Seminar/Talk

Targeted epigenetic editing for the study of reward pathophysiology

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Host: Nicole Amberg , Lora Sweeney

The Heller Lab studies the epigenetic mechanisms that underlie aberrant neuronal function and behavior in neuropsychiatric disease. To approach this problem, we apply preclinical mouse paradigms of drug addiction and depression to determine functionally relevant histone modifications. Because the syndromes of addiction and depression persist long after cessation of the harmful experience, stable epigenetic remodeling is an attractive mechanism for such long-lasting effects and presents an intriguing target for therapeutic intervention. We use high-throughput sequencing and bioinformatic approaches, including machine learning, to identify genes at which drug- or stress-regulation of the epigenome correlates with changes in gene expression. Using novel epigenetic editing tools, we then target individual modifications and examine their causal relevance to transcription and behavior. This bottom-up approach allows direct elucidation of the causal relevance of epigenetic remodeling in the brain.

Tuesday, December 15, 2020 02:30pm - 06:30pm
online

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