Short Talks Selected from Proffered Abstracts

PR001  DNA damage-induced senescence as a driver of glioblastoma recurrence.
Sandeep Burma, Health San Antonio, San Antonio, Texas, United States.

PR002  Functional Screens Identify a Role for CHK1 in Early Nucleotide Excision Repair.
Kent Mouw. Dana-Farber Cancer Institute, Boston, Massachusetts, United States.

PR003  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, Massachusetts, United States.

PR004  SMARCAL1 is a selective dependency and a novel synthetic lethal target in ATRX/DAXX mutant ALT+ osteosarcoma and neuroblastoma.
Lillian M. Guenther. Jude Children’s Research Hospital, Memphis, Tennessee, United States.

PR005  Identification of DNA Damage Repair genes controlling the immune landscape of breast tumors via spatial functional genomics.
Prerna Suri. Icahn School of Medicine and Mount Sinai, New York, NY, United States.

PR006  Elucidating the effect of PARP inhibitors on MMEJ-mediated DNA repair.

PR007  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, Texas, United States.

PR008  Elucidating the mechanistic role of the MRE11-NDRG1 interaction in DNA repair and chemoresistance.
Hanna M Doh. Harvard Medical School, Boston, Massachusetts, United States.

PR009  SMARCAL1 is a dual regulator of innate immune signaling and PD-L1 expression that promotes tumor immune evasion.
Giuseppe Leuzzi. Columbia University Irving Medical Center, New York, New York, United States.

PR010  Understanding extrachromosomal telomere generation in ALT cancers.

PR011  Novel role of glycogen synthase kinase-3β in determining cancer cell response to PARPi through regulation of S3BP1 function.
Fen Xia. University of Arkansas for Medical Sciences, Little Rock, Arkansas, United States.
Poster Session A (To be presented on January 9 from 7:30-9 p.m. ET)

A001 **Discovery of imidazo[4,5-c]pyridin-2-ones as selective inhibitors of DNA-dependent protein kinase and effective radiosensitisers.** Michael Hay. University of Auckland, Auckland, New Zealand.


A003 **HPV infection causes dependence on alternative DNA damage response pathways providing cancer specific targets for radiosensitization.** MICHAEL GOLDSTEIN. Johns Hopkins University, Baltimore, Maryland, United States.

A004 **Targeting tumour hypoxia with prodrugs of DNA-dependent protein kinase inhibitors.** Lydia Liew. University of Auckland, Auckland, Australia.

A005 **Enhanced DNA damage and disruption of repair by iodinated thymidine analogues with tipiracil for clinical radiation sensitization.** Scott Grindrod. Shuttle Pharmaceuticals, Rockville, Maryland, United States.

A006 **Targeting SETD2 in Combination with Radiotherapy in Rectal Cancer.** Lokesh Akana. University of Arkansas for Medical Sciences, Little Rock, Arkansas, United States.

A007 **Ser/Thr kinase BUB1 stabilizes DNAPKcs in response to radiation induced DNA double strand break repair.** Shyam Nyati. Henry Ford Health, Detroit, Michigan, United States.

A008 **Toxic PARP trapping upon cAMP-induced DNA damage reinstates the efficacy of endocrine therapy and CDK4/6 inhibitors in treatment-refractory ER+ breast cancer.** Ozgur Sahin. Medical University of South Carolina, Charleston, South Carolina, United States.

A009 **ATR inhibition as a novel radiosensitization strategy for glioblastoma.** Bipasha Mukherjee. University of Texas Health Science Center at San Antonio, San Antonio, Texas, United States.

A010 **Insights into the Impact of Fanconi Anemia Repair Genes on Immunotherapy Response in Solid Tumors.** Ahmed Ashour. Jordan University of Science and Technology, Irbid, Jordan.

A011 **DPY30 regulates immunoediting by suppressing uncoordinated DNA replication in pancreatic cancer.** Francesca Citron. The University of Texas - MD Anderson Cancer Center, Houston, Texas, United States.

A012 **Mre11 Mediates cGAS Activation and Tumor Suppression through ZBP1-Dependent Necroptosis in Breast Cancer.** Minguk Jo. University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, United States.
A013 **Selective HDAC6 inhibition by SP-2-225 enhances the innate anti-tumor immune response after radiation exposure.** Scott Grindrod. Shuttle Pharmaceuticals, Rockville, Maryland, United States.

A014 **Identification of DNA Damage Repair genes controlling the immune landscape of breast tumors via spatial functional genomics.** Prerna Suri. Icahn School of Medicine and Mount Sinai, New York, NY, United States.

A015 **53BP1 loss mediated PARP inhibitor resistance in BRCA1-deficient pancreatic cancer is overcome with immune checkpoint blockade.** Jeffrey Patterson-Fortin. Dana-Farber Cancer Institute, Boston, Massachusetts, United States.

