102nd New England Complex Fluids

Friday, March 7, 2025

Yale University

Bass Center for Molecular and Structural Biology

Agenda

8:15–8:45am *Breakfast and registration*

8:45–9:00am *Welcome remarks*

Morning Presentations

9:00–9:45am **Invited Talk: Crystal Owens (MIT)**
"*Using the rheology of carbon nanotube-based inks for advanced manufacturing*"

9:45–10:45am **Sound Bite Session 1**

Changshuo Fu, UMass Boston
"*Investigation on the properties of liquid crystal foams*"

Daniel Xu, Brown University
"*Optimization of polymer synthesis for bioinspired tissue-like polymers*"

Gordon Smith, UMass Boston
"*Acoustic wave-induced dynamics in nematic liquid crystals*"

Liam Kennings, University of Rhode Island
"*Conductive liquid crystal elastomers for soft actuators*"

Meghann Dunn, UMass Boston
"*Influence of boundary geometry on the stability and assembly of 2d liquid crystal foams*"

Max Hanrahan, Wesleyan University
"*Surface tension and phase behavior in a dynamically-linked polymer network*"

Rebecca Tobias, Brown University
"*High-throughput screening for development of bioinspired soft materials*"

Vajra Badha, UMass Boston
"*Behavior of living microorganisms near a liquid crystal interface*"

Md Rakib Hassan, Wesleyan University
"*Lévy flight dynamics in graphene and silicene near melting*"

Mobin Alipour, Yale University
"*Phoretic spreading of microplastics in vortical flows*"

Evelyn Grandfield, Wesleyan University
"*Polymer blend compatibilization: dynamic crosslinks and copolymer additives*"

Jiwoo Han, Williams College
"*High-speed adhesive contact dynamics on a 10[ms] timescale*"

Jinseok Lee, Yale University
"*Non-gaussian diffusion of tracers in soft particulate liquid*"

Zehao Chen, Yale University
"*Nutrient-dependent biofilm growth in confinement*"

Timothy Atherton, Tufts University
"*Microseparation and tactoid formation in liquid crystal nanocomposites*"

Yuxin Luo, Yale University
"*Active learning-driven optimization of gelation time for cell morphology control in synthetic hydrogels*"

Xiaoyi Hu, MIT
"*Model respiratory fluid and mycobacterium persistence*"

Xingcai Zhang, Stanford University
"*AI-powered microfluidics for materials and medicine*"

10:45–11:15am *Coffee Break I*

11:15–12:00pm **Invited Talk: Eleni Katifori (UPenn)**
"Multistable fluid flow networks and generation of fluidic memory states"

12:00–1:15pm *Lunch*

1:15–1:30pm *Group photos*

Afternoon Presentations

1:30–2:15pm **Invited Talk: Catherine Fromen (Delaware)**

"Engineering lung models: 3D-printed porous media, hydrogels, and macrophage responses"

2:15–3:15pm **Sound Bite Session 2**

Beatrice Lunsford Poe, UMass Amherst
"*Active microrheology in lyotropic chromonic liquid crystals using optical tweezers*"

Johnathan Hoggarth, Yale University
"*A simple method for generating droplets from a vibrating liquid bath*"

Mikayla Jackson, University of Pennsylvania
"*Influence of polyacrylamide particle size and concentration on the rheological properties of fibrin gels under compression*"

Kyle McKee, MIT
"*Circulation in hele-shaw flows*"

Zahra Shamsi, Yale University
"*Enhanced mixing in porous media through electroosmotic flow*"

Junrou Huang, Yale University
"*Internally-driven cell-layer shape transformations via oriented forces in collagen matrices*"

Katharine Jensen, Williams College
"*Spooky action at a distance in soft adhesion*"

Rupam Saha, Brandeis University
"*Modular programming of interaction and geometric specificity enables assembly of complex dna origami nanostructures*"

Yiran Li, Yale University
"*Effects of inlet solute concentration profile on particle transport in dead-end pore*"

Haoyu Liu, Yale University
"*Precipitation and crystallization of calcium carbonate in the presence of confinement*"

Pragya Arora, Brandeis University
"*Programmable icosahedral capsids: a layered approach mediated by lipid templates*"

Sydney Packard, Worcester Polytechnic Institute
"*Unsupervised machine learning to reveal trends in colloidal properties of biofilm-released cell clusters*"

Yan Shi, Harvard University
"*Superfine grinding of steel slag by superheated steam powered jet mill*"

Dong Wang, Yale University
"*The effects of sub-critical fluid flow on granular bed strength*"

Sepehr Yari, University of Rhode Island
"*Single-walled carbon nanotubes, faster than expected!"*

Abhineet Rajput, Yale University
"*Anchored microfiber deformation in confined geometries."*

Meredith Taghon, Williams College
"*Measuring stick with high-speed interferometry*"

Thor Burkhardt, Brown University
"*Coupled nanopores for molecular sensing*"

3:15–3:45pm *Coffee Break II*

3:45–4:30pm **Invited Talk: Sarah Perry (UMass Amherst)**
"Polyelectrolyte complex materials"