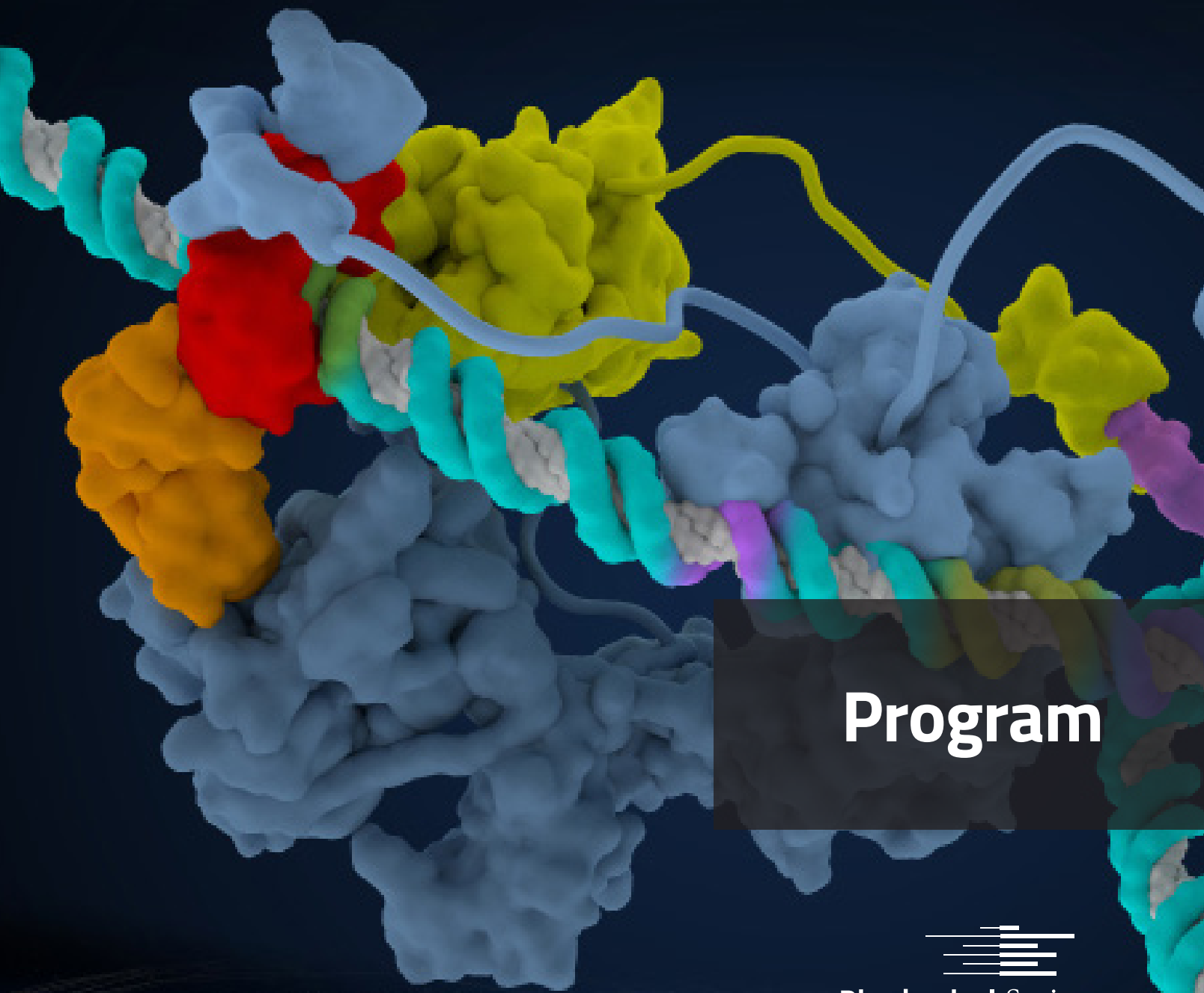
BPS2021

65th Biophysical Society Annual Meeting
February 22–26, 2021



Program

Biophysical Society

BPS2021

65th Biophysical Society Annual Meeting
February 22–26, 2021

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2021 Biophysical Society Lecturer

Eva Nogales
University of California, Berkeley, USA

Visualizing Structure, Dynamics and Interactions of Complex Macromolecular Assemblies

About the Image

The 2021 image featured on the cover is Structure of human transcription factor IID (TFID) bound to core promoter DNA obtained using cryo-EM.

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The Biophysical Society (BPS) is committed to providing an environment that encourages the free expression and exchange of scientific ideas. As a global, professional Society, the BPS is committed to the philosophy of equal opportunity and respectful treatment for all, regardless of national or ethnic origin, religion or religious belief, gender, gender identity or expression, race, color, age, marital status, sexual orientation, disabilities, veteran status, or any other reason not related to scientific merit.

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Sorting and Programming of 2021 Abstracts

Sorting and programming of the 2021 Annual Meeting abstracts into poster and platform sessions was completed by: Patricia Bassereau, Patricia Clark, Michelle A. Digman, Erin C. Dueber, Marta Filizola, Bertrand Garcia-Moreno, Teresa Giraldez, Ruben Gonzalez, Gilad Haran, Kumiko Hayashi, Kalina Hristova, William Kobertz, Elizabeth Komives, Francesca M. Marassi, Joseph A. Mindell, Carolyn A. Moores, Anna Moroni, Arthur Palmer, David W. Piston, Jennifer Ross, Catherine A. Royer, James Sellers, Frances Separovic, Erin Sheets, David Stokes, and Joanna Swain.

BPS Virtual Annual Meeting Dates
The Annual Meeting will be held Monday, February 22 – Friday, February 26, 2021.

Virtual Annual Meeting Time Zone
The Annual Meeting will be held in USA Eastern time.

Certificates of Attendance
Certificates of Attendance may be obtained by emailing society@biophysics.org.

Virtual Event Code of Conduct
The Biophysical Society Annual Meeting provides an environment that encourages free and respectful expression and exchange of scientific ideas.

Please review the virtual event code of conduct policy (https://biophysics.ethicspoint.com/) that all meeting participants must follow.

Virtual Exhibits
The Virtual Exhibit Hall features the most advanced equipment, products, services, and publications available. A list of exhibitors as of February 1, 2021, can be found beginning on page 128.

Tuesday	10:00 AM–5:00 PM
Wednesday	10:00 AM–5:00 PM
Thursday	10:00 AM–5:00 PM
Friday	10:00 AM–5:00 PM

Virtual Exhibitor Scavenger Hunt
Light up the Leaderboard! Join your fellow BPS attendees on an interactive Scavenger Hunt with exhibitors. Visit the exhibitors, scan the QR code in each company's profile, answer the question to score points, and climb the leaderboard! Top two scoring participants will receive a Samsung Galaxy Tablet or a Fitbit Versa. The Scavenger Hunt ends on Friday, February 26, at 5:00 PM. Winners will be notified and announced on BPS' social media accounts on Friday, February 26, at 5:00 PM.

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The virtual meeting platform does not allow downloading or sharing of content and it is strictly prohibited. The Biophysical Society asks – When sharing information about what you see and hear in meeting sessions, please refrain from capturing or sharing full detail of the material presented in order to respect the intellectual property of the presenters. Some presenters may request, verbally or in writing, that attendees not digitally capture or share information about their presentations and content; please honor those requests so that we can maintain a professional, respectful environment.

Any attendees who do not comply with this request will have their access to the virtual meeting revoked.

Poster Sessions
Posters will be presented in a digital format online that include high resolution images and an audio presentation. Attendees will be able to hear an audio description of the poster upon viewing and connect with the presenter about their research.

Presenters will be available for questions through live chat during their formal presentation time. You can also e-mail the presenter directly to coordinate a meeting time to ask your questions. On the day of presentation, Tuesday and Thursday presenting authors with odd-numbered poster boards will present from 12:00 PM – 12:45 PM, USA Eastern and presenting authors with even-numbered poster boards will present from 12:45 PM—1:30 PM, USA Eastern.

On Wednesday and Friday, presenting authors with odd-numbered poster boards will present from 2:00 PM—2:45 PM, USA Eastern and presenting authors with even-numbered poster boards will present from 2:45 PM—3:30 PM, USA Eastern.

Social Media
The Biophysical Society welcomes the use of social media to share information from the 65th Biophysical Society Virtual Annual Meeting and to engage with the biophysics community. Please use the Annual Meeting hashtag #bps2021 when posting to help others follow along.

We encourage you to share highlights from the meeting, suggest sessions to attend, discuss stand-out presentations and posters, and connect with your fellow biophysicists, as well as our sponsors and exhibitors.

When sharing information about what you see and hear in meeting sessions, please refrain from capturing or sharing full detail of the material presented in order to respect the intellectual property of the presenters. Some presenters may request, verbally or in writing, that attendees not digitally capture or share information about their presentations and content; please honor those requests so that we can maintain a professional, respectful environment.

Presenters: If you do not wish to have your research shared via social media, please make an announcement before and during your presentation. BPS strongly encourages compliance with speaker requests regarding social media sharing but cannot guarantee it.

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Facebook:	facebook.com/biophysicalsociety
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Virtual Travel Grant Awardees

Tuesday, February 23

Trishit Banerjee, Tohoku University, Japan
424-Pos, **Board B358**
ENGINEERING OF GENOME EDITING PROTEIN CAS9 THAT SLIDES ALONG DNA FASTER AND MIGHT ENABLE EFFICIENT TARGET SEARCH.

Alexandra Brown, Dalhousie University, Canada
29-Plat
INVESTIGATING THE STRUCTURE AND FUNCTION OF COACTIVATOR RECRUITMENT BY THE MELANOGENIC TRANSCRIPTION FACTOR MITF.

Anuska Das, Florida State University, USA
78-Pos, **Board B12**
STRUCTURAL AND BIOCHEMICAL ANALYSIS OF A METHYLATION SENSITIVE CAS9.

Anirban Das, Tata Institute of Fundamental Research, India
70-Pos, **Board B4**
FACTORS THAT AFFECT THE BINDING OF THE N-TERMINAL HELIX OF HUMAN ACE2 TO SPIKE PROTEIN OF SARS-COV2.

Hammad Faizi, Northwestern University, USA
203-Pos, **Board B137**
SHAPE FLUCTUATIONS OF GIANT UNILAMELLAR VESICLES AND ITS APPLICATIONS TO STUDY ELECTRIFIED MEMBRANES AND MEMBRANE VISCOSITY.

Ankita Gupta, Indian Institute of Technology Kanpur
356-Pos, **Board B290**
STRUCTURAL DYNAMICS AND ENERGETICS OF GLUCOSE TRANSPORT VIA RICE SWEET SUGAR TRANSPORTER.

Pankaj Jadhav, Indian Institute of Science
84-Pos, **Board B18**
2.09 Å RESOLUTION STRUCTURE OF E. COLI HIGBA TOXIN-ANTITOXIN COMPLEX REVEALS AN ORDERED DNA-BINDING DOMAIN AND INTRINSIC DYNAMICS IN ANTITOXIN.

Sarah Hyun Ji Kim, University of Pennsylvania, USA
324-Pos, **Board B258**
INTEGRIN CROSSTALK MODULATES STIFFNESS-INDEPENDENT MOTILITY IN CD4+ T LYMPHOCYTES.

Julene Madariaga Marcos, Universität Leipzig, Germany
453-Plat
DISSECTING THE TARGET RECOGNITION BY CRISPR/CAS EFFECTOR COMPLEXES WITH ULTRAFAST TWIST MEASUREMENTS.

Shankar Mandal, University of Michigan, USA
473-Plat
SINGLE-MOLECULE FRET BASED INTRA-MOLECULAR KINETIC FINGERPRINTING FOR ULTRAFAST AND HIGH-CONFIDENCE COUNTING OF MUTANT DNA.

Guillermo Moreno Pescador, University of Copenhagen, Denmark
221-Pos, **Board B155**
INVESTIGATING PLASMA-MEMBRANE REPAIR EMPLOYING THERMOPLASMONICS.

Fiona Naughton, Arizona State University, USA
357-Pos, **Board B291**
ENERGETICS OF SUBSTRATE BINDING AND CONFORMATIONAL CHANGE OF THE BILE ACID TRANSPORTER $ASBT_{NM}$.

Abhilash Sahoo, University of Maryland, USA
138-Pos, **Board B72**
EFFECTS OF MEMBRANE CURVATURE ON AMYLOID-BETA AGGREGATION.

Jenaro Soto, University of California, Irvine, USA
81-Pos, **Board B15**
DYNAMIC CONSEQUENCES OF SPECIFICITY WITHIN THE CYTIDINE REPRESSOR DNA-BINDING DOMAIN.

Robert Wiener, Icahn School of Medicine at Mount Sinai, USA
306-Pos, **Board B240**
NANOINDENTATION OF IPSC-DERIVED AORTIC SMOOTH MUSCLE CELLS REVEALS A BIOMECHANICAL AND DEVELOPMENTAL BASIS FOR ANEURYSM LOCALIZATION IN MARFAN SYNDROME.

Wednesday, February 24

Santosh Adhikari, University of Minnesota, USA
880-Pos, **Board B331**
QUANTITATIVE LIVE-CELL PALM REVEALS NANOSCOPIC FAA4 REDISTRIBUTIONS AND DYNAMICS ON LIPID DROPLETS DURING METABOLIC TRANSITIONS IN YEAST.

Andrea Basciu, University of Cagliari, Italy
554-Pos, **Board B5**
IN SILICO GENERATION OF HOLO-LIKE CONFORMATIONS OF VERY FLEXIBLE ALLOSTERIC PROTEINS BEARING MULTIPLE BINDING SITES.

Nicholas Castaneda, University of Central Florida, USA
773-Pos, **Board B224**
COUNTERACTIVE EFFECTS OF ELECTROSTATICS AND MACROMOLECULAR CROWDING ON ACTIN BUNDLE MECHANICS AND SECONDARY STRUCTURE.

Fathima Doole, University of Arizona, USA
683-Pos, **Board B134**
ANTIMICROBIAL PEPTIDE-MEMBRANE INTERACTIONS: INSIGHTS FROM MOLECULAR SIMULATIONS.

Steven Fried, University of Arizona, USA
630-Pos, **Board B81**
HYDRATION AND PROTONATION EFFECTS ON ACTIVATION OF G-PROTEIN-COUPLED RECEPTORS.

Jenisha Ghimire, Tulane University, USA
691-Pos, **Board B142**
SYNTHETIC MOLECULAR EVOLUTION TO IDENTIFY HEMOCOMPATIBLE ANTIMICROBIAL PEPTIDES EFFECTIVE AGAINST DRUG-RESISTANT, BIOFILM-FORMING BACTERIA.

Fatlum Hajredini, City University of New York, USA
615-Pos, **Board B66**
ALLOSTERIC REGULATION OF THE ACTIVITY OF BY-KINASES, A UNIQUE FAMILY OF BACTERIAL PROTEIN TYROSINE KINASES.

Rachel Hutchinson, University of Wisconsin-Madison, USA
478-Plat
A NOVEL APPROACH COMBINING FLUORESCENCE-ANISOTROPY DECAYS AND MICROVISCOMETRY TO EXPLORE THE COTRANSLATIONAL COMPACTION OF NASCENT PROTEINS.

Shobhna Kapoor, Indian Institute of Technology Bombay
488-Plat
MEMBRANE BIOPHYSICS AND CHEMICAL BIOLOGY PLATFORM TO MAP THE LANDSCAPE OF VIRULENT LIPID-INDUCED EFFECTS ON HOST CELL MEMBRANE AND SIGNALING.

Sai Li, Rockefeller University, USA
652-Pos, **Board B103**
NONRECIPROCAL AND CONDITIONAL COOPERATIVITY DIRECTS THE PIONEER ACTIVITY OF PLURIPOTENCY TRANSCRIPTION FACTORS.

Haixing Li, Columbia University, USA
526-Plat
THE ROLE TRNA-MEDIATED REGULATION OF RIBOSOME DYNAMICS PLAYS IN FRAMESHIFTING BY +1 FRAMESHIFT-INDUCING TRNAS.

Louisa Mezache, The Ohio State University, USA
743-Pos, **Board B194**
TARGETING THE VASCULAR ENDOTHELIAL BARRIER TO PREVENT NANOSCALE CARDIAC REMODELING: A NOVEL STRATEGY TO PREVENT ATRIAL FIBRILLATION.

Molly Mollica, University of Washington, USA
811-Pos, **Board B262**
MEASURING SINGLE-CELL PLATELET FORCES VIA MICROCONTACT-PRINTED, REFERENCE-FREE TRACTION FORCE MICROSCOPY REVEALS RELATIONSHIPS BETWEEN CELL SHAPE, F-ACTIN LOCALIZATION, AND FORCE.

Sara Osorio Valencia, Loyola University Chicago, USA
534-Plat
TRPP1 CHANNEL CALCIUM SIGNALING AS A KEY DETERMINANT OF MYOGENESIS.

Jinho Park, University of Central Florida, USA
774-Pos, Board B225
CROWDING TUNES THE ORGANIZATION AND MECHANICS OF ACTIN BUNDLES INDUCED BY ACTIN CROSSLINKING PROTEINS.

Maria Queralt-Martin, Universitat Jaume I, Spain
750-Pos, **Board B201**
ASSESSING THE ROLE OF ELECTROSTATIC INTERACTIONS IN THE MECHANISM OF BETA-BARREL CHANNEL GATING.

Priti Roy, Indian Institute of Science Education and Research- Kolkata
619-Pos, **Board B70**
DISULFIDE REDUCTION ALLOSTERICALLY DESTABILIZES THE B-LADDER SUB-DOMAIN ASSEMBLY WITHIN THE NS1 DIMER OF ZIKV.

Michelle Sahai, University of Roehampton, United Kingdom
594-Pos, **Board B45**
USING COMPUTATIONAL AND NEUROBIOLOGICAL METHODS TO CHARACTERISE THE STIMULANT PROPERTIES OF NOVEL PSYCHOACTIVE SUBSTANCES (NPS) AT THE DOPAMINE TRANSPORTER.

Prakash Shrestha, Boston Children's Hospital, USA
906-Pos, **Board B357**
SINGLE MOLECULE SHAPE DETERMINATION OF BIOMOLECULES USING DNA NANOSWITCH CALIPERS.

Yaqiang Wang, University of California, Los Angeles, USA
669-Pos, **Board B120**
A STRUCTURALLY CONSERVED HUMAN AND TETRAHYMENA TELOMERASE CATALYTIC CORE.

Shiying Zhu, Bio21 Institute, Australia
689-Pos, **Board B140**
C-TERMINUS AMIDATION INFLUENCES BIOLOGICAL ACTIVITY AND MEMBRANE INTERACTION OF MACULATIN 1.1.

Thursday, February 25

Wooyoung Choi, Van Andel Institute, USA
1018-Pos, **Board B68**
STRUCTURE BASIS AND GATING MECHANISM OF CALCIUM HOMEOSTASIS MODULATOR 2 CHANNEL.

Bojian Ding, Stony Brook University, USA
1352-Plat
STRUCTURAL PERSPECTIVE INTO ACTIVATION OF ARP2-3 COMPLEX FOR NUCLEATING LINEAR AND BRANCHED ACTIN ASSEMBLIES.

Anneliese Faustino, Johns Hopkins University, USA
953-Pos, **Board B3**
MAPPING STRUCTURAL INTERMEDIATES DURING CO-TRANSLATIONAL FOLDING OF HSP70 WITH CROSSLINKING MASS SPECTROMETRY.

Valeria Guzman Luna, University of Wisconsin-Madison, USA
954-Pos, **Board B4**
INTERACTION BETWEEN RIBOSOME-BOUND NASCENT PROTEINS AND A SPECIFIC REGION OF THE RIBOSOMAL SURFACE.

Soonwoo Hong, University of Texas at Austin, USA
1308-Pos, **Board B358**
CORRELATION BETWEEN SPECTROSCOPIC AND STRUCTURAL FEATURES OF DIMERIC DNA-TEMPLATED SILVER NANOCLUSTERS USING MASS SPECTROMETRY.

Wen Ma, University of California, San Diego, USA
1208-Pos, **Board B258**
MOLECULAR MECHANISM OF FORCE GENERATION BY THE ACTIN-MYOSIN COMPLEX DURING CARDIAC MUSCLE CONTRACTION.

Abigail Nagle, University of Washington, USA
1224-Pos, **Board B274**
A NOVEL METHOD TO MEASURE MYOFIBRIL STRAIN IN INTACT HUMAN STEM CELL DERIVED CARDIOMYOCYTES.

James Osei-Owusu, Johns Hopkins University, USA
930-Plat
STRUCTURES OF HUMAN PROTON-ACTIVATED CHLORIDE CHANNEL (PAC) REVEAL MECHANISM OF PH SENSING AND GATING.

Lara Scofano, University of Oxford, United Kingdom
1196-Pos, **Board B246**
THE MOLECULAR BASIS OF THE REGULATION OF THE TMEM16A CA^{2+}-ACTIVATED CL^- CHANNEL BY THE LYSOSOMAL NPC1 PROTEIN.

Pamela Swiatlowska, New York University, USA
1221-Pos, **Board B271**
MEMBRANE YOUNG'S MODULUS AS A FUNCTION OF PLAKOPHILIN-2 EXPRESSION: IMPLICATIONS TO ARRHYTHMOGENIC RIGHT VENTRICULAR CARDIOMYOPATHY.

Philip To, Johns Hopkins University, USA
1333-Plat
PROBING THE IMPACT OF MOLECULAR CHAPERONES ON THE REFOLDABILITY OF THE *E. COLI* PROTEOME.

Qi Wang, New Mexico Institute of Mining and Technology, USA
1094-Pos, **Board B144**
EXAMINATION OF BREAST-CANCER-ASSOCIATED LIPID TAIL LENGTH EFFECTS ON BILAYER OXYGEN PERMEABILITY.

Xiaoan Wu, University of Miami, USA
1169-Pos, **Board B219**
NON-CANONICAL MECHANISM OF THE VSD-PD COUPLING IN KCNQ1/KCNE1 CHANNELS.

Friday, February 26

Mac Kevin Braza, University of California, San Diego, USA
1443-Pos, **Board B45**
IN SILICO INSIGHTS ON THE ALLOSTERIC MODULATION OF THE MU-OPIOID RECEPTOR AND G PROTEIN COMPLEX IN THE PRESENCE OF AGONIST LIGAND BU72 AND POTENTIAL POSITIVE ALLOSTERIC MODULATOR BMS-986121.

Mandy Erkelens, Leiden University, the Netherlands
1531-Pos, **Board B133**
(A)SPECIFIC DNA BINDING OF ARCHAEAL HISTONES, THE FORMATION AND POSITIONING OF HYPERNUCLEOSOMES.

Kirin Gada, Northeastern University, USA
1639-Pos, **Board B241**
PKC MODULATION BY GIRK CHANNELS IS INVOLVED IN THE PATHOPHYSIOLOGY OF ATRIAL FIBRILLATION.

Francesco Garzella, Istituto Italiano di Tecnologia, Italy
1751-Pos, **Board B353**
DEVELPOMENT AND CHARACTERIZATION OF NOVEL PROBES FOR PHOTOACOUSTIC MICROSCOPY.

Ashwini Hariharan, University of Maryland Baltimore, USA
1580-Pos, **Board B182**
CAPILLARY PERICYTE K_{ATP} CHANNEL ACTIVATION DRIVES THE DILATION OF UPSTREAM CEREBRAL ARTERIOLES.

Taranpreet Kaur, University at Buffalo, State University of New York, USA
1488-Pos, **Board B90**
DECIPHERING MULTIPHASIC STRUCTURE OF PROTEIN-RNA CONDENSATES.

Zhaowei Liu, University of Basel, Switzerland
1745-Pos, **Board B347**
MAPPING MECHANOSTABLE PULLING GEOMETRIES OF PROTEIN-LIGAND COMPLEXES.

Fatema Zahra Rashid, Leiden Institute of Chemistry, the Netherlands
1534-Pos, **Board B136**
REGULATION OF *PROVWX* TRANSCRIPTION BY LOCAL CHROMATIN REMODELLING.

Rosa Romero, University of Michigan, USA
1505-Pos, **Board B107**
SINGLE-MOLECULE INVESTIGATION OF COOPERATIVITY WITHIN THE GLYCINE TANDEM RIBOSWITCH.

Honglue Shi, Duke University, USA
1517-Pos, **Board B119**
RAPID AND ACCURATE DETERMINATION OF ATOMISTIC RNA DYNAMIC ENSEMBLE MODELS USING NMR AND STRUCTURE PREDICTION.

Shwetha Srinivasan, Massachusetts Institute of Technology, USA
1594-Pos, **Board B196**
CONFORMATIONAL COUPLING ACROSS THE MEMBRANE BILAYER OF EPIDERMAL GROWTH FACTOR RECEPTOR.

Prince Tiwari, University of Massachusetts Medical School, USA
1665-Pos, **Board B267**
NEAR-ATOMIC STRUCTURE OF THE 10S FORM OF MYOSIN II: IMPLICATIONS FOR INHIBITION, ACTIVATION AND DISEASE.

Kathleen Vergunst, Dalhousie University, Canada
1413-Pos, **Board B15**
EXPLORING THE STRUCTURAL STABILITY AND ASSEMBLY MECHANISM OF HYDROPHOBIN PROTEINS.

Lili Wang, Vanderbilt University Medical Center, USA
1606-Pos, **Board B208**
THYROID AND DEXAMETHASONE TREATMENT ENHANCES THE EXPRESSION OF REPOLARIZING POTASSIUM CURRENTS AND IMPROVE ELECTROPHYSIOLOGICAL MATURATION OF HUMAN IPSC-DERIVED CARDIOMYOCYTES.

Natalie Weber, Hannover Medical School, Germany
1646-Pos, **Board B248**
EFFECTS OF CARDIAC MYOSIN HEAVY CHAIN ISOFORM COMPOSITION ON CONTRACTION KINETICS AND CALCIUM TRANSIENTS IN ADULT RAT CARDIOMYOCYTES.

Oscar Zabala-Ferrera, University of Massachusetts Amherst, USA
1559-Pos, **Board B161**
ELECTROSTATIC EFFECTS ON MODEL MEMBRANE COMPRESSIBILITY AND VESICLE ADHESION.

