

## Soft Matter Day

22 November 2013

As part of the  
**80<sup>th</sup> Annual Southeastern Section  
of the American Physical Society (SESAPS)**

Bowling Green, Kentucky

20-23 November 2013

<http://physics.wku.edu/sesaps2013/>

As part of the 80<sup>th</sup> Annual SESAPS meeting that is being held this year in Bowling Green, KY there will be a special set of sessions on Friday Nov 22 on Topics in Soft Matter. We have invited a world-class set of researchers who study fluids, polymers and cellular biomechanics. The talks are listed below. Prof. Guthold and I are both really looking forward to the entire day and we feel that it will have a significant impact on shaping the direction of research in our region.

**Morning:** *Soft Matter, Complex Fluids and Polymers in the Southeast* (Chair: R. W. Cohn, U. Louisville)

*This session will present invited overviews of current research in soft condensed matter research. The talks will cover theoretical, computational and experimental studies in capillarity, wetting, flow and self-assembly driven by these various forces, with consideration of macroscopic rheology down to molecular organization of complex fluids, polymeric liquids, elastomers and biopolymers. Also, each speaker will also be asked to comment on their perception of the degree of research involvement and contributions in soft matter by the Southeastern region as a whole, in comparison to other regions of the country and the world.*

**Michael Rubinstein** (U. North Carolina) Dynamics of particles in soft matter

**Yuri Melnichenko** (Oak Ridge Natl. Labs) Small-angle neutron scattering & applications for soft matter systems

**David Hu** (GaTech) Solid-liquid phase transitions of fire ant rafts and towers

**Eric Weeks** (Emory) Are soap films ideal 2D fluids?

**Noshir Pesika** (Tulane) Bio-inspired sticky and slippery materials

**Alberto Fernandez-Nieves** (GaTech) Toroidal droplets of nematic liquid crystal: Generation, stabilization & twist

**John Walz** (U. Kentucky) Equilibrium and dynamic forces in binary colloid mixtures

**Early Afternoon:**

**Gabriel Lopez** (Duke) NSF Research Triangle Soft Matter MRSEC

**Afternoon:** *Biophysics: Biomechanics and Cellular Mechanics* (Chair: M. Guthold, Wake Forest University)

*Leading research groups from the Southeastern US will present their research in topics that include the mechanical properties of cells in general, the cytoskeleton, extracellular matrix, biological fibers & polymers; and cell-substrate interactions. The talks cover experimental, theoretical, computational and modeling work.*

**Christine Helms** (U. Richmond) Mechanical property measurements of single nanofibers

**Jennifer Curtis** (GaTech) How surface bound polymer matrix regulates surface accessibility & function of cells

**Elizabeth Lobo** (NC State) Matrices and mechanics to direct hASC fate

**Donald T. Haynie** (U. South Florida) Mechanisms of cell adhesion & migration on simple and complex surfaces

**Brenton Hoffman** (Duke) Visualizing molecular forces across specific proteins in living cells

**Michelle R. Dawson** (GaTech) Mechanics & malignancy: Biophysical studies of the tumor microenvironment

**Hai Yao** (Clemson) Biophysical modeling and mechanobiology of cartilaginous tissues

**Ewa P. Wojcikiewicz** (Florida Atlantic U.) TNF-alpha mediated modulation of cell biophysical properties enhances cell adhesion & transendothelial migration

Best Regards,  
Bob and Martin