A016 **LINC00261 is functionally linked to tumor mutational burden and immunotherapeutic response in lung adenocarcinoma.** Jonathan Castillo. University of Southern California, Los Angeles, CA, United States.

A017 **Targeting Tlk2 impairs breast cancer growth and engages immune responses.** Travis Stracker. National Cancer Institute, Center for Cancer Research, Bethesda, Maryland, United States.

A018 **GRB2 acts at reversed forks in the BRCA2-RAD51-MRE11 axis: a therapeutic target and enabling predictive biomarker for PARP inhibitor-immunotherapy combination.** John Tainer. UT MDACC, Houston, Texas, United States.

A019 **ATR Inhibitor Efficacy Depends on CD8+ T-cell Recruitment and MHC class-I upregulation via Intratumoral STING Pathway Activation in Small Cell Lung Cancer.** Triporna Sen. Icahn School of Medicine at Mount Sinai, New York, New York, United States.

A020 **Deciphering DNA damage repair in ATM mutant prostate cancers.** Mia Hofstad. UT Southwestern, Dallas, Texas, United States.

A021 **Pre and post treatment transcriptomic analysis provide new insights on the mechanisms underlying the efficacy of PARPi and Androgen blockage in prostate cancer.** Ana Filipa Palma dos Reis. Cambridge University, Cambridge, England.

A022 **Poly(ADP-Ribose) glycohydrolase (PARG) Removes Repressive Poly-ADP Ribose Marks from DNA Polymerase Theta (POLQ) to Stimulate DNA Double-Strand Breaks Repair in Myeloid Malignancies.** Umeshkumar Vekariya. Templa University School of Medicine, Philadelphia, Pennsylvania, United States.

A023 **High glucose increases DNA damage and elevates the expression of multiple DDR genes.** Aya Ibrahim. Zewail city of science and technology, Cairo, Egypt.

A024 **Epigenetic control of topoisomerase 1 activity presents a cancer vulnerability.** Tae-Hee Lee. Johns Hopkins University School of Medicine, Department of Radiation Oncology & Molecular Radiation Sciences, Baltimore, Maryland, United States.
A025 FANCI regulates Fanconi anemia pathway and counteracts the effects of DNA damaging chemotherapy in prostate cancer. Kirsi Ketola. Institute of Biomedicine, University of Eastern Finland, Kuopio, Finland.

A026 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, Massachusetts, United States.

A027 Development of small molecule inhibitors of the Ku-DNA interaction: Impacts on NHEJ, DDR signaling, optimizing genome editing technologies, and therapeutic intervention for the treatment of cancer. John Turchi. Indiana University School of Medicine, Indianapolis, Indiana, United States.

A028 Alcohol induces DNA damage and genomic instability in MCF-7 breast cancer cells and primary mammary tissues. Xiaohe Yang. North Carolina Central University, Bethesda, Maryland, United States.


A032 Identifying the binding partners of a long noncoding RNA involved in the DNA damage response. Michele Ramos Correa. University of Southern California, Los Angeles, California, United States.

A033 The ING5 epigenetic reader regulates a subset of DNA repair genes to maintain genomic integrity. Karl Riabowol. University of Calgary, Calgary, AB, Canada.

A034 Development of a novel class of genomic biomarkers through mathematical modeling of cancer genome contiguity. Noshad Hosseini. University of Michigan, Ann Arbor, Michigan, United States.

A035 Checkpoint is the control mechanism to ensure the strict order of cellular events during cell cycle. Here, we show that cells enter mitosis without completing DNA replication although with transient activation of known ATR/Chk1 checkpoint. Min Huang. MD Anderson Cancer Center, Houston, Texas, United States.
B001 Detection and characterization of DDR reversion alterations in baseline tissue and plasma samples from patients enrolled in the TRESR and ATTACC Phase I clinical trials. Ian Silverman. Repare Therapeutics, Cambridge, Massachusetts, United States.

B002 ALK signalling primes the DNA damage response sensitizing ALK-driven neuroblastoma to therapeutic ATR inhibition. Bengt Hallberg. Inst. of Biomedicine, University of Gothenburg, Gothenburg, Sweden.


B004 Polymerase theta (Pol θ) is essential to repair a subset of DNA breaks in HR proficient cells. Chelsea Smith. University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, United States.

B005 Tolerance to colibactin correlates with response to chemotherapeutic agents in colorectal cancer. Alberto Sogari. University of Torino, Torino, Italy.


B007 Mutations in chromatin remodelers produce intra-chromosomal deletions in cancer cells. Ruben Petreaca. The Ohio State University, Marion, Ohio, United States.

B008 Functional Screens Identify a Role for CHK1 in Early Nucleotide Excision Repair. Kent Mouw. Dana-Farber Cancer Institute, Boston, Massachusetts, United States.

