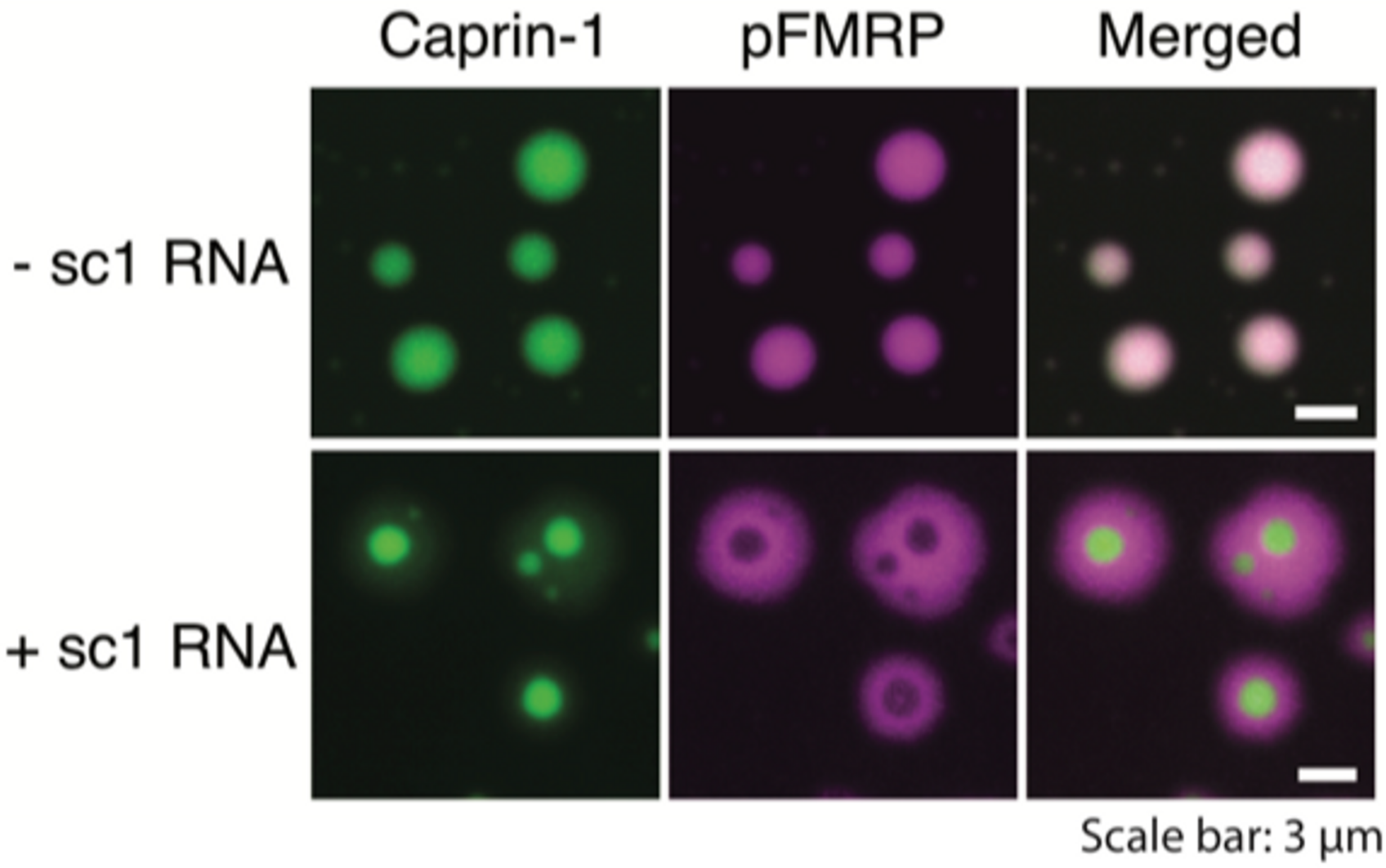
DEPARTMENT OF CHEMICAL & PHYSICAL SCIENCES
COLLOQUIUM SERIES

Wednesday, October 9, 2019 @ 3pm in CC2150

DR. TAE HUN KIM

The Hospital for Sick Children

Biomolecular Phase Separation and its Role in Biological Regulations



Membraneless organelles involved in cellular processes are biomolecular condensates assembled by phase separation. Despite the important roles of intrinsically disordered protein regions, the specific protein-protein interactions underlying phase separation and its functional consequences remain elusive. The disordered regions of two interacting proteins, FMRP and Caprin-1 are reported to form biomolecular condensates in cells. NMR of FMRP-Caprin-1 condensates show molecular details of the protein-protein interactions governing the phase separation. Different phosphorylation patterns of the proteins control phase separation with RNA, sub-compartmentalization, and biochemical reactions in the condensates. These results show implications for how the integration of signaling pathways controls key cellular processes.