

**UNIVERSITY OF MARYLAND DR. KARL PRADO PHYSICS & RADIOBIOLOGY REVIEW
VIRTUAL COURSE QUESTION & ANSWER PROGRAM**

Radiobiology - May 13, 2022

7:30 - 8:00 AM ET	All Speakers	Zoom Setup
8:00 - 8:05 AM ET	Amit Sawant, PhD / France Carrier, PhD	Opening Remarks
8:10 - 8:25 AM ET	Richard C. Miller, PhD	Cell Survival Curves
8:30 - 8:45 AM ET	David J. Grdina, PhD	LET, RBE, and OER
8:50 - 9:05 AM ET	David J. Grdina, PhD	Protectors, Sensitizers, Bioreductive Drugs and ChemoRadiation Strategies
9:10 - 9:25 AM ET	Elaine Zeman, PhD	Radiation Induced DNA Damage and Repair & Chromosome Aberrations
9:30 - 9:45 AM ET	Elaine Zeman, PhD	Time, Dose, Fractionation & The Therapeutic Ratio
9:50 - 10:05 AM ET	Elaine Zeman, PhD	The Tumor Microenvironment
10:10 - 10:25 AM ET	Elaine Zeman, PhD	Radiation-Induced Hereditary Effect, Teratogenesis and Radiation Protection
10:25 - 10:40 AM ET	Break	
10:40 - 10:55 AM ET	Richard C. Miller, PhD	Cell Cycle, Cell & Tissue Kinetics, SLDR/ PLDR
11:00 - 11:15 AM ET	Minesh Mehta, M.B.Ch.B., FASTRO	Radiobiological Aspects of Alternative Delivery Strategies: Radiosurgery and Proton Therapy
11:20 - 11:35 AM ET	Jason Molitoris, MD, PhD	Cancer and Molecular Signaling
11:40 - 11:55 AM ET	Zeljko Vujaskovic, MD, PhD	Radiation Induced Normal Tissue Damage
12:00 - 12:15 PM ET	Isabel Lauren Jackson, PhD	Medical Aspects of Acute, Total Body Radiation Exposure
12:20 - 12:35 PM ET	Matthew Ferris, MD	Immunotherapy
12:35 - 1:20 PM ET	Lunch Break	
1:15 - 1:20 PM ET	Attendees rejoin Zoom sessions	
Physics - May 13, 2022		
1:20 - 1:35 PM ET	Scott Hadley, PhD	X-ray Interactions
1:40 - 1:55 PM ET	Scott Hadley, PhD	Electron Beams and Interactions
2:00 - 2:15 PM ET	Yannick Poirier, PhD	Radiation Detection and Measurement
2:20 - 2:35 PM ET	Amit Sawant, PhD	Medical Imaging and its Applications in Radiotherapy
2:40 - 2:55 PM ET	Sina Mossahebi, PhD	Proton Beam Therapy
3:00 - 3:15 PM ET	Yannick Poirier, PhD	Linear Accelerators and Radiation Producing Machines
3:15 - 3:30 PM ET	Break	
3:30 - 3:45 PM ET	Chaitanya Kalavagunta, PhD	Patient Simulation and Classical Treatment Planning
3:50 - 4:05 PM ET	Arun Gopal, PhD	Radiation Safety, Protection, Shielding and Quality Assurance
4:10 - 4:25 PM ET	Todd McNutt, PhD, FAAPM	Advanced Treatment Planning (Advanced Dose Calculation Algorithms, MLCs, Inverse Planning, IMRT, Treatment Plan Optimization: Physical and Biological)
4:30 - 4:45 PM ET	Stewart Becker, PhD	Special and Advanced Treatment Procedures (SRS, SBRT, TBI)
4:50 - 5:05 PM ET	Arun Gopal, PhD	Brachytherapy
5:10 - 5:25 PM ET	Lei Ren, PhD	Clinical Applications of AI in Radiotherapy
5:30 - 5:45 PM ET	Stewart Becker, PhD	Dose ratios and Accelerator Monitor-Unit Calculations (pre-recorded talk by Dr. Karl Prado, PhD, FACR, FAAPM)
5:45 - 5:50 PM ET	Amit Sawant, PhD	Closing Remarks