Seminar/Talk

Won’t You Be My Neighbor? Proximity Proteomics to Uncover Neural Mechanisms of Adaptive and Maladaptive Synaptic Mechanisms

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Host: Tomas Masson

Synaptic plasticity and genetic risk factors are pivotal in decoding the mysteries of neurological disorders. In this talk, I'll unveil novel proteomics techniques that shed light on the intricate molecular dance at synaptic junctions in vivo and the unique interactomes linked to neurodevelopmental disorders. First, Ill discuss recent presynaptic proteomics, where we have uncovered a dynamic signaling pathway that orchestrates synaptic vesicle replenishment across both excitatory and inhibitory synapses. This discovery has led to a new understanding of mechanisms for short-term presynaptic plasticity, that appears crucial for working memory. Next, Ill pivot to the enigma of autism spectrum disorder (ASD). Here, we identify high-confidence autism risk interactomes in the mouse brain, which strikingly mirror dysregulations observed in human autistic brains. This revelation hints at novel avenues to prioritize genetic risk and emphasizes shared cellular functions that might be at the heart of ASD. Together these stories will detail new approaches for neural proteomics and novel mechansims that drive the balance of synaptic plasticity and genetic underpinnings in neurological conditions.

Tuesday, October 3, 2023 04:00pm - 05:00pm

Office Bldg West / Ground floor / Heinzel Seminar Room (I21.EG.101)

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