



18th International Workshop

ATAXIA-TELANGIECTASIA

Taking a Multidisciplinary Approach

May 1 - 4, 2019

Houston Methodist Research Institute | John F. Bookout Auditorium | 2nd Floor

Chair: Tej K. Pandita, PhD, Houston Methodist

Co-chair: Junjie Chen, PhD, MD Anderson Cancer Center, Houston, TX

AGENDA

Day One • Wednesday, May 1, 2019

Session 1: ATM and ATM-related Response Pathways

8 a.m. **Check-In & Breakfast**

9:30 a.m. – 12:30 p.m.

Yosef Shiloh, PhD

Tel Aviv University, Israel – “Ataxia-Telangiectasia: Are We Closer to Understanding the Ataxia?”

Andre Nussenzweig, PhD

National Cancer Institute, NIH, USA – “How ATM Regulates End Resection”

Ralph Scully, PhD

Harvard Medical School, Boston, MA – “Recombination and Repair at Stalled Mammalian Replication Forks”

Daniel Durocher, PhD

University of Toronto, Ontario, Canada – “Charting the Genetic Architecture of the DNA Damage Response”

10:50 a.m. – 11:20 a.m. **Break**

Dipanjan Chowdhury, PhD

Dana-Farber Cancer Institute, Boston, MA – “A Novel CDK5-PP4 Phospho-Signaling Cascade Regulates Genome Stability During Cell Cycle”

Junjie Chen, PhD

MD Anderson Cancer Center, Houston, TX – “Targeting DNA Damage Checkpoint in Cancer Therapy”

Shyamal Desai, PhD

LSUHSC-School of Medicine, New Orleans, LA – “Deregulation of Mitophagy by Ubiquitin-like Proteins in Ataxia-Telangiectasia”

Vijaya Charaka, PhD

Houston Methodist – “The HP1 β Chromo Shadow Domain Assists BRCA1 Recruitment by Promoting H2A Ubiquitination”

12:30 p.m. – 2 p.m. **Lunch**

Session 2: ATM and Neurodegenerative Diseases

2 p.m. – 5:20 p.m.

Peter McKinnon, PhD

St. Jude Children’s Research Hospital, Memphis, TN – “ATM Suppresses Cerebellar Ataxia by Preventing Toxic NHEJ”

Katherine Schlacher, PhD

MD Anderson Cancer Center, Houston, TX – “Mitochondrial and Nuclear DNA Replication Instability in Disease”

Philip J. Horner, PhD

Houston Methodist – “Neuromodulation and Cell Engineering to Replace Damaged Brain Circuitry”

Martin F. Lavin, PhD

University of Queensland, Brisbane, Australia – “Defective Endoplasmic Reticulum (ER)-Mitochondrial Signaling in A-T”

3:20 p.m. – 3:50 p.m. **Break**

Ari Barzilai, PhD

Tel Aviv University, Israel – “The Role of ATM in Cerebellar Structure-function”

Shu Meng, MD, PhD

Houston Methodist – “Possible Role of Transflammation in Ataxia-Telangiectasia Syndrome”

Tetsuo Ashizawa, MD

Houston Methodist – “Ataxia and ATM”

Zhao-Qi Wang, PhD

Leibniz Institute for Age Research, Germany – “Biological Function of ATR”

Kalpana Mujoo, PhD

Houston Methodist – “DNA Damage Repair by Homologous Recombination is Decreased in Human Pluripotent Stem Cell Derived Differentiated Cells, Astrocytes and Dopaminergic Neurons”

7 p.m. **Dinner**

AGENDA

Day Two • Thursday, May 2, 2019

Session 3: ATM and Clinical Investigation of Human Diseases

8:30 a.m. **Breakfast**

9 a.m. – Noon

Simon Powell, MD, PhD

FRCP, Memorial Sloan Kettering Cancer Center, New York, NY – “The Impact of ATM Mutations on Cancer Genomes and Response to Therapy”

James Larner, MD

University of Virginia, Charlottesville, VA – “A Novel Role for ZEB1 in Promoting NHEJ”

Kum Kum Khanna, PhD

Queensland Institute for Medical Research, Australia – “Sensitizing Cancer Stem Cells to Radio- and Chemotherapy”

