10th Southeast Meeting on Soft Materials
Friday, May 12, 2017, Georgia Institute of Technology
Scheller College of Business
Invited Talks and Sound Bites – Room 200
Breakfast, lunch, and refreshments – Atrium

PROGRAM

8:00 am – 8:30 am
Arrival and breakfast

8:30 am – 8:40 am
Welcome and opening remarks (Jennifer Curtis and Justin Burton)

8:40 am – 9:30 am
Keynote Talk
Itai Cohen (Cornell University)
Atomic Origami: A technology platform for nanoscale machines, robots, and material building blocks

9:30 am – 10:20 am
Invited Talk
Ravi Kane (Georgia Institute of Technology)
The design of nanoscale therapeutics and nanostructured materials

10:20 am – 10:40 am
Coffee and refreshments

10:40 am – 11:30 am
Sound Bites I: Nanoscale and Nonlinear Mechanics
Chair: Justin Burton

11:30 am – 12:20 pm
Invited Talk
Alberto Fernández-Nieves (Georgia Institute of Technology)
Toroidal physics
12:20 pm – 1:30 pm
Lunch and refreshments

1:30 pm – 2:20 pm
Invited Talk
Khalid Salaita (Emory University)
Polymer nanoparticle actuators as synthetic muscle to study mechanochemistry and mechanobiology

2:20 pm – 3:10 pm
Sound Bites II: Physics of Living Systems and Biophysics
Chair: Jennifer Curtis

3:10 pm – 3:30 pm
Coffee and refreshments

3:30 pm – 4:20 pm
Invited Talk
Eric Weeks (Emory University)
2D and 3D colloidal glass transitions: Does dimensionality really matter?

4:20 pm – 5:10 pm
Sound Bites III: Complex Fluids and Particles
Chair: James Kindt

5:10 pm – 5:20 pm
Sound Bite Winners and Prizes Announced!!!

5:20 pm
Meeting Adjourn

Sound Bite Session I: Nanoscale and Nonlinear mechanics

Jonathan Michel (Georgia Institute of Technology)
Role of structural hierarchy in elastic network mechanics

Sunghan Kim (Georgia Institute of Technology)
Interfacial shear strength of silk ionomer LbL-microcapsules

Shashank Markande (Georgia Institute of Technology)
A chiral minimal surface from space group symmetries
Perry Ellis (Georgia Institute of Technology)  
*Nematic materials in toroidal geometries*

Michael Dimitriyev (Georgia Institute of Technology)  
*Coupled geometry and order in quenched hydrogel rods*

Nicholas Cuccia (Emory University)  
*Surface friction of polyacrylamide hydrogel particles*

Svetoslav Nikolov (Georgia Institute of Technology)  
*Understanding micromechanics of stimuli-sensitive microgels using dissipative particle dynamics*

Justin Pye (Emory University)  
*No-slip and anomalous behavior at the liquid/solid interface*

Maritza Mujica (Georgia Institute of Technology)  
*Double emulsion templated microreactors for nanowire synthesis*

Richard Sullivan (Georgia Institute of Technology)  
*Exploring relationships between gold nanorod aptamer structures*

Xinru Huang (Emory University)  
*Use of tethered chains to alter the local glass transition temperature of polystyrene near silica substrates*

Cornelia Rosu (Georgia Institute of Technology)  
*Polypeptide-assisted organization of conjugated polymers into responsive, soft 3D networks*

Suneesh Karunakaran (Georgia Institute of Technology)  
*Schuster non-covalent terminators and supramolecular polymers: Boltzmann control over length, dispersity, and hydrogel viscosity*

Wenbin Wei (Georgia Institute of Technology)  
*Dynamic polymer brush interfaces generated by hyaluronan synthase*

Rezwan Rafid Mohammed (Gwinnett College)  
*Self-assembly and gelation studies of simple steroidal molecular gelators*

Michael Thees (Emory University)  
*Trying to understand unexpected differences in glassy stability for high molecular weight thin films*
Sound Bite Session II: Physics of Living Systems and Biophysics

