PHYSICAL MATHEMATICS SEMINAR

THE "SOFT GEOMETRY" OF PHOSPHOLIPID MEMBRANES: FROM TETHERS TO THE ENDOPLASMIC RETICULUM

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ABSTRACT:

Phospholipid bilayers are thin membranes made up of two layers of amphiphilic molecules, molecules which have a hydrophilic polar head and a hydrophobic hydrocarbon tail. These fluctuating sheets form one of the physical bases of the architecture of the cell. They are also interesting from the point of view of the statistical mechanics of 2d extended objects and the differential geometry of 2d manifolds. Biological membranes in the cell are composite structures, which involve a great variety of proteins and other molecule, and are enormously more complex than the ideal membranes studied by theoretical physicists and mathematicians. Nonetheless, I'll focus on how a small number of geometric and physical quantities can be used to approach and solve problems posed by biologists.

TUESDAY, NOVEMBER 28, 2006
2:30 PM
Building 4, Room 270

Refreshments at 3:30 PM in Building 2, Room 349
(Applied Math Common Room)

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