Shashank Hambarde, PhD

Houston Methodist – “Exonuclease 5 Interacts with the BLM Helicase Complex and Protects the Genome from Replication Stress”

Chi-Lin Tsai, PhD

MD Anderson Cancer Center, Houston, TX – “[4Fe-4S] Cluster-containing Human Exonuclease V Acts as a Novel Replication Fork Restart Factor”

10:25 a.m. – 10:40 a.m. **Break**

Tanya Paull, PhD

University of Texas at Austin, TX – “Consequences of ATM Loss in Human Cells”

Christopher Bakkenist, PhD

University of Pittsburgh, PA – “DNA Damage Signaling to Dormant Origins of Replication”

Lisa Bouchier-Hayes, PhD

Baylor College of Medicine, Houston, TX – “Caspase-2 Regulates S-phase Checkpoint Activation to Facilitate DNA Repair”

Nayan Kim, PhD

University of Texas Health Science Center at Houston – “Nucleolin and the Genome Instability Associated with G4 DNA”

Marguerite Blignaut, PhD

Stellenbosch University, Tygerberg, South Africa – “Ataxia-Telangiectasia Mutated is Located in Cardiac Mitochondria and Impacts Oxidative Phosphorylation”

Ji-Hoon Lee

University of Texas at Austin, TX – “The Role of Single-Stranded DNA Breaks and Parylation in A-T and ATLD Phenotypes”

12:25 p.m. – 1:30 p.m. **Lunch**

Session 4: Chromatin Regulation in Genome Maintenance

1:30 p.m. – 5:05 p.m.

Jacques Cote, PhD

Laval University Cancer Research Center, Quebec City, Canada – “The Importance of Lysine Acetyltransferase Complexes in the Repair of DNA Double Strand Breaks”

Tej K. Pandita, PhD

Houston Methodist – “Pre-existing H4K16ac Levels in Euchromatin Drive DSB Repair by Homologous Recombination”

Subhrangsu Mandal, PhD

The University of Texas at Arlington – Long Noncoding RNA in Neuro-Inflammation and Neurological Disorders”

Yang Yu, PhD

Baylor College of Medicine, Houston, TX – “DNA2 Nuclease Deficiency Results in Large and Complex DNA Insertions at Chromosomal Breaks”

Michele Menotta, PhD

University of Urbino “Carlo Bo”, Urbino, Italy – “A New HDAC4 Role, Induced by Dexamehasone, Improves Autophagy in A-T Cells”

Young Don Kwak, PhD

St. Jude Children’s Research Hospital, Memphis, TN – “R-Loops and Aberrant Rna Splicing Impact Cerebellar Purkinje Cells in Genome Instability-Induced Neurodegeneration”

3:08 p.m. – 3:30 p.m. **Break**

Alexander James Roy Bishop, DPhil

University of Texas Health Science Center at San Antonio – “ATM: Intrinsic Control of Amino Acid Metabolism and Disease Manifestation”

Benu Brata Das, PhD

Indian Association for the Cultivation of Science, Jadavpur Kolkata, India – “New Regulators of DNA Topoisomerase 1-induced DNA Damage and Repair”

Junran Zhang, MD, PhD

Ohio State University, Columbus, OH – “Exploring Potential Biomarkers Predictive of Response to Inhibitors Targeting Cell Cycle Checkpoint Proteins ATR and CHK1”

Barbara Huisamen, PhD

Stellenbosch University, Tygerberg, South Africa – “ATM Regulates Cardiac Mitophagy”

Anastasia Ricci, PhD

University of Urbino “Carlo Bo,” Urbino, Italy – “Lamin A/C Interactome Modulated by Dexamehasone in A-T Cells”

Aditi Aditi, PhD

St. Jude Children’s Research Hospital, Memphis, TN – “Ribonuclease H2 is Required for the Maintenance of Genomic Integrity During Neurogenesis and Prevention of Brain Tumors”

Stoyno Stoynov, PhD

Institute of Molecular Biology, Bulgarian Academy of Sciences, Sofia, Bulgaria – “Dynamics of ATM, ATR and Their Substrates in Complex DNA Lesions”

AGENDA

Day Three • Friday, May 3, 2019

Session 5: Canonical and Non-canonical Signaling and Repair Processes

8:30 a.m. **Breakfast**

9 a.m. – 1 p.m.

