Chemical & Physical Sciences
UNIVERSITY OF TORONTO
MISSISSAUGA

Colloquium Seminar Series
Tuesday, Sept. 10, 2019
3:10 p.m. in CC2150

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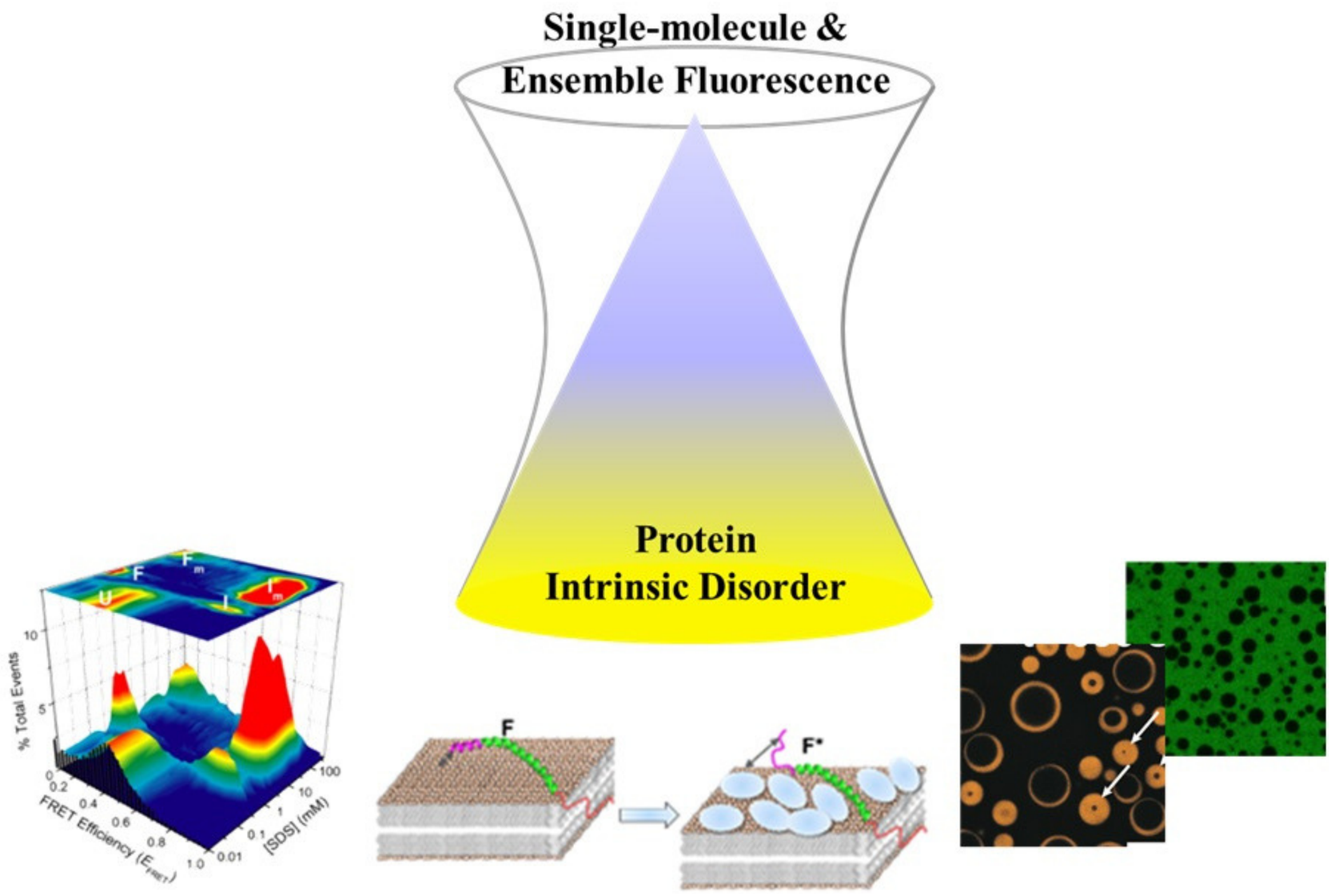
The Scripps Research Institute

Biophysics of protein disorder, single molecules to droplets



Disordered proteins are widely present in proteomes, and their complex structural features and dynamics are critical to cell function. In this lecture, fluorescence approaches we have taken for studies of these complicated systems and their interactions will be discussed. One focus is on single-molecule FRET which can provide nanoscale information about conformation and dynamics during interactions and folding. Insights into complex binding-folding landscapes and additional complexity resulting from multicomponent interactions will be discussed. In addition, studies of protein liquid-liquid phase separation, and resulting reentrant phase transitions and non-equilibrium substructure formation will be discussed. These protein droplet formation/ dissolution reactions are relevant to dynamic compartmentalization and function in cells. Overall, the presentation will highlight the strengths of such fluorescence approaches to map dynamic nanoscale to mesoscale complexity related to protein disorder and corresponding function.