Skanda Vivek (Georgia Institute of Technology)
*Material properties in V Cholerae biofilms*

Alisina Bazrafshan (Emory University)
*Programming microbots for sensing applications*

Michael Tennenbaum (Georgia Institute of Technology)
*Rheology of active matter: Mechanics of fire ant aggregations*

Andrea Welsh (Georgia Institute of Technology)
*Pattern formation of brine shrimp aggregation*

Arben Kalziqi (Georgia Institute of Technology)
*Killing to fluctuate, or: Fluctuation-response theorem in biofilms*

Michelle Gaines (Georgia Institute of Technology)
*Collective cell proliferation on 3D hydrogels*

David Yanni (Georgia Institute of Technology)
*Killing mediated spatial structure in V. Cholerae biofilms*

Bo Broadwater (Georgia Institute of Technology)
*Probing the energy landscape of branch migration in DNA strand displacement*

Manali Banerjee (Georgia Institute of Technology)
*Surface modifications of nanocellulose for applications in pharmaceutical crystallization*

Shlomi Cohen (Georgia Institute of Technology)
*Collective cell migration in development and cancer*

Ki Wolf (Georgia Institute of Technology)
*Fluid-structure model of lymphatic valve and vessel*

Patricia Yang (Georgia Institute of Technology)
*Hydrodynamics of defecation*

Valeria Milam (Georgia Institute of Technology)
*DNA aptamer screening for dynamic proteins*

Callen Rhodes (Gwinnett College)
*Design of pharmaceutically active soft materials: synthesis and studies of novel polycyclic systems using ninhydrin and alkyloxyanilines*
Hemaa Selvakumar (Georgia Institute of Technology)
Two against one: Immune cells and bacteriophage against bacteria

Olga Shishkov (Georgia Institute of Technology)
Active mixing of black soldier fly larvae during feeding

Brian Matei (Gwinnett College)
Mechanotrophic and gelation studies of stearic acid based molecular gelators

Sound Bite Session III: Complex Fluids and Particles

Xiaotang Du (Georgia Institute of Technology)
Probing barriers to particle adsorption at bubble and droplet surfaces via dynamic interfacial tensiometry

Dominic Robe (Emory University)
Observing intermittency in large systems

Drew Gorman (Georgia Institute of Technology)
Characterization and manipulation of nonspherical bubbles

Songcheng Wang (Georgia Institute of Technology)
Trajectory and velocity of oil-coated bubbles

Andras Karsai (Georgia Institute of Technology)
Rapid wheeled locomotion in granular beds

Sven Behrens (Georgia Institute of Technology)
Influence of surface roughness on colloidal interaction

Guram Gogia (Emory University)
Emergent Bistability in 2D Dusty Plasma Crystals

Alexandros Fragkopoulos (Georgia Institute of Technology)
Instabilities of charged toroidal droplets

Shengkai Li (Georgia Institute of Technology)
Supersmarticle

Mia Morrell (Emory University)
Clogging of soft particles in 2D hopper

Xujun Zhang (Georgia Institute of Technology)
Toroidal air bubbles
Clay Wood (Emory University)
*Liquid coffee rings" and the spreading of volatile liquid mixtures*

Shawn Sanderlin (Georgia Institute of Technology)
*Spreading drops and solid boundaries: How fluid entrainment shapes fluid to fluid interactions*

Scott Essenmacher (Georgia Institute of Technology)
*Capillary foams with conducting polymers*

Perrin Schiebel (Georgia Institute of Technology)
*Granular response to drag at the surface and its application to surface sand-swimming*

Cong Cao (Emory University)
*Aging near the wall in 3D colloidal glass*

Christian Hubicki (Georgia Institute of Technology)
*Robotic jumping on granular media*

James Kindt (Emory University)
*Order-disorder transitions in gravitationally confined hard sphere monolayers*

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*A special thank you to our sponsors:*

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