John Tainer

MD Anderson Cancer Center, Houston, TX – “MRE11 Complex Control and the A-T Phenotype”

Maria Jasin, PhD

Memorial Sloan Kettering Cancer Center, New York, NY – “ATM Deficiency and the Impact on Meiotic Recombination”

Sagar Sengupta, PhD

National Institute of Immunology, India – “Multiple Repair Mechanisms Employed by BLM Helicase to Maintain Genome Integrity”

Karen Vasquez, PhD

University of Texas at Austin – “Targeting the High Mobility Group Box 3 Protein Sensitizes Chemoresistant Ovarian Cancer Cells to Cisplatin”

Roketa Sloan Henry, PhD

St Jude Children’s Research Hospital, Memphis, TN – “ATM Suppresses Ataxia by Preventing Toxic NHEJ after Aberrant Topoisomerase I Activity”

Jessica Luzwick, PhD

MD Anderson Cancer Center, Houston, TX – “Mitochondrial DNA Replication Fork Protection by the Fanconi Anemia Pathway Suppresses Inflammation and Disease”

10:45 a.m. – 11 a.m. **Break**

Cheryl Lyn Walker

Baylor College of Medicine, Houston, TX – “An AMPK-regulated Energy Pathway that Directs ATM Localization to the Peroxisome”

Varsha Gandhi, PhD

MD Anderson Cancer Center, Houston, TX – “Mitochondrial Dysfunction and Inhibition of Mitophagy in Mantle Cell Lymphoma Lacking ATM”

Xingzhi (Xavier) Xu, PhD

Shenzhen University, Guangdong, China – “MRE11 UFMylation Promotes ATM Activation”

Sukesh R. Bhaumik, PhD

Southern Illinois University School of Medicine, Springfield, IL – Regulatory Mechanisms of Transcription-coupled DNA Repair”

Zhenkun Lou, PhD

Mayo Clinic, Rochester, MN – “Ubiquitin Signaling in the DNA Damage Response”

Sathees C. Raghavan, PhD

Indian Institute of Science, Bangalore, India – “Sequence Dependence of Nonhomologous End Joining and Alternate Pathways to DNA Double-strand Break Repair”

Aloke Sarkar, PhD

MD Anderson Cancer Center, Houston, TX – “Kinase Independent ATM-Parkin Interaction Drives Mitochondrial Autophagy in Mantle Cell Lymphoma”

1:10 p.m. **Lunch**

Day Four • Saturday, May 4, 2019

Session 6: Mechanisms of DNA Damage Repair

8:30 a.m. **Breakfast**

9 a.m. – Noon

K. Munniyapa, PhD

Indian Institute of Science, Bangalore, India – “Physiologically Important Small Molecules as Regulators of RecA Function”

Jeremy Stark, PhD

City of Hope, Duarte, CA – “Etiology of Chromosomal Rearrangements”

Rashmi Shukla, PhD

All India Institute of Medical Sciences, New Delhi, India – “Novel Pathogenic ATM Variants in Indian Ataxia Telangiectasia Patients”

Marina Alfo, PhD

Tel Aviv University, Israel – “Investigation of the Cerebellar Degeneration in Ataxia-Telangiectasia Using Mouse Models with Combined ATM and SETX Genotypes”

Meredith Juncker, PhD

LSUHSC-School of Medicine, New Orleans, LA – “ISG15 Inhibits Mitophagy in Ataxia-Telangiectasia”

10:15 a.m. – 10:45 a.m. **Break**

Shan Zha, MD, PhD

Columbia University, New York, NY – “The Consequence of ATM Inactivation and Beyond”

Nhung Pham, PhD

Baylor College of Medicine, Houston, TX – “Mechanisms of Large Insertions at DNA Double Strand Breaks”

James E. Haber, PhD

Brandeis University, Waltham, MA – “Autoregulation of Budding Yeast ATR and the Dynamics of ATM/ATR-dependent Chromatin Modification”

Noon **Lunch**



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