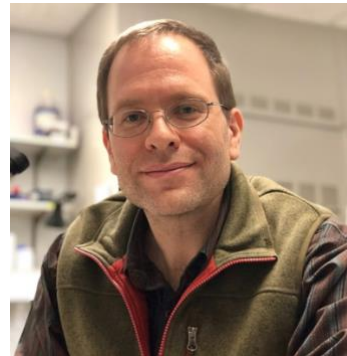


“Munc13 and synaptic transmission: New insights into an old protein”

Speaker

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Time

Thursday, 10th November 2022
5:00 PM

Location

via zoom

<https://gwdg.zoom.us/j/85147921523?pwd=RHpuSGFaUXlnMWVZOWFIVjUwTVAxQT09>

Meeting ID: 851 4792 1523

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Abstract

Munc13 is a deeply conserved synaptic hub protein that coordinates nearly every aspect of neurotransmitter release, although we still lack a complete mechanistic understanding of its actions at the synapse. Using a forward genetic screen in *C. elegans*, we identified and characterized a unique C-terminal domain that is critical for maintaining the pool of fusion-competent vesicles at the synapse (the docking/priming function of Munc13). We also determined that a neighboring protein module comprising a C1-C2 tandem domain mediates an autoinhibitory function that is critical for proper regulation of synaptic transmission. A human point mutation in this site leads to severe neurological dysfunction due to a gain of Munc13 activity. Together with recent structural work on Munc13, our biochemical, genetic, and physiological data suggest a principal organizational role for Munc13 in controlling vesicle docking, SNARE assembly, and membrane fusion.