**Weekly Colloquium**  
Tuesday, 3/28/2017, 12:30pm, Billings Building – Rosedale Conference Room

"Retinal remodeling and plasticity, from metabolism to circuitry"

**Bryan W. Jones, Ph.D.**  
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**Research abstract:**
Understanding how retinal circuitry changes in disease and how it is altered from wild type conditions is critical to understanding pathogenic processes and deriving therapeutic interventions. Our research over the last few years has focused on the normal circuitry and aberrant remodeling of the neural retina and its circuitry triggered by inherited and induced retinal degenerations. Ongoing work in remodeling extends to both animal disease models and human models of retinitis pigmentosa and macular degeneration. My future goals are to solidify our understanding of normal retinal circuitry and how it compares with pathological retinal circuitry, particularly earlier in the disease process by creating complete network diagrams with rich data including classes, cell patternings, and complete connectivities. This work is fundamental for comparison and understanding of aberrant or corrupt circuitry observed in neurogenetic models as well as diseases that trigger retinal remodeling such as age related macular degeneration and retinitis pigmentosa. Retinal remodeling, observed in retinal degenerative diseases renders retinal circuitry corruptive of visual processing and reflects attempts by neurons to replace lost synaptic excitation. However, this unprecedented adult plasticity might also be exploited to rescue vision.

**Recent Publications:**


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