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Biophysical Society Selects Student Research Achievement Award Winners

ROCKVILLE, MD – The 31 winners of the annual Student Research Achievement Awards were recognized at the 65th Biophysical Society Annual Meeting Awards Ceremony on February 26, 2021. These students were selected by judges from the Society's Subgroups for their outstanding presentations during the poster competition. One hundred sixteen students participated in the competition.

The 2021 SRAA winners are:

Bioenergetics, Mitochondria & Metabolism

Jiemin Shen, *Baylor College of Medicine, USA* – “*Mechanism of Electron Transport in Mammalian Stearoyl-CoA Desaturase 1*”

Bioengineering

Aakash Saha, *University of California, Riverside, USA* – “*Cooperative Dynamics of REC-NUC Lobes Prime Cas12a for DNA Processing*”

Trishit Banerjee, *Tohoku University, Japan* – “*Engineering of Genome Editing Protein Cas9 that Slides Along DNA Faster and Might Enable Efficient Target Search*”

Biological Fluorescence

Harikrushnan Balasubramanian, *National University of Singapore* – “*SRRF 'N' Tirf-FCS: New Insights into EGFR-Cytoskeleton Interactions*”

David J. Schodt, *University of New Mexico, USA* – “*Quantitative Multi-Target Super-Resolution for Estimating Antibody Labeling Efficiency*”

Biopolymers in vivo

Fathima T. Doole, *University of Arizona, USA* – “*Antimicrobial Peptide-Membrane Interactions: Insights from Molecular Simulations*”

Channels Receptors & Transporters

Williams Miranda, *University of Calgary, Canada* – “*Molecular Mechanism of hERG1 Channel Regulation by Ceramides*”

Dheeraj Prakaash, *University of Leeds, United Kingdom* – “*Molecular Simulations Reveal the Dynamics of the T-Cell Receptor in a T-Cell Model Membrane*”

Matthew Rook, *University of Rochester Medical Center, USA* – “ASIC Activation Mechanisms Delineated through Genetic Code Expansion”

Cryo-EM

Hamidreza Rahmani, *Florida State University, USA* – “The Atomic Model for Myosin II Coiled-Coil Shows Novel Observations and Insights into Muscle Contraction”

Intrinsically Disordered Proteins

Lavi S. Bigman, *Weizmann Institute of Science, Israel* – “Microtubule-Based Transport is Controlled by Tubulin Tails and their Modifications”

Melina Theoni Gyparaki, *University of Pennsylvania, USA* – “Tau Forms Oligomeric Complexes on Microtubules that are Distinct from Pathological Oligomers in Disease”

Anindita Mahapatra, *CSIR, Indian Institute of Chemical Biology, India* – “Membrane Cholesterol Regulates the Binding of Alpha-Synuclein to Synaptic Vesicles, and its Subsequent Functional and Pathogenic Behavior”

Macromolecular Machines & Assembly

Sebastian Kenny, *Purdue University, USA* – “The Two Deubiquitinating Enzymes from *Chlamydia Trachomatis* Have Distinct Ubiquitin Recognition Properties”

Ines Martinez-Martin, *Spanish National Center for Cardiovascular Research, Spain* – “Crystallographic Structures of Titin Immunoglobulin-Like I21 Domains Involved in Dilated Cardiomyopathy”

Upasana L. Mallimadugula, *Washington University in St. Louis, USA* – “A Parallel Ratchet-Stroke Mechanism Leads to an Optimum Force for Molecular Motor Function”

Mechanobiology

Susanne Mesoy, *University of Cambridge, United Kingdom* – “The Role of the Outer Lipid-Facing Helix in Cationic pLIGCs is Dependent on the Cellular Context”

Amrutha Patkunarajah, *University of New South Wales, Australia* – “Disrupting Elkin1-Dependent Mechanoelectrical Transduction Modulates Cell-Cell Interactions in Organotypic Tumour Spheroids”

Membrane Structure & Function

Hammad Ali Faizi, *Northwestern University, USA* – “Shape Fluctuations of Giant Unilamellar Vesicles and its Applications to Study Electrified Membranes and Membrane Viscosity”

Valeria Zoni, *University of Fribourg, Switzerland* – “Seipin Accumulates and Traps Diacylglycerols and Tryglycerides in its Ring-Like Structure”

Chantelle Leveille, *University of Washington, USA* – “The Role of Growth Temperature and Lipid Composition in Phase Separation of Yeast Vacuole Membranes”

Membrane Transport

Mark MacRae, *New York University Grossman School of Medicine, USA* – “Structure of the Bacterial Lipid ABC Transporter MlaFEDB Reveals Substrate Bound”

Nandan Haloi, *University of Illinois at Urbana-Champaign, USA* – “*Role of the Internal Loops in Gating of Outer Membrane Porins*”

Victoria C. Young, *Texas Tech University Health Sciences Center, USA* – “*Displacement of the Na⁺/K⁺-Pump’s Transmembrane Domains Demonstrate Conserved Conformational Changes in P-Type 2 ATPases*”

Motility & Cytoskeleton

Lila Nehring, *University of California, San Francisco, USA* – “*Opposing Motors Provide Mechanical and Functional Robustness in The Mammalian Spindle*”

Multiscale Genome Organization

Fatema Zahra Rashid, *Leiden University, Netherlands* – “*Regulation of proVWX Transcription by Local Chromatin Remodelling*”

Nanoscale Approaches to Biology

Julia R. Migliore, *University of North Texas, USA* – “*Using Enzyme-Linked Markers with Chromogenic Substrates in Expansion Microscopy*”

Jugal Saharia, *Southern Methodist University, USA* – “*Chemically-Tuned Solid-State Nanopores for Single-Molecule Biophysics*”

Weiqing Xu, *Arizona State University, USA* – “*A Bayesian Nonparametric Approach to Learning Molecular Species and Diffusion Dynamics Based on Photon Arrival Data*”

Physical Cell Biology

Molly Mollica, *University of Washington, USA* – “*Measuring Single-Cell Platelet Forces via Microcontact-Printed, Reference-Free Traction Force Microscopy Reveals Relationships Between Cell Shape, F-Actin Localization, and Force*”

Yanitza Trosel, *Memorial University of Newfoundland, Canada* – “*Diffusion NMR and Rheology Study of a Model Polymer and a Disordered Protein in the Presence of Bacterial Cell Lysate Crowders*”



The Biophysical Society, founded in 1958, is a professional, scientific Society established to lead development and dissemination of knowledge in biophysics. The Society promotes growth in this expanding field through its annual meeting, publications, and committee and outreach activities. Its 7,500 members are located throughout the United States and the world, where they teach and conduct research in colleges, universities, laboratories, government agencies, and industry.