejoin the Meeting</b>	
12:55 - 1:55 PM EDT	<b>Steven Bartolac, PhD</b> , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Photon Interactions in Matter
1:55 - 2:55 PM EDT	<b>Stewart Becker, PhD</b> , 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	<b>Break</b>	
3:05 - 4:05 PM EDT	<b>Yushi Chang, PhD</b> , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Brachytherapy
4:05 - 4:35 PM EDT	<b>Sina Mossahebi, PhD</b> , Associate Professor of Radiation Oncology, University of Maryland School of Medicine	Proton Beam Therapy
4:35 - 5:35 PM EDT	<b>Chaitanya Kalavagunta, PhD</b> , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Patient Simulation and Classical Treatment Planning

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**Physics (AM) - Wednesday, May 13, 2026 (day 2)**

8:00 - 9:00 AM EDT	<b>Jochen Cammin, PhD</b> , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Medical Imaging and its Applications in Radiotherapy
9:00 - 10:00 AM EDT	<b>Birjoo Vaishnav, PhD</b> , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Linear Accelerators and Radiation Producing Machines
10:00 - 10:10 AM EDT	<b>Break</b>	
10:10 - 11:25 AM EDT	<b>Yannick Poirier, PhD</b> , Associate Professor of Radiation Oncology, University of Maryland School of Medicine	Radiation Detection and Measurement
11:25 AM - 11:55 AM EDT	<b>Lei Ren, PhD</b> , Professor, Associate Chief of Medical Physics Research, Department of Radiation Oncology, University of Maryland School of Medicine	Clinical Applications of AI in Radiotherapy
11:55 AM - 12:00 PM EDT	<b>Amit Sawant, PhD</b> , 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	<b>Lunch Break</b>	
12:30 PM EDT	<b>Rejoin the Meeting</b>	
<b>Radiobiology (PM) - Wednesday, May 13, 2026 (day 2)</b>		
12:30 - 12:35 PM EDT	<b>France Carrier, PhD</b> , 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	<b>Jason K. Molitoris, MD, PhD</b> , Associate Professor of Radiation Oncology, University of Maryland School of Medicine	Cancer and Molecular Signaling (pre-recorded)
1:35 - 2:35 PM EDT	<b>Ioannis Verginadis, PhD</b> , 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	<b>Break</b>	
2:45 - 3:55 PM EDT	<b>France Carrier, PhD</b> , 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	<b>Michael Kim, MD</b> , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Immunotherapy

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**Radiobiology - Wednesday, May 20, 2026 (day 3)**

8:00 - 9:15 AM EDT	<b>Elaine Zeman, PhD</b> , 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	<b>Gayle E. Woloschak, PhD</b> , Associate Dean for Graduate Student and Postdoctoral Affairs, Professor of Radiation Oncology and Radiology, Northwestern University Feinberg School of Medicine	Cell Cycle, Cell & Tissue Kinetics, SLDR/ PLDR
10:15 - 10:25 AM EDT	<b>Break</b>	
10:25 - 11:40 AM EDT	<b>Elaine Zeman, PhD</b> , 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	<b>Gayle Woloschak, PhD</b> , 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	<b>Lunch Break</b>	
1:10 PM EDT	<b>Rejoin the Meeting</b>	
1:10 - 2:10 PM EDT	<b>Theresa M. Busch, PhD</b> , Research Professor, Vice Chair of Biology Research, Department of Radiation Oncology, Co-Director, Radiobiology and Imaging Program at Abramson Cancer Center, 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	<b>Minesh Mehta, MD, FASTRO</b> , John and Mary Lou Dasburg Endowed Chair, Deputy Director, and Chief, Department of Radiation Oncology, Baptist Health Miami Cancer Institute Chair and Professor, Department of Oncological Sciences, Florida International University Herbert Wertheim College of Medicine	Radiobiological Aspects of Alternative Delivery Strategies: Radiosurgery, Proton Therapy, Neutron Therapy
3:10 - 4:10 PM EDT	<b>Elaine Zeman, PhD</b> , 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	<b>Break</b>	
4:20 - 5:20 PM EDT	<b>Reed McDonagh, MD, PhD</b> , Assistant Professor of Radiation Oncology, University of Maryland School of Medicine	Normal Tissue Damage - Total Body Irradiation
5:20 - 5:25 PM EDT	<b>France Carrier, PhD</b> , Director of Translational Radiation Sciences and Professor, Department of Radiation Oncology, University of Maryland School of Medicine	Closing Remarks - Radiobiology Portion Course Director