

MACROMOLECULAR CROWDING

Preliminary Schedule

Tuesday June 23 to Saturday June 27

Location: Telluride Elementary School @ 447 W Columbia Ave

Organizers: Jeetain Mittal and David Goldenberg

TSRC Hosts: Mark Kozak, 970-708-4426

06/22/2015 (Monday)

6:00 - 9:00 pm WELCOME RECEPTION FOR ALL SCIENTISTS, CASH BAR, NEW SHERIDAN BAR @231 W. COLORADO

06/23/2015 (Tuesday)

8:00 - 8:30am BREAKFAST @ TSRC meeting site

8:30 - 9:15 **Allen Minton** Progress toward understanding crowding in heterogeneous systems: Theoretical and experimental exploration of the combined effect of hard and soft interactions in concentrated solutions containing two proteins.

9:15 - 10:00 **Liel Sapir** The origin of depletion forces: Entropy vs. enthalpy

TEA/COFFEE BREAK

10:30 - 11:15 **Simon Ebbinghaus** From the test tube to the cell - Exploring the crowding effect in vitro, in cellulo and in vivo

11:15 - 12:00 **Elizabeth Howell** Osmotic Stress and Crowding Effects on Folate Metabolism

6:00pm Steven Berry Tribute Town Talk and Open House, Telluride Elementary School at 447 W Columbia Ave.

06/24/2015 (Wednesday)

8:00 - 8:30am BREAKFAST @ TSRC meeting site

8:30 - 9:15 **Gary Pielak** In-cell thermodynamics establishes new roles for protein surfaces

9:15 - 10:00 **Michael Feig** Crowding effects in realistic models of cytoplasmic environments are complicated!

TEA/COFFEE BREAK

10:30 - 11:15 **Ilena Pazos** Biomolecular crowding arising from small molecules

11:15 - 12:00 **Young Chan Kim** Simulations of protein-binding equilibria in the cellular environment: Beyond spherical crowders

6:00pm TSRC Picnic/BBQ, Telluride Elementary School at 447 W Columbia Ave.

06/25/2015 (Thursday)

8:00 - 8:30am BREAKFAST @ TSRC meeting site

8:30 - 9:15 **Patricia Clark** Effects of the cellular environment on protein folding mechanisms

9:15 - 10:00 **Stefan Klump** Effects of molecular crowding on molecular machines

TEA/COFFEE BREAK

10:30 - 11:15 **Roland Winter** Effects of crowding, osmolytes, temperature and pressure on the interaction potential, dynamics and phase behavior of dense protein solutions

11:15 - 12:00 **Maggie Johnson** Optimizing protein interactions for the crowded cell: Reducing nonspecific binding and optimizing expression levels

5:00 - 5:45pm **M. Thomas Record** Separating chemical and excluded volume interactions of polyethylene glycols with native proteins: Comparison with PEG effects on DNA helix formation

5:45 - 6:30 **Russell Schwartz** Modeling the interplay of crowding and nucleic acid on viral capsid assembly pathways

06/26/2015 (Friday)

8:00 - 8:30am BREAKFAST @ TSRC meeting site

8:30 - 9:15 **Jeetain Mittal** Sequence-dependent effect of crowding on the properties of disordered proteins: Insights from simulation and theory

9:15 - 10:00 **Stephane Longeville** Protein unfolding in the presence of high quantity of macromolecules of different types and sizes

TEA/COFFEE BREAK

10:30 - 11:15 **Andrea Soranno** Single-molecule spectroscopy of disordered proteins in crowded environments

11:15 - 12:00 **David Goldenberg** Crowding effects on disordered proteins: Small-angle scattering data and a look at scaled-particle theory and its relatives

06/27/2015 (Saturday)

8:00 - 8:30am BREAKFAST @ TSRC meeting site

8:30 Optional group discussion