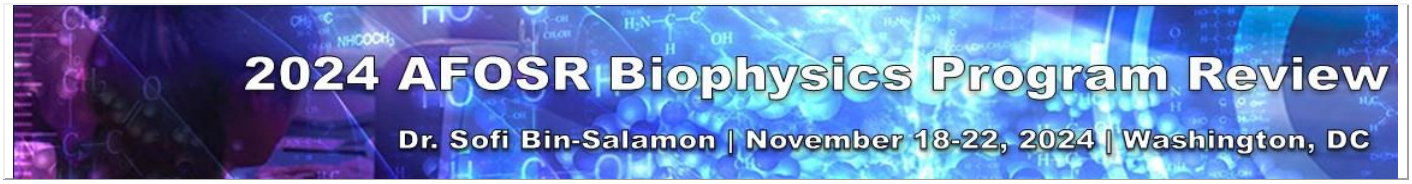

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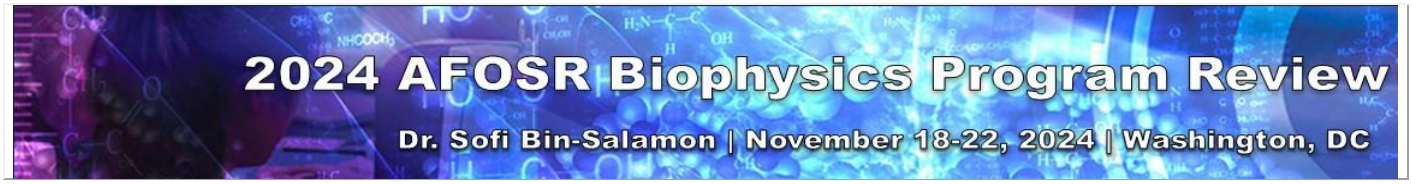
Bloomberg Center
555 Pennsylvania Avenue NW, Washington, DC 20001

Day 1 - Monday, 18 November 2024

TIME	TOPIC	SPEAKER
0830-0850	**REGISTRATION**	
0850-0900	Remarks	**Dr. Sofi Bin-Salamon** Program Manager Air Force Office of Scientific Research
0900-0930	Understanding the "Mission Versatility" of Membrane Proteins and Cells by All-Scale Nanoscopic Imaging	**Prof. Qian Chen** Department of Materials Science University of Illinois Urbana-Champaign
0930-1000	Elucidating the Biophysical Mechanisms of Protein-Lipid Interactions in Nanodiscs	**Prof. Aditi Das** Parker H. Petit Institute for Bioengineering and Biosciences Georgia Tech Research Corporation
1000-1030	Deciphering and Orchestrating Dendritic Cell Membrane-Material Interactions for Immunotherapy	**Prof. Hua Wang** Department of Materials Science University of Illinois Urbana-Champaign
1030-1100	**BREAK**	
1100-1130	Nanomanufacturing Program	**Dr. Khershed Cooper** Program Director National Science Foundation
1130-1200	Innovation in Multi-functional Materials via Scalable Additive Manufacturing	**Prof. Jochen Mueller** Department of Civil and Systems Engineering Johns Hopkins University
1200-1230	Towards the study of the impact of environmental mechanostimulus on oligodendrocyte precursor differentiation and myelination	**Dr. Ana Pêgo** Institute of Biomedical Engineering i3S/University of Porto
1230-1330	**LUNCH**	
1330-1400	Quantum Coherence and Quantum Interactions in Microtubules and Surrounding Environment	**Prof. Vladislav Yakovlev** Department of Biomedical Engineering Texas A&M University

1400-1430	Modulation of astrocytes as new paths to dialogue with the brain - ASTROTALK	**Dr. Valentina Benfenati** Institute of Synthesis and Photoreactivity National Research Council of Italy
1430-1500	From bio-nanomaterials to quantum dots for biosensing and modulating cellular response	**Dr. Maria Grazia Raucci** Institute of Polymers, Composites and Biomaterials National Research Council of Italy
1500-1530	Quantum control of biomolecular vibrations	**Prof. Warwick Bowen** Department of Physics University of Queensland
1530-1600	**BREAK**	
1600-1630	Dissecting the physical principles that control the spatial organization of intracellular signaling	**Prof. Lindsay Case** Department of Biology Massachusetts Institute of Technology
1630-1700	Chemotactic Movement and Organization of Membranes and Protocells	**Prof. Ayusman Sen** Department of Chemistry Pennsylvania State University
1700-1730	Influence of Hydration and Protein Collective Motions on Biological Activities	**Prof. Vinh Nguyen** Department of Physics Virginia Tech University
1730-1800	Optical analysis of biological aerosols for intraoperative tissue characterization	**Dr. José Rafael Guzmán Sepulveda** Biophotonics and Optical Sensing Laboratory Cinvestav Unidad Monterrey
1800	**MEETING ADJOURNED**	



