Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Translocation of a vesicle through a single pore HAMIDREZA SHOJAEI, MURUGAPPAN MUTHUKUMAR, University of Massachusetts — When a single vesicle is squeezed through a pore, it suffers from an elastic barrier arising from bending and stretching elasticity of the vesicle. We will discuss the free energy landscape for the translocation of a vesicle through a uniform cylindrical pore in terms of the initial radius of the vesicle, the diameter and length of the pore, and the elastic properties of the vesicle. With the quasi-equilibrium assumption and the Fokker-Planck formalism, we will present theoretical results for the translocation kinetics for the vesicle across a pore.

Murugappan Muthukumar
University of Massachusetts

Date submitted: 13 Nov 2013 Electronic form version 1.4