NIH NATIONAL CANCER INSTITUTE

Workshop Goals:

- Explore emerging connections between the two historically distinct research areas of RNA metabolism and genome maintenance.
- Bring together RNA-focused cancer biologists and genome maintenance experts to catalyze collaboration and potentially uncover novel pathways for the manipulation of genome instability in cancer.
- Explore alterations in RNA metabolism as a novel means to modulate genome stability and cancer progression.

Day 1: December 6

11:00 Welcome and Opening Remarks (NCI, Chairs)

Session 1: RNA processing defects as drivers of genome instability (Moderator: Karlene Cimprich)

11:10-11:30 Karlene Cimprich
Presentation Title: RNA Meetings DNA: Dangerous Liaisons in the Genome

11:30-11:50 Ashok Vankitaraman
Presentation Title: Perturbations in RNA metabolism following BRCA2 inactivation

11:50-12:10 Houra Merrikh
Presentation Title: The underlying mechanism of TC-NER driven mutagenesis

12:10-12:30 Dale Ramsden
Presentation Title: RNA in NHEJ

12:30-12:40 mini-break

12:40-1:00 Dirk Remus
Presentation Title: Reconstitution of R-loop-replisome collisions with purified proteins.

1:00-1:20 Omar Abdel-Wahab
Presentation Title: Synthetic introns for splicing-dependent targeting of cancer cells.

1:20-1:40 Kathleen Burns
Presentation Title: Repairing Retrotransposition

1:40-2:25 Panel Discussion (Discussion Leader: Karlene Cimprich)

2:25-2:45 Break

Session 2: RNA as a modulator of the DNA damage response (Moderator: Andre Nussenzweig)

2:45-3:05 Gaelle Legube
Presentation Title: Chromosome reorganization during Transcription-Couple DSB repair

3:05-3:25 Fabrizio d'Adda di Fagagna
Presentation Title: DNA damage response control by RNA

3:25-3:45 Francesca Storici
Presentation Title: RNA-mediated double-strand break repair

3:45-4:05 Li Lan
Presentation Title: The roles of RNA modifications in DNA repair

4:05-4:25 Nima Mosammaparast
Presentation Title: RNA alkylation damage: The canary in the coal mine?

4:25-5:10 Panel Discussion (Discussion Leader: Nima Mosammaparast)

ADJOURN DAY 1

Day 2: December 7

11:00-11:50 Keynote Speaker: Andre Nussenzweig

Session 3: Exploiting RNA metabolism in cancer and genotoxic therapy (Moderator: Lee Zou)

11:50-12:10 Lee Zou
Presentation Title: Functions of TERRA and RAD51AP1 in Alternative lengthening of Telomere (ALT)

12:10-12:30 Martin Eilers
Presentation Title: Two trains on the same track: How MYC and MYCN coordinate transcription with DNA replication

12:30-12:50 Alexander Bishop
Presentation Title: Meta-analysis of R-loop sequencing and insights into Ewing Sarcoma R-loop biology

12:50-1:00 mini-break

1:00-1:20 Tanya Paull
Presentation Title: R-loop recognition and processing in human cells

1:20-1:40 Aaron Straight
Presentation Title: Mapping the landscape of Chromatin associated RNAs during human stem cell differentiation

1:40-2:00 Rong Li
Presentation Title: R-Loop Accumulation in BRCA1 Mutant Mammary Epithelium

2:00-2:20 Dipanjan Chowdhury
Presentation Title: Understanding how RNA fits into the TIRR, 53BP1 and p53 axes

2:20-3:05 Panel Discussion (Discussion Leader: Lee Zou)

3:05-3:15 Break

3:15-4:10 Final Discussion: Challenges and Opportunities (Moderator: Philipp Oberdoerffer)

MEETING ADJOURNS