MEDICAL APPLICATIONS
MONDAY APRIL 8, 2019 (AFTERNOON)

1:45 PM – 3:15 PM
LECTURE ROOM A

**Session Title:** Measurement Needs for Validating Dosimetry Methods for Epidemiological Studies of Health Risks Following Radiotherapy

**Session Chair:** Dr. Matthew Mille, National Cancer Institute, National Institutes of Health

Dr. Jeremy Polf, University of Maryland
*Calibrating CT scanners for Patient Dose Calculations in Proton Beam Radiotherapy*

Dr. Matthew Mille, National Cancer Institute, National Institutes of Health
*Out-of-Field Dose Reconstruction for Studies of Health Risks Following Photon Radiotherapy When DICOM-RT Files Are Available*

Dr. David Borrego, National Cancer Institute, National Institutes of Health
*Out-of-Field Dose Reconstruction for Studies of Health Risks Following Photon Radiotherapy When DICOM-RT Files Are Not Available*

Dr. Choonsik Lee, National Cancer Institute, National Institutes of Health
*Overview of the National Cancer Institute’s Radiation Epidemiology Branch and Key Challenges Faced when Reconstructing Patient Dose for Epidemiological Applications*

Dr. Yeon Soo Yeom, National Cancer Institute, National Institutes of Health
*Out-of-field Dose Reconstruction for Proton Therapy and Measurement of Secondary Neutron Dose*

3:15 PM – 3:45 PM
Coffee Break

3:45 PM – 5:15 PM
RED AUDITORIUM

**Joint Sessions: Medical Applications, Radiation Protection & Industrial Applications**

**Session Title:** Chemistry and Biology of the DNA Damage and its Modification

**Session Chair:** Dr. Amitava Adhikary, Department of Chemistry, Oakland University

Dr. Michael Dingfelder, East Carolina University
*Track Structure: Simulating the Physics and Chemistry Basis of Radiation Damage*

Dr. David Becker, Oakland University
*A Radiation Chemistry Track Structure Model in 3D for Ion-beam Irradiated DNA*

Dr. Shubhankar Suman, Georgetown University
*Role of Persistent DNA Damage Response in Heavy-Ion Space Radiation-Induced Carcinogenesis*

Dr. Sudipta Seal, University of Central Florida
*Understanding the Rare Earth Nanomaterials in Mitigation Radiation in Biological Environment*

Dr. Jeffrey Buchsbaum, Radiation Research Program, National Institute of Health
*DNA Damage and High LET Radiation and the Clinic – Biologic Dosimetry is the Goal*
1:45 PM – 3:15 PM
LECTURE ROOM A

Session Title: Targeted Radionuclide Therapies (TRT)
Session Chair: Dr. Jacek Capala, National Cancer Institute, National Institutes of Health

Dr. Robert Hobbs, Johns Hopkins University
Radiation Dosimetry as a Biomarker

Dr. Sara St. James, University of California San Francisco
Radiation Dose: External Beam Radiation Therapy Conventions and the Evolving Field of Radiopharmaceutical Therapy

Dr. Yuni Dewaraja, University of Michigan
Patient Specific Dosimetry: To What Extent Can It be Simplified to Move from Research to The Clinic

Dr. Bryan Bednarz, University of Wisconsin
Implications of Heterogenous Dose Distributions for Radiopharmaceutical Therapy Revisited

Dr. Richard Wahl, Washington University
Patient-Specific Dosimetry: A Nuclear Medicine Physician Perspective

3:15 PM – 3:45 PM
Coffee Break

3:45 PM – 5:15 PM
LECTURE ROOM A

Session Title: Radionuclide Therapy and Standards
Session Chair: Dr. Wesley Culberson, University of Wisconsin

Elisa Napoli, OncoInvent
Radium Isotopes as a Weapon Against Cancer

Dr. John Keightley, National Physical Laboratory, United Kingdom.
Recent Progress in Primary Activity Standards and Nuclear Data for Targeted Alpha Therapy

Dr. Brian Zimmerman, National Institute of Standards and Technology
Radioactivity Standards for Image-based, Patient-specific Nuclear Medicine Treatment Planning