Keck School of Medicine of USC

Department of Translational Genomics - Virtual Distinguished Lecture Series

Long Cai, PhD

Professor
Biology and Biological Engineering at Caltech

"Spatial Genomics: in situ single cell analysis by seqFISH"

Imaging the transcriptome *in situ* with high accuracy has been a major challenge in single cell biology, particularly hindered by the limits of optical resolution and the density of transcripts in single cells. We developed seqFISH+, that can image the mRNAs for 10,000 genes in single cells with high accuracy and sub-diffraction-limit resolution, in the mouse brain cortex, subventricular zone, and the olfactory bulb, using a standard confocal microscope. The transcriptome level profiling of seqFISH+ allows unbiased identification of cell classes and their spatial organization in tissues. In addition, seqFISH+ reveals subcellular mRNA localization patterns in cells and ligand-receptor pairs across neighboring cells. This technology demonstrates the ability to generate spatial cell atlases and to perform discovery-driven studies of biological processes *in situ*.

Tuesday, December 1, 2020 **11:00am – 12:00pm** **Register Here**