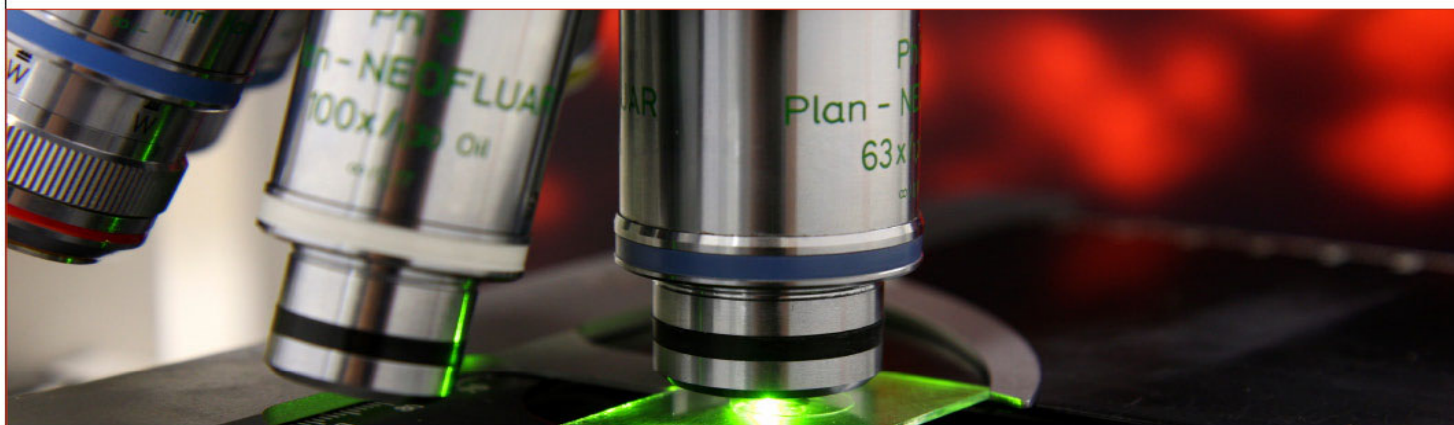


SÉMINAIRES ET CONFÉRENCES



Tanja Mittag

**Department of Structural Biology
St. Jude Children's Research Hospital**

**« Protein disorder, multivalency and phase separation: Implications
for biological function and disease. »**

Phase separation has recently been revealed as a key mechanism underlying the functional compartmentalization of cells. Phase separation mediates the formation of typical membraneless organelles such as nucleoli and stress granules, but also seems responsible for the formation of structures such as heterochromatin, transcriptional condensates, and membrane receptor clusters. The formation of such biomolecular condensates is mediated by the combined action of the formation of networked complexes (i.e., percolation via multivalent interactions) and a density transition (i.e., phase separation). I will discuss how driving forces for phase separation are encoded in intrinsically disordered protein regions of RNA-binding proteins. I will then discuss our work on the tumor suppressor SPOP, a substrate adaptor of a ubiquitin ligase, which forms condensates active for ubiquitination together with substrates. Cancer-causing mutations do not only reduce substrate binding but also phase separation with substrates. Elucidating the mechanisms underlying phase separation will result in a firm biophysical basis of our understanding of fundamental biological processes and has the potential to result in new therapies.



Le lundi 4 octobre 2021, 11h30

Invitée de John Pascal

Faculté de médecine
Département de biochimie
et médecine moléculaire

Université 
de Montréal