

The Cognitive Science Department

is pleased to announce the following seminar by



Dr. Eran Mukamel

UCSD

"Attractors in the Brain: Neuronal Cell Types as Fixed Points in the Epigenetic Landscape."

Abstract: *We are born with a full complement of brain cells, but neurons and glia acquire their mature identity gradually throughout childhood and adolescence. Epigenome sequencing has revealed that over the lifespan human neurons go through an astonishingly dynamic reorganization of methylcytosine, a stable and heritable yet flexible modification of genomic DNA. I will describe our work using computational and bioinformatic methods to characterize the cell type-specific identity and dynamics of the DNA methylome in human brain cells. Using single cell sequencing, we have pinpointed changes in specific cortical neuron types that accompany healthy aging, including a broad upregulation of subtelomeric gene expression. We have also uncovered a dynamic cycle of genomic cytosine methylation and hydroxymethylation with a ~decade timescale.*

Bio: *Dr. Eran Mukamel is an Associate Professor of Cognitive Science at UCSD, where he leads the Computational Neural DNA Dynamics (CNDD) lab. Eran earned a PhD in Physics at Stanford, and trained as a Swartz Postdoctoral Fellow in Theoretical Neuroscience at Harvard's Center for Brain Science and at the Salk Institute. Outside of science Eran is passionate about music, sound, and all sorts of signals.*