



INSTITUTE  
FOR RESEARCH  
IN BIOMEDICINE

# Barcelona BioMed Conference CANCER PROMOTION understanding cancer promotion to inform prevention (3-5 June, 2024)

## Monday, 3 June

8.30 Registration

9.00 Welcome by Dr. Francesc Posas (IRB Barcelona, Director)  
and organizers (Dr. Núria López-Bigas, Dr. Allan Balmain, Dr. Paul Brennan)

### Session I: Epidemiology, risk factors and cancer prevention

Chair: Dr. James DeGregori, University of Colorado (Denver, CO, USA)

Co-Chair: Raquel Blanco, IRB Barcelona (Barcelona, Spain)

9.15 Tracing the origins and evolution of cancers induced by environmental  
carcinogens  
Dr. Allan Balmain, UCSF (San Francisco, CA, USA)

9.50 The Promoter Hypothesis: A Long View from the History and Philosophy of  
Science  
Dr. Anya Plutynski, Washington University (St. Louis, MO, USA)

10.25 Short talk 1: Obesity, diabetes, and pancreatic cancer: revisiting  
epidemiological causality  
Dr. Núria Malats, CNIO (Madrid, Spain)

10.40 -11.15 *Coffee break and poster session*

11.15 Can we identify ubiquitous causes of cancer?  
Dr. George Davey-Smith, Bristol University (Bristol, UK)

- 11:50 **Short talk 2: Dissecting the contribution of circulating proteins to multiple myeloma risk: a Mendelian randomization study**  
Dr. Lucy J. Goudswaard, University of Bristol (Bristol, UK)
- 12.05 **Short talk 3: Early-life tobacco smoke exposure is associated with off-target RAG-mediated deletions in childhood acute lymphoblastic leukemia**  
Dr. Adam J. de Smith, USC (Los Angeles, CA, USA)
- 12.20 **The mutagenic and promotional effect of known and suspected risk factors across multiple cancer sites - Emerging results from Mutographs**  
Dr. Paul Brennan, IARC (Lyon, France)

12.55 -14.00 *Lunch and poster session*

**Session II: Clonal expansions in normal tissues**

**Chair: Dr. Dan Landau, NY Genome Center (New York, NY, USA)**

**Co-Chair: Saumya Bollam, UCSF (San Francisco, CA, USA)**

- 14.00 **Somatic mutations, clonal expansions, and cancer risk**  
Dr. Rosana Risques, UW Medicine (Seattle, WA, USA)
- 14.35 **Comparative two-stage chemical carcinogenesis in the skin: from mouse, to naked mole-rat and Ansell's mole-rat**  
Dr. Angela Goncalves, DKFZ (Heidelberg, Germany)
- 15.10 **Positive selection and mutation dynamics in normal reproductive tissue**  
Dr. Raheleh Rahbari, Wellcome Sanger Institute (Hinxton, UK)

15.45 - 16.15 *Coffee break and poster session*

- 16.15 **Short talk 4: Timing the origin, early diversification and evolution of Richter transformation in chronic lymphocytic leukemia**  
Ian Márquez-López, FRCB-IDIBAPS (Barcelona, Spain)
- 16.30 **Short talk 5: Quantitative genetic and epigenetic lineage tracing of blood in the decades preceding AML diagnosis**  
Dr. Jamie Blundell, Early Cancer Institute, University of Cambridge (Cambridge, UK)
- 16.45 **Clonal selection in normal tissues shaped by cancer promoters**  
Dr. Núria López-Bigas, IRB Barcelona/ ICREA (Barcelona, Spain)
- 17.20 *End of session*

## Tuesday, 4 June

### Session III: Clonal hematopoiesis

Chair: Dr. Rosana Risques, UW Medicine (Seattle, WA, USA)

Co-Chair: Dr. Santiago Demajo, IRB Barcelona (Barcelona, Spain)

9.00 **Inherited and environmental modifiers of clonal hematopoiesis fitness**  
Dr. Kelly Bolton, Washington University School of Medicine (St. Louis, MO, USA)

9.35 **Stem cell memories as drivers of cancer heterogeneity**  
Dr. Alejo Rodriguez-Fraticelli, IRB Barcelona/ ICREA (Barcelona, Spain)

10.10 -10.40 *Coffee break and poster session*

10:40 **Somatic evolution of blood during ageing and disease**  
Dr. Jyoti Nangalia, Wellcome Sanger Institute (Hinxton, UK)