B009 Targeting the AR co-activator CBP/p300 axis in castration resistant prostate cancer impacts DNA damage repair function. Sumaira Sardar. Center for Prostate Disease Research, Bethesda, Maryland, United States.

B010 DNA-PKcs-dependent phosphorylation of RECQL4 promotes NHEJ by stabilizing the NHEJ machinery at DNA double-strand breaks. Anthony Davis. UT Southwestern Medical Center, Dallas, Texas, United States.

B011 CDK9-55 guides the anaphase-promoting complex/cyclosome (APC/C) in choosing the DNA repair pathway by affecting the UFL1 ubiquitination. Luigi Alfano. NCI Pascale Foundation, Naples, Italy.

B013 A quest for deeper understanding of BRCA2 Variants of Uncertain Significance (VUS). Judit Jimenez Sainz. Medical University of South Carolina, Charleston, South Carolina, United States.

B014 KDM4B mutations in human cancers. Wesley Bush. The Ohio State University Marion Biology Program, Marion, Ohio, United States.


B016 Developing diagnostic tools via mutational spectra analysis and multiomic plasma profiling from liquid biopsies to identify potential signatures in cancer in Trinidad and Tobago. Nicole Ramlachan. University of Trinidad and Tobago, Tamana, Trinidad and Tobago.

B017 VCP extracts the chromatin remodeler SNF2H from nascent DNA to stabilize stressed replication forks. Jieya Shao. Washington University in St. Louis, Saint Louis, Missouri, United States.

B018 RNR inhibitors enhance chemotherapeutic activity in pancreatic cancer cells through altering replication stress. Soon Young Park. Department of Cell, Development and Cancer Biology, Knight Cancer Institute, Oregon Health and Sciences University, Portland, Oregon, United States.


B020 Targeting the DNA damage response sensor Replication Protein A for first in class cancer therapy. Katherine Pawelczak. NERx Biosciences, Indianapolis, Indiana, United States.


B022 C11ORF68 is essential for γH2AX formation after replication stress. Clarissa Toh. National University of Singapore, Singapore, Singapore.

B023 SMARCAL1 is a novel candidate therapeutic target for ALT-positive osteosarcoma. Angelo Tagliatela. Columbia University, New York, New York, United States.

B024 The thioredoxin system determines CHK1 inhibitor sensitivity via redox-mediated regulation of ribonucleotide reductase activity. Prasad Chandra. The Ohio State University, Columbus, Ohio, United States.

B025 Exceptional response to the ataxia telangiectasia and Rad3-related inhibitor (ATRI), camonsertib, in a patient with alternative lengthening of telomeres (ALT)-positive metastatic melanoma. Timothy Yap. The University of Texas MD Anderson Cancer Center, Houston, Texas, United States.
B026 Identification of monoallelic ATM loss-of-function and homologous recombination deficiency (HRD) in high-grade ovarian tumor with prolonged response to camonsertib and low-dose gemcitabine combination therapy. Stephanie Lheureux. Princess Margaret Cancer Centre, Toronto, Ontario, Canada.


B028 Preclinical efficacy of Tumor Treating Fields (TTFields) applied with PARP inhibitors or carboplatin in ovarian cancer. Adi Haber. Novocure Ltd, Haifa, Israel.

B029 Enhanced anticancer effects through synergistic targeting of DDX5 and DNA damage-related factors. Jiyeon Ahn. Korea Insitutute of Radiological and Medical Sciences, Seoul, South Korea.

B030 Modulating mitochondria metabolism to radiosensitize KEAP1 mutated non-small cell lung cancer. Scott Bright. The University of Texas MD Anderson Cancer Center, Houston, Texas, United States.

B031 Evaluating the consequence of homologous recombination deficiency in models of pediatric solid tumor. Evan Savage. St. Jude Children’s Research Hospital, Memphis, Tennessee, United States.

B032 USP1 inhibition induces single strand DNA gap accumulation and overcomes PARP inhibitor resistance in BRCA1 deficient cancer cells. Alexandre da Costa. Dana-Farber Cancer Institute, Boston, Massachusetts, United States.

B033 Direct and sensitive in-situ detection of DNA breaks by STRIDE and its potential as a new biomarker. Brian Patterson. intoDNA, Karkow, Poland.


B035 Developing the UValidate platform to measure DNA damage and repair capacity in isogenic donor-derived skin keratinocytes, fibroblasts and melanocyte cell-lines with different Fitzpatrick phototypes. Dean Rosenthal. Georgetown University School of Medicine, Washington, DC, United States.

B036 From cancer to atoms, and back: alkylation damage response protein ASCC1. Susan Tsutakawa. Lawrence Berkeley National Laboratory, Berkeley, California, United States.