

Speaker presentation title: Spatial Omics Technologies at Scale

Brief speaker bio:

Dr. Vicković is a Core Faculty Member and the Director of the Technology Innovation Lab, at the New York Genome Center. She holds joint appointments as an Assistant Professor at the Fu Foundation School of Engineering and Applied Science and the Herbert and Florence Irving Institute for Cancer Dynamics at Columbia University, and as a Wallenberg Academy Fellow of the Royal Swedish Academy of Sciences and the Royal Swedish Academy of Engineering Sciences at Uppsala University. Dr. Vicković is an experienced and accomplished engineer and an inventor of the spatial transcriptomic technology called “Visium” and now commercialized by 10x Genomics.

Brief presentation abstract:

Mucosal and barrier tissues such as the gut, lung or skin, are composed of a complex network of cells and microbes forming a tight niche that prevents pathogen colonization and supports host-microbiome symbiosis. Characterizing these networks at high molecular and cellular resolution is crucial for our understanding of homeostasis and disease. Spatial transcriptomics has recently emerged as a key technique to capture and positionally barcode RNAs directly in tissues. Today, I will introduce two of the recent advances in the application of spatial transcriptomics at scale, by presenting Spatial Multi-Omics (SM-Omics); as a fully automated, high-throughput platform for combined and spatially resolved transcriptomics and antibody-based protein measurements, and Spatial Host-Microbiome sequencing (SHM-seq); an all-sequencing based approach that captures tissue histology, polyadenylated RNAs and bacterial 16S sequences directly from tissues on spatially barcoded glass surfaces.