Xianwei Zhang, University of California, Davis, USA
1619-Pos, **Board B221**
QUANTIFYING THE ARRHYTHMOGENIC EFFECTS OF SUBCELLULAR STRUCTURAL VARIATIONS IN A THREE-DIMENSIONAL MODEL OF THE HUMAN ATRIAL MYOCYTE.

Monday, February 22, 2021

Daily Program Summary

9:00 AM-10:00 AM	Bioenergetics, Mitochondria, and Metabolism Subgroup Business Meeting
9:00 AM-10:00 AM	Biopolymers in vivo Subgroup Business Meeting
9:00 AM-10:00 AM	Intrinsically Disordered Proteins Subgroup Business Meeting
10:00 AM-2:00 PM	Bioenergetics, Metabolism, and Mitochondria Symposium
10:00 AM-2:00 PM	Biopolymers in vivo Symposium
10:00 AM-2:00 PM	Channels, Receptors, and Transporters Symposium
10:00 AM-2:00 PM	Mechanobiology Symposium
10:00 AM-2:00 PM	Membrane Fusion, Fission, and Traffic Symposium
10:00 AM-2:00 PM	Multiscale Genome Organization Symposium
10:00 AM-2:00 PM	Nanoscale Approaches to Biology Symposium
10:00 AM-2:00 PM	Physical Cell Biology Symposium
2:00 PM-5:40 PM	Membrane Transport Symposium
2:00 PM-6:00 PM	Bioengineering Symposium
2:00 PM-6:00 PM	Biological Fluorescence Symposium
2:00 PM-6:00 PM	Cryo-EM Symposium
2:00 PM-6:00 PM	Intrinsically Disordered Proteins Symposium
2:00 PM-6:00 PM	Macromolecular Machines and Assemblies Symposium
2:00 PM-6:00 PM	Membrane Structure and Function Symposium
2:00 PM-6:00 PM	Motility and Cytoskeleton Symposium
3:00 PM-5:00 PM	Undergraduate Mixer and Poster Award Competition
5:40 PM-6:15 PM	Membrane Transport Subgroup Business Meeting
6:00 PM-6:30 PM	Bioengineering Subgroup Business Meeting
6:00 PM-6:30 PM	Macromolecular Machines and Assemblies Subgroup Business Meeting
6:00 PM-7:00 PM	Cryo-EM Subgroup Business Meeting and Virtual Happy Hour
6:00 PM-7:00 PM	Mechanobiology Subgroup Business Meeting
6:00 PM-7:00 PM	Membrane Structure and Function Subgroup Business Meeting

Monday, February 22

Bioenergetics, Mitochondria, and Metabolism Subgroup Business Meeting

9:00 AM - 10:00 AM

Subgroup Co-Chairs
Miguel A. Aon, Johns Hopkins University, USA
Gyorgy Csordas, Thomas Jefferson University, USA

Biopolymers in vivo Subgroup Business Meeting

9:00 AM - 10:00 AM

Subgroup Chair
Daniel Harries, Hebrew University of Jerusalem, Israel

Intrinsically Disordered Proteins Subgroup Business Meeting

9:00 AM - 10:00 AM

Subgroup Chair
Nicolas Fawzi, Brown University, USA

Bioenergetics, Metabolism, and Mitochondria Symposium

10:00 AM - 2:00 PM

Subgroup Co-Chairs
Miguel A. Aon, Johns Hopkins University, USA
Gyorgy Csordas, Thomas Jefferson University, USA

Program Co-Chairs
Sonia Cortassa, National Institute on Aging, NIH, USA
Miguel A. Aon, John Hopkins University, USA

10:00 AM **INTRODUCTION**

NO ABSTRACT **10:10 AM**
MITOCHONDRIAL ADAPTATIONS TO BIOENERGETIC STRESS. **Deborah M. Muoio**

NO ABSTRACT **10:45 AM**
MITOCHONDRIAL METABOLISM AND THE EPIGENOME. **John Denu**

NO ABSTRACT **11:20 AM**
COQ HOMEOSTASIS IN METABOLIC AND MITOCHONDRIAL DISORDERS. **Placido Navas**

11:55 AM **BREAK**

12:15 PM **YOUNG BIOENERGETICIST AWARD ANNOUNCEMENT**

12:20 PM **YOUNG BIOENERGETICIST AWARD PRESENTATION**

NO ABSTRACT **12:40 PM**
THE IMPACT OF NAD(P)H: QUINONE OXIDOREDUCTASE 1 (NQO1) ON HEALTH AND MITOCHONDRIAL, GLUCOSE AND LIPID METABOLISM. **Rafael de Cabo**

NO ABSTRACT **1:15 PM**
MITOCHONDRIAL FUNCTION IN CARDIAC AGING AND HEALTHSPAN. **Ann Chiao**

1:50 PM **CLOSING REMARKS**

Biopolymers in vivo Symposium

10:00 AM - 2:00 PM

Subgroup Chair
Daniel Harries, Hebrew University of Jerusalem, Israel

Program Co-Chairs
Silvia Cavagnero, University of Wisconsin, USA
Bin Zhang, Massachusetts Institute of Technology, USA

10:00 AM **INTRODUCTION**

NO ABSTRACT **10:05 AM**
MITOCHONDRIA HEALTH AND DETERIORATION UNDER NUTRIENT STRESS DEPEND ON LIPID TRAFFICKING PATHWAYS SET UP AND CONTROLLED BY VACUOLAR PHASE-SEPARATED, STEROL-RICH MICRODOMAINS. **Jennifer Lippincott-Schwartz**

1-SUBG **10:45 AM**
IMAGING BIOPOLYMERS IN VIVO DIRECTLY WITH CRYO-ET: TRIM5 NETS AND IRE-1 HELICES. **Grant Jensen**

11:10 AM **BREAK**

NO ABSTRACT **11:20 AM**
CONDENSATION OF A PLANT TRANSCRIPTION FACTOR DRIVEN BY AN OLIGOMERIZATION DOMAIN AND IDR. **Lucia Strader**

11:45 AM **JUNIOR INVESTIGATOR AWARD PRESENTATION**

12:10 PM **BREAK**

12:20 PM **STUDENT/POSTDOCTORAL FELLOW TALK**

2-SUBG **12:40 PM**
OPTOGENETIC CONTROL OF SPINDLE MICROTUBULE CROSSLINKERS REVEALS THAT BRIDGING FIBERS PROMOTE CHROMOSOME ALIGNMENT BY OVERLAP LENGTH-DEPENDENT FORCES. Mihaela Jagric, Patrik Risteski, **Iva M. Tolic**

NO ABSTRACT **1:05 PM**
ENERGY LANDSCAPES, ORDER AND DISORDER, AND PROTEIN SEQUENCE COEVOLUTION: FROM PROTEINS TO CHROMOSOME STRUCTURE. **Jose Onuchic**

1:45 PM **CONCLUDING REMARKS**

Channels, Receptors, and Transporters Symposium

10:00 AM - 2:00 PM

Subgroup Chair
Lucia Sivilotti, University College London, United Kingdom

3-SUBG **10:00 AM**
THE STRUCTURAL BASIS FOR LIPID-SENSING IN PENTAMERIC LIGAND-GATED ION CHANNELS. **John E. Baenziger**, Mackenzie J. Thompson

4-SUBG **10:30 AM**
JOSTLING FOR POSITION: DEFINING HOW MULTIPLE LIPID SPECIES INTERACT WITH INWARD RECTIFIER POTASSIUM (KIR) CHANNELS. **Anna L. Duncan**, Robin A. Corey, Mark S.P. Sansom

5-SUBG **11:00 AM**
STRUCTURE AND FUNCTION OF THE HUMAN SODIUM LEAK CHANNEL NALCN. **Han Chow Chua**

No Abstract **11:30 AM**
STRUCTURE AND FUNCTION OF TRPV CHANNELS. **Kirill Nadezhdin**

12:00 PM **BREAK**

12:05 PM **SUBGROUP BUSINESS MEETING**

12:35 PM **BREAK**

12:45 PM **COLE AWARD LECTURE**

Mechanobiology Symposium

10:00 AM - 2:00 PM

Subgroup Chair
Michael Sheetz, University of Texas Medical Branch, USA

10:00 AM **OPENING REMARKS**

No Abstract **10:05 AM**
MECHANICAL MULTITASKING: THE FORCES THAT ENABLE EPITHELIA TO FOLD, MIGRATE, DIVIDE AND DIE. **Xavier Trepat**

10:30 AM **Q&A WITH XAVIER TREPAT**

No Abstract **10:35 AM**
INVITED SUBGROUP SPEAKER. **Amid Pathak**

11:00 PM **Q&A WITH AMID PATHAK**

6-Subg **11:05 AM**
MECHANICAL FORCES AND THE NUCLEUS: REGULATION OF CELL FATE AND INTEGRITY. **Sara A. Wickstrom**

11:30 AM **Q&A WITH SARA WIKSTROM**

No Abstract **11:35 AM**
HOW TO BUILD AN EPITHELIAL TREE. **Celeste Nelson**

12:00 PM **Q&A WITH CELESTE NELSON**

No Abstract **12:05 PM**
INVITED SUBGROUP SPEAKER. **Valerie Weaver**

12:20 PM **Q&A WITH VALERIE WEAVER**

No Abstract **12:23 PM**
GEOMETRIC SIGNATURES OF HETEROTYPIC CELL-CELL INTERACTIONS IN CONFLUENT TISSUES. **Lisa Manning**

12:38 PM **Q&A WITH LISA MANNING**

No Abstract **12:41 PM**
CONTROL OF MEMBRANE MORPHOLOGICAL TRANSITIONS BY THE GLYCOCALYX . **Matthew J. Paszek**

12:56 PM **Q&A WITH MATTHEW J. PASZEK**

No Abstract **12:59 PM**
THE MOLECULAR BASIS OF MECHANICALLY ACTIVATED ION CHANNELS OSCAS. **Swetha Murthy**

1:14 PM **Q&A WITH SWETHA MURTHY**

No Abstract **1:17 PM**
COLLECTIVE BEHAVIOR OF SALMONELLA IN PERSISTENT INFECTIONS. **Stuti Desai**

1:27 PM **Q&A WITH STUTI DESAI**

7-Subg **1:29 PM**
MAPPING TRANSMEMBRANE BINDING PARTNERS FOR E-CADHERIN ECTODOMAINS. **Omer Shafraz**, Bin Xie, Soichiro Yamada, Sanjeevi Sivasankar

1:39 PM **Q&A WITH OMER SHAFRAZ**

No Abstract **1:41 PM**
DYNAMIC REAL-TIME DEFORMABILITY CYTOMETRY: TIME-RESOLVED MECHANICAL SINGLE CELL ANALYSIS AT 100 CELLS. **Bob Fregin**

1:51 PM **Q&A WITH BOB FREGIN**

1:53 PM **CLOSING REMARKS**

Membrane Fusion, Fission, and Traffic Symposium

10:00 AM - 2:00 PM

Subgroup Chair
Jenny Hinshaw, NIDDK, NIH, USA

10:00 AM **OPENING REMARKS**

No Abstract **10:05 AM**
MECHANISMS UNDERLYING THE DIVERSITY OF CALCIUM-DEPENDENT SYNAPTIC VESICLE FUSION DYNAMICS. **David DiGregorio**

8-Subg **10:30 AM**
A PHASE OF SYNAPSIN AND SYNAPTIC VESICLES RECRUITS ALPHA-SYNUCLEIN. Christian Hoffman, Roberto Sansevrino, Giuseppe Morabito, Chinyere Logan, Marcelo Ganzella, **Dragomir Milovanovic**

No Abstract **10:55 AM**
MECHANICAL TENSION DRIVES CELL-CELL FUSION. **Elizabeth Chen**

11:20 AM **BUSINESS MEETING / BREAK**

9-Subg **11:35 AM**
INHIBITION OF VIRAL FUSION BY INTERFERON-INDUCED TRANSMEMBRANE PROTEINS. Xiangyang Guo, Jan Steinkühler, Mariana Marin, Rumiana Dimova, **Gregory Melikian**

No Abstract **12:00 PM**
MEMBRANE MECHANICS: NEW INSIGHTS FROM CRYOEM AND CRYOEM-GUIDED SIMULATIONS. **Adam Frost**

10-Subg **12:25 PM**
HIGH-SPEED ATOMIC FORCE MICROSCOPY: MEMBRANE DEFORMATION PROTEIN COMPLEXES IN ACTION. **Simon Scheuring**, Grigory Tagiltsev, Nebojsa Jukic, Alma P. Perrino

No Abstract **12:50 PM**
EXTRACELLULAR VESICLES AS KEY REGULATORS OF DICTYOSTELIUM AND NEUTROPHILS CHEMOTAXIS. **Carole Parent**

No Abstract **1:15 PM**
THE PATHWAY FOR MEMBRANE FUSION AND FISSION IN EXOCYTOSIS AND VIRAL ENTRY. **Joshua Zimmerberg**

Multiscale Genome Organization Symposium

10:00 AM - 2:00 PM

Subgroup Co-Chairs
Tom Connor Bishop, Louisiana Tech University, USA
Tamar Schlick, New York University, USA

10:00 AM **WELCOME**

No Abstract **10:05 AM**
CHROMATIN SIGNALING: THE IMPORTANCE OF HISTONE TAIL CONFORMATION. **Catherine Musselman**

10:25 AM **Q&A WITH CATHERINE MUSSELMAN**

No Abstract **10:30 AM**
NUCLEOSOMAL PHYSICS FROM ELECTROSTATICS TO ELASTICITY. **Garegin Papoian**

10:50 AM **Q&A with Garegin Papoian**

No Abstract **10:55 AM**
STRUCTURE AND DYNAMICS OF TELOMERIC CHROMATIN. **Lars Nordenskiöld**

11:15 AM **Q&A with Lars Nordenskiöld**

No Abstract **11:20 AM**
DEMULTIPLEXING INFORMATION WRITTEN ALONG DNA MOLECULES. **Helmut Schiessel**

11:40 AM **Q&A with Helmut Schiessel**

11-Subg **11:45 AM**
NUCLEOSOME CONTRIBUTION TO EPIGENETIC GENOME REGULATION. **Hitoshi Kurumizaka**

12:05 PM **Q&A with Hitoshi Kurumizaka**

No Abstract **12:10 PM**
BUNGEE JUMPING INTO FRAGILE SITES IN THE HUMAN CANCER GENOME: MAPPING NANO-ELASTICITY OF VARIANT CHROMATIN STRUCTURE. **Yamini Dalal**

12:30 PM **Q&A with Yamini Dalal**

No Abstract **12:35 PM**
ACROSS SPACE AND ALONG POLYMERS: EPIGENETICS' CONFLICTING MEANS OF SHAPING CHROMOSOMES. **Michele Di Pierro**

12:55 PM **Q&A with Michele Di Pierro**

No Abstract **1:00 PM**
TOPOLOGICAL ANALYSIS OF CHROMOSOMAL TRACINGS, OBTAINED BY SERIAL FLUORESCENT IN SITU HYBRIDIZATION METHOD, SUGGESTS THAT HUMAN CHROMOSOMES ARE UNKNOTTED. **Andrzej Stasiak**

1:20 PM **Q&A with Andrzej Stasiak**

1:25 PM **Business Meeting**

Nanoscale Approaches to Biology Symposium

10:00 AM - 2:00 PM

Subgroup Chair
Frederik Westerlund, Chalmers University, Sweden

10:00 AM **Opening Remarks**

No Abstract **10:05 AM**
CORRELATIVE 3D MICROSCOPY OF SINGLE CELLS USING SUPER-RESOLUTION AND SCANNING ION-CONDUCTANCE MICROSCOPY. **Aleksandra Radenovic**

12-Subg **10:35 AM**
DYNAMICS AND BINDING STRENGTH OF THE SPIKE PROTEIN OF SARS-COV-2 PROBED BY HIGH-SPEED ATOMIC FORCE MICROSCOPY. Fidan Sumbul, Claire Valotteau, Ignacio Fernandez, Analisa Meola, Eduard Baquero, Dorota Kostrz, Charlie Gosse, Terence R. Strick, Felix Rey, **Felix Rico**

11:05 AM **Student/Postdoc Talk**

No Abstract **11:25 AM**
3D OPTICAL NANOSCOPY IN LIVING CELLS. **Ilaria Testa**

11:55 AM **Break**

13-Subg **12:10 PM**
HUMAN FACT PROTEINS FACILITATE BOTH DISASSEMBLY AND REASSEMBLY OF NUCLEOSOMES. Micah J. McCauley, Ran Huo, Emily C. Navarrete, Nicole Becker, Qi Hu, Ioulia Rouzina, Georges Mer, Louis J. Maher, Nathan Israeloff, **Mark Williams**

12:40 PM **Student/Postdoc Talk**

1:00 PM **Student/Postdoc Talk**

No Abstract **1:20 PM**
NANOSCALE STRUCTURES MODULATING CELL SIGNALING AT THE NANO-BIO INTERFACE. **Bianxiao Cui**

1:50 PM **Nanoscale Approaches to Biology Subgroup Business Meeting**

Physical Cell Biology Symposium

10:00 AM - 2:00 PM

Subgroup Chair
Melike Lakadamyali, University of Pennsylvania, USA

Program Chair
Johan Elf, Uppsala University, Sweden

10:00 AM **Welcome**

No Abstract **10:10 AM**
DISORDER REGION GUIDE TRANSCRIPTION FACTOR TO SPECIFIC GENOMIC SITES. **Naama Barkai**

10:40 AM **Discussion**

10:50 AM **Selected Abstract Talk 1**

No Abstract **11:05 AM**
SPATIAL GENOMICS IN SITU ANALYSIS BY SEQFISH. **Long Cai**

11:35 AM **Discussion**

11:45 AM **Selected Abstract Talk 2**

12:00 PM **Break**

No Abstract **12:15 PM**
DESIGN FOR INFERENCE AND THE POWER OF RANDOM EXPERIMENTS IN BIOLOGY. **Aviv Regev**

12:45 PM **Discussion**

12:55 PM **Selected Abstract Talk 3**

No Abstract **1:10 PM**
IMAGING HOW CELLS CHOOSE THEIR FATE, SHAPE AND POSITION TO FORM THE MAMMALIAN EMBRYO. **Nicholas Plachta**

1:40 PM **Discussion**

1:50 PM **Business Meeting & Closing Remarks**

Membrane Transport Symposium

2:00 PM - 5:40 PM

Subgroup Chair
Ming Zhou, Baylor College of Medicine, USA

2:00 PM **Opening Remarks**

14-Subg **2:05 PM**
THE TRANSPORT CYCLE OF A SODIUM/PROTON ANTIPORTER. **Oliver Beckstein**

No Abstract **2:30 PM**
INVITED SUBGROUP SPEAKER. **Nancy Carrasco**

15-Subg **2:55 PM**
MECHANISTIC INSIGHTS FROM MOLECULAR DYNAMICS SIMULATIONS OF LARGE-SCALE CONFORMATIONAL TRANSITIONS IN THE INDY TRANSPORT CYCLE. **Noah Trebesch**, David B. Sauer, Da-Neng Wang, Emad Tajkhorshid

No Abstract **3:10 PM**
STRUCTURAL INSIGHT INTO TOXIN SECRETION BY CONTACT DEPENDENT GROWTH INHIBITION OF TRANSPORTERS. **Susan K. Buchanan**

3:35 PM **COFFEE BREAK**

16-Subg **4:10 PM**
THE MOLECULAR DETERMINANTS FOR UNLOCKING SUBSTRATE TRANSLOCATION IN GLUT TRANSPORTERS. **David Drew**

No Abstract **4:35 PM**
ION PERMEATION IN NON-SELECTIVE CATION CHANNELS. **Han Sun**

No Abstract **5:00 PM**
CRYO-EM AND FUNCTIONAL STUDIES OF RYRS CARRYING MUTATIONS LEADING TO "LEAKY" PHENOTYPE. **Kavita Iyer**, Yifan Hu, Ashok R. Nayak, Takashi Murayama, Nagomi Kurebayashi, Montserrat Samso

No Abstract **5:15 PM**
ARCHITECTURE AND FUNCTION OF NEURONAL MACHINERY. **Hiro Furukawa**

Bioengineering Symposium

2:00 PM - 6:00 PM

Subgroup Chair
Samir Iqbal, University of Texas Rio Grande Valley, USA

No Abstract **2:00 PM**
FLEXIBLE MULTIFUNCTIONAL FIBERS FOR BRAIN INTERFACING. **Xiaoting Jia**

17-Subg **2:45 PM**
RECONSTRUCTING PROTEIN STRUCTURE AND DYNAMICS FROM EXPERIMENTAL OBSERVABLES. **Andrew Ferguson**

3:30 PM **POSTDOC RECOGNITION**

4:15 PM **BREAK**

No Abstract **4:30 PM**
ENGINEERING MINIATURE HUMAN TISSUES FOR DISEASE MODELING AND DRUG DEVELOPMENT. **Salman Khetani**

No Abstract **5:15 PM**
INVITED SUBGROUP SPEAKER. **Ahmad Khalil.**

Biological Fluorescence Symposium

2:00 PM - 6:00 PM

Subgroup Chair
Jay Knutson, NHLBI, NIH, USA

2:00 PM **INTRODUCTION**

2:05 PM **TRIBUTE TO ARTHUR G. SZABO**

No Abstract **2:15 PM**
THROUGH THE LOOKING-GLASS: IMAGING-BASED CHROMOSOME CONFORMATION CAPTURE IN SINGLE CELLS. **Marcelo Nollman**

18-Subg **2:45 PM**
COHERENT RAMAN SCATTERING MICROSCOPY FOR QUANTITATIVE LABEL-FREE BIOIMAGING. **Paola Borri**

3:15 PM **SUBGROUP BUSINESS MEETING**

No Abstract **3:30 PM**
LASER-SCANNING MICROSCOPY WITH SINGLE-PHOTON DETECTOR ARRAY: DECONSTRUCTING THE PHOTON STREAM FROM YOUR FLUORESCENCE SAMPLE. **Giuseppe Vicidomini**

19-Subg **4:00 PM**
BEYOND IMAGING FCS - MULTIPARAMETRIC FLUORESCENCE MICROSCOPY. **Thorsten Wohland**

4:30 PM **RAPID FIRE SPEAKERS SELECTED FROM POSTERS**

4:55 PM **YOUNG FLUORESCENCE INVESTIGATOR AWARDEE**

5:20 PM **PRESENTATION OF WEBER AWARD**

5:25 PM **WEBER AWARDEE**

5:50 PM **CONCLUDING REMARKS**

Cryo-EM Symposium

2:00 PM - 6:00 PM

Subgroup Chair
Charles (Chuck) Sindelar, Yale University, USA

Program Co-Chairs
Andres Leschziner, University of California, San Diego, USA
Michael Cianfrocco, University of Michigan, USA

2:00 PM **OPENING REMARKS**

No Abstract **2:05 PM**
CRYO EM OF DYNAMIC COMPLEXES. **Helen Saibil**

No Abstract **2:35 PM**
REVEALING MITOCHONDRIAL ARCHITECTURE IN VITRIFIED CELLS BY CRYOSTEM TOMOGRAPHY. **Sharon G. Wolf**

No Abstract **2:57 PM**
RESOLVING PROTEIN DYNAMICS IN SITU WITH DEEP LEARNING. **Dimitry Tegunov**

No Abstract **3:19 PM**
ISOLDE: AN INTERACTIVE MOLECULAR DYNAMICS APPROACH TO MACROMOLECULAR MODEL BUILDING IN EXPERIMENTAL MAPS. **Tristan Croll**

No Abstract **3:37 PM**
MECHANISTIC INSIGHTS INTO MOLECULAR MACHINES THAT REGULATE GENE EXPRESSION. **Lori A. Passmore**

3:59 PM **COFFEE BREAK**

No Abstract **4:14 PM**
TUNNELS FOR LIPID TRANSPORT ACROSS THE BACTERIAL CELL ENVELOPE. **Gira Bhabha**

No Abstract **4:36 PM**
MONOLAYER GRAPHENE GRIDS ENABLE 2.6-Å RECONSTRUCTION OF 52-KDA STREPTAVIDIN. **Yimo Han**

No Abstract **4:54 PM**
VISUALIZING THE SARS-COV-2 SPIKE IN COMPLEX WITH NEUTRALIZING ANTIBODIES. **Lexi Walls**

No Abstract **5:12 PM**
INVITED SUBGROUP SPEAKER. **Katerina Naydenova**

No Abstract **5:30 PM**
PUSHING THE LIMITS OF CRYO-EM FOR G PROTEIN-COUPLED RECEPTORS. **Radostin Danev**

5:52 PM **CLOSING REMARKS**

Intrinsically Disordered Proteins Symposium

2:00 PM - 6:00 PM

Subgroup Chair
Nicolas Fawzi, Brown University, USA

Program Co-Chairs
Robert Best, NIDDK, NIH, USA
Alessandro Borgia, St. Jude Childrens Research Hospital, USA

NO ABSTRACT **2:00 PM**
ON THE EVOLUTION OF IDRS, IDDS, AND IDPS. **Keith Dunker**

NO ABSTRACT **2:35 PM**
LIQUID-LIKE CHROMATIN ORGANIZATION FROM MULTISCALE MODELLING. **Rosana Collepardo**

NO ABSTRACT **3:00 PM**
DYNAMIC CONTROL MECHANISMS OF LOCAL CHROMATIN ACCESS. **Beat Fierz**

NO ABSTRACT **3:25 PM**
ALLOSTERY THROUGH DNA DRIVES PHENOTYPE SWITCHING. **Hagen Hofmann**

3:50 PM **POSTDOC TALK #1**

NO ABSTRACT **4:05 PM**
THE THERMODYNAMICS OF MISFOLDING INTO AMYLOID FIBRILS. **Alexander K. Buell**

NO ABSTRACT **4:30 PM**
MECHANISMS OF COMPETITION BETWEEN DISORDERED PROTEINS IN VITRO AND IN VIVO. **Rebecca Berlow**

4:55 PM **POSTDOC TALK #2**

NO ABSTRACT **5:10 PM**
DESIGN OF PROTEIN-BASED COMPLEX COACERVATES IN CELLS. **Allie Obermeyer**

20-SUBG **5:35 PM**
COMPUTATIONAL MODELS FOR LIQUID-LIQUID PHASE SEPARATION OF INTRINSICALLY DISORDERED PROTEINS. **Wenwei Zheng**, Gregory Dignon, Youngchan Kim, Robert B. Best, Jeetain Mittal

