



# BiophysTO Lunchtime Seminar Series

## Date

Thursday, Feb 8<sup>th</sup>, 2024  
12:00 – 1:00 pm

## Location

McLennan Physical  
Laboratories,  
60 St George street.  
Room: MP606

## Dr. Julie Forman-Kay

Department of Biochemistry,  
University of Toronto  
and Molecular Medicine Program  
SickKids

## The Intrinsically disordered protein biophysics: bioinformatics, biochemistry and structural biology

Intrinsically disordered protein regions (IDRs) do not adopt stable structure in isolation, instead rapidly interconverting between highly heterogeneous conformations. IDRs encompass approximately one-third of residues in the known/canonical human proteome, but understanding them is hindered by the lack of applicability of standard structural and bioinformatic tools. A major role of a subset of IDRs is in modulating formation of biomolecular condensates, including membrane-less organelles and biomaterials, that form with contributions from the physical process of phase separation. The Forman-Kay lab, together with collaborators, is focused on the biophysics of IDRs, including developing new bioinformatic tools using IDR biophysical properties, exploring how IDR phase separation creates solvent environments that impact enzyme function, and generating IDR conformational ensembles that agree with biophysical data from solution spectroscopies.



Seminar  
Sponsors

UTSG

Biochemistry   Physics   Chemistry

Host: Anton Zilman