

MRSEC Winter School

Tuesday, February 27th, 2018

Schedule of Events

- Morning 3:45pm: Informal science activities
- > 3:45pm 5:45pm, Washburn Room: DNA Origami assembly
 - 3:45pm Gregory Grason: Geometically-Frustrated Assembly
 - 4:15pm W. Benjamin Rogers: Using DNA to program colloidal self-assembly
 - 4:45pm Christian Sigl, TUM, Munich (Dietz): DNA-based Viral Capsid Mimics
 - 5:15pm Stefan Paquay (Hagan): Coarse-grained simulations of self-assembling DNA origami subunits
- ➤ 6:00pm 7:00pm: Dinner
- > 7:30pm 7:45pm, Washburn Room: Group Photo
- > 7:45pm 10:00pm, Washburn Room: Poster Session

lan Hunter (Fraden): Designing synchronous patterns

Caleb Wagner (Baskaran): Response of an active gas to shearing

Farzaneh Mohajerani (Hagan): What controls size of Bacterial

Microcompartments

Yi Fan (Breuer): The loss of isotropy due to confinement in kinesin-driven active fluids

Joanna Robaszewski (Dogic): Self-assembly of Filamentous Viruses into Giant Vesicles

Chaitanya Joshi (Hagan/Baskaran): *Theory of Raft Interactions in Ternary Colloidal Membranes*

Daniel Goldstein (Chakraborty): Active Plasticity

Daniel Beller (Powers): Defect loops in 3D active nematics: Dynamics and

shifting winding character

Leila Farhadi (Ross): Active alignment of driven copolymer systems



MRSEC Winter School Wednesday, February 28th, 2018

Schedule of Events

- ➤ Morning 3:45pm: Informal science activities
- ➤ 3:45pm 5:45pm, Washburn Room: *Membranes*

3:45pm - Sarah Zuraw-Weston (Dinsmore): *Particle Induced Membrane Deformations; From Soft Solids to Liposome Disruption, using Nano-Spheres, Rods and More!*

4:15pm - Michael Hagan: Budding of proteins and colloids driven by, or impeded by, membrane-mediated interactions

4:45pm - Joia Miller (Dogic): *Tetramers to horseshoes: chirality and phase separation in colloidal membranes*

5:15pm - Mahsa Siavashpouri (Dogic): *Molecular engineering of colloidal liquid crystals using DNA origami and Filamentous viruses*

➤ 6:00pm – 7:00pm: Dinner

> 8:00pm – 12:00 am: Bar at Bretton Woods



MRSEC Winter School

Thursday, March 1st, 2018

Schedule of Events

- Morning 3:45pm: Informal science activities
- ➤ 3:45pm 5:45 pm, Washburn Room: *Active Matter*
 - 3:45pm Julian Eskin (Goode): *Imaging advances toward understanding actin cable length control*
 - 4:15pm Bezia Laderman (Dogic): Structure and Dynamics of Polarity Sorting Filamentary Systems
 - 4:45pm Michael Norton (Fraden): *Hydrodynamics of active topological defects near boundaries in nematic suspensions*
 - 5:15pm Linnea Metcalf (Dogic): Extensive Dynamics in 2D Active Nematics
- ➤ 6:00pm 7:00pm: Dinner
- > 7:30pm 10:00 pm, Washburn Room: Poster Session (featuring live music)

Ali Aghvami (Fraden): Counter-Diffusion Microfluidic Chip for Protein Crystallization

Simon Merminod (Rogers): Characterizing DNA-mediated interactions between colloidal particles and fluid membranes

Janna Lowensohn (Rogers): Linker binding of DNA-coated colloids
John Berezney (Dogic / Fraden): Scale-dependent stiffness and internal tension
of a model brush polymer

Andrew Balchunas (Dogic): Tunable Gaussian Curvature Directs Catenoid Formation from 2D Colloidal Membranes

Guillaume Duclos (Dogic): Active 3d nematic liquid crystal

Pooja Chandrakar (Dogic): Effect of motor proteins on active gel dynamics Minu Varghese (Baskaran): Macroscopic flows in incipient active nematics Hyunki Kim (Hayward / Emrick): Light-induced wrinkling and assembly of hydrogel nanocomposite at air/water interface