

Conference Program

Tuesday, April 18, 2017

- 4:00pm – 5:00pm Registration
- 5:00pm – 5:10pm Welcome & Introductions
- 5:10pm – 7:10pm Keynote Lectures
- 5:10pm – 6:10pm **Keynote:** Professor Sir Mike Stratton (Wellcome Trust Sanger Institute, UK)
Signatures of mutational processes
- 6:10pm – 7:10pm **Keynote:** Titia de Lange (The Rockefeller Institute, US)
Telomere crisis as a source of genome rearrangements
- 7:10pm – 8:15pm **Welcome Reception & Posters on display**

Wednesday, April 19, 2017

- 8:40am – 12:30pm Session 1 – Mutation and chromosome rearrangement I**
Session Chair – Maria Jasin (Memorial Sloan Kettering Cancer Center, US)
- 8:40am – 8:45am Morning welcome and introductions
- 8:45am – 9:15am Gad Getz (Broad Institute, US)
Mutational Signatures in Cancer: Methodologies and Opportunities
- 9:15am – 9:45am Serena Nik-Zainal (Wellcome Trust Sanger Institute, UK)
Advances in the understanding of mutational signatures in human cells
- 9:45am – 10:15am Rameen Beroukhim (Dana-Farber Cancer Institute, US)
Mechanistic and selective forces shaping rearrangement profiles in cancer
- 10:15am – 10:30am **Abcam Welcome:** David Grotzky (Scientific Support Specialist, Abcam)
- 10:30am – 11:00am Coffee break
- 11:00am – 11:30am Jim Lupski (Baylor College of Medicine, US)
Complex genomic rearrangements (CGR) and multiple de novo CNV (MdnCNV) – what can they teach us about mutational mechanisms
- 11:30am – 12:00pm Peter Campbell (Wellcome Trust Sanger Institute, UK)
Patterns of structural variation in 2,600 cancer genomes
- 12:00pm – 12:15pm Peter Park (Harvard Medical School, US)
A molecular portrait of microsatellite instability across 8000 cancers
- 12:15pm – 12:30pm **Elevator talks selected from poster abstracts**
- 12:30pm – 1:30pm Lunch

- 1:30pm – 2:15pm **Poster Session #1**
Odd Poster Numbers Present
- 2:15pm – 6:30pm Session II – Mutation and chromosome rearrangement II**
Session Chair: Angelika Amon (MIT, US)
- 2:15pm – 2:45pm Jim Haber (Brandeis University, US)
Mutations arising during repair of chromosome breaks: how much microhomology is enough
- 2:45pm – 3:15pm Anna Malkova (University of Iowa Carver College of Medicine, US)
Genetic instability resulting from DNA synthesis associated with double-strand break repair
- 3:15pm – 3:45pm Fred Alt (Boston Children's Hospital, US)
Recurrent DNA Break Cluster Genes in Neural Stem and Progenitor Cells
- 3:45pm – 4:00pm Catherine Freudenreich (Tufts University, US)
Cytosine deamination mediates R-loop dependent CAG repeat fragility and instability
- 4:00pm – 4:15pm Jeff Sekelsky (University of North Carolina, US)
Synthesis-dependent strand annealing
- 4:15pm – 4:45pm Afternoon coffee break
- 4:45pm – 5:15pm Maria Jasin (Memorial Sloan Kettering Cancer Center, US)
CRISPR-Cas9-guided oncogenic chromosomal translocations with conditional fusion protein expression in human mesenchymal cells
- 5:15pm – 5:45pm Dmitry Gordenin (NIEHS, US)
Knowledge-based analyses of mutation signatures reveal sources and mechanistic details of mutagenesis in humans
- 5:45pm – 6:00pm Kyle Vrtis (Harvard Medical School, US)
Microhomology-mediated repair of collapsed replication forks in Xenopus egg extracts
- 6:00pm – 6:30pm Ralph Scully (Harvard Medical School, US)
Mechanisms of genomic instability at stalled replication forks
- 6:30pm **Close of day II sessions**

Thursday, April 20, 2017

- 9:00am – 12:30pm Session III – Evolution of karyotype and mitotic control I**
Session Chair: Serena Nik-Zainal (Wellcome Trust Sanger Institute, UK)
- 9:00am – 9:30am Don Cleveland (University of California- San Diego, US)
Genome rearrangements and mutation signatures in development and cancer
- 9:30am – 10:00am Emily Hatch (Fred Hutchinson Cancer Research Center, US)
Causes/consequences of nuclear envelope rupture in micronuclei

- 10:00am – 10:15am Michael Lodato (Boston Children's Hospital, US)
Somatic Mutations in Human Neurons Reflect Developmental and Transcriptional Histories
- 10:15am – 10:30am Marcin Imielinski (Weill Cornell Medicine, US)
Noncoding indel hotspots target lineage-defining genes in human cancer
- 10:30am – 10:45am Mia Petljak (Wellcome Trust Sanger Institute, UK)
Investigation of activities of mutational processes over time reveals episodic nature of APOBEC mutagenesis in human cancer cells
- 10:45am – 11:15am Coffee break
- 11:15am – 11:45am Luca Comai (University of California- Davis, US)
CENH3-mediated genome elimination
- 11:45am – 12:00am Harveer Dev (University of Cambridge, UK)
Ectopic recruitment of 53BP1 to chromatin impairs mitotic DNA synthesis and promotes genome instability
- 12:00pm – 12:30pm David Pellman (Dana-Farber Cancer Institute, US)
Complex chromosomal rearrangements from nuclear envelope disruption
- 12:30pm – 1:30pm Lunch
- 1:30pm – 2:15pm **Poster Session #2**
Even Poster Numbers Present
- 2:15pm – 4:15pm** **Session IV: Evolution of karyotype and mitotic control II**
Session Chair: Gad Getz (Broad Institute, US)
- 2:15pm – 2:30pm Jason Sheltzer (Cold Spring Harbor Laboratory, US)
Single-chromosome aneuploidy commonly functions as a tumor suppressor but can drive genome evolution
- 2:30pm – 2:45pm Benoit Laurent (Boston Children's Hospital, US)
m6A RNA methylation regulates the UV-induced DNA damage response
- 2:45pm – 3:00pm Donata Weghorn (Harvard Medical School, US)
Bayesian inference of negative and positive selection in human cancers
- 3:00pm – 3:30pm Angelika Amon (MIT, US)
New sources of genome instability
- 3:30pm – 4:00pm Steve Elledge (Harvard Medical School, US)
How aneuploidy drives cancer
- 4:15pm **Close of session and departure**