



The University of Western Ontario

Faculty of Science

Department of Applied Mathematics

APPLIED MATHEMATICS COLLOQUIUM

Date: Wednesday, April 9, 2008

Time: 2:30 pm

Location: Middlesex College Room 204

Molecular Dynamics of Cationic Lipid Bilayers

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Abstract:

Lipid bilayers are the core of all biomembranes, and synthetic bilayer systems have technological and medical applicability. Liposomes, for example, are multipotent delivery vehicles, capable of transporting genetic material, proteins or drug molecules into cells.

Here we employ molecular dynamics simulations to study bilayers comprising two types of lipids, one of which is neutral and the other cationic (positively charged). We report the effects of (neutral to cationic) lipid fraction and NaCl electrolyte concentration on the structural and dynamic properties of the bilayer.