Computational and Data Enabled Science Seminar

Complexities of the Cytoskeleton: Integration of Scales

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Abstract: Biological systems are traditionally studied as isolated processes (e.g. regulatory pathways, motor protein dynamics, transport of organelles, etc.). Although more recent approaches have been developed to study whole cell dynamics, integrating knowledge across biological levels remains largely unexplored. In experimental processes, we assume that the state of the system is unknown until we sample it. Many scales are necessary to quantify the dynamics of different processes. These may include a magnitude of measurements, multiple detection intensities, or variation in the magnitude of observations. The interconnection between scales, where events happening at one scale are directly influencing events occurring at other scales, can be accomplished using mathematical tools for integration to connect and predict complex biological outcomes. In this work we focus on building inference methods to study the complexity of the cytoskeleton from one scale to another.

Friday, October 7, 2022, 1:00 pm
Mathematics and Science Center: MSC W301

Mathematics
Emory University