1173-92-311 **John Fricks*** (jfricks@asu.edu). *A Bayesian Analysis of 2-D Motor-Cargo Complex Dynamics.*

Molecular motors, such as kinesin and dynein, move along microtubules in cells while the tails of the motors are connected to cargos. The cargos can be tracked in fluorescence or dark field experiments yielding a stack of images. Processing allows for the localization of the cargos yielding a two-dimensional time series; typically, further processing projects the data on to one-dimension along the direction of the microtubule. However, curvature or misidentification of the microtubule may be relevant, but is generally not considered. In this talk, we will propose an analysis of the original two-dimensional time series, which can also extract additional information on the dynamics of these motor-cargo complexes. (Received September 21, 2021)