CURRENT AS OF 1/10/24

CONFERENCE COCHAIRS:
Robert G. Bristow, University of Manchester, Manchester, England
David K. Cortez, Vanderbilt University School of Medicine, Nashville, Tennessee
Susan P. Lees-Miller, University of Calgary, Calgary, AB, Canada
Simon N. Powell, Memorial Sloan Kettering Cancer Center, New York, New York

*Short-talk from Proffered Abstracts

TUESDAY, JANUARY 9, 2024

Registration
2:30 p.m. -7:00 p.m. | Promenade Foyer outside State Ballroom

Welcome and Opening Keynote
5:15 p.m. -6:00 p.m. | State Ballroom

Welcome from Cochairs
Susan P. Lees-Miller, University of Calgary, Calgary, AB, Canada
Robert G. Bristow, University of Manchester, Manchester, England
David K. Cortez, Vanderbilt University School of Medicine, Nashville, Tennessee

Introduction of Keynote Speaker
Simon N. Powell, Memorial Sloan Kettering Cancer Center, New York, New York

Single strand DNA GAP accumulation as a functional biomarker for USP1 inhibitor sensitivity
CME-eligible
Alan D. D’Andrea, Dana-Farber Cancer Institute, Boston, Massachusetts

Plenary Session 1: Biomarkers for Radiation Sensitivity and DNA Damaging Therapeutics – A Holy Grail?
Session organized by the AACR Radiation Science and Medicine (RSM) Working Group
6:00 p.m. -7:30 p.m. | State Ballroom
Session chair: Fei-Fei Liu, Princess Margaret Cancer Centre
CME-eligible
Biomarkers for radiation sensitivity and DNA damaging therapeutics  
Fei-Fei Liu, Princess Margaret Cancer Centre, Toronto, Ontario, Canada

Molecular and imaging biomarkers of PARP inhibitors for small cell lung cancer  
Benjamin Lok, University of Toronto, Toronto, Ontario, Canada

PET imaging predictors of response to chemoradiotherapy in cervical cancer  
Julie K. Schwarz, Washington University School of Medicine in St. Louis, MO

Biomarkers for normal tissue toxicity - DDR genetics and beyond  
Sarah Kerns, Medical College of Wisconsin, Madison, WI

Panel Discussion  
Drs. Liu, Lok, Kerns, Schwarz

Poster Session A + Opening Reception  
7:30 p.m. - 9:00 p.m. | District Ballroom

WEDNESDAY, JANUARY 10, 2024

Breakfast  
7:00 a.m. - 8:00 a.m. | Cabinet

Plenary Session 2: Combination Therapy - Radiation DDR Combinations  
8:00 a.m. - 9:45 a.m. | State Ballroom  
Session Chair: Simon N. Powell, Memorial Sloan Kettering Cancer Center  
CME-eligible

Multifaceted effects of DNA damage response inhibitors on radiation responses of glioblastoma and the normal brain  
Anthony Chalmers, University of Glasgow - Institute of Cancer Sciences, Glasgow, Scotland

An AACR Special Conference in DNA Damage Repair: From Basic Science to Future Clinical Application  
In association with the AACR Radiation Science and Medicine (RSM) Working Group  
January 9-11, 2024 | The Mayflower Hotel | Washington, DC
Targeting the hypoxia-induced DDR to improve radiotherapy response
Ester M. Hammond, University of Oxford, Gray Institute for Radiation Oncology and Biology, Oxford, England

Targeting homologous recombination deficiency (HRD) using optimized ionizing radiation and drug combinations
Simon N. Powell, Memorial Sloan Kettering Cancer Center, New York, New York

DNA damage-induced senescence as a driver of glioblastoma recurrence*
Sandeep Burma, UT Health Science Center at San Antonio, San Antonio, TX

Break
9:45 a.m.-10:15 a.m. | Promenade Foyer

Plenary Session 3: Mutational Spectra
10:15 a.m.-11:45 a.m. | State Ballroom
Session chair: Marcin Imielinski, NYU Grossman School of Medicine
CME-eligible

Scars of faulty DNA repair in cancer whole genomes
Marcin Imielinski, NYU Grossman School of Medicine, New York, New York

Molecular archeology of cancer
Peter Van Loo, The University of Texas MD Anderson Cancer Center, Houston, Texas

Polymerase-based bypass of atypical UV photoproducts
Steven A. Roberts, University of Vermont, Burlington, VT

Keynote Lecture II
11:45 a.m. -12:30 p.m. | State Ballroom

Introduction of keynote speaker
Robert G. Bristow, University of Manchester, Manchester, England

Recent advances in mutational signatures of DNA Damage Repair and clinical implications
CME-eligible
Serena Nik-Zainal, University of Cambridge, Cambridge, England
Lunch on own
12:30 p.m.-2:00 p.m.

Plenary Session 4: DNA Repair Pathways
2:00 p.m.-4:00 p.m. | State Ballroom
Session chair: Maria Jasin, Memorial Sloan Kettering Cancer Center
CME-eligible

BRCA2 promotes genomic integrity and therapy resistance primarily through its role in homology-directed repair
Maria Jasin, Memorial Sloan Kettering Cancer Center, New York, New York

Functional screens identify a role for chk1 in early nucleotide excision repair*
Kent Mouw, Dana-Farber Cancer Institute, Boston, MA

Using systems approaches to interrogate DNA double strand break signaling and repair for optimal tumor cell killing
Michael B. Yaffe, Koch Institute for Integrative Cancer Research, MIT, Cambridge, Massachusetts

DHX9 inhibition as a novel therapeutic for ovarian and breast cancer with loss-of-function mutations in the DNA damage repair genes BRCA1 or BRCA2*
Jennifer Castro, Accent Therapeutics, Lexington, MA

Replication-coupled and canonical DNA double strand breaks are processed by distinct mechanisms
Andre Nussenzweig, National Cancer Institute, Bethesda, Maryland

Break
4:00 p.m. -4:30 p.m.

