SACRAMENTO STATE

Department of Physics and Astronomy

SPRING 2022 Colloquium Series

"Quantitative analysis of liquid-liquid phase separation in biological cell model systems"

Dr. Mikkel Jensen

Department of Physics & Astronomy,
California State University, Sacramento

The interior of a living cell is a dense and complex environment packed with large macromolecules. Cells are dynamic, and undergo shape changes and even phase separations as they respond to internal and external stimuli. For example, so-called liquid-liquid phase separation occurs in cells to organize and create transient internal "micro-compartments" within the cell. By virtue of being living, energy-consuming systems, cells inherently exist far from thermal equilibrium, but they are nonetheless governed by thermodynamic driving forces, and evolve to minimize free energy. Understanding and quantifying these thermodynamic driving forces is therefore critical to understanding the physical function of cells. In this talk, I will describe an ongoing project in our lab, in which we study liquid-liquid phase separation in experimental model systems (shown in the picture above), and work to develop 3D image analysis techniques to quantify the thermodynamic free energy of the system.

Thursday, Feb. 10, 2022
4:00 – 5:20PM
Talk will be IN PERSON in MND1015 and <u>not</u> also recorded

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