

# KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

## Single Cell Biology: Pushing New Frontiers in the Life Sciences (T9)

April 5-9, 2022 • Firenze Fiera - Nazioni • Florence, Italy

Scientific Organizers: Nikolaus Rajewsky and Massimiliano Pagani

Organized in collaboration with Menarini International Foundation

Sponsored by Novo Nordisk A/S and Thermo Fisher Scientific Inc.

Global Health Travel Award Deadline: March 15, 2022 / Scholarship Deadline: January 6, 2022 / Abstract Deadline: January 6, 2022 / Discounted Registration Deadline: February 7, 2022

### TUESDAY, APRIL 5

#### Arrival and Registration

### WEDNESDAY, APRIL 6

#### Welcome and Keynote Address

**Eileen E.M. Furlong**, European Molecular Biology Laboratory, Germany  
*Dissecting Regulatory Principles of Embryonic Development One Cell at a Time*

#### Interrogating Disease Models at Single Cell

**Barbara Treutlein**, ETH Zürich, Switzerland  
*Understanding Organoids by Disassembling and Analysing Component Lineages Using Single-Cell RNA Sequencing*

**Ido Amit**, Weizmann Institute, Israel  
*The Power of ONE: Immunology in the Age of Single Cell Genomics*

**Maike Sander**, University of California, San Diego, USA  
*Insights into Pancreatic Islet Cell Gene Regulation and Disease Mechanisms of Diabetes from Single-Cell Analyses*

**Short Talks Chosen from Abstracts**

#### Poster Session 1

#### Workshop 1: Emerging Technologies for Unbiased Single Cell Analysis

**Short Talks Chosen from Abstracts**

#### Single Cell Computational Biology to Molecular Mechanisms

**Sarah Teichmann**, Wellcome Sanger Institute, UK  
*Cell States and Transcriptional Programmes in the Adult Human Heart*

**Fabian Theis**, Helmholtz Zentrum München, Germany  
*Computational Approaches in Single Cell Trajectory Analysis and Modeling*

**Matthias Mann**, Max Planck Institute of Biochemistry, Germany  
*Proteomics and Systems Biology in the Age of Single Cell Analysis*

**Short Talks Chosen from Abstracts**

### THURSDAY, APRIL 7

#### Development and Cell Fate at Single Cell Resolution I

**Jeffrey A. Whitsett**, Cincinnati Children's Hospital Medical Center, USA

*LungMAP: Systems Biology Approaches Supporting Study of Perinatal and Postnatal Lung Development and Disease*

**Nikolaus Rajewsky**, Max Delbrück Center for Molecular Medicine, Germany

*Design Principles of Gene Expression by Single Cell-Sequencing*

**Alexander F. Schier**, University of Basel, Switzerland  
*Cellular Biographies: Reconstructing Zebrafish Development*

**Speaker to be Announced**

**Stefano Piccolo**, University of Padua, Italy  
*Combined Single-Cell and Histopathology Datasets Reveal Spatial Location of Glioblastoma Stem Cells and New Plasticity Determinants*  
**Short Talk(s) Chosen from Abstracts**

#### Workshop 2

**Short Talks Chosen from Abstracts**

#### Spatially-Resolved Omics at Single Cell Resolution

**Speaker to be Announced**

**Bernd Bodenmiller**, University of Zürich, Switzerland  
*Highly Multiplexed Imaging of Tissues with Subcellular Resolution by Imaging Mass Cytometry*

**Speaker to be Announced**

**Short Talks Chosen from Abstracts**

#### Poster Session 2

### FRIDAY, APRIL 8

#### Single Cell Analysis in Tumor Microenvironment

**Massimiliano Pagani**, IFOM - The FIRC Institute of Molecular Oncology, Italy

*Deciphering the Tumor Microenvironment by Multiomics Analyses*

**Evan W. Newell**, Fred Hutchinson Cancer Research Center, USA  
*Using Antigen Specificity to Parse the High Dimensional Profiles of Tumor Infiltrating T Cells*

**Peter Lichter**, Deutsches Krebsforschungszentrum, Germany  
*Experiences in Assessing Intra-Tumor Heterogeneity by Single Cell Sequencing*

**Kara L. Davis**, Stanford University, USA  
*Single-Cell Developmental Classification of B Cell Precursor Acute Lymphoblastic Leukemia Using Mass Cytometry at Diagnosis Reveals Predictors of Relapse*

**Short Talks Chosen from Abstracts**

#### Career Roundtable

#### Development and Cell Fate at Single Cell Resolution II

**Alexander van Oudenaarden**, Hubrecht Institute, Netherlands  
*Ribosome Profiling in Single Cells*

**Speaker to be Announced**

**Speaker to be Announced**

**Short Talks Chosen from Abstracts**

#### Poster Session 3

### SATURDAY, APRIL 9

#### Single Cell Analysis in Neuroscience

**Ana Pombo**, Max Delbrück Centre for Molecular Medicine, Germany  
*Specialization of 3D Genome Topologies in Specific Cell Types and States*

**Speaker to be Announced**

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### Workshop 3

**Short Talks Chosen from Abstracts**

### Single Cell Analysis in Infection Biology

**Muzlifah A. Haniffa**, Newcastle University, UK

*Decoding the Developing Human Immune System*

**Emmanuel Saliba**, University of Würzburg, Germany

*Regulatory and Virulence Mechanisms in Host-Pathogen Interactions*

**Angela Ciuffi**, Institute of Microbiology - CHUV/UNIL, Switzerland

*Single Cell Analysis of Viral Pathogenesis*

**Short Talks Chosen from Abstracts**

### Meeting Wrap-Up: Outcomes and Future Directions (Organizers)

### SUNDAY, APRIL 10

Departure