

BIG-DATA IN MOLECULAR BIOLOGY: FROM EXPERIMENTAL DESIGN TO MOLECULAR FUNCTION

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June 20-21 2024
Room BM

**BIG-DATA IN MOLECULAR BIOLOGY:
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The course will provide indications on the importance of using genomics and transcriptomics data. The most recent bioinformatics methods used for the analysis of genomics and transcriptomics data and their use in complex projects will be described and illustrated.

PROGRAM

JUNE 20, 2024

Room BM

➤ **14.00-17.00 Genomics Session**

14:00 Introduction

14:10 Stein Aerts # Modelling genome regulation

14:50 Magda Bienko # Long-distance communication between long and short neuronal genes mediated by RNA

15:30 Graziano Pesole # Comparative evaluation of long and short read sequencing technologies for human trio genotyping

16:10 Coffee break

16:20 Fernanda Pinheiro # TBD

17:00 Fabio Zanarello # Genome annotation across the tree of life using long read transcriptomics



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JUNE 21, 2024

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➤ **9.00-13.00 Transcriptomics Session**

9:00 Introduction

9:10 Valentina Proserpio # Single cell technologies and their applications

10:00 Iros Barozzi # Unravelling Transcriptional Heterogeneity Exposes General Mechanisms of Adaptation to Endocrine Therapies in Breast Cancer

10:50 coffee break

11:10 Tommaso Selmi # Deciphering Stem Cell States: The Interplay of RNA Modifications and Translational Dynamics

11:50 Mattia Pellizzola # Nanodynamo quantifies the dynamics of RNA metabolism and reveals extensive coupling between steps of the RNA life cycle

12:30 Daniele Traversa (Phd student) # SCALT: automatic annotation of cell identity in SC RNAseq

➤ **14.00-17.00 A real world application: FSHD as a case of study**

14:00 Introduction

14:10 Rossella Tupler # FSHD clinical perspective

14:50 Valentina Salsi # Wet lab and experimental design of omics-based assays

15:20 Coffee break

15:40 Sara Pini # TBD

16:20 Matteo Chiara # How to work/cope with a bioinformatician, computational analyses and interpretation of the results.