Macromolecular Machines and Assemblies Symposium

2:00 PM - 6:00 PM

Subgroup Chair
Catherine Musselman, University of Colorado, Anschutz, USA

2:00 PM **OPENING REMARKS**

NO ABSTRACT **2:05 PM**
LONG NONCODING RNAS: NEW GUARDIANS OF GENOME INTEGRITY DURING THE CELL CYCLE. **Lovorka Stojic**

2:30 PM **Q&A WITH LOVORKA STOJIC**

NO ABSTRACT **2:35 PM**
FUNCTION AND MECHANISMS OF UBQLN2-MEDIATED PHASE TRANSITIONS IN PROTEIN QUALITY CONTROL. **Carlos Castaneda**

3:00 PM **Q&A WITH CARLOS CASTANEDA**

NO ABSTRACT **3:05 PM**
VIRAL MANIPULATION OF TRANSLATION AND RNA TURNOVER. **Anna-Lena Steckelberg**

3:30 PM **Q&A WITH ANNA-LENA STECKELBERG**

3:35 PM **SELECTED ABSTRACT TALK #1**

3:47 PM **Q&A FROM SELECTED ABSTRACT TALK #1**

3:50 PM **BREAK**

NO ABSTRACT **4:00 PM**
STRUCTURAL INSIGHTS INTO THE REGULATION OF GENE SILENCER PRC2. **Vignesh Kasinath**

4:25 PM **Q&A WITH VIGNESH KASINATH**

21-SUBG **4:30 PM**
USING SINGLE MOLECULES TO MAP THE PATHWAYS OF SPLICEOSOME ACTIVE SITE FORMATION. **Aaron Hoskins**, Xingyang Fu, Harpreet Kaur, Margaret L. Rodgers

4:55 PM **Q&A WITH AARON HOSKINS**

NO ABSTRACT **5:00 PM**
DIVERSITY, STRUCTURE, FUNCTION, ASSEMBLY AND ENGINEERING OF PRIMITIVE PROTEIN-BASED ORGANELLES: BACTERIAL MICROCOMPARTMENTS. **Cheryl Kerfeld**

5:25 PM **Q&A WITH CHERYL KERFELD**

5:30 PM **SELECTED ABSTRACT TALK #2**

5:42 PM **Q&A FROM SELECTED ABSTRACT TALK #2**

5:45 PM **FLASH TALKS FROM SELECTED ABSTRACTS**

5:55 PM **CLOSING REMARKS**

Membrane Structure and Function Symposium

2:00 PM - 6:00 PM

Subgroup Chair
Sarah Veatch, University of Michigan, USA

2:00 PM **INTRODUCTIONS AND CELEBRATIONS**

22-SUBG **2:10 PM**
CAN WE DISPENSE WITH SPHINGOLIPIDS? CORRELATION BETWEEN MEMBRANE LIPID COMPOSITION AND BIOPHYSICAL PROPERTIES IN SPHINGOLIPID-RESTRICTED MAMMALIAN CELLS. **Félix M. Goñi**, Bingen G. Monasterio, Noemi Jimenez-Rojo, Aritz B. Garcia-Arribas, Howard Riezman, Alicia Alonso

2:25 PM **DISCUSSION: CELEBRATING FOUNDATIONS**

NO ABSTRACT **2:30 PM**
INTERPLAY BETWEEN THE CELLULAR MACHINERY FOR APOPTOSIS AND MITOCHONDRIAL DIVISION. **Ana J. Garcia-Saéz**

NO ABSTRACT **2:45 PM**
IMMUNE RECEPTORS AND THE MEMBRANE MICROENVIRONMENT. **Sarah Shelby**

3:00 PM **DISCUSSION: DOMAINS IN SIGNALING**

3:15 PM **BREAK**

NO ABSTRACT **3:30 PM**
DYNAMIC REGULATION OF THE CHEMICAL POTENTIAL OF PLASMA MEMBRANE CHOLESTEROL BY GROWTH FACTORS. **Fredric Cohen**

23-SUBG **3:45 PM**
INSIGHTS INTO REGULATION OF CELL MEMBRANES THROUGH REGULATED ENSEMBLES. **Martin Girard**, Tristan Bereau

NO ABSTRACT **4:00 PM**
CHOLESTEROL ACCESSIBILITY IN MEMBRANES. **Kristen A. Johnson**

4:15 PM **DISCUSSION: CHEMICAL ACTIVITY OF MEMBRANE COMPONENTS**

NO ABSTRACT **4:30 PM**
(PRE)WETTING OF PROTEIN DROPLETS TO CRITICAL MEMBRANES. **Benjamin Machta**

24-SUBG **4:45 PM**
MEMBRANE BENDING BY PROTEIN PHASE SEPARATION. **Feng Yuan**

5:00 PM **DISCUSSION: PROTEIN PHASE SEPARATION AT MEMBRANES**

5:15 PM **BREAK**

5:30 PM **PRESENTATION OF THOMPSON AWARD**

5:35 PM **THOMPSON AWARD LECTURE: MARKUS DESERNO**

5:55 PM **CLOSING REMARKS**

Motility and Cytoskeleton Symposium

2:00 PM - 6:00 PM

Subgroup Co-Chairs
Sanford (Sandy) Bernstein, San Diego State University, USA
Kenneth (Ken) Campbell, University of Kentucky, USA

2:00 PM **OPENING REMARKS**

NO ABSTRACT **2:05 PM**
SARS-COV-2 INFECTS HUMAN ENGINEERED HEART TISSUES AND MODELS COVID-19 MYOCARDITIS. **Michael J. Greenberg**

25-SUBG **2:25 PM**
PROBING HIERARCHICAL CYTOSKELETAL ENSEMBLES USING OPTICAL TWEEZERS. **Nikki Reinemann**

26-SUBG **2:45 PM**
THE N-TERMINAL LOBE OF THE MYOSIN REGULATORY LIGHT CHAIN IS PART OF A SARCOMERIC LENGTH SENSOR IN CARDIAC MUSCLE. **Thomas Kampourakis**

NO ABSTRACT **3:05 PM**
A TUG-OF-WAR AT THE PLUS-END: KINESIN-14 MOTORS AND PLUS-END MICROTUBULE DYNAMICS. **Melissa Gardner**

NO ABSTRACT **3:25 PM**
STRUCTURAL BASIS OF NONMUSCLE MYOSIN-2 REGULATION. **Krishna Chinthalapudi**

27-SUBG **3:45 PM**
THE MECHANISM OF SELECTIVE KINESIN INHIBITION BY KINESIN BINDING PROTEIN. **Joseph Atherton**, Jessica J. Hummel, Natacha Olieric, Michel O. Steinmetz, Anna Akhmanova, Casper Hoogenraad, Carolyn A. Moores

NO ABSTRACT **4:05 PM**
CRYO-EM STRUCTURE OF DROSOPHILA THICK FILAMENTS. **Nadia Daneshparvar**

28-SUBG **4:25 PM**
CHOLESTEROL IN CARGO MEMBRANE AMPLIFIES INHIBITORY EFFECT OF MAP TAU ON KINESIN-1. Qiaochu Li, John O. Wilson, James Ferrare, Jonathan E. Silver, Weihong Qiu, Michael Vershinin, Stephen J. King, Keir C. Neuman, **Jing Xu**

NO ABSTRACT **4:45 PM**
A QUICK TAIL: LARVAL ZEBRAFISH MUSCLES ARE A SEE-THROUGH WINDOW INTO MECHANISMS OF CONTRACTILE MODULATION. **Andrew Mead**

5:05 PM **BUSINESS MEETING**

NO ABSTRACT **5:20 PM**
DYNAMIC ARCHITECTURE OF THE MICROTUBULE CYTOSKELETON: UNDERSTANDING BY BUILDING. **Marija Zanic**

Membrane Transport Subgroup Business Meeting

5:40 PM - 6:15 PM

Subgroup Chair
Ming Zhou, Baylor College of Medicine, US

Undergraduate Mixer and Poster Award Competition

3:00 PM-5:00 PM

If you're an undergraduate student, plan on attending this virtual social and scientific event! Come meet other undergraduates and learn about their research projects. For undergraduate students who will be presenting during the standard scientific sessions, the event provides an opportunity to hone presentation skills before the general poster session begins. Undergraduates listed as co-authors on posters are welcome to practice their poster presentation skills in a less formal setting, even if not listed as the presenting author. Additionally, undergrads presenting as first or second author on a poster may participate and be recognized for their work. Selected students will receive a $100 award and recognized by the BPS meeting attendees prior to the 2021 Biophysical Society Lecture. Winners will be selected based on the quality and scientific merit of their research, knowledge of the research problem, contribution to the project, and overall presentation for the poster.

Pre-registration was required to participate in the competition.

Bioengineering Subgroup Business Meeting

6:00 PM - 6:30 PM

Subgroup Chair
Samir Iqbal, University of Texas Rio Grande Valley, USA

Macromolecular Machines and Assemblies Subgroup Business Meeting

6:00 PM - 6:30 PM

Subgroup Chair
Catherine Musselman, University of Colorado, Anschutz, USA

Cryo-EM Subgroup Business Meeting and Virtual Happy Hour

6:00 PM - 7:00 PM

Subgroup Chair
Charles Sindelar, Yale University, USA

Mechanobiology Subgroup Business Meeting

6:00 PM - 7:00 PM

Subgroup Chair
Michael Sheetz, University of Texas Medical Branch, U

Membrane Structure and Function Subgroup Business Meeting

6:00 PM - 7:00 PM

Subgroup Chair
Sarah Veatch, University of Michigan, USA

Tuesday, February 23, 2021

Daily Program Summary

9:00 AM-10:00 AM	**General Networking**
10:00 AM-11:30 AM	**Symposium: Future of Biophysics** **Co-chairs:** *Patricia Bassereau, Institut Curie, France, Bertrand Garcia-Moreno, Johns Hopkins University, USA* COMBINING PHYSICS-BASED AND KNOWLEDGE-BASED COMPUTATIONAL METHODS FOR THE STUDY OF MEMBRANE PROTEINS. *Chen Song* DECIPHERING A SMART MATERIAL - A NEW METHOD TO MEASURE ACTIN CORTEX MECHANICS AND MECHANOSENSITIVITY. *Elisabeth Fischer-Friedrich* VIROLOGY UNDER THE BIOPHYSICAL LENS: FROM VIRAL MECHANISMS TO PREDICTING AND PREVENTING THE NEXT PANDEMIC. *Tijana Ivanovic* THE DAWN OF IN-VIVO MOLECULAR DYNAMICS SIMULATIONS. *Abhishek Singharoy*
10:00 AM-11:30 AM	**Platform: Protein Structure and Conformation: Interactions**
10:00 AM-11:30 AM	**Platform: Protein Prediction, Design, and Stability I**
10:00 AM-11:30 AM	**Platform: DNA Structure and Dynamics**
10:00 AM-11:30 AM	**Platform: Membrane Physical Chemistry**
10:00 AM-11:30 AM	**Platform: Voltage-gated Channels**
10:00 AM-11:30 AM	**Platform: Microtubules, Structure, Dynamics, and Associated Proteins**
10:00 AM-11:30 AM	**Platform: Optical Microscopy and Superresolution Imaging I**
10:00 AM-11:30 AM	**Platform: Biophysics Education**
10:00 AM-5:00 PM	**Exhibits**
11:30 AM-12:00 PM	**Exhibitor Presentation: Mad City Labs Inc** **From iSCAT to SCATTIRSTORM: Adventures in Single-Molecule Microscopy**
11:30 AM-12:00 PM	**Break**

12:00 PM-1:30 PM	Poster Presentations and Late Posters
1:00 PM-2:00 PM	General Networking
1:30 PM-2:00 PM	Exhibitor Presentation: Bruker Introduction to Super-Resolution Multiplexed Imaging Applications Using the Vutara VXL Platform for Single-Molecule and Widefield Imaging
1:30 PM-2:00 PM	Break
2:00 PM-3:30 PM	Live Q&A: Careers in Industry
2:00 PM-3:30 PM	Platform: Membrane Protein Structures
2:00 PM-3:30 PM	Platform: Intrinsically Disordered Proteins (IDP) and Aggregates I
2:00 PM-3:30 PM	Platform: Protein-Nucleic Acid Interactions and Chromatin I
2:00 PM-3:30 PM	Platform: Membrane Receptors and Signal Transduction
2:00 PM-3:30 PM	Platform: Membrane Traffic
2:00 PM-3:30 PM	Platform: Muscles I
2:00 PM-3:30 PM	Platform: Molecular Dynamics and Bioinformatics I
2:00 PM-3:30 PM	Platform: Biosensors and Nanotechnology
3:30 PM -4:00 PM	Exhibitor Presentation: Nikon Instruments Inc Using the Nikon Ti2 Inverted Platform as an Optical Bench
3:30 PM -6:30 PM	Student Research Achievement Awards (SRAA) Poster Competition
4:00 PM-4:30 PM	Exhibitor Presentation: Horiba Scientific Rapid, Optical Technique for Sensitive Characterization and Differentiation of OTC Canine Vaccines

Tuesday, February 23

General Networking

9:00 AM-10:00 AM

Catch up with colleagues and friends in the biophysical community during our networking hour. This event, which is open to all meeting attendees, provides meet-and-greet opportunities to enhance your virtual meeting experience.

Symposium
Future of Biophysics

10:00 AM - 11:30 AM

Support Contributed By The Burroughs Wellcome Fund

Co-chairs
Patricia Bassereau, Institut Curie, France
Bertrand Garcia-Moreno, Johns Hopkins University, USA

No Abstract **10:00 AM**
COMBINING PHYSICS-BASED AND KNOWLEDGE-BASED COMPUTATIONAL METHODS FOR THE STUDY OF MEMBRANE PROTEINS. **Chen Song**

No Abstract **10:22 AM**
DECIPHERING A SMART MATERIAL - A NEW METHOD TO MEASURE ACTIN CORTEX MECHANICS AND MECHANOSENSITIVITY. **Elisabeth Fischer-Friedrich**

No Abstract **10:44 AM**
VIROLOGY UNDER THE BIOPHYSICAL LENS: FROM VIRAL MECHANISMS TO PREDICTING AND PREVENTING THE NEXT PANDEMIC. **Tijana Ivanovic**

No Abstract **11:06 AM**
THE DAWN OF IN-VIVO MOLECULAR DYNAMICS SIMULATIONS. **Abhishek Singharoy**

Platform
Protein Structure and Conformation: Interactions

10:00 AM - 11:30 AM

Chair
Rafael Brüschweiler, The Ohio State University, USA

No Abstract **10:00 AM**
NANOPARTICLE-ASSISTED NMR SPIN RELAXATION FOR STUDYING THE DYNAMICS AND INTERACTIONS OF FOLDED AND INTRINSICALLY DISORDERED PROTEINS. **Rafael Bruschweiler**

29-Plat **10:30 AM**
INVESTIGATING THE STRUCTURE AND FUNCTION OF COACTIVATOR RECRUITMENT BY THE MELANOGENIC TRANSCRIPTION FACTOR MITF. **Alexandra D. Brown**, Kathleen Vergunst, Denis J. Dupré, David N. Langelaan

30-Plat **10:45 AM**
CRYO-EM STRUCTURE OF CGAS-NUCLEOSOME COMPLEX REVEALS MECHANISM OF NUCLEOSOME-DEPENDENT CGAS INHIBITION. **Cathy J. Spangler**, Joshua A. Boyer, Joshua D. Strauss, Andrew P. Cesmat, Pengda Liu, Robert K. McGinty, Qi Zhang

31-Plat **11:00 AM**
CRYSTAL STRUCTURE REVEALS THE FULL RAS: RAF INTERFACE AND ADVANCES MECHANISTIC UNDERSTANDING OF RAF ACTIVATION. **Trinity Cookis**, Carla Mattos

32-Plat **11:15 AM**
STRUCTURAL AND FUNCTIONAL STUDIES OF THE EFFECTS OF PHOSPHORYLATION ON EPHRIN RECEPTOR TYROSINE KINASE, EPHA2, AND THE RELATIONSHIP WITH ITS SAM DOMAIN AS AN AUTOINHIBITOR. **Pravesh Shrestha**, Zen-lu Li, Amita Rani Sahoo, Xiaojun Shi, Fatima Razelle Javier, Deanna Bowman, Jeannine Mueller-Greven, Belinda Willard, Bing-Cheng Wang, Adam W. Smith, Matthias Buck

Platform
Protein Prediction, Design, and Stability I

10:00 AM - 11:30 AM

Chair
Rebecca Wade, Heidelberg Institute for Theoretical Studies, Germany

33-Plat **10:00 AM**
PREDICTION OF THE STRUCTURE AND DYNAMICS OF PROTEIN COMPLEXES IN MEMBRANES. **Rebecca Wade**

34-Plat **10:30 AM**
NEAR-NATIVE ENTANGLED PROTEIN CONFORMATIONS ARE THE MOLECULAR BRIDGE CONNECTING SYNONYMOUS MUTATIONS TO LONG-TIMESCALE CHANGES IN PROTEIN STRUCTURE AND FUNCTION. **Edward P. O'Brien**

35-Plat **10:45 AM**
OBSERVING THE REGULATION OF THE HSP90 CHAPERONE BY CO-CHAPERONES AND NUCLEOTIDES. **Katarzyna M. Tych**, Markus Jahn, Hannah Girstmair, Thorsten Hugel, Johannes Buchner, Matthias Rief

36-Plat **11:00 AM**
CONTRIBUTION OF NASCENT POLYPEPTIDES OF INCREASING LENGTH TO THE APPARENT STABILITY OF THE BACTERIAL RIBOSOME. **Meranda Masse**, Angela Varela, Aniruddha Srivastava, Wanting Wei, Silvia Cavagnero

37-Plat **11:15 AM**
FOLDING, FOLD SWITCHING AND ENERGY LANDSCAPE OF REGULATORY PROTEIN RFAH. Bahman Seifi, Adekunle Aina, **Stefan Wallin**

Platform
DNA Structure and Dynamics

10:00 AM - 11:30 AM

Chair
G.V. Shivashankar, ETH Zurich and Paul Scherrer Institute, Switzerland

38-Plat **10:00 AM**
MECHANICAL CONTROL OF CHROMATIN ORGANIZATION AND CELL-FATE DECISIONS. **G.V. Shivashankar**

39-Plat **10:30 AM**
PROBING THE CONTRIBUTIONS TO DNA HYBRIDIZATION DYNAMICS WITH TIME-RESOLVED INFRARED SPECTROSCOPY. **Brennan Ashwood**, Paul J. Sanstead, Qing Dai, Chuan He, Andrei Tokmakoff

40-Plat **10:45 AM**
HOOGSTEEN BASE PAIRS INCREASE THE SUSCEPTIBILITY OF DOUBLE-STRANDED DNA TO CYTOTOXIC DAMAGE. **Akanksha Manghrani**, Yu Xu, Emily Cannistraci, Hashim M. Al-Hashimi

41-Plat **11:00 AM**
RAPID (SUB-20 μS) INTRINSIC DNA FLUCTUATIONS AT DAMAGED SITES IMPLICATED IN STALLING RAD4/XPC DNA REPAIR PROTEIN DURING DAMAGE SENSING. **Saroj Baral**, Sagnik Chakraborty, Debamita Paul, Jung-Hyun Min, Anjum Ansari

42-Plat **11:15 AM**
CHARACTERIZATION OF LOCUS SPECIFIC CHROMATIN STRUCTURE AND DYNAMICS USING CORRELATIVE CONVENTIONAL SUPER RESOLUTION CRISPR DCAS9/MS2 IMAGING. **Dushyant Mehra**, Chiranjib Banerjee, Santosh Adhikari, Jacob M. Ritz, Angel Mancebo, Elias M. Puchner

Platform
Membrane Physical Chemistry
10:00 AM - 11:30 AM

Chair
Tobias Walther, Harvard University, USA

43-PLAT **10:00 AM**
THE PHASE OF FAT: MECHANISMS AND REGULATION OF LIPID STORAGE. Robert V. Farese, **Tobias Walther**

44-PLAT **10:30 AM**
CLATHRIN SENSES MEMBRANE CURVATURE. **Wade F. Zeno**, Jacob B. Hochfelder, Ajay S. Thatte, Liping Wang, Avinash K. Gadok, Carl Hayden, Eileen M. Lafer, Jeanne C. Stachowiak

45-PLAT **10:45 AM**
ALPHA-SYNUCLEIN AFFECTS DIFFERENTLY THE INTERNAL AND EXTERNAL LEAFLET OF THE LIPID MEMBRANES. **Samira Jadavi**, Silvia Dante, Alberto Diaspro, Claudio Canale

46-PLAT **11:00 AM**
INSERTING SMALL MOLECULES ACROSS MEMBRANE MIXTURES: INSIGHT FROM THE POTENTIAL OF MEAN FORCE. **Tristan Bereau**

47-PLAT **11:15 AM**
TAKING A COOLER BREATH: MODERATE HYPOTHERMIA BOOSTS LUNG SURFACTANT ACTIVITY. **Chiara Autilio**, Mercedes Echaide, Emilie Da Silva, Jorid Birkelund Sørli, Jesus Perez-Gil

Platform
Voltage-gated Channels
10:00 AM - 11:30 AM

Chair
Teresa Giraldez, University of La Laguna, Spain

48-PLAT **10:00 AM**
INSIGHTS INTO THE FUNCTION OF BK-CA MULTI-CHANNEL COMPLEXES. **Teresa Giraldez**

49-PLAT **10:30 AM**
FUNCTIONAL CHARACTERIZATION OF DISEASE-CAUSING MUTATIONS IN THE SODIUM LEAK CHANNEL NALCN. **Claudia Weidling**, Aishat O. Ameen, Han Chow Chua, Stephan A. Pless

50-PLAT **10:45 AM**
COTRANSLATIONAL COMPLEXES ENCODING ION CHANNELS IN THE HEART. **Margaret B. Jameson**, Catherine A. Eichel, Fang Liu, Erick B. Rios Perez, David K. Jones, Gail A. Robertson

51-PLAT **11:00 AM**
SINGLE-MOLECULE RESOLUTION OF MULTIVALENT LIGAND BINDING IN PACEMAKER CHANNELS. **David S. White**, Sandipan Chowdhury, Ruohan Zhang, Scott T. Retterer, Randall H. Goldsmith, Baron Chanda

52-PLAT **11:15 AM**
INFLUENCE OF PHOSPHOLIPID BINDING ON VOLTAGE SENSOR-PORE COUPLING IN THE KAT1 POTASSIUM CHANNEL. **Bernardo I. Pinto**, Michael D. Clark, Eduardo Perozo, Francisco Bezanilla

Platform
Microtubules, Structure, Dynamics, and Associated Proteins
10:00 AM - 11:30 AM

Chair
Samara Reck-Peterson, University of California, San Diego, USA

53-PLAT **10:00 AM**
MECHANISM OF PARKINSON'S DISEASE-LINKED LRRK2'S INTERACTION WITH MICROTUBULES. **Samara L. Reck-Peterson**, David Snead, Mariusz Matyszewski, Andrea M. Dickey, Yu Xuan Lin, Andres Leschziner

54-PLAT **10:30 AM**
AUTOREGULATORY CONTROL OF MICROTUBULE BINDING IN DOUBLECORTIN-LIKE KINASE 1. Melissa Rogers, Tracy Tan, Amrita Ramkumar, Ashlyn Downing, Hannah Bodin, Julia Castro, Dan W. Nowakowski, **Kassandra M. Ori-McKenney**

55-PLAT **10:45 AM**
LOAD-BEARING INTERACTIONS BETWEEN THE NDC80 AND DAM1 COMPLEXES DIFFER ON GROWING AND SHORTENING MICROTUBULE TIPS. **Rachel L. Flores**, Zachary Peterson, Charles L. Asbury, Trisha Davis

56-PLAT **11:00 AM**
CLASPS DEPOLYMERIZE MICROTUBULES IN A NUCLEOTIDE-DEPENDENT MANNER. **Elizabeth J. Lawrence**, Marija Zanic

57-PLAT **11:15 AM**
GTP-DEPENDENT FORMATION OF STRAIGHT OLIGOMERS LEADS TO NUCLEATION OF MICROTUBULES. **Etsuko Muto**, Rie Ayukawa, Seigo Iwata, Hiroshi Imai, Shinji Kamimura, Ken Sekimoto, Gigant Benoît

Platform
Optical Microscopy and Superresolution Imaging I
10:00 AM - 11:30 AM

Chair
Erdinc Sezgin, Karolinska Institute, Sweden

NO ABSTRACT **10:00 AM**
UNDERSTANDING PLASMA MEMBRANE WITH SUPERRESOLUTION IMAGING AND SPECTROSCOPY. **Erdinc Sezgin**

58-PLAT **10:30 AM**
DIRECTIONALITY OF LIGHT ABSORPTION AND EMISSION IN FLUORESCENT PROTEINS. Jitka Myskova, Olga Rybakova, Jiri Brynda, Petro Khoroshyy, Alexey Bondar, **Josef Lazar**

59-PLAT **10:45 AM**
QUANTITATIVE SUPERRESOLUTION IMAGING OF EFFLUX PUMPS IN BIOFILM-ASSOCIATED BACTERIA. **Lucia Gardini**, Tiziano Vignolini, Marco Capitanio, Francesco S. Pavone

60-PLAT **11:00 AM**
FLUOROGENIC PROBE FOR FAST 3D WHOLE-CELL DNA-PAINT. **Kenny K.H. Chung**, Zhao Zhang, Phylicia Kidd, Yongdeng Zhang, Nathan D. Williams, Bennett Rollins, Yang Yang, Chenxiang Lin, David Baddeley, Joerg Bewersdorf

61-PLAT **11:15 AM**
HIGH-THROUGHPUT SUPER-RESOLUTION MICROSCOPY OF VIRAL PARTICLES REVEALS INSIGHTS INTO THEIR MORPHOLOGY AND ORGANISATION. **Andrew McMahon**, Christof Hepp, Nicole C. Robb

Platform
Biophysics Education

10:00 AM - 11:30 AM

Chair
Samuel Safran, Weizmann Institute of Science, Israel

62-PLAT **10:00 AM**
INTRODUCTORY MODELS OF THE COVID-19 PANDEMIC IN THE UNITED STATES. **Peter H. Nelson**

63-PLAT **10:18 AM**
DIGITAL EDUCATIONAL RESOURCES IN SCIENCES FOR VISUAL IMPAIRED STUDENTS IN TIMES OF COVID - 19. **Yuly E. Sánchez**, Angie V. Rodriguez

64-PLAT **10:36 AM**
STRATEGIES FOR ENHANCING REMOTE BIOPHYSICAL EDUCATION: DEVELOPMENT OF A MODULE BASED TRAINING SERIES. **Amanda K. Sharp**, Anne M. Brown

65-PLAT **10:54 AM**
CLINICAL APPLICATIONS OF BIOPHYSICS-CLINICAL BIOPHYSICS. **Semire Uzun Göçmen**

66-PLAT **11:12 AM**
THE NATIONAL CENTER FOR CRYOEM ACCESS AND TRAINING: NATIONWIDE ACCESS TO CRYOEM TECHNOLOGY AND CURRICULA. **Edward T. Eng**, Elina Kopylov, Cathleen Castello, Clinton S. Potter, Bridget Carragher

Exhibits

10:00 AM - 5:00 PM

Exhibitor Presentation
Mad City Labs Inc

11:30 AM - 12:00 PM

From iSCAT to SCATTIRSTORM: Adventures in Single-Molecule Microscopy
I will describe the design and application of two multi-modal microscopes built around the Mad City Labs RM21® single molecule microscope. The first system combines Interferometric Scattering (iSCAT) microscopy, developed by Philipp Kukura's lab, together with Total Internal Reflection Dark-Field (TIRDM). By labeling kinesin-1 motors on one head with a 30-nm gold nanoparticle, we were able to track motor stepping at 1 kHz temporal resolution and 1-2 nm spatial precision. This allowed us to clarify previously uncovered features of kinesin stepping. In collaboration with Luke Rice, we extended this system to understanding microtubule dynamics by labeling tubulin dimers with 20-nm gold nanoparticles and observing these tubulin reversibly binding at the plus-ends of growing microtubules. These tools have the potential to be applied broadly to single-molecule studies to increase the temporal resolution beyond what is traditionally accessible by fluorescence, while still maintaining the spatial resolution provided by point-spread function fitting. In the second part of the talk, I will describe our progress on a multi-modal microscope that we are using for a DOE-funded project to study the mechanism of cellulose degradation by cellulases for bioenergy applications. In particular, we have optimized the ability to combine Interference Reflection Microscopy (IRM) to image cellulose micro- and nanofibers with TIRF to simultaneously image fluorescently-labeled cellulase enzymes degrading the cellulose.

