

# CCR – Lecture Series

Monday, October 7, 2024, 1:00 PM

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## **Deconstructing Immune Mechanisms, Therapy Responses and Patient Outcomes by Highly Multiplexed Tissue Imaging**

In recent years, tremendous developments in spatial biology technologies have enabled the identification and quantification of dozens to hundreds of proteins and RNAs at the subcellular level across millions of cells in intact tissue sections. These advances open new possibilities for many research fields, including oncology, immunology and pharmacology. The key for understanding biology often lies in the tissue itself, and unlocking its architecture, cellular composition, cell-cell interactions and cellular neighborhoods in health and disease will inform future diagnostics and therapies. In this presentation, I will provide an overview of spatial omics technologies and analysis concepts and present our recent work on the application of CODEX (CO-Detection by indEXing), a highly multiplexed microscopy technology, in various diseases. Specifically, I will discuss how we used CODEX to dissect immune mechanisms, predict therapy response, and discover a novel spatial biomarker in cutaneous T cell lymphoma patients enrolled in a clinical trial of anti-PD-1 immunotherapy. Moreover, I will show recent data on innate and adaptive immune responses in human glioblastoma tissue cultures treated with anti-PD-1 and anti-CD47 antibodies. Finally, I will elaborate on the use of CODEX in dissecting spatially nuanced inflammatory processes and response to TNF inhibitors in ulcerative colitis.

**Venue:** Lecture Hall B2, Borschkegasse 4a

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**Host:** Iros Barozzi



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