

Cell Biology and Neuroscience Seminar

Friday, April 20th

1:10 pm – 2:00 pm

108 Plant Bioscience Building



Dr. Ed Chapman

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School of Medicine and Public Health
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“New insights into fusion pore structure and dynamics”

Research in the Chapman lab is focused on understanding the structure, function and dynamics of the exocytotic membrane “fusion machine” that mediates the release of neurotransmitters from neurons. These studies have begun to reveal insights into how the release machinery is regulated and thereby contributes to neuronal plasticity. Neuronal exocytosis is triggered by Ca^{2+} and occurs via the abrupt opening of a pre-assembled fusion pore. Subsequent dilation of the pore results in the complete fusion of the vesicle membrane with the plasma membrane. We are currently identifying and reconstituting the sequential protein-protein and protein-lipid interactions that underlie excitation-secretion coupling. To delineate this pathway, we have primarily focused on the Ca^{2+} -binding synaptic-vesicle protein, Synaptotagmin, which appears to function as the Ca^{2+} -sensor that regulates release, and the SNARE proteins that form the core of the fusion apparatus.