Speaker
William Hancock, Department of Biomedical Engineering, Pennsylvania State University

Break

11:30 AM - 12:00 PM

Poster Presentations and Late Posters

12:00 PM - 1:30 PM

General Networking

1:00 PM-2:00 AM

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Exhibitor Presentation
Bruker

1:30 PM - 2:00 PM

Introduction to Super-Resolution Multiplexed Imaging Applications Using the Vutara VXL Platform For Single-Molecule and Widefield Imaging
This talk will introduce the next generation of the Vutara imaging platform, the VXL. While the VXL has been designed and optimized for single molecule localization microscopy, most current methods for super resolution microscopy are limited due to the limited number of dyes compatible with single molecule based super resolution techniques. This talk presents methods for imaging a series of consecutive targets within a sample using single molecule localization microscopy integrated with a software-controlled automated microfluidics system for probe multiplexing. Probe multiplexing allows for the imaging of more than four different targets within a cell. During this talk we will show examples using oligoSTORM and DNA-PAINT methods. OligoSTORM allows for the direct tracing of chromosomes within cells. We will show the three-dimensional trajectory of a multiplexed oligoPAINT labeled chromosome in individual human fibroblast cells using the Vutara platform. We will also show DNA-PAINT based single molecule localization data for antibody labeled targets in cell culture. We will also show how the Vutara can be used for ORCA, a widefield imaging technique that has been developed for high throughput sequential labelling of chromosome targets for generating 3D image data and single cell chromosome conformation maps (similar to Hi-C type data). The VXL with integrated fluidics and SRX software provides a powerful suite of tools for simultaneous imaging, localization, visualization and statistical analysis of multiplexed data.

Speaker
Robert Hobson, Applications Scientist, Bruker

Break

1:30 PM - 2:00 PM

Live Q&A
Careers in Industry

2:00 PM - 3:30 PM

Join us for a Q&A discussion about scientific careers in industry. Industry panelists will answer audience questions and share their career experiences. Hear from professionals and get tangible advice for identifying and pursuing a career in industry.

Chair
Erin Dueber, Genentech, USA

Speakers
Muneera Beach, Malvern Panalytical, USA
Jeff Hirsch, Confluence Discovery Technologies, USA
Aysegul Ozen, Scorpion Therapeutics, USA
Jeremy Wilbur, Relay Therapeutics, USA

Platform
Membrane Protein Structures

2:00 PM - 3:30 PM

Chair
José Faraldo-Gómez, NIH, NHLBI, USA

No Abstract **2:00 PM**
LIPID BILAYER MORPHOLOGY AS A DRIVING FORCE FOR MEMBRANE PROTEIN ORGANIZATION. **José Faraldo-Gómez**

441-Plat **2:30 PM**
OLIGOMERIZATION OF THE HUMAN ADENOSINE A_{2A} RECEPTOR IS DRIVEN BY THE INTRINSICALLY DISORDERED C-TERMINUS. **Khanh D. Nguyen**, Michael Vigers, Eric Sefah, Susanna Seppala, Jennifer Hoover, Blake Mertz, Michelle A. O'Malley, Songi Han

442-Plat **2:45 PM**
VIRUS-HOST PROTEIN INTERACTIONS IN THE DEGRADATION PATHWAY OF HUMAN SERINC5 BY NEF. **Joana Paulino**, Alisa Bowen, Phuong Nguyen, Lucas Liu, Janet Finer-Moore, Robert M. Stroud

443-Plat **3:00 PM**
BAMB STABILIZES BAMA'S LATERALLY OPEN AND CLOSED STATES. **David Ryoo**, Katie M. Kuo, Zijian Zhang, Yui Tik Pang, James C. Gumbart

444-Plat **3:15 PM**
TOWARDS MECHANISTIC UNDERSTANDING OF MITOCHONDRIAL B-BARREL BIOGENESIS: STRUCTURAL STUDIES OF THE SORTING AND ASSEMBLY MACHINERY. **Kathryn A. Diederichs**, Xiaodan Ni, Sarah E. Rollauer, Istvan Botos, Xiaofeng Tan, Martin S. King, Edmund Kunji, Jiansen Jiang, Joseph A. Mindell, Susan K. Buchanan

Platform
Intrinsically Disordered Proteins (IDP) and Aggregates I

2:00 PM - 3:30 PM

Chair
Yuri Lyubchenko, University of Nebraska Medical Center, USA

445-Plat **2:00 PM**
MISFOLDING AND AGGREGATION OF AMYLOID PROTEINS AT PHYSIOLOGICALLY RELEVANT CONCENTRATIONS AT THE LIQUID-MEMBRANE INTERFACE. **Yuri L. Lyubchenko**, Mohtadin Hashemi, Siddhartha Banerjee

446-Plat **2:30 PM**
AMPHIPHILIC PROTEINS COAT MEMBRANELESS ORGANELLES AND ACT AS BIOLOGICAL SURFACTANTS. **Fleurie Kelley**, Benjamin S. Schuster

447-Plat **2:45 PM**
PHYSICAL THEORY OF CONCENTRATION BUFFERING IN MULTI-COMPONENT, PHASE-SEPARATING SYSTEMS. **Dan Deviri**, Samuel Safran

448-Plat **3:00 PM**
HIDDEN COMPLEXITIES IN THE PHASE BEHAVIOR OF LOW-COMPLEXITY DISORDERED PROTEINS. **Anne Bremer**, Mina Farag, Wade M. Borcherds, Rohit V. Pappu, Tanja Mittag

449-Plat **3:15 PM**
PROBING THE HIDDEN SENSITIVITY OF INTRINSICALLY DISORDERED PROTEINS TO THEIR CHEMICAL ENVIRONMENT. **David Moses**, Karina Guadalupe, Shahar Sukenik

Platform
Protein-Nucleic Acid Interactions and Chromatin I

2:00 PM - 3:30 PM

Chair
Karolin Luger, University of Colorado, Boulder, USA

No Abstract **2:00 PM**
UNFINISHED BUSINESS: NUCLEOSOMES IN TRANSITION. **Karolin Luger**

450-Plat **2:30 PM**
FORCE-DEPENDENT STIMULATION OF RNA UNWINDING BY SARS-COV-2 NSP13 HELICASE. **Keith J. Mickolajczyk**, Patrick M. Shelton, Michael Grasso, Xiaocong Cao, Sara E. Warrington, Amol Aher, Shixin Liu, Tarun M. Kapoor

451-Plat **2:45 PM**
INVESTIGATING HOW THE RESTRICTION ENDONUCLEASE BCNI FLIPS ON DNA. Nirmala Shrestha, Kyle Russell, Nooshin Shatery Nejad, **Candice M. Etson**

452-Plat **3:00 PM**
UNCOVERING THE PHYSICAL BASIS FOR SELECTIVE MIXING VERSUS UNMIXING OF PROTEIN-RNA CONDENSATES. Andrew Z. Lin, **Ammon E. Posey**, Furqan Dar, Amy S. Gladfelter, Rohit V. Pappu

453-Plat **3:15 PM**
DISSECTING THE TARGET RECOGNITION BY CRISPR/CAS EFFECTOR COMPLEXES WITH ULTRAFAST TWIST MEASUREMENTS. **Julene Madariaga Marcos**, Dominik J. Kauert, Marius Rutkauskas, Alexander Wulfken, Inga Songaliene, Tomas Sinkunas, Virginijus Siksnys, Ralf Seidel

Platform
Membrane Receptors and Signal Transduction

2:00 PM - 3:30 PM

Chair
Scott Hansen, University of Oregon, USA

No Abstract **2:00 PM**
PHOSPHATIDYLINOSITOL LIPID MODIFYING ENZYMES IN CELL SIGNALING. **Scott Hansen**

454-Plat **2:30 PM**
IDENTIFICATION OF LIGAND-SPECIFIC G-PROTEIN COUPLED RECEPTOR STATES AND PREDICTION OF DOWNSTREAM EFFICACY VIA DATA-DRIVEN MODELING. Oliver Fleetwood, **Lucie Delemotte**

455-Plat **2:45 PM**
EFFECTS OF SOFT MATTER ON G-PROTEIN-COUPLED RECEPTOR ACTIVATION. **Kushani S.K. Hewage**, Shifat Hossain, Steven D.E. Fried, Helen F. Mann, Benjamin H.C. Cabrera, Zizhao Yu, David B. Jurkowitz, Andrey V. Struts, Suchithranga M.D.C. Perera, Michael F. Brown

456-Plat **3:00 PM**
A SINGLE-MOLECULE APPROACH TO STUDY B CELL ANTIGEN RECOGNITION AND AFFINITY DISCRIMINATION. **Anna T. Bajur**, Hannah Reed, Maro Iliopoulou, Katelyn M. Spillane

457-Plat **3:15 PM**
PLASMA MEMBRANE ORGANIZATION IS POISED FOR RECEPTOR-MEDIATED TRANSMEMBRANE SIGNALING. **Nirmalya Bag**, David A. Holowka, Barbara A. Baird

Platform
Membrane Traffic

2:00 PM - 3:30 PM

Chair
Sandra Schmid, University of Texas, Southwestern Medical Center, USA

No Abstract **2:00 PM**
THE PLASTICITY AND ROBUSTNESS OF CLATHRIN-MEDIATED ENDOCYTOSIS. **Sandra Schmid**

458-Plat **2:30 PM**
MECHANISMS OF ACTIN FORCE PRODUCTION IN CLATHRIN-MEDIATED ENDOCYTOSIS REVEALED BY INTEGRATING MATHEMATICAL MODELING WITH IN SITU CRYO-ELECTRON TOMOGRAPHY. **Matthew Akamatsu**, Daniel Serwas, Amir Moyaed, Ritvik Vasan, Karthik Vegesna, Jennifer Hill, Johannes Schoeneberg, Padmini Rangamani, David G. Drubin

459-Plat **2:45 PM**
STRESSES WITHIN THE ENDOCYTIC ACTIN MESHWORK CONTROLS THE TURNOVER OF FIMBRIN. **Xiaobai Li**, Julien Berro

460-Plat **3:00 PM**
MECHANOREGULATION OF EXOCYTOSIS RATES BY VESICLE-MEMBRANE MERGING KINETICS. **Rui Su**, Ben O'Shaughnessy

461-Plat **3:15 PM**
SUBCELLULAR MAGNETIC CONTROL OF PHAGOSOME MATURATION IN LIVING CELLS. **Zihan Zhang**, Yanqi Yu, Glenn Walpole, Yan Yu

Platform
Muscles I

2:00 PM - 3:30 PM

Chair
Zhen Ma, Syracuse Biomaterials Institute, USA

462-Plat **2:00 PM**
CONTRACTILE DEFICITS OF HIPSC-DERIVED CARDIAC MICROTISSUES INDUCED BY SYNERGISTIC OUTCOME OF MYBPC3 MUTATION AND MECHANICAL OVERLOADING. **Zhen Ma**

463-Plat **2:30 PM**
STEP SIZE AND KINETICS OF CARDIAC MYOSIN CROSSBRIDGES ARE NOT AFFECTED BY TROPONIN AND TROPOMYOSIN. **Sarah R. Clippinger**, William Stump, Thomas Blackwell, Michael J. Greenberg

464-Plat **2:45 PM**
THE ROLE OF SEPTIN7 IN SKELETAL MUSCLE REGENERATION. Mónika Gönczi, János Fodor, Andrea Telek, Nóra Dobrosi, Zsolt Ráduly, László Szabó, Peter Szentesi, Beatrix Dienes, **Laszlo Csernoch**

465-Plat **3:00 PM**
STRUCTURAL CHANGES IN THE MYOSIN FILAMENT INDUCED BY COOLING ISOLATED CARDIAC TRABECULAE. Jesus G. Ovejero, Luca Fusi, So-Jin Park-Holohan, Andrea Ghisleni, Theyencheri Narayanan, Malcolm Irving, **Elisabetta Brunello**

466-Plat **3:15 PM**
FIBERSIM, AN OPEN-SOURCE SPATIALLY-EXPLICIT MODEL OF THE HALF-SARCOMERE. Sarah Kosta, Dylan F. Colli, **Kenneth S. Campbell**

Platform
Molecular Dynamics and Bioinformatics I

2:00 PM - 3:30 PM

Chair
Qiang Cui, Boston University, USA

No Abstract **2:00 PM**
ELECTROSTATICS IN ATOMISTIC AND COARSE-GRAINED MOLECULAR SIMULATIONS: FROM BURIED ION-PAIRS TO MEMBRANE REMODELING. **Qiang Cui**

467-Plat **2:30 PM**
KINETICS AND FREE ENERGY OF PROTEIN LIGAND INTERACTION USING WEIGHTED ENSEMBLE MILESTONING (WEM). **Dhiman Ray**, Trevor Gokey, David L. Mobley, Ioan Andricioaei

468-Plat **2:45 PM**
PEPTIDE GAUSSIAN ACCELERATED MOLECULAR DYNAMICS (PEP-GAMD) ENHANCED SAMPLING AND FREE ENERGY AND KINETICS CALCULATIONS OF PEPTIDE BINDING. **Jinan Wang**, Yinglong Miao

469-Plat **3:00 PM**
LIGAND GAUSSIAN ACCELERATED MOLECULAR DYNAMICS (LIGAMD) FOR CHARACTERIZATION OF LIGAND BINDING THERMODYNAMICS AND KINETICS. **Yinglong Miao**, Apurba Bhattarai, Jinan Wang

470-Plat **3:15 PM**
FREE ENERGY ALONG TRANSITION PATHWAYS FROM STRUCTURE REFINEMENT SIMULATIONS. **Emmi Pohjolainen**, Andrea C. Vaiana, Maxim Igaev, Helmut Grubmuller

Platform
Biosensors and Nanotechnology

2:00 PM - 3:30 PM

Chair
Hendrik Dietz, Technische Universität München, Germany

No Abstract **2:00 PM**
PROGRAMMABLE ICOSAHEDRAL SHELL SYSTEM FOR VIRUS TRAPPING. **Hendrik Dietz**

471-Plat **2:30 PM**
DECODING DIGITAL INFORMATION STORED IN POLYMER BY NANOPORE. **Chan Cao**, Lucien Krapp, Abdelaziz Ouahabi, Aleksandra Radenovic, Jean-François Lutz, Matteo Dal Peraro

472-Plat **2:45 PM**
NOVEL SYNTHETIC NANOPORES FOR SINGLE-MOLECULE BIOSENSING APPLICATIONS. **Mehrnaz Mojtabavi**, Meni Wanunu

473-Plat **3:00 PM**
SINGLE-MOLECULE FRET BASED INTRA-MOLECULAR KINETIC FINGERPRINTING FOR ULTRAFAST AND HIGH-CONFIDENCE COUNTING OF MUTANT DNA. **Shankar Mandal**, Kunal Khanna, Muneesh Tewari, Alexander Johnson-Buck, Nils G. Walter

474-Plat **3:15 PM**
DIRECT AND ACCURATE DETECTION OF DNA METHYLATION POSITIONS USING BIOLOGICAL NANOPORE. **Ping Liu**

Exhibitor Presentation
Nikon Instruments Inc

3:30 PM - 4:00 PM

Using the Nikon Ti2 Inverted Platform as an Optical Bench
Flexibility and modularity are core principles underlying Nikon's imaging systems and components. In this presentation, we will discuss innovative solutions from Nikon that are designed to maximize flexibility and enable easy customization of both home-built microscopes and fully turn-key commercial systems. Learn how the Eclipse Ti2 with its expandable structure, multiple input and output ports, and easy access to the back-aperture plane can be used as an optical bench. Furthermore, Nikon's wide range of modular illumination devices from TIRF to photo-stimulation can be custom-combined for your unique application. For those requiring full access to the optical path, Nikon also offers the Ti2-Hardware Development Kit for introducing completely custom components. We will also discuss Nikon's latest objectives utilizing new immersion media and featuring industry-leading numerical aperture and working distance.

Speaker
Ian Ross, Senior Biosystems Applications Manager, Nikon Instruments Inc

Student Research Achievement Awards (SRAA) Poster Competition

3:30 PM-5:30 PM

This poster competition features graduate and PhD students who are presenting posters at the Annual Meeting and have indicated at the time of abstract submission that they wish to participate in the competition. During the competition, students' one-to-three minute oral presentations of their posters will be reviewed by one or more judges, followed by a live question and answer period. Winners will be recognized on Friday prior to the Biophysical Society Lecture.

Exhibitor Presentation
Horiba Scientific

4:00 PM - 4:30 PM

Rapid, Optical Technique For Sensitive Characterization and Differentiation of OTC Canine Vaccines
The pharmaceutical industry increasingly relies on spectroscopy for quality assurance and has established, and conforms to, USP (United States Pharmacopeia) regulations. While some spectroscopic approaches (NIR, FT-IR and Raman) are common, the adoption of fluorescence spectroscopy has lagged, even though it has high specificity and sensitivity in many analyses in demand, and is conveniently amenable to chemometrics analysis.

We present identification and validation of "unknown" samples with 100% certainty based on A-TEEM fluorescence analysis of Solo-Jec brand canine vaccines from Boehringer Ingelheim VetMedica: Spectra-5, Spectra-6, Spectra-9, and Spectra-10, containing 5, 6, 9 and 10 vaccine combinations, respectively of coronavirus, hepatitis, adenovirus, parainfluenze, leptospirae, parvovirus, etc. A key consideration upon an established vaccine product release is specificity. Analytical techniques need to characterize the final product, and must also differentiate between it and all others made at the facility. The 3-D fluorescence molecular fingerprints of these vaccines were subjected to chemometric analysis through PARAFAC classification as well as XGBOOST discriminant analysis. The "most probable prediction" of unknown samples with 100% certainty was substantiated by the generated *confusion matrix* supporting the A-TEEM fluorescence claim to be a powerful addition to the arsenal of validation techniques. Two lots for each vaccine were measured on one instrument and were validated with a different lot, instrument and operator. The data analysis approaches used were each able to differentiate between the vaccine products. Even Spectra-9 and Spectra-10, that differ ONLY by a coronavirus component based on publicly available SDS data, were readily distinguished.

Fluorescence EEMs (Excitation-Emission Matrix) solve the longstanding issue of imperfect quantification (a result of the Inner Filter Effect) by directly incorporating a UV spectrophotometer in the fluorometer. This allows the *simultaneous acquisition in situ* of a UV/VIS/NIR-absorbance spectrum for the real-time Inner Filter Effect (IFE) correction of the fluorescence spectrum, improving quantification accuracy and extending the usable range of concentrations over which quantification can be performed. A-TEEM (Absorbance Transmission Excitation Emission Matrix) is fully validatable using United States Pharmacopeia monograph USP <853>, given that the novel aspect of simultaneous acquisition of the UV/VIS/NIR absorbance spectrum for IFE correction is fully compatible with validation protocols. This spectroscopic approach provides a complete and traceable optical fingerprint for liquid samples that performs a similar role to chromatographic methods, and compared to other spectroscopic methodologies is faster, less expensive and can operate in production environments.

Speaker
Karoly Csatorday, Business Development Manager, Horiba Scientific

TUESDAY POSTER SESSIONS

12:00 PM–1:30 PM

Below is the list of poster presentations for Tuesday of abstracts submitted by October 1.
The list of late abstracts scheduled for Tuesday is available on page 105.

ODD-NUMBERED BOARDS 12:00 PM–12:45 PM | EVEN-NUMBERED BOARDS 12:45 PM–1:30 PM

Board Numbers	Category
B1 - B21	Protein Structure and Conformation I
B22 - B37	Protein Structure, Prediction, and Design
B38 - B50	Protein Assemblies I
B51 - B65	Membrane Protein Structures I
B66 - B87	Intrinsically Disordered Proteins (IDP) and Aggregates I
B88 - B95	DNA Replication, Recombination, and Repair
B96 - B117	Protein-Nucleic Acid Interactions I
B118 - B146	Membrane Physical Chemistry
B147 - B164	Membrane Dynamics I
B165 - B174	Protein-Lipid Interactions: Structures
B175 - B187	Exocytosis and Endocytosis
B188 - B199	Calcium Signaling
B200 - B218	Ligand-gated Channels I
B219 - B224	Other Channels
B225 - B240	Skeletal and Smooth Muscle Mechanics, Structure, and Regulation
B241 - B264	Cell Mechanics, Mechanosensing, and Motility I
B265 - B271	Bacterial Mechanics, Cytoskeleton, and Motility
B272 - B299	Membrane Pumps, Transporters, and Exchangers
B300 - B305	EPR and NMR: Spectroscopy and Imaging
B306 - B328	Molecular Dynamics I
B329 - B350	Computational Methods and Bioinformatics I
B351 - B367	Bioengineering
B368 - B374	Biophysics Education

Protein Structure and Conformation I (Boards B1 - B21)

67-Pos **Board B1**
THE INFLUENCE OF GLYCOSYLATION ON THE INTERACTION OF THE SARS-COV-2 SPIKE PROTEIN RECEPTOR BINDING DOMAIN WITH THERAPEUTIC CANDIDATES. Bradley Harris, Yihan Huang, Giovanni Lara, Shiaki Minami, Matthew Kenaston, Seongwon Jung, Yongao Xiong, Karen McDonald, Somen Nandi, Priya Shah, **Roland Faller**

68-Pos **Board B2**
RAPID CHARACTERIZATION OF SARS COV2 PROTEINS WITH SCATTERING METHODS. **Greg L. Hura**

69-Pos **Board B3**
EXPLORING THE ROLE OF GLYCANS IN THE INTERACTION OF SARS-COV-2 RBD AND HUMAN RECEPTOR ACE2. **Kien Nguyen**, Srirupa Chakraborty, Rachael A. Mansbach, Pedro D. Manrique, Bette Korber, Sandrasegaram Gnanakaran

70-Pos **Board B4**
FACTORS THAT AFFECT THE BINDING OF THE N-TERMINAL HELIX OF HUMAN ACE2 TO SPIKE PROTEIN OF SARS-COV2. **Anirban Das**, Vicky Vishvakarma, Ankur Gupta, Simli Dey, Arpan Dey, U S. Sandra, Ullas Kolthur, Mitradip Das, Krishna K. Vishwakarma, Ravindra Venkatramani, Sudipta Maiti

71-Pos **Board B5**
TOPOGRAPHY, SPIKE DYNAMICS AND NANOMECHANICS OF INDIVIDUAL NATIVE SARS-COV-2 VIRIONS. Balint Kiss, Zoltán Kis, Bernadett Pályi, **Miklós S. Kellermayer**

72-Pos **Board B6**
ENERGETICS OF OPENING FOR THE GLYCOSYLATED AND UNGLYCOSYLATED FORMS OF THE SARS-COV-2 S-PROTEIN TRIMER. **Yui Tik Pang**, Atanu Acharya, Diane L. Lynch, James C. Gumbart

73-Pos **Board B7**
CORONAVIRUS PATHOGENICITY IS DETERMINED BY STABILITY OF THE SPIKE PROTEIN OPEN CONFORMATION. **Josiah Bones**, Ben Corry

74-Pos **Board B8**
AN INTEGRATIVE MD SIMULATION AND NETWORK ANALYSIS APPROACH TO STUDY GLYCOSYLATION OF SPIKE IN SARS-COV-2. **Mahdi Ghorbani**, Bernard R. Brooks, Jeffery B. Klauda

75-Pos **Board B9**
STRUCTURES OF CAPSID AND CAPSID-ASSOCIATED TEGUMENT COMPLEX INSIDE THE EPSTEIN-BARR VIRUS. **Wei Liu**, Yanxiang Cui, Caiyan Wang, Zihang Li, Danyang Gong, Xinghong Dai, Guo-Qiang Bi, Ren Sun, Hong Zhou