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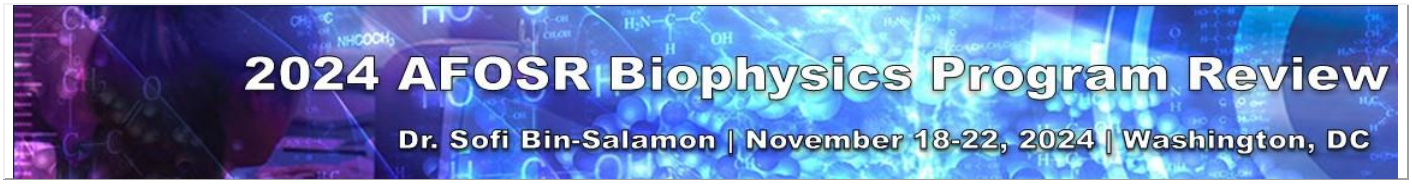
Day 2 - Tuesday, 19 November 2024

TIME	TOPIC	SPEAKER
0830-0900	**REGISTRATION**	
0900-0930	An Integrated Technology Platform with Photoelectrical and Electromagnetic Stimulator Arrays for Neuromorphic Vision	**Prof. Jian-Ping Wang** Department of Electrical and Computer Engineering University of Minnesota
0930-1000	Leveraging AI and computational methods for translational biophysics	**Prof. Tinen Iles** Department of Surgery University of Minnesota
1000-1030	Pixelated artificial retina models and biomodulation via organic semiconductors and light	**Prof. Thomas Brown** Department of Electronic Engineering University of Rome, Tor Vergata
1030-1100	**BREAK**	
1100-1130	Quantum Coherence and Dynamics in Biological Processes: Molecular Isomerization in Vision	**Prof. Paul Brumer** Department of Chemistry University of Toronto
1130-1200	Quantum correlation microscopy: progressing nanoscopy	**Prof. Andrew Greentree** ARC Centre of Excellence for NanoBiophotonics Royal Melbourne Institute of Technology University
1200-1230	Microwave and nano diamonds to dialogue with astrocytes	**Dr. Andrea Candini** Institute of Synthesis and Photoreactivity National Research Council of Italy
1230-1330	**LUNCH**	
1330-1400	Opportunities for creating Japan-US research collaboration	**Prof. Larry Nagahara** Vice Dean for Research and Translation Whiting School of Engineering Johns Hopkins University **Dr. Takeshi Usami** Director, Washington, D.C. Office Japan Science and Technology Agency

		Ms. Yuko Tsuda Deputy Director, Washington, D.C. Office Japan Science and Technology Agency
1400-1500	Label-free, high-speed quantitative imaging of astrocyte-neuron networks with optical diffraction tomography and machine learning	**Prof. Ishan Barman** Department of Mechanical Engineering Johns Hopkins University **Dr. Emanuela Saracino** Institute of Synthesis and Photoreactivity National Research Council of Italy
1500-1530	Investigation on co-cultured astrocyte and neuron populations by recording ultra-low signals with nanostructured electrodes	**Dr. Annalisa Convertino** Institute for Microelectronics and Microsystems National Research Council of Italy
1530-1600	Reconstruction of neuron potentials with convolutional neural networks trained on nanoelectrode recordings	**Prof. Zeinab Jahed** Department of Nanoengineering University of California, San Diego
1600-1630	**BREAK**	
1630-1700	Strategic Foresight - Helping Aviation Find Problems Worth Solving	**Dr. Vikram Shyam** Futurist Aeronautics Research Mission Directorate National Aeronautics & Space Administration
1700-1730	Entangled Quantum Sensors in Biology	**Prof. Peter Burke** Department of Integrated Nanosystem Research University of California, Irvine
1730-1800	Engineering nanodiamonds for superior sensing performance and future scalability	**Prof. Philip Hemmer** Department of Electrical and Computer Engineering Texas A&M University
1800	**MEETING ADJOURNED**	



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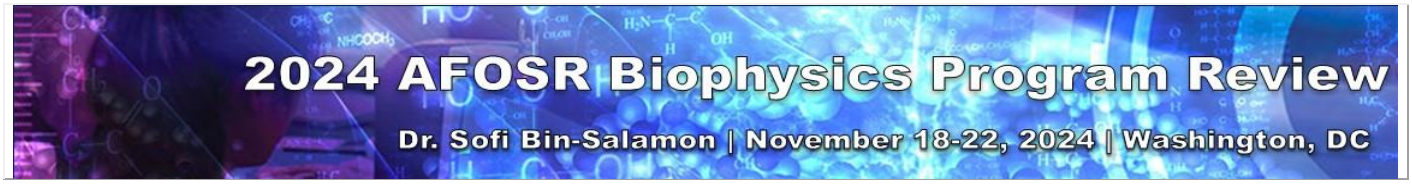
Day 3 - Wednesday, 20 November 2024

