West Virginia University

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Interactions of Huntington with Model Cell Membranes

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Huntington's disease (HD) is a dominant genetic neurodegenerative disorder associated with motor and cognitive decline, caused by a mutation in the poly-glutamine (polyQ) region near the N-terminus of the huntingtin (htt) protein. Expansion of the polyQ region above 35-40 repeats results in the disease, which is characterized by inclusion body aggregates of mutated protein. There is increasing evidence that lipid interactions may play a role in the toxic gain of function associated with expansion of polyQ in htt, as membrane-related changes (including mutant htt membrane association and subsequent disruption as well as altered membrane composition) are observed in HD. The interactions between htt and lipid membranes were measured with a combination of Langmuir trough monolayer techniques, vesicle permeability assays, membrane fluctuation analysis, and fluorescence imaging. Our data suggests that the polyQ flanking regions play a critical role in htt binding and aggregation on lipid membranes. Additionally, lipid composition strongly influences htt binding and aggregation and this peptide binding serves to soften the membrane.

Date: Wed, Nov. 7, 2018
Time: 4:30-5:30 pm
Location: 208 Clark Hall

Students, meet the speaker over coffee and cookies in the Bennett Conference room at 3:30 pm