76-Pos **Board B10**
A COMBINED HDX-MS AND MD SIMULATION APPROACH TO IDENTIFY POTENTIAL DRUGGABLE REGIONS IN THE NS5 PROTEIN OF THE DENGUE VIRUS SEROTYPE 2. **Juliet O. Obi**, Daniel J. Deredge

77-Pos **Board B11**
COOPERATIVE DYNAMICS OF REC-NUC LOBES PRIME CAS12A FOR DNA PROCESSING. **Aakash Saha**, Pablo R. Arantes, Rohaine Hsu, Yogesh B. Narkhede, Martin Jinek, Giulia Palermo

78-Pos **Board B12**
STRUCTURAL AND BIOCHEMICAL ANALYSIS OF A METHYLATION SENSITIVE CAS9. **Anuska Das**

79-Pos **Board B13**
DNA-INDUCED ALLOSTERIC CONTROL REGULATES ACTIVATION OF CAS12A. **Pablo R. Arantes**, Aakash Saha, Martin Jinek, Giulia Palermo

80-Pos **Board B14**
DYNAMICAL BEHAVIOR OF THE CAT DOMAIN FROM CRE RECOMBINASE, IN THE ABSENCE OF AND WITH THE *CIS* INTERACTION OF THE N HELIX. **Marco A. Ramírez**

81-Pos **Board B15**
DYNAMIC CONSEQUENCES OF SPECIFICITY WITHIN THE CYTIDINE REPRESSOR DNA-BINDING DOMAIN. **Jenaro Soto**, Colleen Moody, Donald F. Senear, Melanie J. Cocco

82-Pos **Board B16**
A BIOPHYSICS UNDERGRADUATE RESEARCH STORY FROM THE UNIVERSITY FOR THE DEAF AND HARD OF HEARING. **Tugba G. Kucukkal**

83-Pos **Board B17**
NOVEL ANTI-REPRESSION MECHANISM OF H-NS PROTEINS BY PHAGE'S "EARLY PROTEINS". **Fredj Ben Bdira**, Liang Qing, Alexander N. Volkov, Mandy Erkelens, Remus T. Dame

84-Pos **Board B18**
2.09 Å RESOLUTION STRUCTURE OF E. COLI HIGBA TOXIN-ANTITOXIN COMPLEX REVEALS AN ORDERED DNA-BINDING DOMAIN AND INTRINSIC DYNAMICS IN ANTITOXIN. **Pankaj Jadhav**

85-Pos **Board B19**
ENSEMBLE SWITCHING OF THE DNA-BINDING DOMAIN OF HUMAN FOXP1. **Narendar Kolimi**, Exequiel Medina, César Ramírez-Sarmiento, Hugo Sanabria, Jorge Babul

86-Pos **Board B20**
STRUCTURE OF THE ATP-FREE MRE11-RAD50 DNA DAMAGE REPAIR COMPLEX BOUND TO DNA SUBSTRATES. **Mahtab Beikzadeh**, Marella Canny, Michael Latham

87-Pos **Board B21**
STUDYING THE INTERACTION MECHANISM OF AZURIN-DERIVED PEPTIDE P28 AND TUMOR SUPPRESSOR P53. **Jing Yang**, Yifan Zeng, Junwen Xiong, Meng Gao, Yongqi Huang

Protein Structure, Prediction, and Design (Boards B22 - B37)

88-Pos **Board B22**
THE TRADE-OFF BETWEEN THERMOSTABILITY AND FUNCTION IN DESIGNED DNA-BINDING PROTEINS. Lauren A. Verheyden, Lily A. Schumacher, Andrew Bigler, Natali A. Gonzalez, Emily Hamlin, Parwana Z. Khazi, **Michelle E. McCully**

89-Pos **Board B23**
PREDICTION OF AMPHIPATHIC HELIX - MEMBRANE INTERACTIONS WITH ROSETTA. **Alican Gulsevin**, Jens Meiler

90-Pos **Board B24**
HIGH RESOLUTION CRYO-EM STRUCTURE OF THE ESPA FILAMENT FROM EPEC. **Bronwyn Lyons**

91-Pos **Board B25**
COMPLETING THE PARTIALLY RESOLVED COMPLEX CRYSTAL STRUCTURE OF AURORA KINASE A / N-MYC BY MOLECULAR MODELING. **Pinar Altiner**, Suleyman Selim Çınaroglu, Emel Timucin

92-Pos **Board B26**
EVOLUTIONARY MODELS OF FOLD-SWITCHING PROTEINS. **Layne B. Frechette**, Robert B. Best

93-Pos **Board B27**
BIOINFORMATICS ANALYSIS OF PROTEINS INVOLVED IN BACTERIAL CURLI ASSEMBLY INDICATE CONSERVED AMINO ACIDS THAT MAY PLAY A ROLE IN STRUCTURE/FUNCTION. **Karen Guerrero**, Shruti Sunder Rajkumar, Zachary Cairo, Jonathan Adame, Jenny Tran, Renad Rawas, Ranim Rawas, Jasmin Aquino, Melissa Spring, Ananya Ranaraja, Sajith A. Jayasinghe

94-Pos **Board B28**
DEVELOPING WEB SITES THAT INTEGRATE DATA AND DIVERSE APPROACHES. **Daniel Kool**

95-Pos **Board B29**
REFINEMENT OF PROTEIN HOMOLOGY MODEL BY ENHANCED DIRECTIONAL SAMPLING GUIDED BY BIOINFORMATICS. **Rajat Punia**, Gaurav Goel

96-Pos **Board B30**
DISULPHIDE LOCK-PROBING FIBRILLOGENESIS TRIGGER IN ACINIFORM SPIDER SILK. **Anamika Sulekha**, Lingling Xu, Paul X-Q. Liu, Jan K. Rainey

97-Pos **Board B31**
EXPLORING THE SPECIFICITY OF 3-KETOSTEROID-Δ1-DEHYDROGENASE BY USE OF SITE-DIRECTED MUTAGENESIS. **Shikui Song**, Xiyao Cheng, Xin Li, Zhengkun Kuang, Yongqi Huang, Zhengding Su

98-Pos **Board B32**
PREDICTING THE ABILITY OF SARS-COV-2 TO UTILIZE THE ACE2 RECEPTOR FOR CELL ENTRY IN NORTH AMERICAN RODENTS. **Peik K. Lund-Andersen**, Jeremy R. Ellis, James T. Van Leuven, Jagdish Patel

99-Pos **Board B33**
RATIONALLY DESIGNED CHIMERIC ANTIBODIES FOR COVID-19 AND FUTURE CORONAVIRUS VARIANTS. **Ching-chung Hsueh**, Steven S. Plotkin

100-Pos **Board B34**
COMBINING COMPUTATIONAL MODELING WITH LIBRARY SCREENING TO ADAPT SARS-COV-NEUTRALIZING ANTIBODY 80R TO SARS-COV-2. **Michael S. Kent**, Maxwell Stefan, Kenneth Sale, Corey Hudson, Daniella Martinez, Miranda Juarros, Brooke Harmon, Daniel Gelperin, Valerie Duva, Alyssa Wynne, Valeria Busygina

101-Pos **Board B35**
AUTOMATED COMPUTATIONAL TECHNIQUE TO IMPROVE THE QUALITY OF SARS-COV-2 PROTEINS. **Joseph P. Farrell**, Esmael J. Haddadian

102-Pos **Board B36**
CHARACTERIZING BINDING KINETICS AND THERMODYNAMICS OF COMPUTER-DESIGNED NANOBODIES TARGETING SARS-COV-2 RBD. **Matheus Ferraz**, Roberto Lins

103-Pos **Board B37**
STRUCTURAL BASES FOR THE DEGRADATION SELECTIVITY OF C2H2 ZINC FINGER BY THALIDOMIDE METABOLITE. **Hirotake Furihata**, Satoshi Yamanaka, Toshiaki Honda, Norio Shibata, Masaru Tanokura, Tatsuya Sawasaki, Takuya Miyakawa

Protein Assemblies I (Boards B38 - B50)

104-Pos **Board B38**
COMPARATIVE ANALYSIS OF THE STRUCTURE AND FIBRILLOGENESIS OF AB_{11-28} PEPTIDE AND THE INVERSE SEQUENCE. Nabin Kandel, Gregory Hammock, **Faisal Abedin**, Suren A. Tatulian

105-Pos **Board B39**
BIOPHYSICAL STUDIES OF INTERACTION BETWEEN MYCOBACTERIAL SEPF AND FTSZ. **Jagrity Choudhury**, Lucky Singh, Barnali Chaudhuri

106-Pos **Board B40**
EFFECT OF ATPASE-DEFECTIVE MUTANT DOPING ON FUNCTIONALITY AND DYNAMICS OF SINGLE BACTERIOPHAGE T4 DNA PACKAGING MOTORS. **Suoang Lu**, Vishal I. Kottadiel, Li Dai, Digvijay Singh, Taekjip Ha, Venigalla B. Rao, Yann R. Chemla

107-Pos **Board B41**
CHARACTERIZATION OF SCF LIGASE INHIBITION BY TUMOR SUPPRESSOR HINT1. **Calvin P. Lin**, Nathan Lee, Elizabeth A. Komives

108-Pos **Board B42**
DOMAIN-DOMAIN INTERACTIONS IN THE SELF-ASSEMBLY OF NON-STRUCTURAL PROTEIN 1 FROM INFLUENZA A VIRUS. **James E. Gonzales**, Jie Shi, Jae-Hyun Cho, Wonmuk Hwang

109-Pos **Board B43**
YORKIE-WARTS COMPLEXES ARE AN ENSEMBLE OF INTERCONVERTING CONFORMERS FORMED BY MULTIVALENT INTERACTIONS. **Kasie Baker**, Ethiene Kwok, Diego Rodriguez, Amber Rolland, Jesse Wilson, James Prell, Patrick Reardon, Afua Nyarko

110-Pos **Board B44**
ANS FLUORESCENT PROBE INDUCES CLUSTERING OF AMYLOID FIBERS. **Anna I. Sulatskaya**, Maksim I. Sulatsky, Olga I. Povarova, Irina M. Kuznetsova, Konstantin K. Turoverov

111-Pos **Board B45**
MODELING MULTIVALENT PROTEIN PHASE SEPARATIONS WITH NETWORK-FREE RULE-BASED MODELING. **Aniruddha Chattaraj**, Michael L. Blinov, Leslie M. Loew

112-Pos **Board B46**
STRUCTURAL INSIGHTS INTO THE MULTIVALENT BINDING OF AMOTL1, YAP, AND KIBRA. **Amber Vogel**, Afua Nyarko

113-Pos **Board B47**
THE EFFECT OF GENOME SIZE ON THE STRUCTURE OF VIRAL SHELLS. **Sanaz Panahandeh**, Siyu Li, Roya Zandi

114-Pos **Board B48**
MODULATION OF MICROTUBULE SYSTEMS BY INTENSE NANOSECOND ELECTRIC PULSES. **Michal Cifra**, Daniel Havelka

115-Pos **Board B49**
THE PENTAMER VS HEXAMER ASSEMBLY OF RETROVIRAL CAPSID PROTEIN IS CONTROLLED BY THE FLEXIBLE LINKER. **Bo Chen**, Xin Qiao, Tyrone Thames, Alexander J. Bryer, Jaekyun Jeon, Ivan Hung, Peter Gorkov, Zhehong Gan, Juan R. Perilla

116-Pos **Board B50**
CAN 3D-DOMAIN-SWAPPING HELP UNDERSTAND POLYQ SEQUENCES? **Manjula Ramu**, Ramaswamy Subramanian, Shachi Gosavi

Membrane Protein Structures I (Boards B51 - B65)

117-Pos **Board B51**
THE RELATIONSHIP BETWEEN STRUCTURAL SYMMETRY AND FUNCTION IN MEMBRANE PROTEINS. **Emily L. Yaklich**, Antoniya A. Aleksandrova, Lucy R. Forrest

118-Pos **Board B52**
IMPLICATIONS OF SP-C OLIGOMERIZATION IN MEMBRANE FRAGMENTATION AND PULMONARY SURFACTANT HOMEOSTASIS. **Juranny Mishelle Moran Lalangui**, Alejandro Barriga, Ismael Mingarro, Jesus Perez-Gil, Begoña Garcia-Alvarez

119-Pos **Board B53**
BIOPHYSICAL AND COMPUTATIONAL STUDIES OF HUMAN DISEASE RELATED PROTEINS WITH A SINGLE-PASS TRANSMEMBRANE HELIX. **Younghee Park**, Jens Meiler

120-Pos **Board B54**
CHARACTERIZING KRAS MEMBRANE STRUCTURES BY DATA-DRIVEN MOLECULAR DOCKING. **Christopher B. Stanley**, Que N. Van, Frank Heinrich, Mathias Losche, Debsindhu Bhowmik, Arvind Ramanathan, Cesar A. Lopez, Sandrasegaram Gnanakaran, Dwight V. Nissley, Andrew G. Stephen

121-Pos **Board B55**
STRUCTURE PREDICTION OF THE TRANSMEMBRANE REGION OF ALPHA- AND BETA- SECRETASES USING REPLICA-EXCHANGE MOLECULAR DYNAMICS SIMULATIONS, AND THE INTERACTION BETWEEN AMYLOID PRECURSOR PROTEIN AND THEM. **Kaori Yanagino**, Naoyuki Miyashita

122-Pos **Board B56**
WORKING TOWARDS CRYO-EM STRUCTURES OF MITOCHONDRIAL DYNAMIN-LIKE GTPASES. **Melissa R. Mikolaj**, Sarah Nyenhuis, Jenny E. Hinshaw

123-Pos **Board B57**
MODELLING LONG LOOPS OF MEMBRANE PROTEINS USING PRETZEL. **Manisha Barse**, Alan Perez-Rathke, Jie Liang

124-Pos **Board B58**
MOLECULAR MECHANISM OF POTASSIUM (K^+) ION SENSING HISTIDINE KINASE INVOLVED IN BIOFILM FORMATION. **Rachael M. Lucero**, Randy Stockbridge

125-Pos **Board B59**
INVESTIGATING SARS-COV-2 ORF7B HOMODIMERIZATION BY MOLECULAR DYNAMICS SIMULATIONS. **Min-Kang Hsieh**, Jeffery B. Klauda

126-Pos **Board B60**
INTERPLAY BETWEEN LEAKAGE AND FUSION OF PHOSPHATIDYLCHOLINE LIPOSOMES INDUCED BY THE MACROLITTINS, A SYNTHETICALLY EVOLVED FAMILY OF PORE-FORMING PEPTIDES. **Leisheng Sun**, Kalina Hristova, William C. Wimley

127-Pos **Board B61**
DECIPHERING THE ROLES OF *YERSINIA PESTIS* OUTER MEMBRANE PROTEINS IN THEIR NATIVE ENVIRONMENT. **James E. Kent**, Lynn M. Fujimoto, Kyungsoo Shin, Chandan Singh, Yong Yao, Gregory V. Plano, Francesca M. Marassi

128-Pos **Board B62**
STRUCTURAL INSIGHTS AND CLASSIFICATION OF THE DISEASE-CAUSING MUTATIONS IN HUMAN NA^+- COUPLED CITRATE TRANSPORTER (NACT) USING A HOMOLOGY MODELING APPROACH.
Valeria Jaramillo-Martinez, Vadivel Ganapathy, Ina Urbatsch

129-Pos **Board B63**
RATIONAL DESIGN OF SMALL MOLECULAR GLP-1R AGONISTS. **Zixin Yang**, Zhengkun Kuang, Rui Wang, Ni Pi, Xiyao Cheng, Yongqi Huang, Zhengding Su

130-Pos **Board B64**
MODULATION OF THE ACYLATION OF THE C-TERMINAL SEGMENT OF GRK1 DRASTICALLY INFLUENCES ITS SOLUBILITY AND MEMBRANE-BINDING PROPERTIES. **Marc-Antoine Millette**, Camille Gagnon, Christian Salesse

131-Pos **Board B65**
COMPARING THE DYNAMIC DIFFERENCES BETWEEN X-RAY AND CRYO-EM STRUCTURES OF CANNABINOID RECEPTOR 1 USING MOLECULAR DYNAMICS SIMULATIONS. **Ugochi Isu**, Vivek Govind Kumar, Adithya Polasa, Mahmoud Moradi

Intrinsically Disordered Proteins (IDP) and Aggregates I (Boards B66 - B87)

132-Pos **Board B66**
REENTRANT LIQUID CONDENSATE PHASE OF PROTEINS IS STABILIZED BY HYDROPHOBIC AND NON-IONIC INTERACTIONS. **Georg Krainer**, Timothy J. Welsh, Jerelle A. Joseph, Peter St George-Hyslop, Anthony A. Hyman, Rosana Collepardo-Guevara, Simon Alberti, Tuomas P.J. Knowles

133-Pos **Board B67**
CHARACTERIZING STRUCTURAL AND DYNAMIC FEATURES OF SOLUBLE IAPP OLIGOMERS. **Bryan A. Bogin**, Zachary Levine

134-Pos **Board B68**
A 4BPA COARSE-GRAINED MOLECULAR DYNAMICS STUDY ON THE AGGREGATION OF POLYGLUTAMINE. **Mark van der Klok**, Maurice Dekker, Erik Van der Giessen, Patrick R. Onck

135-Pos **Board B69**
DOXORUBICIN INDUCES ABERRANT SELF-ASSEMBLY OF P53 BY PHASE SEPARATION. **Ankush Garg**, Sharmistha Sinha

136-Pos **Board B70**
THERMODYNAMIC STABILITY OF HNRNP A1 LOW COMPLEXITY DOMAIN REVEALED BY HIGH-PRESSURE NMR. Jeffrey D. Levengood, Jake Peterson, Blanton S. Tolbert, **Julien Roche**

137-Pos **Board B71**
HOW DO EVOLUTIONARILY ENCODED COMPOSITIONAL BIASES INFLUENCE THE PHASE BEHAVIORS OF INTRINSICALLY DISORDERED LOW COMPLEXITY DOMAINS OF PROTEINS? **Mina Farag**, Anne Bremer, Wade Borcherds, Tanja Mittag, Rohit V. Pappu

138-Pos **Board B72**
EFFECTS OF MEMBRANE CURVATURE ON AMYLOID-BETA AGGREGATION. **Abhilash Sahoo**

139-Pos **Board B73**
BOTTOM-UP COARSE-GRAINED MODELS FOR INTRINSICALLY DISORDERED PROTEINS. **Thomas P. Dannenhoffer-Lafage**, Robert B. Best

140-Pos **Board B74**
QUANTIFICATION OF THE ONSET OF CONDENSATION IN NEGATIVE ELONGATION FACTORS. **Chenyang Lan**, Prashant Rawat, Ritwick Sawarkar, Thorsten Hugel

141-Pos **Board B75**
DE NOVO COMPUTATIONAL DESIGN OF DISORDERED FG-NUCLEOPORINS. **Henry de Vries**, Alessio Fragasso, Tegan Otto, Nils Klughammer, John Andersson, Eli van der Sluis, Anton Steen, Andreas Dahlin, Liesbeth Veenhoff, Cees Dekker, Erik Van der Giessen, Patrick Onck

142-Pos **Board B76**
INTEGRATING NMR, SAXS AND SINGLE-MOLECULE FRET DATA TO INFER CONFORMATIONAL ENSEMBLES OF THE YEAST SIC1 PROTEIN. **Claudiu C. Gradinaru**, Gregory W. Gomes, Tanja Mittag, Teresa L. Head-Gordon, Julie D. Forman-Kay

143-Pos **Board B77**
EFFECTS OF FAMILIAL MUTATION AND C-TERMINAL TRUNCATION ON NUCLEATION AND FIBRIL ELONGATION OF A-SYNUCLEIN. **Takashi Ohgita**, Norihiro Namba, Hiroki Kono, Hiroyuki Saito

144-Pos **Board B78**
REAL-TIME OBSERVATION OF STRUCTURAL AND DYNAMICAL CHANGES OF THE FUS LOW-COMPLEXITY DOMAIN DURING LIQUID-TO-SOLID PHASE TRANSITIONS. **Raymond F. Berkeley**, Maryam Kashefi, Galia T. Debelouchina

145-Pos **Board B79**
ENVIRONMENT DEPENDENT SECONDARY STRUCTURE OF A RIBOSOME STALLING PEPTIDE. **Gabor Nagy**, Michal H. Kolar, John D. Kunkel, Sara M. Vaiana, Helmut Grubmuller

146-Pos **Board B80**
PROBING THE INTERACTIONS OF INTRINSICALLY DISORDERED PROTEIN WITH METAL IONS AND LIPID MEMBRANES BY FLUORESCENCE SPECTROSCOPY. **Xiangyu Teng**, Keith Willison, Liming Ying

147-Pos **Board B81**
CURVATURE SENSING MEDIATED BY F-BAR DOMAIN AND AN INTRINSICALLY DISORDERED REGION OF FBP17. **Maohan Su**, Yinyin Zhuang, Wenting Zhao, Min Wu

148-Pos **Board B82**
TAU FORMS OLIGOMERIC COMPLEXES ON MICROTUBULES THAT ARE DISTINCT FROM PATHOLOGICAL OLIGOMERS IN DISEASE. **Melina Theoni Gyparaki**, Arian Arab, Elena M. Sorokina, Adriana N. Santiago-Ruiz, Christopher H. Bohrer, Jie Xiao, Melike Lakadamyali

149-Pos **Board B83**
THE C55 PEPTIDE PORTION OF THE AMYLOID PRECUROSR PROTEIN CAN FORM STABLE DIMERS. **Ethan Croitoru**, Esmael J. Haddadian

150-Pos **Board B84**
ACCELERATED AMYLOID BETA PATHOGENESIS BY BACTERIAL AMYLOID FAPC. **Zhenzhen Zhang**, Feng Ding

151-Pos **Board B85**
LIQUID-LIQUID PHASE SEPARATION IS INFLUENCED BY THE ACTIVE, CROWDED CYTOPLASM. **Tong Shu**, Jonathan Alberts, Dajun Sang, Sarah Tsao, Matheus Palhares Viana, Meta Heidenreich, Emmanuel Levy, Liam J. Holt

152-Pos **Board B86**
EFFECTS OF THE FLANKING POLYQ REGIONS AND MEMBRANE PHYSICAL PROPERTIES ON HUNTINGTIN BINDING TO LIPID VESICLES. Tânia Sousa, Nuno Bernardes, Ana Coutinho, Manuel Prieto, **Ana M. Melo**

153-Pos **Board B87**
THE SEQUENCE, STRUCTURE AND FUNCTION OF THE PLANT STRESS PROTEIN LEA3. Karamjeet K. Singh, **Steffen P. Graether**

DNA Replication, Recombination, and Repair (Boards B88 - B95)

154-Pos **Board B88**
USING EXCITON-COUPLED PROBE SPECTROSCOPY TO INVESTIGATE THE ROLES OF LOCAL DNA CONFORMATIONAL DYNAMICS IN PROCESSIVE DNA POLYMERASE HOLOENZYME FORMATION. **Patrick J. Herbert**, Dylan Heussman, Jack Maurer, Steven E. Weitzel, Peter H. von Hippel, Andrew H. Marcus

155-Pos **Board B89**
SILVER NANOPARTICLES INTERFERCE WITH DNA REPLICATION IN MITOCHONDRIA. **Yeying Gao**, Yujie Zhang, Yun Ju, Xueling Peng, Qingdai Liu

156-Pos **Board B90**
EXPLORING THE TRANSLOCATION MECHANISM OF BACTERIOPHAGE T7 HELICASE. **Shikai Jin**, Carlos A. Bueno Basurco, Wei Lu, Yang Gao, Peter G. Wolynes

157-Pos **Board B91**
SINGLE-MOLECULE INVESTIGATION OF RAD-51 PRESYNAPTIC FILAMENT ASSEMBLY AND THE ROLE OF MEDIATOR PROTEINS. **Ondrej Belan**, Consuelo Barroso, Artur Kaczmarczyk, Roopesh Anand, Stefania Federico, Nicola O'Reilly, Matt D. Newton, Radoslav Enchev, Enrique Martinez-Perez, David S. Rueda, Simon Boulton

158-Pos **Board B92**
SINGLE MOLECULE EXPERIMENTS DEFINE THE ROLE OF NBS1 AND XRS2 IN DNA TETHERING BY MRN AND MRX IN DSB REPAIR. **Carl Möller**, Rajhans Sharma, Robin Öz, Giordano Reginato, Elda Cannavò, Sriram KK, Petr Cejka, Fredrik Westerlund

159-Pos **Board B93**
ACTIVATION BARRIERS FOR ADENINE METHYLATION BY METHANE DIAZONIUM ION AND DIMETHYL SULFATE. **George A. Papadantonakis**, Daniel R. Eichler, Maria V. Yermolina, Tim Regan, Blake Mirman

160-Pos **Board B94**
PROBING THE BIOMECHANICS OF RUVA-HOLLIDAY JUNCTION COMPLEX. **Soma Dhakal**, Dalton R. Gibbs

161-Pos **Board B95**
FLOW MAGNETIC TWEEZERS: IMAGING RARE ENZYMATIC EVENTS WITH SINGLE MOLECULE PRECISION. Rohit Agarwal, **Karl E. Duderstadt**

Protein-Nucleic Acid Interactions I (Boards B96 - B117)

162-Pos **Board B96**
DNA FOLDING BY MULTIVALENT CATIONS. **Donna M. Roscoe**, Ashwin Balaji, Luka Matej Devenica, Ashley R. Carter

163-Pos **Board B97**
DNA TOROIDS FORM VIA A FLOWER INTERMEDIATE. **Ryan B. McMillan**, Hilary Bediako, Luka Matej Devenica, Yuxing E. Ma, Donna M. Roscoe, Ashley R. Carter

164-Pos **Board B98**
ELUCIDATION OF INTERACTIONS BETWEEN INTEGRATION HOST FACTOR AND A DNA FOUR-WAY JUNCTION. **Shawn H. Lin**, Dacheng Zhao, Ishita Mukerji, Candice M. Etson