TIME	TOPIC	SPEAKER
0830-0900	**REGISTRATION**	
0900-0930	Universal Quantum Standards for Stochastic Biophysics	**Prof. James Brozik** Department of Chemistry Washington State University
0930-1000	Stochastic Biophysical Interactions within Aquaporin-4 Assemblies	**Prof. Grazia Paola Nicchia** Department of Bioscience, Biotechnology and Biopharmaceutics University of Bari
1000-1030	Label-free, sub-diffraction identification of biomolecules	**Prof. Somin Lee** Department of Electrical Engineering and Computer Science University of Michigan
1030-1100	**BREAK**	
1100-1130	Bio-imaging, Bio-sensing, and Quantum Sensing at ORNL	**Dr. Ali Passian** Senior Research Staff Computational Sciences and Engineering Division Oak Ridge National Laboratory
1130-1200	Oxygen controlled hydrogel to uncover cellular responses to rapid hypoxia	**Prof. Larry Nagahara** Whiting School of Engineering Johns Hopkins University **Prof. Sharon Gerecht** Department of Biomedical Engineering Duke University
1200-1230	Applying Artificial Intelligence Techniques to Biophysics in the Air Domain	**Mr. George Hellstern** Senior Manager of the Artificial Intelligence Pillar Lockheed Martin Corporation
1230-1330	**LUNCH**	

1330-1400	Biomolecular condensates as mediators of non-classical sensing at the molecular scale: The microtubule +TIP network	**Prof. Holly Goodson** Department of Chemistry and Biochemistry University of Notre Dame
1400-1430	Hybrid quantum biosensing platforms	**Prof. Brant Gibson** ARC Centre of Excellence for NanoBiophotonics Royal Melbourne Institute of Technology University
1430-1500	Exploring New Biophysical Processes with Quantum Entanglement	**Prof. Theodore Goodson** Department of Chemistry University of Michigan
1500-1530	Fundamental Biophysics Investigations on Upconversion Nanoparticles Modified Photoreceptive Composite Architectures for Enhanced Quantum Optoelectronics	**Prof. Bed Poudel** Department of Materials Science and Engineering Pennsylvania State University
1530-1600	**BREAK**	
1600-1630	Investigating Quantum Techniques for Breakthrough Solutions in Aerospace and Defence	**Dr. Massimiliano Dispenza** Head of Quantum Technology, Optronics and Advanced Materials Labs Leonardo SpA
1630-1700	Investigating Novel Materials and Processes for Breakthrough Solutions in Aerospace and Defence	**Dr. Abhishek Kumar** Advanced Materials Labs Leonardo SpA
1700-1730	Quantum biotechnologies	**Dr. Nicolas Mauranyapin** Department of Physics University of Queensland
1730-1800	Understanding Cell Morphology Using Neural Radiance Fields and Optical Diffraction Tomography	**Dr. Orlando Avila Garcia** ARQUIMEA Research Center
1800	**MEETING ADJOURNED**	



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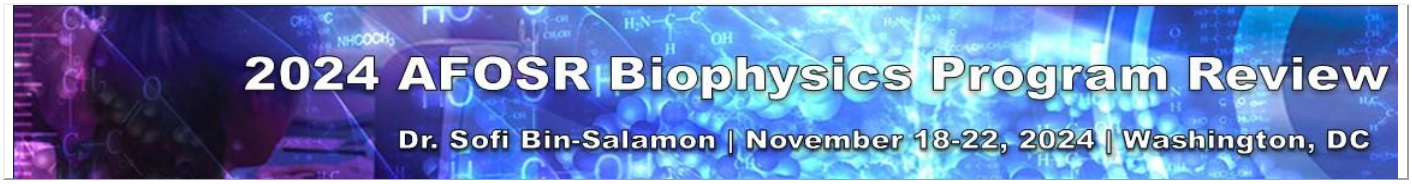
Day 4 - Thursday, 21 November 2024