Plenary Session 5: Synthetic Lethal Targets
4:30 p.m.-6:15 p.m. | State Ballroom
Session chair: David K. Cortez, Vanderbilt University Medical Center
CME-eligible
Drugging the DNA damage response (DDR) in the clinic: Going beyond the approved PARP inhibitors
Timothy A. Yap, The University of Texas MD Anderson Cancer Center, Houston, TX

SMARCAL1 is a selective dependency and a novel synthetic lethal target in ATRX/DAXX mutant ALT+ osteosarcoma and neuroblastoma*
Lillian M. Guenther, St. Jude Children's Research Hospital, Memphis, TN

GRB2 as a target in the BRCA2-RAD51-MRE11 axis
John A. Tainer, MD Anderson Cancer Center, Houston, TX

Spotlight on Proffered Talks (SITA Awardees)
6:15 p.m. - 7:15 p.m. | State Ballroom
Session Chair: Susan P. Lees-Miller, University of Calgary
CME-eligible

Identification of DNA damage repair genes controlling the immune landscape of breast tumors via spatial functional genomics
Prerna Suri, Icahn School of Medicine at Mount Sinai, New York, NY

Elucidating the effect of PARP inhibitors on MMEJ-mediated DNA repair
Raquel Ortega, University of Colorado Boulder, Boulder, CO

The combination of TRIP13 and Aurora kinase A inhibition caused cell cycle specific DNA damage and death in Rb-deficient cancers
Lacin Yapindi, The University of Texas MD Anderson Cancer Center, Houston, TX

Elucidating the mechanistic role of the MRE11-NDRG1 interaction in DNA repair and chemoresistance
Hannah Doh, Harvard Medical School, Boston, MA

Poster Session B + Reception
7:15 p.m. - 8:45 p.m. | District Ballroom
Plenary Session 6: DNA Damage-Associated Immune Responses

Chair and Moderator: Robert G. Bristow, University of Manchester

8:00 a.m. - 9:45 a.m. | State Ballroom

CME-eligible

Micronuclei are a nexus of DNA damage signaling and genomic instability
Shane Michael Harding, UHN Princess Margaret Cancer Centre, Toronto, Ontario, Canada

SMARCAL1 is a dual regulator of innate immunity and PD-L1 expression that promotes tumor immune evasion*
Giuseppe Leuzzi, Columbia University Irving Medical Center, New York, NY

A new role of altered R-loop homeostasis in radiation-induced tumor immunogenicity
Sandra Demaria, Weill Cornell Medicine, New York, NY

Thymidine rescues ATR kinase inhibitor-induced deoxyuridine contamination in genomic DNA, cell death, and type-1 interferon expression in cells treated with ATR kinase inhibitors.
Christopher J. Bakkenist, University of Pittsburgh Cancer Institute, Pittsburgh, Pennsylvania

Panel Discussion: Drs. Harding, Demaria and Bakkenist

Break
9:45 a.m. - 10:00 a.m. | Promenade Foyer

Plenary Session 7: Replication Stress

10:00 a.m. - 11:45 a.m. | State Ballroom

Session chair: Agata Smogorzewska, The Rockefeller University

CME-eligible

The role of RTF2 in replication and replication stress response
Agata Smogorzewska, The Rockefeller University, New York, New York
Mechanistic insights into how RADX regulates RAD51 nucleoprotein filaments to maintain genome stability and control replication stress responses
David K. Cortez, Vanderbilt University Medical Center, Nashville, Tennessee

Understanding extrachromosomal telomere generation in ALT cancers*
Jaewon Min, Columbia University Irving Medical Center, New York, NY

DNAJC9-a novel regulator of the MCM complex
Dipanjan Chowdhury, Dana-Farber Cancer Institute, Boston, MA

11:45 a.m.-12:15 p.m. | Promenade Foyer

Plenary Session 8: Acquired resistance to DDR inhibitors
12:15 p.m. -2:30 p.m. | State Ballroom
Session chair: Susan P. Lees-Miller, University of Calgary
CME-eligible

Understanding and overcoming resistance to PARP inhibitors in cancer therapy
Jos M. M. Jonkers, Netherlands Cancer Institute, Amsterdam, The Netherlands

Novel role of glycogen synthase kinase-3β in determining cancer cell response to PARPi through regulation of 53BP1 function*
Fen Xia, University of Arkansas for Medical Sciences, Little Rock, AK

DNA repair inhibitor and immunologic strategies for reversal of PARP inhibitor resistance
Geoffrey I. Shapiro, Harvard Medical School, Boston, MA

Enhancing radiation-induced anti-tumoral immune responses with PARP inhibitors in pancreatic cancer from laboratory studies to clinical trials
Meredith A. Morgan, University of Michigan, Ann Arbor, MI

Closing Remarks
2:30 p.m. | State Ballroom
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