



University of Florida Research & Engineering Education Facility (REEF)  
1350 Poquito Rd N | Shalimar, FL 32579

**Agenda Day 1 | Tuesday, December 10, 2024**

Time	Title	Speaker
7:50-8:00	<b>Registration</b>	
8:00-8:30	Welcome and Overview	Bennett Ibey, AFOSR Program Officer
8:30-9:00	Optimizing Acoustic Camouflage through Characterization and Biomimicry of Moth Scales	Matthew Shawkey, Universiteit Gent
9:00-9:30	Revealing the Design Principles of combined Pigmentary and Structural Coloration in a Dynamic Color Patterning System	Roger Hanlon, The Marine Biological Laboratory
9:30-10:00	Directed Discovery of Peptide Materials for Extreme Environments	Rein Ulijn, The City University of New York
10:00-10:30	3D Nano-printing of Protein Nanostructures using DNA Molds	Nicholas Stephanopoulos, Arizona State University (VIRTUAL)
10:30-10:45	<b>BREAK</b>	
10:45-11:15	Self-assembled Archaeella Swimmers for Nanoscale Actuation and Sensing	Jamel Ali, Florida A & M University
11:15-11:45	Engineering Silk-based Materials into "Living"	Raymond Tu, CCNY-CUNY
11:45-12:15	Peptide-Directed High Entropy Nanomaterials Established via Structure/Function Relationships	Nicholas Bedford, University of New South Wales
12:15-1:45	<b>LUNCH</b>	
1:45-2:15	Living Plastics for Extreme Environments	David Kaplan, Tufts University
2:15-2:45	Biological CO2 Recycling for Long-Term Space Exploration	Ahmed Badran, Scripps Research Institute
2:45-3:15	Visualizing Nanoscale Formation Dynamics of Turing Nanoparticle Patterns	Taylor Woehl, University of Maryland, College Park
3:15-3:30	<b>BREAK</b>	
3:30-4:00	Programmable Resilin Assembly using Materials-Binding Peptides for Bioinspired	Marc Knecht, University of Miami

	Resilient Elastomeric Materials of Precise Morphologies	
<b>4:00-4:30</b>	Tunable Enzyme (MIMETIC) Nanomaterials with Peptide-Polymer Amphiphiles	Abigail Knight, University Of North Carolina At Chapel Hill
<b>4:30</b>	<b>MEETING ADJOURN FOR THE DAY</b>	

<b>Agenda Day 2   Wednesday, December 11, 2024</b>		
<b>Time</b>	<b>Title</b>	<b>Speaker</b>
<b>8:00-8:30</b>	DNA-Programmed Assembly of Hierarchical Mesoporous Materials	Robert Macfarlane, Massachusetts Institute of Technology
<b>8:30-9:00</b>	Closed and Open Architecture Colloidal Crystals with Properties by Design	Chad Mirkin, Northwestern University
<b>9:00-9:30</b>	Design and Real-time Characterization of Topologically Active DNA-based Materials	Rae Robertson-Anderson, University Of San Diego
<b>9:30-10:00</b>	Expanding the Toolbox of DNA Nanotechnology: Silver-mediated DNA Base Pairing	Stacy Copp, University of California Irvine
<b>10:00-10:15</b>	<b>BREAK</b>	
<b>10:15-10:45</b>	Phonon Propagation in Biological Structures and Implications on Phononic Tunability of Synthetic Materials	Horacio Espinosa, Northwestern University
<b>10:45-11:15</b>	Functional Biophotonic Materials with Tailored Twisting Organization	Vladimir Tsukruk, Georgia Tech University
<b>11:15-11:45</b>	Synthetic Biological Systems made using Structural PNA Nanotechnology	Rebecca Taylor, Carnegie Mellon University
<b>11:45-1:15</b>	<b>LUNCH</b>	
<b>1:15-1:45</b>	Macromolecular Mechanisms of Biomimetic and Biological Assembly	Murugappan Muthukumar, University of Massachusetts
<b>1:45-2:15</b>	Elucidating the Intrinsically Disordered State, Supramolecular Assembly and Protein Condensates in Natural Materials Formation	Gregory Holland, San Diego State University
<b>2:15-2:45</b>	Uncovering and Applying the Interfacial Design Principles of Multiphasic Natural and Synthetic Organelles	Rohit Pappu, Washington University in St. Louis
<b>2:45-3:00</b>	<b>Break</b>	

<b>3:00-3:30</b>	Synthetic Mucus: A Bioinspired Solution to Diverse Soft-material Needs	Adam Braunschweig, The City University Of New York
<b>3:30-4:00</b>	Bio-Inspired Chimeric Textile Materials with Multi-Functional Properties	Sanaz Farajollahi, AFRL
<b>4:00-4:30</b>	Shear-responsive colloidal coatings using biomembrane-derived interfaces	Sho Takatori, University of California, Santa Barbara (VIRTUAL)
<b>4:30</b>	<b>MEETING ADJOURN FOR THE DAY</b>	

<b>Agenda Day 3   Thursday, December 12, 2024</b>		
<b>Time</b>	<b>Title</b>	<b>Speaker</b>
<b>8:00-8:30</b>	Engineering in-cellulo Mesoporous Protein Crystals as Genetically Programmable Functional Biomaterials	Dingchang Lin, The Johns Hopkins University
<b>8:30-9:00</b>	Engineering Biomolecular Actuators from Ion-Responsive Repeat Proteins	Danielle Mai, Stanford University
<b>9:00-9:30</b>	Synthetic-Biological LEGOs – Designing Versatile Nanoscale Synthons for Self-Assembly	Thi Vo, The Johns Hopkins University
<b>9:30-10:00</b>	Microbial Patterning of Soft Materials	Benjamin Keitz, University Of Texas
<b>10:00-10:15</b>	<b>BREAK</b>	
<b>10:15-10:45</b>	Protein-mediated Polyphosphate Synthesis and Templating of Nanostructured Biocomposites for Thermal Protective Systems	Peter Mirau, AFRL
<b>10:45-11:15</b>	Novel Microbial Chemolithotrophy in Hot, Acidic Biotopes	Robert Kelly, North Carolina State University (VIRTUAL)
<b>11:15-11:45</b>	The Crush Resistant and Self-Cooling Exoskeleton of the Diabolical Iron Clad Beetle: A Multifunctional Biological Composite	David Kisailus, University Of California, Irvine
<b>11:45-1:30</b>	<b>LUNCH</b>	
<b>1:30-2:00</b>	Transformative Mesoporous Biocomposites	Paul Trulove & David Durkin, US Naval Academy

<b>2:00-2:30</b>	Impact-Resistant Soft Materials Engineered by Hierarchical Noncovalent Energy Dissipation	Benjamin Partridge, University of Rochester
<b>2:30-3:00</b>	Triggerable DNA Condensation for On-demand Expression of Gene Products	Lydia Contreras, University of Texas
<b>3:00-4:30</b>	Discussion	
<b>4:30</b>	<b>MEETING ADJOURNED</b>	