NE Ohio Applied Mathematics Workshop:

Interface between Mathematics and Soft Matter Physics

Tuesday, January 12, 2016

Samsung Auditorium, Liquid Crystal Institute

This informal one-day workshop features recent developments in applied mathematics and physics concentrated on the field of liquid crystals, soft matter, and materials science. All faculty, graduate students and researchers interested in these and related fields are welcome to join the fun.

9:45-10:00 Opening by Department Chairs, Hiroshi Yokoyama and Andrew Tonge

10:00 -10:45 Epifanio Virga, University of Pavia, Italy

Cluster Expansion for Hard Repulsion

10:45 -11:00 Coffee break

11:00 -11:30 Dmitry Golovaty, University of Akron, USA

Dimension Reduction for the Landau-de Gennes Model of Nematic Thin Films

11:30 -12:00 Arghir Zarnescu, University of Sussex, UK

Poking Around the K13 Problem

12:00 - 12:30 Xiaoyu Zheng, Kent State University, USA

‘Hard’ Density Functional Theory for Nematic Liquid Crystals

12:30 - 2:00 Lunch

2:00 - 2:45 David Kinderlehrer, Carnegie Mellon University, USA

Gradient Flows: the Poisson-Nernst-Planck System as a Gradient Flow

2:45 - 3:00 Coffee break

3:00 - 3:30 Rolfe Petschek, Case Western Reserve University, USA

Spatially Varying Liquid Crystal Order: Quasi Crystals and Complex Crystals

3:30 - 4:00 Shawn Ryan, Kent State University, USA

Curvature Driven Foam Coarsening on the Sphere

The organizers acknowledge the generous support by Liquid Crystal Institute and Kent State University.