The self-assembly of biological amphiphiles has proved a fascinating topic in recent years, and the idea of phase separation phenomena in the cell membrane has attracted a great deal of attention. Phase co-existence in the lipid bilayer can be observed in biologically-relevant multi-component giant unilamellar vesicles, tubules and single substrate-adsorbed bilayers.

In this talk I will present a selection of recent work from our lab looking at membrane elasticity under AFM and optical probes, photo-induced lipid sorting in lipid mixtures and the effect of molecular tilt on bilayer structure.

Bio: Professor Hirst’s research interests focus on soft-condensed matter physics, with interests in both biophysics and liquid crystal materials. In general, her research group uses experimental techniques to characterize molecular assemblies and to understand the physics behind why they form. In a wider context, her group tries to uncover the common principles of how self-organization at a molecular level can transfer physical properties across length scales to define complex structures in real biological systems and soft phases.

Professor earned her B.S. with Honors at Manchester University in 1998 and her Ph.D. at Manchester University in 2001. In 2004 she was awarded the International Liquid Crystal Society’s Glenn Brown Prize and in 2008 she earned a National Science Foundation Early Career Award, National Science Foundation, Division of Materials Research.

In addition to her research interests Prof. Hirst is also the creator of softmatterworld.org, a new educational networking site for the soft matter community around the world.

Wednesday, February 29th ● Bourns A265 ● 1:40-2:30pm