11.15 Short talk 6: **Studying PIK3CA cancer-associated mutations in congenital disorders**  
Dr. Mariona Graupera, Josep Carreras Leukaemia Research Institute (Barcelona, Spain)

11.30 Short talk 7: **Investigating clonal haematopoiesis using a novel single cell multi-omic approach**  
Dr. Laura Mincarelli, Wellcome Sanger Institute (Hinxton, UK)

11.45 **Tumor-infiltrating clonal hematopoiesis in non-small cell lung cancer**  
Dr. Elsa Bernard, Gustave Roussy (Villejuif, France)

12:20-13.20 *Lunch and poster session*

### Session IV: Molecular mechanisms of cancer promotion

Chair: Dr. Kamila Naxerova, Harvard University (Cambridge, MA, USA)

Co-Chair: Dr. Rocio Chamorro, IRB Barcelona (Barcelona, Spain)

13.20 **Environmental challenge rewires functional connections among human genes**  
Dr. Luke Gilbert, Arc Institute (San Francisco, CA, USA)

13.55 **Mapping phenotypes and lineage history in human somatic evolution with single-cell multi-omics**  
Dr. Dan Landau, NY Genome Center (New York, NY, USA)

14.30 Short talk 8: **Understanding the causes of head and neck cancer using mutational signature analysis**  
Dr. Laura Torrens, IARC/WHO (Lyon, France)

- 14.45 **Epigenetic co-option of epithelial-immune crosstalk promotes pancreatic tumorigenesis**  
Dr. Direna Alonso-Curbelo, IRB Barcelona (Barcelona, Spain)
- 15.20- 16.00 *Coffee break and poster session*
- 16.00 **Somatic evolution of the hematopoietic system in health and disease**  
Dr. Kamila Naxerova, Harvard University (Cambridge, MA, USA)
- 16:35 **Short talk 9: Uncovering Global Exogenous Mutagenic Exposures**  
Dr. Aida Ferreiro-Iglesias, IARC/WHO (Lyon, France)
- 16.50 **The neuronal RNA-binding protein is a master regulator of the tumor microenvironment that promotes malignant progression and immune evasion**  
Dr. Douglas Hanahan, EPFL (Lausanne, Switzerland)
- 17.25 **Exploring evolutionary contingencies and constraints by rewinding the tape of malignant transformation**  
Dr. Samra Turajlic, The Francis Crick Institute (London, UK)
- 18.00 *End of session*
- 20.30 *Speakers dinner (Restaurant Can Pineda) (Sant Joan de Malta, 55)*

## Wednesday, 5 June

- 9.00 ***Major late-acting determinants of human cancer: endocrine treatments, and smoking cessation***  
**Keynote:** Prof. Sir. Richard Peto, University of Oxford (Oxford, UK)  
**Chair:** Dr. Paul Brennan, IARC (Lyon, France)

### Session V: Modeling cancer promotion and prevention in organoids and model Systems

**Chair:** Dr. Allan Balmain, UCSF (San Francisco, CA, USA)  
**Co-Chair:** Maria Guarini, IRB Barcelona (Barcelona, Spain)

- 9.35 **Short talk 10: Species-specific role of RAS in Malignant Transformation**  
Dr. Nikhil Gupta, UTU (Turku, Finland)
- 9.50 **Short talk 11: A robust ex vivo system to study cellular dynamics and development of human pulmonary NE cells**  
Noah Candeli, EMBL (Barcelona, Spain)

- 10.05 **Metabolic disorders promote oncogenic mutant expansion in normal oesophagus**  
Dr. Phil Jones, Wellcome Sanger Institute (Hinxton, UK)
- 10.40 -11.20 *Coffee break and poster session*
- 11.20 **Somatic Evolution, Cancer, and Our Inevitable Decline with Age-Inextricably Linked**  
Dr. James DeGregori, University of Colorado (Denver, CO, USA)
- 11.55 **Short talk 12: Estimating mutation risks conferred by mutational processes in cancer genomes**  
Dr. Axel Rosendahl Huber, IRB Barcelona (Barcelona, Spain)
- 12.10 **Short talk 13: Somatic evolution and treatment mutagenesis**  
Dr. Oriol Pich, The Francis Crick Institute (London, UK)
- 12.25 **Organoid models of the tumor immune microenvironment**  
Dr. Calvin Kuo, Stanford University School of Medicine (Stanford, CA, USA)
- 13.00 *Concluding remarks and end of conference*