TIME	TOPIC	SPEAKER
0830-0900	**REGISTRATION**	
0900-0930	Detail Mechanism of the Visual Process	**Prof. Peter Rentzepis** Department of Electrical and Computer Engineering Texas A&M University
0930-1000	Photothermal label-free dynamic probing and modulation of astrocytes and fibroblast cell models	**Prof. Michelle Sander** Electrical and Computer Engineering Boston University
1000-1030	Astrocytes neural network multiscale response to extracellular sensing cues	**Dr. Valentina Benfenati** Institute of Synthesis and Photoreactivity National Research Council of Italy
1030-1100	**BREAK**	
1100-1130	Aquaporin-4 as intelligent system in astrocytes to sense extracellular environmental clues	**Prof. Grazia Paola Nicchia** Department of Bioscience, Biotechnology and Biopharmaceutics University of Bari
1130-1200	Sensing extracellular matrix analogues to modulate astrocytes response	**Prof. Luigi Ambrosio** Institute of Polymers, Composites and Biomaterials National Research Council of Italy
1200-1230	Italy-US bilateral cooperation in Science & Technology	**Dr. Maurizio Biasini** Science Attaché Embassy of Italy **Mr. Giulio Busulini** Scientific Advisor Italian Institute of Technology
1230-1235	Remarks	**Dr. Allen Chong** Senior Advisor Science, Technology and Innovation Division Embassy of Canada
1235-1330	**LUNCH**	

1330-1400	Computing with Controllable Neuro-Glial Networks	**Prof. Wolfgang Losert** Department of Physics University of Maryland
1400-1430	Collective Information Processing of Astrocytes	**Dr. Kate O'Neill** Department of Physics University of Maryland
1430-1530	Astrocyte Augmented Machine Learning	**Dr. Corey Hart** Advanced Development Programs Lockheed Martin Corporation **Dr. Christopher Yang** Advanced Technology Laboratories Lockheed Martin Corporation
1530-1600	**BREAK**	
1600-1630	Radiation Research Program	**Dr. Jeffrey Buchsbaum** Program Director National Cancer Institute National Institutes of Health
1630-1700	Real-time monitoring of aquaporin-4 dependent astrocyte biophysical parameters using multi-dimensional optical imaging and deep learning	**Prof. Bahram Javidi** Department of Electrical and Computer Engineering University of Connecticut
1700-1730	Lensless Computational Microendoscopy for Minimally-Invasive Hyperspectral Bio-imaging	**Prof. Mark Foster** Department of Electrical and Computer Engineering Johns Hopkins University
1730-1800	**DISCUSSION**	
1800	**MEETING ADJOURNED**	



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Day 5 - Friday, 22 November 2024

TIME	TOPIC	SPEAKER
0830-0900	**REGISTRATION**	
0900-0930	Measurement of Cellular Viscosity and Mitochondrial Dynamics using Ultrasensitive Imaging Methods	**Prof. Yun Chen** Department of Mechanical Engineering Johns Hopkins University
0930-1000	Imaging the living activity of cells	**Prof. Warwick Bowen** Department of Physics University of Queensland
1000-1030	Biotransfer Printing of Nanopatterns on Tissue and Single Cells	**Prof. Luo Gu** Department of Materials Science and Engineering Johns Hopkins University
1030-1100	**BREAK**	
1100-1130	Investigations of Cell Responses to Extreme Environments Created by 3D Printing	**Prof. Zhijian Pei** Department of Industrial and Systems Engineering Texas A&M University
1130-1200	Biophysical responses of lung cells to extreme environments created by 3D printing	**Prof. Hongmin Qin** Department of Biology Texas A&M University
1200-1230	Biophysical responses of brain cells to extreme environments created by 3D printing	**Dr. Ana Pêgo** Institute of Biomedical Engineering i3S/University of Porto
1230-1300	Biophysical responses of brain cells to extreme environments created by 3D printing	**Prof. Vladislav Yakovlev** Department of Biomedical Engineering Texas A&M University
1300-1400	**LUNCH**	
1400-1430	Measuring Plasticity in Integrated Quantum-Enabled Neural Networks (IQ-NNs)	**Prof. Wolfgang Losert** Department of Physics University of Maryland
1430-1500	Biological Control of IQ-NNs	**Prof. Kan Cao** Dept. of Cell Biology and Molecular Genetics University of Maryland

1500-1530	Engineering IQ-NN topologies	**Prof. John Fourkas** Department of Chemistry and Biochemistry University of Maryland
1500-1530	Harnessing IQ-NNs as a Quantum Biosensing Testbed	**Prof. Cheng Gong** Department of Electrical and Computer Engineering University of Maryland
1530-1600	**BREAK**	
1600-1630	NIH quantum opportunities	**Dr. Geetha Senthil** Deputy Director, Office of Special Initiatives National Center for Advancing Translational Sciences National Institutes of Health
1630-1700	Quantum Signatures in Redox Cell Biology	**Prof. Robert Usselman** Department of Chemistry and Chemical Engineering Florida Institute of Technology
1700-1730	Multiscale Electrical Mapping of Biosystems	**Prof. Jinglei Ping** Department of Mechanical and Industrial Engineering University of Massachusetts Amherst
1730-1800	Scalable nanophotonic source of squeezed light towards quantum- and bio-sensing	**Prof. Avik Dutt** Department of Mechanical Engineering University of Maryland
1800-1830	**DISCUSSION**	
1830	**MEETING CONCLUSION**	