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