165-Pos **Board B99**
SINGLE MOLECULE INVESTIGATIONS OF PROTEIN AND SMALL MOLECULE INTERACTIONS WITH G-QUADRUPLEXES AND THEIR IMPACT ON TELOMERE STRUCTURE. **Hamza Balci**, Golam Mustafa, Prabesh Gyawali, Parastoo Maleki, Sajad A. Shiekh

166-Pos **Board B100**
DNA FOLDING BY THE SARS-COV-2 NUCLEOCAPSID PROTEIN. **Youna N. Choi**, Ryan B. McMillan, Ashley R. Carter

167-Pos **Board B101**
DNA STRETCHING AND SUPERCOILING INDUCES CAS9 OFF-TARGET ACTIVITY. **Matt D. Newton**, Graeme King, Benjamin J. Taylor, Emanuela M. Cuomo, David S. Rueda

168-Pos **Board B102**
LINE-1 ORF1P REORGANIZES AND PACKAGES SINGLE-STRANDED NUCLEIC ACIDS THROUGH WRAPPING AND INTERPROTEIN INTERACTIONS. **Benjamin A. Cashen**, M. Nabuan Naufer, Michael D. Morse, Charlie E. Jones, Anthony V. Furano, Mark C. Williams

169-Pos **Board B103**
MAPPING THE INTERPLAY BETWEEN DNA TOPOLOGY AND SEQUENCE ON TYPE II TOPOISOMERASE BINDING AND CLEAVAGE ACTIVITY. **Rachel Kim**, Shannon J. Mckie, Keir C. Neuman

170-Pos **Board B104**
DNA-UNWINDING DYNAMICS OF *ESCHERICHIA COLI* UVRD LACKING THE C-TERMINAL 40 AMINO ACIDS. **Hiroaki Yokota**

171-Pos **Board B105**
E. COLI SINGLE STRANDED BINDING PROTEIN (SSB) BINDING MEASURED USING FORCE SPECTROSCOPY AND STRUCTURAL MUTANTS. **Gudfridur B. Moller**, M. Nabuan Naufer, Michael Morse, James McIsaac, Ioulia F. Rouzina, Penny Beuning, Mark C. Williams

172-Pos **Board B106**
CRITICAL ROLE OF N AND C TERMINAL DOMAINS OF BACTERIOPHAGE T4 SINGLE-STRANDED BINDING PROTEIN (GP32) IN TRANSIENT BINDING CONFORMATIONS AND REORGANIZATION MEASURED USING FORCE SPECTROSCOPY. Benjamin Cashen, **Michael Morse**, Richard L. Karpel, Ioulia F. Rouzina, Mark C. Williams

173-Pos **Board B107**
THE T4 BACTERIOPHAGE PROTEIN MOTB REMODELS HOST DNA. Jennifer P. West, Revathy Ramachandran, **Emilios K. Dimitriadis**, Deborah M. Hinton

174-Pos **Board B108**
FUNCTION OF A VIRAL GENOME PACKAGING MOTOR FROM BACTERIOPHAGE T4 IS INSENSITIVE TO DNA SEQUENCE. **Douglas E. Smith**, Youbin Mo, Nick Keller, Damian delToro, Neeti Ananthaswamy, Stephen C. Harvey, Venigalla B. Rao

175-Pos **Board B109**
FRET STUDY OF THE BINDING OF HIV-1 RRE RNA TO REV PEPTIDE. **Jade M. DeSpain**, Jacob D. Durfee, Ina P. O'Carroll, Katherine Truex

176-Pos **Board B110**
METAL IONS AND NUCLEIC ACIDS' PROCESSING, NOVEL INSIGHTS FROM RNASE-H1 MOLECULAR DYNAMICS. **Jacopo Manigrasso**, Giulia Palermo, Marco De vivo

177-Pos **Board B111**
WHAT THE FORK? A STRUCTURAL BIOINFORMATICS APPROACH TO DECIPHER PATTERNS IN ARGININE-FORK MEDIATED RNA RECOGNITION. **Sai Shashank Chavali**, Chapin E. Cavender, David H. Mathews, Joseph E. Wedekind

178-Pos **Board B112**
INVESTIGATING THE RNA BINDING SPECIFICITY THROUGH THE CSTF-64 RRM-RNA STRUCTURAL ENSEMBLE. **Elahe Masoumzadeh**, Michael P. Latham

179-Pos **Board B113**
PROBING STRUCTURAL DYNAMICS OF THE CLOSED-LOOP MODEL IN TRANSLATION INITIATION. **Jacopo Airapetyan**

180-Pos **Board B114**
WATCHING U4 SNRNA RELEASE DURING SPLICEOSOME ACTIVATION WITH MANGO RNA APTAMERS. **Karli Lipinski**, Peter J. Unrau, Aaron A. Hoskins

181-Pos **Board B115**
METHYLTRANSFERASE ENZYME RSMC ACT AS AN RNA CHAPERONE DURING BACTERIAL RIBOSOME BIOGENESIS. **Keshav G C**, Prabesh Gyawali, Hamza Balci, Sanjaya Abeysirigunawardena

182-Pos **Board B116**
DIVALENT CATIONS DRIVE TUNABLE PHASE SEPARATION OF HOMOPOLYMERIC RNA SEQUENCES. **Paulo Onuchic**, Anthony Milin, Ibraheem Alshareedah, Priya R. Banerjee, Ashok Deniz

183-Pos **Board B117**
STRUCTURAL AND MOLECULAR DETERMINANTS OF DYNAMICS IN P GRANULES OF *C. ELEGANS*. **Stela Jelenic**, Janos Bindics, Alex S. Holehouse, Martine Ruer, Philipp Czermak, Rohit V. Pappu, Anthony A. Hyman, Shambaditya Saha

Membrane Physical Chemistry (Boards B118 - B146)

184-Pos **Board B118**
THE ROLE OF GROWTH TEMPERATURE AND LIPID COMPOSITION IN PHASE SEPARATION OF YEAST VACUOLE MEMBRANES. **Chantelle Leveille**, Caitlin E. Cornell, Alexey J. Merz, Sarah L. Keller

185-Pos **Board B119**
PROTOCELL FORMATION IS ENHANCED BY INNATE SOLID SURFACES. **Elif S. Koksal**, Inga Põldsalu, Henrik Friis, Irep Gozen

186-Pos **Board B120**
FLOCCULATION OF FATTY ACID MEMBRANES DOES NOT DISRUPT ENCAPSULATION: IMPLICATIONS FOR THE ORIGIN OF CELLS IN EVAPORATIVE LAKE ENVIRONMENTS. **Zachary R. Cohen**, Caitlin E. Cornell, David C. Catling, Roy A. Black, Sarah L. Keller

187-Pos **Board B121**
INVESTIGATION OF DRUG ENTRAPMENT PROPERTIES OF ASYMMETRIC CHARGED LARGE UNILAMELLAR VESICLES. **Bingchen Li**, Erwin London

188-Pos **Board B122**
LIPID SPONGE PHASE AS A MATRIX FOR ENZYME ENCAPSULATION: STRUCTURE AND DYNAMICS. Jennifer Gilbert, Maria Valldeperas Badell, Inna Ermilova, Michihiro Nagao, Susana Cristina Marujo Teixeira, Najet Mahmoudi, Jan Swenson, **Tommy Nylander**

189-Pos **Board B123**
COUPLING OF LEAFLET PHASE BEHAVIOR IN ASYMMETRIC GIANT UNILAMELLAR VESICLES PREPARED BY HEMIFUSION: INVESTIGATING THE INFLUENCE OF THE LOW-METLING LIPID. **Kristen Kennison**, Frederick A. Heberle, Thais A. Enoki

190-Pos **Board B124**
COUPLING BETWEEN LATERAL AND TRANSVERSE ORGANIZATION IN THREE-COMPONENT LIPID MIXTURES INVESTIGATED WITH ASYMMETRIC GUVS PREPARED BY HEMIFUSION. **James R. Baker**, Thais A. Enoki, Frederick A. Heberle

191-Pos **Board B125**
FABRICATION AND CHARACTERIZATION OF FREE-STANDING ASYMMETRIC MEMBRANES. Paige Liu, Oscar Zabala-Ferrera, **Peter J. Beltramo**

192-Pos **Board B126**
SUPER-RESOLVING MEMBRANE GEOMETRY AND LIPID PACKING IN LIVING CELLS. **Gabriele Kockelkoren**, Line Lauritsen, Dimitrios Stamou

193-Pos **Board B127**
DYNAMIC MEMBRANE ASYMMETRY INDUCED BY CERAMIDE-RICH DOMAINS UNDER ENZYMATIC REACTION. **Hyun-Ro Lee**, Siyoung Choi

194-Pos **Board B128**
SUPER-RESOLUTION MICROSCOPY WITH A MECHANOSENSITIVE MEMBRANE TENSION PROBE. **Jimmy Maillard**, José Garcia-Calvo, Karolina Strakova, Naomi Sakai, Stefan Matile, Alexandre Fuerstenberg

195-Pos **Board B129**
PROBING THE RELATIONSHIP BETWEEN CHOLESTEROL CONCENTRATION AND CHEMICAL POTENTIAL IN MODEL MEMBRANES. **Fiona Gaffney**, Kathleen Wisser, Sarah L. Veatch

196-Pos **Board B130**
DETERMINANTS OF MEMBRANE DOMAIN SIZE. Ali Saitov, Maksim A. Kalutsky, Timur R. Galimzyanov, Toma Glasnov, Sergey A. Akimov, **Peter Pohl**

197-Pos **Board B131**
TO WHAT EXTENT DOES A SINGLE LIPID AFFECT THE MECHANICAL PROPERTIES OF THE MEMBRANE THAT SURROUNDS IT. **Kayla Sapp**, Andrew H. Beaven, Alexander J. Sodt

198-Pos **Board B132**
MEMBRANE DEFORMATION MODULATED BY HYDRATION AND CHOLESTEROL UNVEILED BY SOLID-STATE ^{2}H NMR SPECTROSCOPY. **Trivikram R. Molugu**, K. J. Mallikarjunaiah, Jacob J. Kinnun, Horia I. Petrache, Milka Doktorova, George Khelashvili, Rana Ashkar, Michael F. Brown

199-Pos **Board B133**
A NEEDLESS BUT INTERESTING CONTROVERSY WITH PEDAGOGICAL OVERTONES. **John F. Nagle**

200-Pos **Board B134**
BILAYER-COATED NANOPARTICLES TO PROBE THE EFFECT OF MEMBRANE DEFORMABILITY ON FUSION INTERMEDIATES. **Ana Villamil**, Peter Kasson

201-Pos **Board B135**
ARRANGEMENT OF SPHERICAL NANOPARTICLES ON LIPID VESICLES. **Eric J. Spangler**, Mohamed Laradji

202-Pos **Board B136**
INTERACTION OF POLYHYDROXYALKANOATE NANOPARTICLES WITH PULMONARY SURFACTANT. **Olga Cañadas**, Andrea Garcia, María Auxiliadora Prieto, Jesus Perez Gil

203-Pos **Board B137**
SHAPE FLUCTUATIONS OF GIANT UNILAMELLAR VESICLES AND ITS APPLICATIONS TO STUDY ELECTRIFIED MEMBRANES AND MEMBRANE VISCOSITY. **Hammad A. Faizi**, Cody J. Reeves, Rumiana Dimova, Petia M. Vlahovska

204-Pos **Board B138**
DEUTERATED PUFA INHIBIT OXIDATIVE DAMAGE TO LIPOSOMES UPON PHOTODYNAMIC TREATMENT. **Alexander M. Firsov**, Marcia S.F. Franco, Elena A. Kotova, Maksim A. Fomich, Andrei V. Bekish, Olga L. Sharko, Vadim V. Shmanai, Mauricio S. Baptista, Yuri N. Antonenko, Mikhail S. Shchepinov

205-Pos **Board B139**
MOLECULAR ORGANIZATION OF LIPID RAFTS IS MODIFIED BY OXIDIZED PHOSPHATIDYLCHOLINES. **Andres T. Cavazos**, Anandita Pal, Sahil Dadoo, Stephen R. Wassall, Saame Raza Shaikh

206-Pos **Board B140**
MOLECULAR DYNAMICS OF CELL MEMBRANE ELECTROPORATION. **Lea Rems**, Xinru Tang, Fangwei Zhao, Lucie Delemotte

207-Pos **Board B141**
THE ROLE OF ION-PHOSPHOLIPID INTERACTIONS IN THE PERMEATION OF CATIONS ACROSS ZWITTERIONIC PHOSPHOLIPID BILAYERS. **Evelyne Deplazes**, Beatriu Domingo Tafalla, Christopher Murphy, Jacqueline White, Charles G. Cranfield, Alvaro Garcia

208-Pos **Board B142**
COUNTERION PHENOMENA NEAR CHARGED SURFACES IN FINITE VOLUMES. **Joel A. Cohen**

209-Pos **Board B143**
MEMBRANE PERMEABILITY OF RIFAMPICIN AND TETRACYCLINE FROM FREE ENERGY AND DIFFUSIVITY CALCULATIONS. **Shek Fung Hui**, Chi Hang Tse, Christophe Chipot, Yi Wang

210-Pos **Board B144**
THE MECHANISMS OF LIPID-MEDIATED REGULATION OF THE ACTIVITY OF ANTIMICROBIAL PEPTIDES OF DIFFERENT SECONDARY STRUCTURE. Svetlana S. Efimova, **Anastasiia A. Zakharova**, Olga S. Ostroumova

211-Pos **Board B145**
INTERACTION OF A HOMOLOGOUS SERIES OF AMPHIPHILES WITH P-GLYCOPROTEIN CONTAINING MEMBRANES. Susana V. Cunha, Hugo L. Filipe, Cristiana V. Ramos, Patricia A. Martins, Biebele Abel, Suresh V. Ambudkar, Luis M. Loura, **Maria Joao Moreno**

212-Pos **Board B146**
VARIATIONS IN THE BIOPHYSICAL PROPERTIES OF DMPG AND DPPG MEMBRANES WITH STAPHYLOXANTHIN: A MOLECULAR DYNAMICS SIMULATION STUDY. **David R. Figueroa**, John E. Cabrera, Julian Andres Melendez Delgado, Gian Pietro Miscione, Chad Leidy, Camilo A. Aponte-Santamaria

Membrane Dynamics I (Boards B147 - B164)

213-Pos **Board B147**
INFLUENCE OF FULLERENES ON PEROXIDIZED LIPID MEMBRANES. **Gülsah Gül**, Nazar Ileri-Ercan

214-Pos **Board B148**
LOCAL STIFFENING EFFECTS OF CHOLESTEROL IN SATURATED AND UNSATURATED PHOSPHATIDYLCHOLINE MEMBRANES. Teshani Kumarage, Trivikram R. Molugu, Milka Doktorova, George Khelashvili, Michael F. Brown, **Rana Ashkar**

215-Pos **Board B149**
TOWARDS UNDERSTANDING ANTIBIOTIC PERMEATION ACROSS THE GRAM-NEGATIVE BACTERIA OUTER MEMBRANE. **Javad Deylami**, Shu Sin Chng, Ee Hou Yong

216-Pos **Board B150**
ABSOLUTE/CONVECTIVE INSTABILITIES AND FRONT PROPAGATION IN LIPID MEMBRANE TUBES. **Amaresh Sahu**, Joel Tchoufag, Kranthi K. Mandadapu

217-Pos **Board B151**
OLIGOMERIC STATE TRANSITIONS OF PORE FORMING TOXINS INDUCE NON-MONOTONIC LIPID DYNAMICS IN BIOMEMBRANES. Ilanila I. P, K G. Ayappa, **Jaydeep Kumar Basu**

218-Pos **Board B152**
COMPARING INNER AND OUTER MEMBRANE PERMEABILITIES FOR LIGNIN RELATED AROMATIC COMPOUNDS. **Josh V. Vermaas**, Michael F. Crowley, Gregg T. Beckham

219-Pos **Board B153**
SPHINGOLIPID-ENRICHED DOMAINS IN YEAST: BIOPHYSICAL PROPERTIES AND ANTIFUNGAL INTERACTION. **Rodrigo F.M. De Almeida**, Joaquim T. Marquês, Liana C. Silva, H. Susana Marinho, M. L. Corvo, Francesca Fedeli, Catarina Faria-Silva, Filipa C. Santos, Andreia Bento-Oliveira

220-Pos **Board B154**
A CONTINUUM MODEL FOR SIMULATION OF LARGE BIOLOGICAL LIPID MEMBRANES. **Timothy S. Carpenter**

221-Pos **Board B155**
INVESTIGATING PLASMA-MEMBRANE REPAIR EMPLOYING THERMOPLASMONICS. **Guillermo S. Moreno Pescador**, Dunya S. Aswad, Mohammad Reza Arastoo, Helena M. Dávidsdóttir Danielsen, Christoffer D. Florentsen, Azra Bahadori, Jesper Nylandsted, Lene B. Oddershede, Poul Martin Bendix

222-Pos **Board B156**
FUNGAL PLASMA MEMBRANE LIPID DOMAINS ALTERATIONS UPON DRUG EXPOSURE. **Filipa C. Santos**, Andreia S. Fernandes, Arnaldo Videira, Rodrigo F.M. De Almeida

223-Pos **Board B157**
BIOPHYSICAL INSIGHTS INTO THE SPATIAL ORGANIZATION AND DYNAMICS OF STRUCTURALLY COMPLEX MYCOBACTERIAL MEMBRANE LIPIDS. **Aswin Srivatsav T**, Pranav Adhyapak, Shobhna Kapoor

224-Pos **Board B158**
BEYOND A CRITICAL STRAIN RATE, LAMIN-A DILUTES AND NUCLEI RUPTURE AT SITES OF HIGH CURVATURE. **Michael P. Tobin**, Charlotte R. Pfeifer, Emma G. Ricci-De Lucca, Lizeth Lopez, Keiann T. Simon, Dennis E. Discher

225-Pos **Board B159**
MODELING MEMBRANE DYNAMICS IN 3D USING DISCRETE DIFFERENTIAL GEOMETRY. **Cuncheng Zhu**, Christopher T. Lee, Ravi Ramamoorthi, Padmini Rangamani

226-Pos **Board B160**
DIFFUSIVE BENDING MODES IN BOLALIPID MEMBRANE WITH U-FORMS. **Sergei I. Mukhin**, Daria A. Makitruk

227-Pos **Board B161**
BIOPHYSICAL MODELING OF DENDRITIC SPINE MORPHOLOGY. **Haleh Alimohamadi**, Miriam Bell, Shelley Halpain, Padmini Rangamani

228-Pos **Board B162**
IMPACT OF SPHINGOLIPID PROFILE IN YEAST GEL DOMAINS AND MEMBRANE COMPARTMENTS. **Andreia Bento-Oliveira**, Filipa C. Santos, Joaquim T. Marquês, Pedro M. R. Paulo, Susana Marinho, Rodrigo F.M. de Almeida

229-Pos **Board B163**
THE LIPIDS THAT GET THE INVITE TO A CAVEOLAR NECK PARTY. **Andrew H. Beaven**, Kayla Sapp, Alexander J. Sodt

230-Pos **Board B164**
STABILITY OF MEMBRANES CONTAINING DIFFERENT TYPES OF ANIONIC LIPIDS. **Fernanda Leomil**, Rumiana Dimova, Karin A. Riske

Protein-Lipid Interactions: Structures (Boards B165 - B174)

231-Pos **Board B165**
CHARACTERIZATION OF BETA-2-GLYCOPROTEIN I DOMAIN V INTERACTION WITH PLASMA MEMBRANE. **Hale S. Hasdemir**, Emad Tajkhorshid

232-Pos **Board B166**
WHOLE CELL ^{2}H SOLID-STATE NMR OF ANTIMICROBIAL PEPTIDES INTERACTING WITH CELL ENVELOPES ROLE OF LIPOPOLYSACCHARIDE. **Sarika Kumari**, Michael R. Morrow, Valerie Booth

233-Pos **Board B167**
PYLIPID: A PYTHON TOOLKIT FOR ANALYSIS OF LIPID-PROTEIN INTERACTIONS FROM MD SIMULATIONS. Wanling Song, Robin A. Corey, Anna L. Duncan, T. Bertie Ansell, Phillip J. Stansfeld, **Mark S. Sansom**

234-Pos **Board B168**
A NEUTRON REFLECTOMETRY STUDY OF PULMONARY SURFACTANT COMPLEXES. **Ainhoa Collada**

235-Pos **Board B169**
PHASE PARTITIONING OF INFLUENZA VIRUS NEURAMINIDASE IN A MODEL MEMBRANE. **Mohammad Reza Arastoo**, Guillermo Sergio Moreno Pescador, Emilie Lysdal Veje, Henrik Østbye, Robert Daniels, Poul Martin Bendix

236-Pos **Board B170**
CHOLESTEROL-MEDIATED CONFORMATIONAL PLASTICITY RESTRAINS IMMUNOGENICITY AND PROMOTES MEMBRANE FUSION BY AN HIV SEQUENCE JUXTAPOSED TO THE LIPID ENVELOPE. **Jose L. Nieva**, Johana Torralba, Igor De la Arada, Sara Insausti, Eneko Largo, Igor Tascon, Miguel Garcia-Porras, Iban Ubarretxena-Belandia, Beatriz Apellaniz

237-Pos **Board B171**
MOLECULAR SIMULATIONS OF BIOGENESIS PROCESSES WITHIN THE BACTERIAL CELL ENVELOPE. Joshua B. Sauer, Owen N. Vickery, Keith Cassidy, Robin A. Corey, **Phillip J. Stansfeld**

238-Pos **Board B172**
MODELING PROTEIN-LIPID INTERACTIONS DURING VIRAL ASSEMBLY OF SARS-COV-2. **Viviana Monje-Galvan**, Alexander Pak, Gregory A. Voth

239-Pos **Board B173**
MEDIN - MEMBRANE INTERACTIONS: CLEAVAGE, BINDING, AND AGGREGATION. **Ashley M. De Lio**, Andrew S. Lee, David Middleton, Taras V. Pogorelov

240-Pos **Board B174**
CHOLESTEROL BINDING TO HUMAN MULTIDRUG TRANSPORTER ABCG2. **Ali Rasouli**, Po-Chao Wen, Emad Tajkhorshid

Exocytosis and Endocytosis (Boards B175 - B187)

241-Pos **Board B175**
MALARIA PARASITE MORPHOLOGY AND PH MODULATION AT THE TIME OF EGRESS FROM HOST-RED BLOOD CELLS. **Matthias Garten**, Amelia Ralowicz, Svetlana Glushakova, Christopher K.E. Bleck, Joshua Zimmerberg

242-Pos **Board B176**
CAN WE QUANTIFY GLUCAGON SECRETION IN LIVE CELLS BY MEASURING FLUORESCENCE? **Alessandro Ustione**, Priya Mathur, David W. Piston

243-Pos **Board B177**
TRIGGERING FUSION AND EXPANDING THE FUSION PORE: DUAL ROLES FOR THE SECOND C2 DOMAIN OF SYNAPTOTAGMIN 1. **Sarah B. Nyenhuis**, Nakul Karandikar, Volker Kiessling, Alex J.B. Kreutzberger, Anusa Thapa, Binyong Liang, Lukas K. Tamm, David S. Cafiso

244-Pos **Board B178**
THE NANOSCALE ANATOMY OF EXOCYTIC DENSE-CORE VESICLES IN NEUROENDOCRINE CELLS. **Bijeta Prasai**, Gideon Haber, John Ciemniecki, Marie-Paule Strub, Kem A. Sochacki, Justin W. Taraska

245-Pos **Board B179**
CRYO-EM STUDIES OF DYNAMIN ASSEMBLED ON MEMBRANES IN VITRO AND WITHIN CELLS. **John Jimah**, Nidhi Kundu, Kem A. Sochacki, Abigail Stanton, Lieza M. Chan, Justin W. Taraska, Jenny E. Hinshaw

246-Pos **Board B180**
DISTINCT INSULIN GRANULE SUBPOPULATIONS CONTRIBUTE TO THE SECRETORY PATHOLOGY OF DIABETES TYPES 1 AND 2. **Volker Kiessling**, Alex J.B. Kreutzberger, Catherine A. Doyle, Noah Schenk, Clint M. Upchurch, Margaret M. Elmer-Dixon, Amanda E. Ward, Julia Preobraschenski, Syed Saad Hussain, Weronika Tomaka, Patrick Seelheim, Megan Harris, Binyong Liang, J. D. Castle, Lukas K. Tamm

247-Pos **Board B181**
VESICLE MEMBRANE ORDER CONTROLS FUSION BY DETERMINING SYNAPTOBREVIN'S CONFORMATION. **Chase Amos**, Volker Kiessling, Binyong Liang, Lukas K. Tamm

248-Pos **Board B182**
MODELING NUCLEATION AND KINETICS OF CLATHRIN ASSEMBLY BY MEMBRANE LOCALIZATION. **Sikao Guo**, Margaret E. Johnson

249-Pos **Board B183**
MUNC13-1 PROMOTES SECRETORY GRANULE EXOCYTOSIS THROUGH TWO SEPARATE CALCIUM-DEPENDENT MECHANISMS. **Santiago Echeverry**, Johan Dunevall, Per-Eric Lund, Sebastian Barg

250-Pos **Board B184**
ENTROPIC FORCES, ZIPPERING PRESSURE AND MEMBRANE THINNING DRIVE SNARE-MEDIATED MEMBRANE FUSION. **Jin Zeng**, Zachary A. McDargh, Ben O'Shaughnessy

251-Pos **Board B185**
EXTRACELLULAR VESICLES: NOT ONLY SIZE MATTERS. **Pietro Parisse**, Valeria M. Rondelli, Beatrice Senigagliesi, Loredana Casalis

252-Pos **Board B186**
ENDOCYTOSIS AGAINST HIGH TURGOR PRESSURE IS MADE EASIER BY PARTIAL PROTEIN COATING AND A FREELY ROTATING BASE. **Rui Ma**, Julien Berro

253-Pos **Board B187**
PLC$_E$ ACTIVITY IS ESSENTIAL FOR PACAP-STIMULATED SECRETION FROM CHROMAFFIN CELLS. **Alina Chapman-Morales**, Shreeya Bakshi, Ramkumar Mohan, Mounir Bendahmane, Alan Smrcka, Arun Anantharam

