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Modeling and Inference of Molecular Motors across Scales

John Fricks

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## Modeling and Inference of Molecular Motors across Scales

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Linear molecular motors, such as kinesin and dynein, carry cargo through a cell along a microtubule network. The heads of these motors step along a microtubule and are on the order of nanometers, while the cargo size and the distance traveled can be on the order of hundreds of nanometers or even longer. Stochastic models of motors and motor-cargo complexes that describe and bridge these spatial scales will be discussed along with how data can be incorporated into these models at the various scales. Particular attention will be given to the how data at one scale can inform biological mechanisms at other scales.