

Cancer Evolution Symposium

**Cancer Research UK City of London Centre
Cancer Evolution Symposium**

Monday 13th – Tuesday 14th September 2021

Monday 13th September AM

10:00-10:15 Welcome – Professor Charles Swanton

10:15-11:45 Session 1 – Early Detection

Chair: Professor Peter Sasieni, King's College London

10:15-10:45 *Lung cancer pathogenesis and early diagnosis*

Professor Sam Janes, University College London

10:45-11:15 *Can we monitor tumor plasticity in patients' circulation*

Professor Francesca Demichelis, University of Trento

11:15-11:30 **Short talk:** *Mapping field cancerisation and clonal evolution in IBD colons with dysplasia and CRC*

Mehmet Yalchin, St. Mark's Hospital/Barts Cancer Institute

11:30-11:45 **Short talk:** *Comparative analysis of genes driving clonal expansions in cancer and healthy tissues*

Reda Keddar, Francis Crick Institute/King's College London

11:45-12:00 Break

12:00-13:30 Session 2 - Single Cell

Chair: Dr Mirjana Efremova, Barts Cancer Institute

12:00-12:30 *Somatic evolution through the lens of single-cell multi-omics*

Dr Dan Landau, Cornell University

12:30-13:00 *The role of genomic instability in shaping immunophenotypes in ovarian cancer*

Dr Sohrab Shah, Memorial Sloan Kettering Cancer Center

13:00-13:15 **Short talk:** *CACTUS: integrating clonal architecture with genomic clustering and transcriptome profiling of single tumor cells*

Shadi Darvish Shafighi, Cotutelle: University of Warsaw & Sorbonne University

13:15-13:30 **Short talk:** *Evolutionary tracking of cancer haplotypes at single cell resolution*

Dr Marc Williams, Memorial Sloan Kettering Cancer Center

13:30-14:45 Lunch and poster session



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Monday 13th September PM**14:45-16:15****Session 3 - Mathematical Modelling****Chair: Professor Trevor Graham, Barts Cancer Institute**14:45-15:15 *Evolutionary dynamics of breast tumorigenesis***Professor Franziska Michor, Dana-Farber Cancer Institute**15:15-15:45 *Tracing the dynamics of preneoplasia in the mouse mammary gland epithelium***Professor Ben Simons, University of Cambridge**15:45-16:00 **Short Talk:** *Principles of ecDNA random inheritance drive rapid genome change and therapy resistance in human cancers***Dr Benjamin Werner, Barts Cancer Institute**16:00-16:15 **Short Talk:** *Cell lineage tracing with molecular clocks based on fluctuating DNA methylation***Calum Gabbutt, Barts Cancer Institute****16:15-16:30****Break****16:30-18:00****Session 4 - Cancer Systems****Chair: Dr Nicky McGranahan, UCL Cancer Institute**16:30-17:00 *Genotype to phenotype mapping of tumorigenesis at single cell resolution***Professor Christina Curtis, Stanford University**17:00-17:30 *Common germline immune variants contribute to selective constraint on tumor genomes***Dr Hannah Carter, University of California San Diego**17:30-17:45 **Short Talk:** *Transient instability in TNBC examined via single cell DNA sequencing and mathematical modelling***Michael Nicholson, University of Edinburgh**17:45-18:00 **Short talk:** *The RNA editing landscape of NSCLC*
Dr Carlos Martinez Ruiz, University College London**18:00****End of day one - Drinks reception**

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Tuesday 14th September AM

10:15-11:45

Session 5 - Model Systems

Chair: Dr Ilaria Malanchi, Francis Crick Institute

10:15-10:45 *Towards rational combination therapies: Understanding Tumor evolution during therapy response and resistance*

Dr Anna Obenauf, Research Institute of Molecular Pathology

10:45-11:15 *Understanding how spatial patterns of tumour growth impact clonal diversification and evolutionary trajectories*

Dr Erik Sahai, Francis Crick Institute

11:15-11:30 *Short talk: Developing adaptive therapy to suppress the evolution of treatment resistance in high-grade serous ovarian cancer*

Dr Helen Hockings, Barts Cancer Institute

11:30-11:45 *Short talk: Single-cell signalling analysis of CRC tumour microenvironment organoids in response to treatment*

Maria Ramos, UCL Cancer Institute

11:45-12:00

Break

12:00-13:45

Session 6 - Cancer Genomes

Chair: Dr Simone Zaccaria, UCL Cancer Institute

12:00-12:30 *Computational analysis of cancer genomes*

Professor Núria López-Bigas, IRB Barcelona

12:30-13:00 *Somatic mutation and clonal expansion in normal tissues*

Dr Inigo Martincorena, Wellcome Sanger Institute

13:00-13:15 *Short talk: Signatures of copy number alterations in human cancer*

Christopher Steele, UCL Cancer Institute

13:15-13:30 *Short talk: Genetic and immune landscape evolution defines subtypes of MMR deficient colorectal cancer*

Dr Benjamin Challoner, Institute of Cancer Research

13:30-13:45 *Short talk: Allele-specific expression in non-small cell lung cancer evolution*

Dr James Black, UCL Cancer Institute

13:45-14:30

Lunch



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Session 7 - Microenvironment

Chair: Professor Francesca Ciccarelli, King's College London/Francis Crick Institute

14:30-15:00 *Genomic triggers and cellular context of cancer dormancy*

Dr Maria Secrier, University College London

15:00-15:30 *Cancer rearranges the rules in tissue building blocks. A new class of targets for therapy?*

Professor Garry Nolan, Stanford University

15:30-15:45 *Short talk: Identification and impact of clonal and subclonal driver alterations during cancer progression at a single-patient resolution*

Hrvoje Misetic, Francis Crick Institute/King's College London

15:45-16:00 *Short talk: Selection of metastasis competent subclones in the tumour interior*

Dr Kevin Litchfield, UCL Cancer Institute

16:00-16:15

Closing remarks

16:15

End of Symposium



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