Calcium Signaling (Boards B188 - B199)

254-Pos **Board B188**
IPSCS-BASED MODELS OF POLYGLUTAMINE SPINOCEREBELLAR ATAXIAS OF TYPE 1 AND 17 HAVE DIFFERENT IMPAIRMENTS OF CALCIUM SIGNALING. **Dmitry Grekhnyov**, Vladimir Vigont, Elena Kaznacheyeva

255-Pos **Board B189**
QUANTIFICATION OF INSULIN VESICLE DYNAMICS, FUSION EVENTS AND CALCIUM ACTIVITY IN INTACT MOUSE ISLETS. **Xue Wen Ng**, Michael R. DiGruccio, David W. Piston

256-Pos **Board B190**
LOCAL SYNTHESIS OF SARCOLEMMA AND SARCOPLASMIC RETICULUM MEMBRANE PROTEINS IN CARDIAC MYOCYTES. **Vladimir Bogdanov**, Andrew M. Soltisz, Marina Ivanova, Ivan Andreev, Galina Sakuta, Jonathan P. Davis, Rengasayee Veeraraghavan, Sandor Gyorke

257-Pos **Board B191**
A NOVEL METHOD FOR SINGLE MOLECULE VISUALIZATION OF ACTIVE PROTEIN SYNTHESIS IN CARDIAC MYOCYTES REVEALS SERCA2A MRNA TRANSLATION IS SARCOPLASMIC RETICULUM CA^{2+} LOAD DEPENDENT. **Vladimir Bogdanov**, Andrew M. Soltisz, Marina S. Ivanova, Ivan S. Andreev, Rengasayee Veeraraghavan, Jonathan P. Davis, Sandor Gyorke

258-Pos **Board B192**
THE ROLE OF S-ACYLATION IN THE REGULATION OF STORE-OPERATED CALCIUM ENTRY. **Savannah J. West**, Qiaochu Wang, Goutham Kodakandla, Michael X. Zhu, Darren Boehning, Askar M. Akimzhanov

259-Pos **Board B193**
TOBACCO HORNWORM (*MANDUCA SEXTA*) CATERPILLAR HEMOLYMPH MODULATES REACTIVE OXYGEN SPECIES AND CALCIUM GENERATION IN TOMATO PROTOPLASTS. Akanksha Gandhi, Rupesh Kariyat, **Nirakar Sahoo**

260-Pos **Board B194**
A MODELING FRAMEWORK FOR INVESTIGATING THE ROLE OF HUMAN ATRIAL FIBROBLAST CALCIUM SIGNALING IN FIBROGENESIS. **Alex Fogli Iseppe**, Stefano Morotti, Marcel Tekook, Dennis Hoffmann, Andrew G. Edwards, Dobromir Dobrev, Eleonora Grandi

261-Pos **Board B195**
JUPITER MICROTUBULE ASSOCIATED HOMOLOG 2 IS A NICOTINIC ACID ADENINE DINUCLEOTIDE PHOSPHATE (NAADP) BINDING PROTEIN REQUIRED FOR NAADP-EVOKED INTRACELLULAR CALCIUM RELEASE. **Gihan S. Gunaratne**, Eugen Brailoiu, Shijun He, Sandip Patel, James T. Slama, Timothy Walseth, Jonathan S. Marchant

262-Pos **Board B196**
IDENTIFICATION OF A STIM1 SPLICING VARIANT THAT PROMOTES TUMOR GROWTH. **Guolin Ma**, Lian He, Yubin Zhou

263-Pos **Board B197**
GADOLINIUM DIFFERENTIALLY AFFECTS MEMBRANE PERMEABILIZATION AND CA^{2+} INFLUX INDUCED BY NANOSECOND ELECTRIC PULSES IN BOVINE ADRENAL CHROMAFFIN CELLS. **Lisha Yang**, Sophia Pierce, Gale L. Craviso, Normand Leblanc

264-Pos **Board B198**
DUAL IMPACT OF HEART RATE VARIABILITY AND SUBCELLULAR CALCIUM HETEROGENEITY ON CARDIAC ALTERNANS. **Vrishti Phadumdeo**, Seth H. Weinberg

265-Pos **Board B199**
EXPLORING THE EFFECTS OF MUTATIONS AND THICK FILAMENT PROTEINS ON MYOFILAMENT CALCIUM KINETICS VIA STOPPED-FLOW. **Matthew M. Klass**, Rhye-Samuel Kanassatega, Sarah Lehman, Jil C. Tardiff, Brett A. Colson, Jonathan P. Davis

Ligand-gated Channels I (Boards B200 - B218)

266-Pos **Board B200**
HERITABLE MUTATIONS TO THE B3 SUBUNIT OF GABA-A RECEPTOR ALTER THE RECEPTOR FUNCTION AND SYNAPTIC LOCALISATION. **Nela I. Durisic**, Joseph W. Lynch, Ned Cotter, Dejan Gagoski, Parnayan Syed, Pankaj Sah, Duka Skalamera

267-Pos **Board B201**
TWO-PHOTON PHOTOACTIVATION OF RUBI-GABA FOR STUDYING THE ROLE OF THE ANTISECRETORY FACTOR IN THE MODULATION OF THE $GABA_A$ RECEPTOR IN RAT CEREBELLAR GRANULE CELLS *IN VITRO*. **Virginia Bazzurro**, Elena Gatta, Elena Angeli, Aroldo Cupello, Stefan Lange, Mauro Robello, Alberto Diaspro

268-Pos **Board B202**
INFLUENCE OF GABA-A RECEPTOR INTRACELLULAR DOMAIN ON CHANNEL ACTIVATION AND DESENSITIZATION. **Anton J. Tung**, Lucas M. Blecker, Cynthia Czajkowski

269-Pos **Board B203**
A CONSERVED ARGININE WITH NON-CONSERVED FUNCTION IS A KEY DETERMINANT OF AGONIST SELECTIVITY IN ALPHA7 NICOTINIC ACETYLCHOLINE RECEPTORS. **Teresa Minguez Vinas**, A. Sofia F. Oliveira, B. Elizabeth Nielsen, Cecilia Gotti, Adrian J. Mulholland, Timothy Gallagher, Isabel Bermudez

270-Pos **Board B204**
STRUCTURAL INVESTIGATION INTO GATING AND MODULATION OF ALPHA1 GLYCINE RECEPTOR IN LIPID NANODISCS. **Arvind Kumar**, Sandip Basak, Shanlin Rao, Mark S. Sansom, Sudha Chakrapani

271-Pos **Board B205**
WHEN A GAIN BECOMES A LOSS: GAIN-OF-FUNCTION GLYCINE RECEPTORS AND HYPEREKPLEXIA. **James P. Dilger**, Mohammed A. Shanawaz

272-Pos **Board B206**
CONFORMATIONAL LANDSCAPE OF AN AGONIST-BINDING DOMAIN OF A FULL-LENGTH HETEROMERIC KAINATE RECEPTOR GLUK2/K5 DISPLAYING PARTIAL AGONISM. **Nabina Paudyal**, Elisa Carrillo, Vladmir Berka, Vasanthi Jayaraman

273-Pos **Board B207**
FATTY ACIDS INHIBIT A PENTAMERIC LIGAND-GATED ION CHANNEL THROUGH ONE OF TWO BINDING SITES. Noah Dietzen, John T. Petroff, Douglas F. Covey, **Wayland W. Cheng**

274-Pos **Board B208**
SOLUTION STRUCTURE OF THE GLOEOBACTER VIOLACEUS LIGAND-GATED ION CHANNEL PROBED BY SMALL-ANGLE NEUTRON SCATTERING. **Marie Lycksell**, Urska Rovsnik, Cathrine C. Bergh, Nicolai T. Johansen, Anne Martel, Lionel Porcar, Lise Arleth, Rebecca J. Howard, Erik Lindahl

275-Pos **Board B209**
AGONIST EFFICIENCY ESTIMATED FROM CONCENTRATION RESPONSE CURVE. **Dinesh Indurthi**, Anthony Auerbach

276-Pos **Board B210**
INVESTIGATION OF CATION PERMEATION THROUGH AMPA RECEPTORS BY MOLECULAR DYNAMICS SIMULATIONS. **Johann Biedermann**, Andrew J. Plested, Han Sun, Sebastian Braunbeck

277-Pos **Board B211**
INHIBITION OF AMPA RECEPTORS BY ZN^{2+}. **Elisa Carrillo**, Nidhi Kaur Bhatia, Askar M. Akimzhanov, Vasanthi Jayaraman

278-Pos **Board B212**
STOICHIOMETRY OF GLUA1/GLUA2 HETEROMER OF AMPA RECEPTOR. **Antara Mukhopadhyay**, Chenlu Yu, Maximilian H. Ulbrich

279-Pos **Board B213**
A STATE-SPECIFIC INTERACTION STABILIZES NMDA RECEPTOR OPENING. **Gary J. Iacobucci**, Han Wen, Matthew Helou, Beiying Liu, Wenjun Zheng, Gabriela K. Popescu

280-Pos **Board B214**
SINGLE MOLECULE FRET INVESTIGATIONS OF THE NMDA RECEPTOR. **Ryan J. Durham**, Nabina Paudyal, Elisa Carrillo, Nidhi Kaur Bhatia, David M. MacLean, Vladimir Berka, Drew M. Dolino, Alemayehu A. Gorfe, Vasanthi Jayaraman

281-Pos **Board B215**
DIRECT M3-M4 INTERACTIONS CONTROL NMDA RECEPTOR GATING AND DESENSITIZATION. **Hannah Premo**, Beiying Liu, Gary J. Iacobucci, Gabriela K. Popescu

282-Pos **Board B216**
PROBING ALLOSTERIC NETWORKS IN LIGAND-GATED ION CHANNEL GATING BY ELECTROPHYSIOLOGY AND MOLECULAR DYNAMICS IN THE MODEL RECEPTOR GLIC. **Rebecca J. Howard**, Yuxuan Zhuang, Sabina Gutheim, Luise Zeckey, Stephanie A. Heusser, Erik R. Lindahl

283-Pos **Board B217**
THE ROLE OF THE OUTER LIPID-FACING HELIX IN CATIONIC PLGICS IS DEPENDENT ON THE CELLULAR CONTEXT. **Susanne M. Mesoy**, Sarah C.R. Lummis

284-Pos **Board B218**
CONFORMATIONAL LANDSCAPES OF LIGAND-GATED ION CHANNEL GLIC FROM MARKOV STATE MODELING. **Cathrine Bergh**, Stephanie A. Heusser, Rebecca J. Howard, Erik R. Lindahl

Other Channels (Boards B219 - B224)

285-Pos **Board B219**
CENTRAL ROLE OF THE LOWEST PART OF S4 OF CI-VSP IN COUPLING MECHANISM. **Natsuki Mizutani**, Akira Kawanabe, Yasushi Okamura

286-Pos **Board B220**
EVOLUTION OF INVERTED REPEATS IN MEMBRANE TRANSPORTERS. **Christian B. Macdonald**, Troy Cao, Randy Stockbridge

287-Pos **Board B221**
EXPLORING THE PROTON-TRANSFER MECHANISM IN HV1 BY MULTISCALE SIMULATIONS. **William B. Stone**, Adam W. Duster, Ashley L. Bennett, I. Scott Ramsey, Hai Lin

288-Pos **Board B222**
ALPHA-HEMOLYSIN CHANNEL INTERACTION WITH NEUTRAL POLYMERS. **Vicente M. Aguilella**, Marcel Aguilella-Arzo

289-Pos **Board B223**
PERMUTATION OF THE AMINO ACID AT THE CYTOSOLIC ENTRY TO THE CAVITY ALTERS CONDUCTANCE AND GATING OF K^+ CHANNEL IN AN AMINO SPECIFIC MANNER. **Kerri Kukovetz**, Matea Cartolano, Jonas Stein, Oliver Rauh, Alessandro Porro, Anna Moroni, Gerhard Thiel

290-Pos **Board B224**
INFLUENCE OF HYDROPHOBICITY ON ANION SELECTIVITY. **Linda X. Phan**, Charlotte I. Lynch, Jason Crain, Stephen J. Tucker, Mark S. Sansom

Skeletal and Smooth Muscle Mechanics, Structure, and Regulation (Boards B225 - B240)

291-Pos **Board B225**
COLLECTIVE FORCE GENERATOR MODEL OF MUSCLE CONTRACTION. **Vidya Murthy**, Travis J. Stewart, Josh E. Baker

292-Pos **Board B226**
SATURATION OF ACTIN-MYOSIN KINETICS AND MECHANICS. **Josh E. Baker**

293-Pos **Board B227**
MECHANICAL FORCE RATHER THAN STRONG BINDING INTERMEDIATES EXTENDS ACTIVATION OF REGULATED ACTIN. **Henry G. Zot**, Prescott B. Chase, Javier E. Hasbun, J. Renato D. Pinto

294-Pos **Board B228**
TIRASEMTIV AND DATP SYNERGISTICALLY REVERSE THE ACIDOSIS-INDUCED DEPRESSION OF MYOSIN'S FORCE AND MOTION GENERATING CAPACITY. **Christopher P. Marang**, Brent D. Scott, Mike K. Woodward, Edward P. Debold

295-Pos **Board B229**
CONTRACTILITY DEFICIENCY OF TPNT-CD70 FLY MUSCLES UNDERLYING THE HOMOZYGOUS LETHALITY. **Gabriela Aires Moragas**

296-Pos **Board B230**
THE ATOMIC MODEL FOR MYOSIN II COILED-COIL SHOWS NOVEL OBSERVATIONS AND INSIGHTS INTO MUSCLE CONTRACTION. **Hamidreza Rahmani**, Nadia Daneshparvar, Dianne W. Taylor, Wen Ma, Kenneth A. Taylor

297-Pos **Board B231**
TWO ATP ENERGY-SAVING MECHANISMS IN RELAXED TARANTULA SKELETAL MUSCLE. **Raul Padron**, Weikang Ma, Sebastian Duno-Miranda, Thomas C. Irving, Roger W. Craig

298-Pos **Board B232**
DYNAMICS OF STRUCTURAL CHANGES IN MYOSIN-CONTAINING FILAMENTS OF INTACT MOUSE EDL DURING TWITCH AND TETANIC CONTRACTIONS. **Cameron Hill**, Elisabetta Brunello, Luca Fusi, Jesus G. Ovejero, Malcolm Irving

299-Pos **Board B233**
GRADED TITIN CLEAVAGE UNCOVERS THE PROTEIN'S ROLE FOR SARCOMERE STRUCTURE AND FORCE GENERATION OF CONTRACTING MUSCLE. **Anthony L. Hessel**, Yong Li, Andreas Unger, David Ing, Franziska Koser, Jannik Recker, Johanna K. Freundt, Wolfgang A. Linke

300-Pos **Board B234**
SARCOMERIC PROTEIN FATZ FORMS A TIGHT FUZZY COMPLEX WITH A-ACTININ AND PHASE-SEPARATES IN VITRO. Antonio Sponga, Joan L. Arolas, Thomas C. Schwarz, Cy M. Jeffries, Julius Kostan, Anton A. Polyansky, Bojan Zagrovic, Dmitri Svergun, Bettina Warscheid, Robert Konrat, Mathias Gautel, **Kristina Djinovic-Carugo**

301-Pos **Board B235**
THE COMPLIANCE-INDUCED SLOWDOWN OF STRESS RELAXATION IN ACTIVE SARCOMERES. **Khoi D. Nguyen**, Madhusudhan Venkadesan

302-Pos **Board B236**
STRETCH-ACTIVATION IN DROSOPHILA JUMP MUSCLE FIBERS IS DESCRIBED BY A MINIMAL CROSS-BRIDGE MODEL THAT INCLUDES FORCE-DEPENDENT WEAKLY-BOUND CROSS-BRIDGES AND SERIES ELASTICITY. **Katelyn Jarvis**, Kaylyn Bell, Amy K. Loya, Douglas M. Swank, Sam Walcott

303-Pos **Board B237**
MANDIBULAR MUSCLE TROPONIN OF THE FLORIDA CARPENTER ANT *CAMPONOTUS FLORIDANUS*: EXTENDING OUR INSIGHTS INTO INVERTEBRATE CA^{2+} REGULATION. **Yun Shi**, Julia P. Bethea, Hannah L. Hetzel-Ebben, Maicon Landim-Vieira, Ross J. Mayper, Regan L. Williams, Lauren E. Kessler, Amanda M. Ruiz, Kathryn Gargiulo, Jennifer S.M. Rose, Grayson Platt, J. Renato D. Pinto, Brian K. Washburn, Prescott B. Chase

304-Pos **Board B238**
TIME-RESOLVED X-RAY DIFFRACTION STUDIES ON TWITCHING RAT SOLEUS AND EDL MUSCLE. Henry Gong, Weikang Ma, Michael Regnier, **Thomas C. Irving**

305-Pos **Board B239**
EMBRYONIC MYOSIN MUTATIONS T178I AND R672C DEVELOP MECHANICAL DYSFUNCTION WHEN EXPRESSED IN HIPSC DERIVED SKELETAL MYOTUBES. **Saffie Mohran**, Shawn M. Luttrell, Kati Buckingham, Alec S.T. Smith, Michael J. Bamshad, David L. Mack, Michael Regnier

306-Pos **Board B240**
NANOINDENTATION OF IPSC-DERIVED AORTIC SMOOTH MUSCLE CELLS REVEALS A BIOMECHANICAL AND DEVELOPMENTAL BASIS FOR ANEURYSM LOCALIZATION IN MARFAN SYNDROME. **Robert J. Wiener**, Christoph Schaniel, Francesco Ramirez, Kevin D. Costa

Cell Mechanics, Mechanosensing, and Motility I (Boards B241 - B264)

307-Pos **Board B241**
EPITHELIAL CELLS RECOVER SUBSTRATE ADHESION THROUGH RETRACTION FIBER-GUIDED LAMELLIPODIA. **Elgin Korkmazhan**, Carlos O. Garzon Coral, Claudia G. Vasquez, Alexander R. Dunn

308-Pos **Board B242**
FIBROBLASTS CLOSE A VOID IN FREE SPACE BY A PURSE-STRING MECHANISM. **Avelino D.S. Da Costa**

309-Pos **Board B243**
CELL MONOLAYER DEFORMATION MICROSCOPY - A NEW METHOD TO MEASURE THE RHEOLOGY OF CELL MONOLAYERS REVEALS MECHANICAL FRAGILITY OF THE CELL NETWORK IN THE EPITHELIAL TO MESENCHYMAL TRANSITION. **Amy A. Sutton**, Allen J. Ehrlicher, Clayton W. Molter, Ali Amini, Johanan Idicula, Max Furman, Pouria Tirgar Bahnamiri, Yuanyuan Tao, Ajinkya Ghagre, Newsha Koushki, Adele Khavari

310-Pos **Board B244**
ACTIVE VOLUME REGULATION IN ADHERED CELLS. **Ram M. Adar**, Samuel Safran

311-Pos **Board B245**
GLYCOLYSIS INHIBITION REGULATES ENDOTHELIAL JUNCTIONS BY PERTURBING ACTIN AND FOCAL ADHESIONS. **Gregory Schwarz**, Priyanka Gajwani, Jalees Rehman, Deborah E. Leckband

312-Pos **Board B246**
MECHANO-ACTIVATION OF MESENCHYMAL STEM CELLS BY AVOIDING INTRACELLULAR TENSIONAL EQUILIBRIUM ON MATRIX WITH STIFFNESS-HETEROGENEITY. **Satoru Kidoaki**, Hiroyuki Ebata, Kousuke Moriyama, Thasaneeya Kuboki, Yukie Tsuji, Rumi Sawada, Ken Kono, Kazusa Tanaka

313-Pos **Board B247**
VERTEX MODEL INSTABILITIES IN EPITHELIAL TISSUES SUBJECT TO CELLULAR ACTIVITY OR APPLIED STRESS. **Fernanda L. Pérez**

314-Pos **Board B248**
MACROPHAGES SUPPORT THE AGGRESSIVE MECHANICAL PHENOTYPE OF CIRCULATING TUMOR CELLS IN PROSTATE CANCER. **Pawel A. Osmulski**, Alessandra Cunsolo, Yusheng Qian, Meizhen Chen, Chun-Lin Lin, Chia-Nung Hung, Devalingam Mahalingam, Nameer Kirma, Chun-Liang Chen, Josephine Taverna, Michael Liss, Ian M. Thompson, Tim H.-. Huang, Maria Gaczynska

315-Pos **Board B249**
ON THE ADHESION-VELOCITY RELATION AND LENGTH ADAPTION OF MOTILE CELLS ON STEPPED FIBRONECTIN LANES. **Behnam Amiri**, Christoph Schreiber, Johannes Heyn, Martin Falcke, Joachim O. Rädler

316-Pos **Board B250**
MEDIO-APICAL TENSIONS REGULATE TIGHT JUNCTIONS OF WELL-POLARIZED MADIN-DARBY CANINE KIDNEY CELLS. Chia-hsuan Lu, **Keng-hui Lin**

317-Pos **Board B251**
PATTERN-BASED CONTRACTILE SCREENING (PACS), A REFERENCE-FREE TRACTION FORCE MICROSCOPY METHODOLOGY, REVEALS CONTRACTILE DIFFERENCES IN BREAST CANCER CELLS. **Ajinkya Ghagre**, Ali Amini, Luv Kishore Srivastava, Pouria Tirgar Bahnamiri, Adele Khavari, Newsha Koushki, Allen J. Ehrlicher

318-Pos **Board B252**
KINETICS OF CELLULAR AGGREGATION MEDIATED THROUGH DIFFERENT KIND OF INTERACTION MECHANISMS. **Rumi De**, Debangana Mukhopadhyay

319-Pos **Board B253**
DISRUPTING ELKIN1-DEPENDENT MECHANOELECTRICAL TRANSDUCTION MODULATES CELL-CELL INTERACTIONS IN ORGANOTYPIC TUMOUR SPHEROIDS. **Amrutha Patkunarajah**, Lioba Schroeter, Georgina Sanderson, Maté Biro, Kate Poole

320-Pos **Board B254**
MULTIMODAL MICROSCALE MECHANICAL MAPPING OF SINGLE CELLS AS A FUNCTION OF ENVIRONMENT GEOMETRY. **Milos Nikolic**, Giuliano Scarcelli, Kandice Tanner

321-Pos **Board B255**
MECHANICAL COMPETITION TRIGGERED BY INNATE IMMUNE SIGNALING DRIVES THE COLLECTIVE EXTRUSION OF BACTERIALLY-INFECTED EPITHELIAL CELLS. **Effie Bastounis**, Francisco Serrano Alcalde, Prathima Radhakrishnan, Patrik Engström, Maria Gómez Benito, Mackenzi Oswald, Jason Smith, Matthew Welch, José M. García Aznar, Julie Theriot

322-Pos **Board B256**
WHICH CHEMOTHERAPY DRUGS ALTER CELL MECHANICAL PROPERTIES WITH IMPACT ON METASTASIS? Ashley Abraham, Mackenzie McCuddin, Chisom Nwakama, Megha Jacob, Gargee Khaparde, Scott Baumel, Spencer Mckinley, Jack Lewison, Sukhman Virdi, Destiny Jordan, Harry Kramer, **Andrew E. Ekpenyong**

323-Pos **Board B257**
FORCE MEASUREMENT DETERMINES THE DIERECTION OF CELL MIGRATION BY THE TRACTION FORCE MICROSCOPY. **Takeshi Sakamoto**, Yuwen Mei, Justin J. Raupp

324-Pos **Board B258**
INTEGRIN CROSSTALK MODULATES STIFFNESS-INDEPENDENT MOTILITY IN CD4+ T LYMPHOCYTES. **Sarah Hyun Ji Kim**, Daniel A. Hammer

325-Pos **Board B259**
DEPENDENCE OF NEUTROPHIL PHAGOCYTOSIS MECHANICS ON EXTRA- AND INTRACELLULAR CALCIUM. **Emmet A. Francis**, Volkmar Heinrich

326-Pos **Board B260**
STRATEGIES OF MECHANICAL ADAPTATION OF CTCS TO BLOOD CIRCULATION. **Yusheng Qian**, Alessandra Cunsolo, Meizhen Chen, Chia-Nung Hung, Nameer B. Kirma, Michael Liss, Tim H. Huang, Pawel A. Osmulski, Maria E. Gaczynska

327-Pos **Board B261**
ROLE OF MICROGLIA IN POLARIZATION GUIDED COLLECTIVE MIGRATION OF GLIOMAS - A BIOPHYSICAL APPROACH. **Megha Jhunjhunwala**, Yi-Hsuan Tsai, Chi-Shuo Chen

328-Pos **Board B262**
INTRACELLULAR CALCIUM CONCENTRATION-INDEPENDENT CARDIOMYOCYTE CONTRACTION TRIGGERED BY HIGH HYDROSTATIC PRESSURE. **Yohei Yamaguchi**, Masayoshi Nishiyama, Gentaro Iribe, Keiji Naruse, Masatoshi Morimatsu

329-Pos **Board B263**
CORTICAL DYNAMICS OF CONTACT EXPANSION. **Feyza Nur Arslan**, Martin Loose, Carl-Philipp Heisenberg

330-Pos **Board B264**
UNDERSTANDING THE ROLE OF MEMBRANE FLUCTUATION AND TENSION DURING CELL FUSION OF MYOGENESIS. **Madhura Chakraborty**

Bacterial Mechanics, Cytoskeleton, and Motility (Boards B265 - B271)

331-Pos **Board B265**
MODELING GROWTH-MEDIATED MOTILITY IN *CLOSTRIDIUM PERFRINGENS*. **Sean G. McMahon**, Stephen B. Melville, Jing Chen

332-Pos **Board B266**
COARSE-GRAINED UNFOLDING SIMULATIONS OF FTSZ AND DOCKING OF THERAPEUTIC COMPOUNDS. **Kelly E. Theisen**

333-Pos **Board B267**
A MULTISCALE MODEL OF FUNGAL IMPACT ON CHEMOTACTIC BEHAVIOR OF MYCORRHIZAL HELPER BACTERIA. **Jolene Britton**, Alireza Ramezani, Dale Pelletier, Mark Alber, William R. Cannon

