Defining the Shades of Gy: Utilizing the Biological Consequences of Radiation Therapy in the Development of New Treatment Approaches

Workshop Agenda

DAY 1: September 11, 2017

8:30 – 8:45 am

Introduction to the NCI Workshop
C. Norman Coleman (NCI) and Mansoor M. Ahmed (NCI)

8:45 – 10:15 am

SESSION I - Dose-Effect Models: What do they tell us about biology, and what do they allow us to do safely? Does comfort with them dissuade us from considering mechanisms and result in missed opportunities?

Chairs: Soren Bentzen (University of Maryland) and Bhadrasin Vikram (NCI)
Discussant: Marc Mendonca (Indiana University)
Speakers: Soren Bentzen (University of Maryland), Martin Brown (Stanford University), and Philippe Lambin (Maastricht University)

10:30 – 12:00 pm

SESSION II - Biophysics - Why track structure from various forms of radiation? The various tissues, cells, organelles, and molecules that are hit strongly suggest that simple RBE measurements will have limitations.

Chairs: Dudley Goodhead (UK) and Ceferino Obcemea (NCI)
Discussant: Stephen M. Seltzer (NIST)
Speakers: Dudley Goodhead (UK), Francis A. Cucinotta (University of Las Vegas), Jan Schuemann (Harvard University), and Lisa Carnell (NASA)

12:45-2:15 pm

SESSION III - RBE and the range of end points used- from organism down to the molecular level and the impact of biological perturbations as assessed in terms of dose size, dose rate, and radiation quality.

Chairs: Kevin Prise (Queen's University Belfast) and Jacek Capala (NCI)
Discussant: Radhe Mohan (MD Anderson)
Speakers: Kevin Prise (Queen's University Belfast), Cläre von Neubeck (German Cancer Consortium), Jeffrey Buchsbaum (NCI), Roger Howell (Rutgers University), and Manjit Dosanjh (CERN)

2:30 – 4:00 pm

SESSION IV - Biomarkers and Response Predictors: How can one measure “radiation effect”?

Chairs: Gary Kao (University of Pennsylvania) and Molykutty Aryankalayil (NCI)
Discussant: Deborah Citrin (NCI)
Speakers: Merrilene Vedamony (NIAID), Murali Krishna (NCI, RBB), Molykutty Aryankalayil (NCI), Gary Kao (University of Pennsylvania), and Pataje Prasanna (NCI)

4:15 – 6:00 pm
SESSION V - Clinician’s perspective on “dose” and desired outcome

Chairs: Quynh-Thu Le (Stanford University) and Iris Eke (NCI)
Discussant: Fei-Fei Liu (Princess Margaret)
Speakers: Bob Timmerman (University of Texas, Southwestern), Quynh-Thu Le (Stanford University), Harald Paganetti (Harvard University), and Iris Eke (NCI)

6:00 pm
Dinner Session: Philosophical considerations of changing how we use dose
Chair: C. Norman Coleman (NCI)
Speakers: Eli Glatstein (University of Pennsylvania) and Ed Halperin (New York Medical College)

DAY 2: September 12, 2017

8:00 – 9:45 am
SESSION VI - Biological consequences of clinical relevance: how can we exploit biology?

Chairs: David Kirsch (Duke University) and DeeDee Smart (NCI)
Discussant: Beverly Teicher (NCI)
Speakers: David Kirsch (Duke University), Phuoc Tran (Johns Hopkins), Amit Maity (University of Pennsylvania), and Joanne Weidhaas (UCLA)

10:00 am – 11:15 am
SESSION VII - Can we consider partial tumor volume radiotherapy in the clinic that has the proposed potential to protect normal tissue and cells and elicit intra-tumoral and distal immune attack?

Chairs: Silvia Formenti (Weill Cornell) and Jeffrey Buchsbaum (NCI)
Discussant: Joel Tepper (UNC)
Speakers: Robert J. Griffin (University of Arkansas), Xiaodong Wu (Biophysics Research Institute of America and Shanghai Proton Heavy Ion Center), Silvia Formenti (Weill Cornell), and Chandan Guha (Albert Einstein)

12:00 – 1:30 pm
SESSION VIII - What is conventional accepted wisdom of radiobiology that needs re-validation using modern tools for proper use in the clinic?

Chairs: Walter J. Curran (Emory) and Jim Mitchell (NCI)
Discussant: Daphne Haas-Kogan (Dana-Farber)
Speakers: Catherine Park (UCSF), Charles Simone (University of Maryland), David Raben (University of Colorado), Jann Sarkaria (Mayo Clinic), Dennis Hallahan (Washington University), and Tim Williams (Boca Radiation Oncology Associates)

1:30 - 2:00 pm
NEXT STEPS and FINAL DISCUSSION
Eric Bernhard (NCI), Mansoor M. Ahmed (NCI), and Norm Coleman (NCI)