



ACS Fall 2020 Symposium:

BIOPHYSICAL CHEMISTRY

IN COMPLEX ENVIRONMENTS



August 17-19

Schedule and Zoom links:
phys-accs.org

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ZOOM LINKS: phys-accs.org

Organizers: Carlos Baiz (cbaiz@cm.utexas.edu) and Angel Garcia (agarcia@lanl.gov)

Time	Speaker	Title
Monday August 17 (all times PDT)		
PDT		Afternoon Session; Chair: Carlos Baiz
1:20	Gary Pielak	Protein- & protein complex- stability in living cells
1:50	David Nesbitt	Thermodynamics of RNA Folding at High Pressures: "Raising the Bar" for Single Molecule Biophysics
2:20	Arnaldo Serrano	Does Liquid-Liquid Phase Separation Drive Peptide Folding?
2:40	Martin Zanni	2D IR spectroscopy of amyloid in cataract and pancreas tissues: Smaller than a TEM can see.
3:10	Intermission	
3:30	George I. Makhatadze	Effect of Crowder Size on the Thermodynamics and Kinetics of Proteins from Simple Structure-Based Models
4:00	Michael Fayer	Water dynamics in polyacrylamide hydrogels
4:30	Joanna Trylska	Macromolecular crowders affect the activity, inhibition and dynamics of the NS3/4A protease of the hepatitis C virus
4:50	Lauren Warning	Nanoscale surface-induced unfolding of single fibronectin is restricted by serum albumin crowding

Tuesday August 18 (all times PDT)

PDT		Morning Session; Chair: Galia Debelouchina
8:00	Ron Elber	Phase Transition in a Heterogeneous Membrane: Atomically Detailed Picture
8:30	Diwakar Shukla	Reconciling Membrane Protein Simulations with Experimental DEER Spectroscopy Data
8:50	Edward Lyman	Lipid packing and fluidity in complex and crowded biomembranes
9:20	Itay Budin	Exploring functions for lipid-encoded properties in engineered cell membranes
9:50	Intermission	
10:10	Michihiro Nagao	Effects of channel forming peptides on lipid bilayer dynamics
10:30	Robert Newberry	Quantitative Determinants of Peripheral Membrane Protein Structure and Dynamics from Deep Mutational Scanning
10:50	Huong Kratochvil	Designed Proton Channels Unveils Roles of Transient Water Wires in Proton Channel Selectivity and Conductivity

PDT		Afternoon Session; Chair: Arnaldo Serrano
1:20	Richard Dyer	Protein mediated membrane fusion studied by laser induced pH-jump
1:50	Carlos Baiz	Ultrafast dynamics in heterogeneous and crowded lipid membranes
2:10	Rebika Shrestha	Unravelling the mystery of three-state diffusion model of KRas4b on complex model membrane
2:30	Van Ngo	Insights into the Dynamics of RAS on Lipid Membranes for Understanding Cellular Signaling
2:50	Intermission	
3:10	Yinglong Miao	Improved Modeling of Peptide-Protein Binding through Global Docking and Accelerated Molecular Dynamics Simulations
3:30	Frank Moss	Lipid bilayer asymmetry and distortion during membrane constriction by ESCRT-III proteins
3:50	Adam Smith	Membrane protein interaction networks: the next frontier of cell signaling
4:10	Yin Song	Excitonic structure and charge transfer in the Heliobacterial Reaction Center probed by multispectral two-dimensional spectroscopy
4:40	Minjung Son	Mapping out photoprotective dissipation in plants in membrane nanodiscs using ultrabroadband 2D electronic spectroscopy

Wednesday August 19 (all times PDT)

PDT		Morning Session; Chair: Lauren Buchanan
8:10	Changbong Hyeon	Theta chain in confined space and its implication to biopolymers
8:40	Steven Schwartz	The control of function in the molecular machine of cardiac muscle cells. Atomistic modeling, simulation, and rare event methods for a complex protein machine
9:10	Onkar Singh	Dual mechanism of ionic liquid-induced protein unfolding

9:30	Sucheol Shin	Nonlinear response of water to surface charge and its role in mediating polar interactions at biomolecular interfaces
9:50	Intermission	
10:10	Lauren Webb	Investigating Electrostatic Mechanisms of Biomolecular Organization and Function
10:40	Matthew Tucker	Mapping Structure and Dynamics with Site-Specific Vibrational Probe Pairs via 2D IR Spectroscopy
11:00	Ahmed Heikal	Intrinsically fluorescent protein constructs for sensing environmental ionic strength using time-resolved fluorescence
11:20	Megan Thielges	Impact of Binding by Protein Redox Partners
PDT	Afternoon Session; Chair: Matthew Tucker	
1:20	Galia Debelouchina	Chromatin-HP1 α interactions in phase separated heterochromatin environments
1:50	Judy Kim	Photogeneration and stability of the tryptophan radical in azurin
2:20	Toshiko Ichiye	Dynamical model for the effects of osmolytes on protein stability
2:50	Intermission	
3:10	Lauren Buchanan	Measuring protein structure and dynamics at the protein-nanoparticle interface via 2D infrared spectroscopy
3:30	Giulia Palermo	Ab-Initio Molecular Dynamics Reveals the Catalysis of DNA Cleavage in CRISPR-Cas9
3:50	Aninda Bhattacharyya	Electrochemical and Spectroscopic Studies of Some Redox Active Biomolecules
4:10	Ehud Pines	Deprotonation of Water and Methanol by Photobases Enhanced by Metal-cation.