



Chemical & Physical Sciences
UNIVERSITY OF TORONTO
MISSISSAUGA

COLLOQUIUM
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12:00 NOON – 1:00 PM
IB280

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Frontiers in Membrane Biophysics

One of the major challenges of modern physics is to contribute to biology and life-sciences. Neutron and X-ray beams are prime tools to study molecular structure and dynamics in membranes in-situ, under physiological conditions.

The experiments give access to nanoscale diffusion processes within and across the membranes, effects of macromolecules on membrane properties, such as ethanol and cholesterol, the interaction with common drugs, such as aspirin and ibuprofen, and potential side effects, detection and characterization of raft structures and protein-protein interactions in Alzheimer's disease. The quantitative measurements lend themselves for comparison with computer simulations of complex membrane systems. I will talk about current topics in membrane biophysics, the associated experimental challenges and present exciting recent results and potential biomedical applications.