

Program

1st South-East Workshop on Soft Materials and Interfaces
Georgia Institute of Technology – Emory University
May 9, 2008

M-Building on Georgia Institute of Technology Campus

Registration, Breakfast, and Breaks: **G011**

Lunch: **Atrium 3rd floor**

Seminars: Ground floor Room G011



9:45 AM - 10:20 AM

Breakfast and Registration, Ground floor G011



10:20 AM - 10:30 AM

Welcome from Elisa Riedo, Ground floor G011

Morning Invited Speakers (Chair: Elisa Riedo)

10:30 AM - 11:00 AM

David Weitz, Harvard University

“Mechanics of Active Biomolecular Networks”

11:00 AM - 11:30 AM

Daniel Goldman, Georgia Tech

“Running in Sand: Biological and Physical Interaction with Granular Media”



11:30 AM - 11:50 AM

Coffee, Ground floor G011



12:00 AM - 1:00 PM

Sound Bites I: Biological and Soft Matter

Chair: Laura Finzi

Laura Finzi, *Emory University*

Single-Molecule Microscopy & Manipulation of DNA & DNA-Protein Interactions

Jennifer Curtis, *Georgia Tech*

At the Invisible Rim: Polymer Physics of the Cell Coat

Anna Edlund, *Spelman College*

Pollen Grain Wall Stiffness Measured by AFM

Johnna Temenoff, *Georgia Tech*

A Model System for Understanding the Bone-Ligament Interface

Eugenia Kharlampieva, *Georgia Tech*

Bio-Inspired Surface-Mediated Synthesis of Inorganic Nanoparticles

Rui Zhang, *Georgia Tech*

A Model of HIV Budding and Assembly: Role of the Cell Membrane

Ahmet Altun, *Emory University*

Hybrid Quantum Mechanical/Molecular Mechanical Studies on Large Biomolecular Systems

Hannah Lee, *Georgia Tech*

VP-Based Hydrogel Systems for Tissue Expander

Se il Lee, *Georgia Tech*

Diversity of In Vivo Assembled HIV-1 Capsids

Mauricio Bedoya, *Georgia Tech*

Protein-Hyaluronan Networks: Modelling the Cell's Micro-Environment

James Hardin, *Georgia Tech*

Infiltration of DNA into Gelatin Microspheres

Louis McLane, *Georgia Tech*

Probing the Structure of the Pericellular Coat Using Optical Tweezers

Debin Wang, *Georgia Tech*

High-Speed, Nano-Resolution Thermo-Chemical Nanolithography

Ryan Maladen, *Georgia Tech*

Laboratory Experimental Study of a Sand-Swimming Lizard

Nicole Mazouchova, *Georgia Tech*

Locomotion of Cockroaches and Wind-Scorpions Up Sandy Inclines

Bryan Baker, *Georgia Tech*

DNA-Mediated Particle Assembly of Pathogen Detection

Chris Tison, *Georgia Tech*

Competitive Hybridization at Microsphere Surfaces: Comparing ... Targets



1:00 PM - 2:20 PM

Lunch and Discussion, M-Building, Third Floor Atrium



Afternoon Invited Speakers (Chair: Eric Weeks)

2:30 PM - 3:00 PM

Andrew Lyon, *Georgia Tech*

“Soft Microgel Assemblies”

3:00 PM - 3:30 PM

James Kindt, *Emory University*

“Material Properties of Membranes: Insights from Molecular Simulation”



3:30 PM - 4:45 PM

Sound Bites II: Complex and Soft Matter

Chair: Sven Holger Behrens

Sven Holger Behrens, *Georgia Tech*

Electrostatic Interaction Between Charge-Regulating Colloidal Surfaces

Connie Roth, *Emory University*
Influence of Interfacial Interactions on the Glass Transition in Nanoconfined Polymers

Michael Schatz, *Georgia Tech*
Is Turbulence a Transient?

Haiying Huang, *Georgia Tech*
Fluid Injection Into Granular Media

Tai-De Li, *Georgia Tech*
Nonlinear Viscoelasticity of Nano-Confined Wetting Liquids

Lionel London, *Georgia Tech*
Penetration into Granular Media

Yang Ding, *Georgia Tech*
Simulation and Experiment of Impact into Granular Media

Juan Jose Lietor-Santos, *Georgia Tech*
Looking at Turbid Samples Using 3-D Dynamic Light Scattering

Teresa Lopez-Leon, *Georgia Tech*
Spherical Shells of Liquid Crystal: Drop Formation and Topological Defects

Kazem Vafai Edmond, *Emory University*
Confinement Finds a Length-Scale for the Colloidal Glass Transition

Dandan Chen, *Emory University*
Studying Microscopic Rearrangements in a Sheared Supercooled Colloidal Liquid

Vikram Prasad, *Emory University*
Flow Fields in Soap Films: Effects of Film Thickness and Surface Viscosity

Joaquim Clara Rahola, *Emory University*
Confocal Microscopy of Shear-Induced Dynamics in Jammed Emulsions

Adriana San Miguel, *Georgia Tech*
Droplet Deformation in Particle Stabilized Emulsions Induced by Oil Diffusion

Qiong Guo, *Georgia Tech*
Micellar Behavior of Ionic Surfactants (AOT) in Nonpolar Media

Venkata Gundabala, *Georgia Tech*
Dripping and Jetting in the Presence of Electric Fields

Benjamin Sierra, *Georgia Tech*
Rheology of Highly Packed Microgel Particles

Pearl J Young, *Emory University*
Deformation Produced by Droplet Interaction in Emulsions

Jennifer Lynch, *Emory University*
Aging of a Binary Colloidal Glass

Rei Kurita, *Emory University*
Simulation of Particle Migration in Pressure-Driven Flow of a Brownian Suspension

Gary Hunter, *Emory University*
Sheared Colloidal Gels

Adam Perkins, *Georgia Tech*
Forecasting Complex Spatiotemporal Behavior

Huseyin Kurtuldu, *Georgia Tech*
Topological Characterization of Complex Patterns in Experimental Data

Kenneth Desmond, *Emory University*
Correlated Motion of Ellipsoids Diffusing in 3D

Chen Li, *Georgia Tech*
Locomotion of a Robot on Controlled Granular Media

Danny Guigou, *Georgia Tech*
Measurements of Exoskeleton Strain in the Limbs of Running Ghost Crabs



4:45 PM - 5:15 PM

Coffee and Cookies, Ground floor G011



5:15 PM – 5:30 PM

Sound Bites III : Condensed and Soft Matter

Chair: Alberto Fernandez Nieves

Felipe Birk, *Georgia Tech*
Spin Transport Through Aluminum Nano-Particles

Chris Malec, *Georgia Tech*
Fabrication of Spin Transport Devices in Graphite

Wenjie Mai, *Georgia Tech*
Quantifying the Elastic Deformation of Bridged Nanobelts

Marcel Lucas, *Georgia Tech*
Aspect Ratio Dependence of the Elastic Properties of ZnO Nanobelts

Deborah Ortiz, *Georgia Tech*
AFM Slippage Study of Water



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