Life Sciences Seminar

From Single Cell to Spatial Transcriptomics with 10x Genomics

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Host: Anna Kicheva

Whether you want to dissect cell-type differences, investigate the adaptive immune system, or discover copy number variation and genomic heterogeneity on a cell-by-cell basis, the Chromium System from 10x Genomics is the answer. Characterize and profile gene expression in hundreds to tens of thousands of single cells, sequence paired, full-length B-cell or T-cell repertoires, or profile hundreds to thousands of single cell genomes to reveal genome heterogeneity and understand clonal evolution. But also the ability to discern spatial gene expression differences in complex biological systems is critical to our understanding of developmental biology and the progression of disease. However, the complexity presented by heterogeneous tissue has been historically difficult to overcome. Immunohistochemistry, ISH, and H&E staining, foundational tools for understanding tissue architecture, are based on a combination of gene expression and cell morphology information. Though recent advances in RNA sequencing (RNA-seq) have made it possible to obtain unbiased high-throughput gene expression data, these experiments require dissociated cells and cannot preserve morphological context, until now. The Visium Spatial Gene Expression Solution from 10x Genomics analyzes complete transcriptomes in intact tissue sections, allowing you to discover genes and markers relevant to your research without having to rely on known targets. Preserving spatial resolution offers critical information for understanding the relationships between cellular function, phenotype, and location in the tissue.

Tuesday, November 19, 2019 10:00am - 12:00pm
Seminar Room, Lab Building East

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.
Please find a schedule of the ISTA Shuttle on our webpage:
https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.