



December 6, 2022

Time	Topic	Speaker
8:00-8:30	Registration	
8:15-8:30	Opening Comments	Bennett Ibey, AFOSR
8:30-9:00	Unraveling the Biology, Chemistry and Nanoscience of Natural and Synthetic Melanin	Nathan Gianneschi, Northwestern University
9:00-9:30	Synthetic Mucus: A Bioinspired Solution to Diverse Soft-material Needs	Adam Braunschweig, CUNY
9:30-10:00		
10:00-10:30	BREAK	
10:30-11:00	Shear-responsive colloidal coatings using biomembrane-derived interfaces	Sho Takatori, UC-SB
11:00-11:30	Robust Conductance and Force Measurements of Single DNA Molecules to Quantify Nucleosome Unwinding	Maria Kamenetska, Boston University
11:30-12:00	Self-assembled Archaela Swimmers for Nanoscale Actuation and Sensing	Jamel Ali, FAMU
	LUNCH	
1:30-2:00	De novo Design of Alpha Helical and Beta Barrel Protein Channels and Pores for Molecular Sensing	David Baker, U of Washington
2:00-2:30	Expanding the Toolbox of DNA Nanotechnology: Silver-mediated DNA Base Pairing	Stacy Copp, UC-Irvine
2:30-3:00	Scalable Manufacturing of Squid Skin-Inspired Thermoregulatory Materials	Alon Gorodetsky, UC-Irvine
3:00-3:30	BREAK	
3:30-4:00	Transformative Mesoporous Biocomposites	Paul Trulove, US Naval Academy
4:00-4:30	Microbial Patterning of Soft Materials	Benjamin Keitz, UT-Austin



December 7, 2022

Time	Topic	Speaker
8:00-8:30	Registration	
8:30-9:00	Uncovering and Applying the Interfacial Design Principles of Multiphasic Natural and Synthetic Organelles	Rohit Pappu, Washington University (Virtual)
9:00-9:30	Molecular Systems Control in Networks of Communicating, Phase-Separated Droplets in Yeast	Rein Ulijn, CUNY
9:30-10:00	Macromolecular Modeling of Biomimetic Assembly	Murugappan Muthukumar, UMass-Amherst
10:00-10:30	BREAK	
10:30-11:00	Phonon Propagation in Biological Structures and Implications on Phononic Tunability of Synthetic Materials	Horacio Espinosa, Northwestern University
11:00-11:30	Closed and Open Architecture Colloidal Crystals with Properties by Design	Koray Aydin, Northwestern University
11:30-12:00	DNA-Programmed Assembly of Hierarchical Mesoporous Materials	Robert Macfarlane, MIT
	LUNCH	
1:30-2:00	Design and Real-time Characterization of Topologically Active DNA-based Materials	Rae Robertson-Anderson, U of San Diego (Virtual)
2:00-2:30	3D Nano-printing of protein nanostructures using DNA molds	Nicholas Stephanopoulos, Arizona State University (Virtual)
2:30-3:00	Design and Real-time Characterization of Topologically Active DNA-based Materials	Vladimir Tsukruk, Georgia Tech
3:00-3:30	BREAK	
3:30-4:00	Triggerable DNA Condensation for on-demand Expression of Gene Products	Lydia Contreras, UT-Austin
4:00-4:30	Self-Assembly of Conductive Fibers from Bioinspired Peptides	Allon Hochbaum, UC-Irvine



December 8, 2022

Time	Topic	Speaker
8:00-8:30	Registration	
8:30-9:00	Engineering Biomolecular Actuators from Ion-Responsive Repeat Proteins	Danielle Mai, Stanford University
9:00-9:30	Avian Eggshell: Engineering and Evolution of a Remarkable Multifunctional Material	Mary Stoddard, Princeton University
9:30-10:00	Inspiration from Fungi - Generating Tuneable Mycelial Networks for Directed Assembly	Carole Perry, Nottingham Trent University (Virtual)
10:00-10:30	BREAK	
10:30-11:00	Thermal Processing of Silk Polymer Composite Systems	David Kaplan, Tufts
11:00-11:30	Engineering Silk-based Materials into "Living"	Raymond Tu, CUNY
11:30-12:00	Hierarchical Assembly of Spider Silk Proteins: Exploring Structural Biology of Biomaterials from the Atomic to the Mesoscale	Gregory Holland, San Diego State University
	LUNCH	
1:30-2:00	Enhanced Cell Tolerance and Survival in Extreme Environments: Elucidating the Role of Archaeal Molecular Chaperones	Douglas Clark, UC-Berkely (Virtual)
2:00-2:30	Novel Microbial Chemolithotrophy in Hot, Acidic Biotopes	Robert Kelly, University of Virginia (Virtual)
2:30-3:00	Proto-organelles for Biomineralization	Abigail Knight, UNC – Chapel Hill
3:00-3:30	BREAK	
3:30-4:00	Revealing the Design Principles of Combined Pigmentary and Structural Coloration in a Dynamic Color Patterning System	Roger Hanlon, Marine Biological Laboratory
4:00-4:30	Convergent Evolution to Engineering: Multiscale Structures and Mechanics in Damage Tolerant Functional Biocomposite and Biomimetic Materials	David Kisailus, UC - Irvine
MEETING ADJOURN		