334-Pos **Board B268**
MATHEMATICAL MODELLING OF CONTACT-DEPENDENT MOTILITY COORDINATION IN *MYXOCOCCUS XANTHUS*. **Yirui Chen**, Jing Chen

335-Pos **Board B269**
LIFE IN A TIGHT SPOT: MOTILITY OF BACTERIA IN HETEROGENEOUS ENVIRONMENTS. **Sujit S. Datta**, Tapomoy Bhattacharjee, Daniel B. Amchin, Jenna A. Ott, Felix Kratz

336-Pos **Board B270**
MECHANOBIOLOGY OF STATOR REMODELING IN THE BACTERIAL FLAGELLAR MOTOR. **Navish Wadhwa**, Yuhai Tu, Howard C. Berg

337-Pos **Board B271**
CO-ASSEMBLY OF MINC-MIND FROM *BACILLUS SUBTILIS* SUGGESTS A "CAPTURE-RELEASE" MODEL. **Yaodong Chen**, Na Wang, Mingyue Niu, Xiaoyu Wang, Tingting Zhang, Zhe Li

Membrane Pumps, Transporters, and Exchangers (Boards B272 - B299)

338-Pos **Board B272**
DRUG-BINDING TO DISTINCT SITES OF THE MULTIDRUG EXPORTER P-GLYCOPROTEIN. **Ina Urbatsch**, Anthony A. Bui, Joel Zapata, Douglas J. Swartz, Courtney Katz, Anukriti Singh, Joachim Weber

339-Pos **Board B273**
SIMULATION OF COPPER-DEPENDENT REGULATION DYNAMICS IN ATP7B. **Fredrik Orädd**, Magnus Andersson

340-Pos **Board B274**
PEPTIDE-BASED INHIBITION OF ACRB EFFLUX ACTIVITY. **Tyler Johnson**, Charles M. Deber

341-Pos **Board B275**
BIOPHYSICAL CHARACTERIZATION AND STRUCTURAL STUDIES OF SMALL MULTIDRUG RESISTANCE FAMILY OF TRANSPORTERS. **Ali A. Kermani**, Christian B. Macdonald, Randy Stockbridge

342-Pos **Board B276**
A BIPHASIC MOLECULAR MODEL FOR PROTON TRANSPORT IN TETRAMERIC UNCOUPLING PROTEINS. **Afshan Ardalan**, Habib Oduwoye, Shahin Sowlati-Hashjin, Mikko Karttunen, Matthew D. Smith, Masoud Jelokhani-Niaraki

343-Pos **Board B277**
MECHANISM OF SULFATE SELECTIVITY AND TRANSPORT IN A SLC26 FAMILY OF SULFATE TRANSPORTER. **Lie Wang**, Kehan Chen, Shuai Gao, Nieng Yan, Ming Zhou

344-Pos **Board B278**
DIRECT EVIDENCE FOR VOLTAGE-INDUCED CONFORMATIONAL CHANGES OF PRESTIN, THE ELECTROMECHANICAL TRANSDUCER IN OUTER HAIR CELLS. **Makoto F. Kuwabara**, Dominik Lenz, Thomas K. Berger, Dominik Oliver

345-Pos **Board B279**
THE REACTION CYCLE OF DASSCARBOXYLATE TRANSPORTERS. **David B. Sauer**, Noah Trebesch, Jennifer Marden, Nicolette Cocco, Jinmei Song, Akiko Koide, Shohei Koide, Emad Tajkhorshid, Da-Neng Wang

346-Pos **Board B280**
KNOCKOUT OF SLC26A6 PROTECTS THE HEART FROM ISCHEMIA/REPERFUSION INJURIES. **Phung N. Thai**, Lu Ren, Hannah A. Ledford, Richard Q. Ngo, Padmini Sirish, Valeriy Timofeyev, Yang Li, Xiaotian Zhou, Zhong Jian, Ye Chen-Izu, Nipavan Chiamvimonvat, Xiao-Dong Zhang

347-Pos **Board B281**
MECHANISM OF SUBSTRATE RECOGNITION AND TRANSPORT IN A SLC5 FAMILY OF MULTIVITAMIN TRANSPORTER WITH THREE NA^+ BINDING SITES. Lie Wang, Eva G. Iturbe, Yaping Pan, Matthias Quick, **Ming Zhou**

348-Pos **Board B282**
NOVEL INSIGHTS INTO SUBSTRATE BINDING AND TRANSPORT BY THE SLC4 TRANSPORTERS. **Hristina R. Zhekova**, Alexander Pushkin, Gulru Kayik, Liyo Kao, Rustam Azimov, Natalia Abuladze, Debra Kurtz, Mirna Damergi, Sergei Y. Noskov, Ira Kurtz

349-Pos **Board B283**
STRUCTURAL BASIS OF ION TRANSPORT AND INHIBITION IN FERROPORTIN. **Yaping Pan**, Zhenning Ren, Shuai Gao, Jiemin Shen, Xiao Fan, Nieng Yan, Ming Zhou

350-Pos **Board B284**
ELUCIDATION OF ZN^{2+} BINDING IN THE ZN^{2+}/H^+ ANTIPORTER YIIP. **Shujie Fan**, Maria Lopez-Redondo, David L. Stokes, Oliver Beckstein

351-Pos **Board B285**
THE ENERGETICS OF CHOLESTEROL TRANSPORT THROUGH PATCHED1: MD SIMULATIONS AND FREE ENERGY CALCULATIONS. **T. Bertie Ansell**, Robin A. Corey, Christian Siebold, Mark S. Sansom

352-Pos **Board B286**
DISULFIDE CHAPERONE KNOCKOUTS FACILITATE DOUBLE SPIN LABELLING OF AN OUTER MEMBRANE TRANSPORTER FOR *IN VITRO* EPR STUDIES. **Viranga W. Wimalasiri**, Thushani D. Nilaweera, David S. Cafiso

353-Pos **Board B287**
STRUCTURAL BIOCHEMISTRY OF THE ZRT-/IRT-LIKE PROTEIN (ZIP) TRANSITION METAL TRANSPORTERS. **Jian Hu**

354-Pos **Board B288**
EVALUATING CANDIDATE MECHANISMS OF A DISEASE-CAUSING MUTATION IN THE LYSOSOMAL CHLORIDE TRANSPORTER CLC-7. **Kamsiyochukwu C. Nwangwu**, Alissa J. Becerril, Joseph A. Mindell

355-Pos **Board B289**
BIOPHYSICAL EFFECTS OF DISEASE MUTANTS IN THE LYSOSOMAL CL-/H+ EXCHANGER CLC-7. **Jacob K. Hilton**, Joseph A. Mindell

356-Pos **Board B290**
STRUCTURAL DYNAMICS AND ENERGETICS OF GLUCOSE TRANSPORT VIA RICE SWEET SUGAR TRANSPORTER. **Ankita Gupta**, Ramasubbu Sankararamakrishnan

357-Pos **Board B291**
ENERGETICS OF SUBSTRATE BINDING AND CONFORMATIONAL CHANGE OF THE BILE ACID TRANSPORTER $ASBT_{NM}$. **Fiona Naughton**, Patrick Becker, Alexander D. Cameron, Oliver Beckstein

358-Pos **Board B292**
IN VIVO AND *IN VITRO* CHARACTERIZATIONS OF NANOBODIES RAISED AGAINST THE MELIBIOSE PERMEASE MELB OF *SALMONELLA TYPHIMURIUM*. **Satoshi Katsube**, Katleen Willibal, Elena B. Tikhonova, Hariharan Parameswaran, Sangama Vemulapally, Els Pardon, H. Ronald Kaback, Jan Steyaert, Lan Guan

359-Pos **Board B293**
DRUG EFFECTS ON HUMAN NA(+)/CA(2+)EXCHANGER AND IMPLICATIONS FOR DRUG DEVELOPMENT. **Maria Barthmes**, Andre Bazzone, Marta Lemme, Sonja Stoelzle-Feix, Andrea Bruggemann, Michael George, Niels Fertig

360-Pos **Board B294**
MECHANISTIC INSIGHT INTO PEPTIDE-BASED EFFLUX PUMP INHIBITORS AGAINST PATHOGENIC BACTERIA. **Chloe J. Mitchell**, Charles M. Deber

361-Pos **Board B295**
PUMP, REST AND REPEAT: SINGLE MOLECULE MEASUREMENTS REVEAL MODE-SWITCHING IN THE MAMMALIAN BRAIN V-ATPASE. **Eleftherios I. Kosmidis**, Julia Preobraschenski, Christopher Shuttle, Salome Veshaguri, Peter J. Johnson, Jesper L. Pedersen, Reinhard Jahn, Dimitrios Stamou

362-Pos **Board B296**
ALTERNATING BINDING OF PHOSPHOLAMBAN AND DWORF TO SERCA DURING TRANSIENT ELEVATIONS OF CYTOSOLIC CALCIUM. **Sean R. Cleary**, Marsha P. Pribadi, Ellen E. Cho, Xuan Fang, Jaroslava Seflova, Jordan R. Beach, Peter M. Kekenes-Huskey, Seth L. Robia

363-Pos **Board B297**
DISPLACEMENT OF THE NA^+/K^+-PUMP'S TRANSMEMBRANE DOMAINS DEMONSTRATE CONSERVED CONFORMATIONAL CHANGES IN P-TYPE 2 ATPASES. **Victoria C. Young**, Pablo Artigas

364-Pos **Board B298**
INSIGHT INTO SODIUM PUMP REGULATION BY FXYD PROTEINS. **Jaroslava Seflova**, John Q. Yap, Christine E. Delligatti, Marsha P. Pribadi, Pablo Artigas, Julie Bossuyt, Seth L. Robia

365-Pos **Board B299**
THE USE OF THIOFLAVIN T TO ESTIMATE AND MEASURE THE PLASMA MEMBRANE POTENTIAL IN *SACCHAROMYCES CEREVISIAE*. **Antonio Peña**

EPR and NMR: Spectroscopy and Imaging (Boards B300 - B305)

366-Pos **Board B300**
"ONE STOP SHOP" FOR NMR-BASED BIOMOELCULAR RESEARCH. **Woonghee Lee**

367-Pos **Board B301**
PARAMAGNETIC NMR SPECTROSCOPY OF A TRI-NUCLEAR COPPER CENTER FROM A MULTICOPPER OXIDASE, LACCASE. **Rubin Dasgupta**

368-Pos **Board B302**
STRUCTURE AND DYNAMICS OF FICOLL (POLYSUCROSE). **Venketesh Thrithamara Ranganathan**, Yun Liu, Anand Yethiraj

369-Pos **Board B303**
INVESTIGATING CHROMATIN DYNAMICS IN HETEROCHROMATIN ENVIRONMENTS BY SOLID-STATE NMR SPECTROSCOPY. **Nesreen Elathram**, Bryce Ackermann, Galia T. Debelouchina

370-Pos **Board B304**
^{15}N BIFUNCTIONAL SPIN LABEL: PUSHING THE LIMITS OF ANGULAR RESOLUTION OF MUSCLE MYOSIN. **Yahor Savich**, Megan R. McCarthy, Stefan Stoll, David D. Thomas

371-Pos **Board B305**
HOW ACCURATE ARE PRE-DERIVED DISTANCES? COMBINED MD AND EXPERIMENTAL STUDY OF SPIN-LABELED GB1 DOMAIN. Olga Lebedenko, **Sergei A. Izmailov**, Dmitrii Luzik, Nikolai Skrynnikov

Molecular Dynamics I (Boards B306 - B328)

372-Pos **Board B306**
DEEP LEARNING BASED OPTIMIZATION OF LENNARD-JONES PARAMETERS FOR THE DRUDE GENERAL FORCE FIELD (DGENFF). **Payal Chatterjee**, Mert Y. Sengul, Alexander D. MacKerell

373-Pos **Board B307**
MASSIVELY PARALLEL MACHINE LEARNING DRIVEN MULTISCALE SIMULATIONS TO EXPLORE RAS-RAF BIOLOGY. **Helgi I. Ingólfsson**

374-Pos **Board B308**
PREDICTION OF ABSOLUTE BINDING AND UNBINDING KINETICS ON TIMESCALES OF A MINUTE FROM SUB-MICROSECOND MD SIMULATIONS. **Steffen Wolf**, Benjamin Lickert, Simon Bray, Gerhard Stock

375-Pos **Board B309**
HOOGSTEEN BASE PAIRING IN DNA: EFFECTS OF FORCE FIELD MODELS ON FREE ENERGY AND TRANSITION PATHWAYS. **Sharon E. Stone**, Dhiman Ray, Ioan Andricioaei

376-Pos **Board B310**
THE VARIATIONALLY DERIVED INTERMEDIATES METHOD TO CALCULATE FREE ENERGY DIFFERENCES. **Martin Reinhardt**, Helmut Grubmueller

377-Pos **Board B311**
HAMILTONIAN REPLICA EXCHANGE WITH SOLUTE TEMPERING AND BIASING POTENTIALS (HREST-BP): APPLICATIONS IN ANTIBODY GLYCOENGINEERING. **Gene Chong**, Alexander D. MacKerell

378-Pos **Board B312**
USING LAMBDA DYNAMICS TO STUDY PROTONATION STATES OF GLIC. **Paul Bauer**, Noora Aho, Anton Jansen, Rebecca J. Howard, Berk Hess, Gerrit Groenhof, Erik R. Lindahl

379-Pos **Board B313**
MD SIMULATION OF SOLVATED DAFP-1-ICE SURFACE BINDING USING UMBRELLA SAMPLING. **Benjamin M. Harless**

380-Pos **Board B314**
WAYPOINT GRAPH GENERATION WITH GROWING NEURAL GASES FOR PATHFINDING APPLICATIONS IN MOLECULAR DYNAMICS SIMULATIONS. **Moeen Meigooni**, Emad Tajkhorshid

381-Pos **Board B315**
ADAPTIVE SAMPLING USING A GEOMETRIC BROWNIAN MOTION MODEL TO PREDICT MD TRAJECTORY MOBILITY ON A FREE ENERGY SURFACE. **Ekaterina D. Kots**, Derek M. Shore, Harel Weinstein

382-Pos **Board B316**
AUTOMATED IDENTIFICATION OF COLLECTIVE VARIABLES AND METASTABLE STATES FROM MOLECULAR DYNAMICS DATA. Yasemin Bozkurt Varolgunes, Tristan Bereau, **Joseph F. Rudzinski**

383-Pos **Board B317**
IMPROVING REPRODUCIBILITY OF AUTOMATICALLY GENERATED MARKOV MODELS FROM MOLECULAR DYNAMICS TRAJECTORIES. **Andreas Volkhardt**, Nicolai Kozlowski, Malte Schäffner, Helmut Grubmuller

384-Pos **Board B318**
MEMBRANE BINDING OF FLAVIVIRAL NONSTRUCTURAL PROTEIN 1: COMPARATIVE SIMULATIONS OF ZIKA AND DENGUE VIRUS NS1 PROTEINS IN POPE BILAYERS. **Muthukumaran Rajagopalan**, Ramasubbu Sankararamakrishnan

385-Pos **Board B319**
MOLECULAR DYNAMICS STUDY OF MEMBRANE BINDING MECHANISM OF A PERIPHERAL MEMBRANE PROTEIN OSH4.
Sharmistha Das Karmakar, Jeffery B. Klauda

386-Pos **Board B320**
ABOUT THE IMPACT ON MSMS OF PROTEIN MD SIMULATIONS BY THE RESEMBLANCE BETWEEN TICA PROJECTIONS AND COSINES. **Malte Schäffner**, Steffen Schultze, Nicolai Kozlowski, Andreas Volkhardt, Helmut Grubmuller

387-Pos **Board B321**
TOWARDS PROTEIN FUNCTION PREDICTION BASED ON MOLECULAR DYNAMICS SIMULATIONS. **Nicolai Kozlowski**, Malte Schäffner, Andreas Volkhardt, Helmut Grubmuller

388-Pos **Board B322**
ENHANCED SAMPLING MOLECULAR DYNAMICS TO DETERMINE FORCE RESPONSE IN PEPTIDE TENSION SENSORS. **Yuvraj Singh**, Glen M. Hocky

389-Pos **Board B323**
CG2AT2: RECOVERING ATOMISTIC DETAILS FROM COARSE GRAIN SIMULATIONS. **Owen N. Vickery**, Phillip J. Stansfeld

390-Pos **Board B324**
INHOMOGENEOUS SOLUBILITY-DIFFUSION MODEL GIVES INSIGHT IN EFFICACY OF COUNTING CROSSINGS METHOD TO CALCULATE THE MEMBRANE PERMEABILITY. **Samaneh Davoudi**, An Ghysels

391-Pos **Board B325**
A NOVEL GRID-BASED MOLECULAR DYNAMICS PROTOCOL TO SHUFFLE LIPIDS IN HETEROGENIOUS MEMBRANES. **Sepehr Dehghanighahnaviyeh**, Giuseppe Licari, Emad Tajkhorshid

392-Pos **Board B326**
ELECTROSTIMULATED TRANSMEMBRANE TRAFFIC — MOLECULAR SIMULATIONS OF LIPID PORE RESPONSE TO PICOSECOND FIELD REVERSAL. **Federica Castellani**, Tatiana Zvoraneva, Esin B. Sozer, P. Thomas Vernier

393-Pos **Board B327**
RNA-PROTEIN INTERACTIONS IN MOLECULAR LIFE AND HEALTH: A COMPUTATIONAL APPROACH. **Mark D. Driver**, Patrick R. Onck

394-Pos **Board B328**
HOW EFFECTIVE ARE RETRO-INVERSO PEPTIDES? INSIGHTS FROM MD SUPPORTED BY PARAMAGNETIC NMR DATA. **Dmitrii Luzik**, Olga Rogacheva, Nikolai Skrynnikov

Computational Methods and Bioinformatics I (Boards B329 - B350)

395-Pos **Board B329**
DETECTING PROTEIN AND DNA/RNA STRUCTURES IN CRYO-EM MAPS OF INTERMEDIATE RESOLUTION USING DEEP LEARNING. **Xiao Wang**, Eman Alnabati, Tunde W Aderinwale, Sai Raghavendra Maddhuri Venkata Subramaniya, Genki Terashi, Daisuke Kihara

396-Pos **Board B330**
ANALYSIS OF LENGTH BIASES IN SINGLE-CELL RNA SEQUENCING OF UNSPLICED MRNA BY MARKOV MODELING. **Gennady Gorin**, Lior Pachter

397-Pos **Board B331**
DEVELOPMENT AND EVALUATION OF THE SILCS METHODOLOGY FOR TARGETING RNA WITH SMALL MOLECULES. **Abhishek A. Kognole**, Alexander D. MacKerell

398-Pos **Board B332**
AUTOMATED LOCALIZATION AND QUANTIFICATION OF RNA TRANSCRIPTS FROM RNA-FISH IMAGE DATA. **Blythe G. Hospelhorn**, Benjamin K. Kesler, Gregor Neuert

399-Pos **Board B333**
PREDICTION OF MEMBRANE PERMEATION OF SMALL DRUG MOLECULES USING SILCS ENERGY PROFILE WITH MACHINE LEARNING. **Poonam Pandey**

400-Pos **Board B334**
THE EFFECT OF POINT MUTATIONS ON STRUCTURE AND DYNAMICS OF SARS-COV-2 MAIN PROTEASE MUTANTS. **Elizabeth M. Diessner**, Zixiao Zong, Thomas J. Cross, Gemma R. Takahashi, Marquise G. Crosby, Vesta Farahmad, Shannon Zhuang, Carter T. Butts, Rachel W. Martin

401-Pos **Board B335**
STRUCTURE PREDICTION AND MOLECULAR PHYLOGENETIC ANALYSIS OF MEMBRANE INTERACTIONS IN SYNAPTOTAGMIN-LIKE PROTEINS. **Nara L. Chon**, Sherleen Tran, Christopher Miller, Hai Lin, Jefferson Knight

402-Pos **Board B336**
EXTRACTING PROTEIN RECRUITMENT KINETICS TO DNA DAMAGE USING QFADD.PY. **Samuel Bowerman**, Jyothi Mahadevan, Philip Benson, Johannes Rudolph, Karolin Luger

403-Pos **Board B337**
ANTIBODY MODELING USING MOLECULAR DYNAMICS AND SILCS FRAGMAPS. **Asaminew H. Aytenfisu**, Daniel J. Deredge, Erik H. Klontz, Jonathan Du, Eric J. Sundberg, Alexander D. MacKerell

404-Pos **Board B338**
EXPLORING HOST-GUEST INTERACTIONS USING THE SITE-IDENTIFICATION BY LIGAND COMPETITIVE SATURATION (SILCS) METHOD. **Wenbo Yu**, Alexander D. MacKerell

405-Pos **Board B339**
LIPID CONTACT PROBABILITY - AN ESSENTIAL AND PREDICTIVE PROPERTY FOR THE STRUCTURAL AND FUNCTIONAL STUDIES OF (MEMBRANE) PROTEINS. **Lei Wang**, Jiangguo Zhang, Dali Wang, Chen Song

406-Pos **Board B340**
COMPREHENSIVE 3D-RISM ANALYSIS OF THE HYDRATION OF SMALL MOLECULE BINDING SITES IN LIGAND-FREE PROTEIN STRUCTURES. **Takashi Yoshidome**, Mitsunori Ikeguchi, Masateru Ohta

407-Pos **Board B341**
EXTENSION OF THE UNRES PACKAGE FOR PHYSICS-BASED COARSE-GRAINED SIMULATIONS OF PROTEINS AND PROTEIN COMPLEXES TO VERY LARGE SYSTEMS. Adam K. Sieradzan, Cezary R. Czaplewski, Emilia A. Lubecka, Agnieszka G. Lipska, Agnieszka S. Karczynska, Artur P. Gieldon, Rafal Slusarz, Mariusz Makowski, Pawel Krupa, Mateusz Kogut, Anna Antoniak, Patryk A. Wesolowski, Antoni Augustynowicz, Henryk Leszczynski, **Jozef A. Liwo**

408-Pos **Board B342**
USING TACTICS TO FIND DRUGGABLE POCKETS IN SARS-COV2 PROTEINS. **Daniel J. Evans**, Remy A. Yovanno, Sanim Rahman, Afif Bandak, Albert Y. Lau

409-Pos **Board B343**
COMPARISON OF DEEP LEARNING MODELS FOR FULLY AUTOMATED SINGLE CHANNEL IDEALIZATION. **Sam Ball**, Numan Celik, Nathanael O'Neill, Fiona O'Brien, Richard Barrett-Jolley

410-Pos **Board B344**
VESPER: GLOBAL AND LOCAL CRYO-EM MAP ALIGNMENT AND DATABASE SEARCH USING LOCAL DENSITY VECTORS. **Genki Terashi**, Xusi Han, Charles Christoffer, Siyang Chen, Daisuke Kihara

411-Pos **Board B345**
MONTE CARLO PATHWAY SEARCH (MCPS) FOR EXPLORING PERMEATION PATHWAYS IN HIGH-DIMENSIONAL CONFORMATIONAL SPACE. **Archit K. Vasan**, Nandan Haloi, Po-Chao Wen, Emad Tajkhorshid

412-Pos **Board B346**
PREDICTING EPITHELIAL-MESENCHYMAL TRANSITION DYNAMICS UNDER SPECIFIC PERTURBATIONS USING DATA ASSIMILATION. **Mario J. Mendez**, Matthew J. Hoffman, Elizabeth M. Cherry, Christopher A. Lemmon, Seth H. Weinberg

413-Pos **Board B347**
CAN COMPLETE TRANSPORTER MECHANISMS BE INFERRED FROM EXPERIMENTAL DATA? **August George**, Nathan E. Thomas, Katherine A. Henzler-Wildman, Daniel M. Zuckerman

414-Pos **Board B348**
INTEGRATING MOLECULAR DYNAMICS AND SMFRET DATA TO STUDY THE CONFORMATIONAL ENSEMBLE OF THE C-TERMINUS OF ALBINO3 PROTEIN. **James Losey**, Vivek Govind Kumar, Dustin Baucom, Mercede Furr, Colin D. Heyes, Suresh Kumar, Mahmoud Moradi

415-Pos **Board B349**
USING THE ENTROPY OF NON-EQUILIBRIUM SYSTEMS OF MOLECULES TO ESTIMATE THE INTERACTION MATRIX IN GRAPHICAL GAUSSIAN MODELS OF OMICS DATA. **Ahmad Borzou**, Rovshan G. Sadygov

416-Pos **Board B350**
QUANTITATIVE SPATIAL LOCALIZATION OF BIOMOLECULES FROM FLUORESCENCE MICROSCOPY DATA. **Andrew M. Soltisz**, Rengasayee Veeraraghavan

Bioengineering (Boards B351 - B367)

417-Pos **Board B351**
SINGLE-STEP, SINGLE-COLUMN PROTEIN PURIFICATION AND LABELLING FOR FLUORESCENCE STUDIES. **Arvi Puka**, Adrian Rotaru, Spencer Smyth, Andrew Beharry, Claudiu C. Gradinaru

418-Pos **Board B352**
NEAR-INFRARED FLOURESCENCE PROBES FOR VISUALIZATION OF TUMORS AND BLOOD VESSELS. **Michael DuPont**, Troy Crawford, Anna Moshnikova, Dhammika Weerakkody, Yana K. Reshetnyak, Oleg A. Andreev, John Shen

419-Pos **Board B353**
DEEP LEARNING IMAGE ANALYSIS MODEL OF PULMONARY ARTERIES. **Erica Pursell**, Yasser Aboelkassem

420-Pos **Board B354**
FIBRIN MOLECULAR STRUCTURE INDUCED BY SHEAR AND TENSION MECHANICAL STIMULI CAN BE A KEY FOR FIBRINOLYSIS. **Yujen Wang**, Sachin Kumar B, Mischa Bonn, Sapun H. Parekh

421-Pos **Board B355**
CALMODULINOPATHY CORRECTION USING CRISPR INTERFERENCE IN A CARDIAC MICROTISSUE MODEL. **Chenyu Huang**, Chin Siang Ong, Jingnan Han, Joseph Boktor, Roald Teuben, Ijala Wilson, Deborah DiSilvestre, Leslie Tung, Narutoshi Hibino, Daniel H. Reich, Gordon F. Tomaselli

422-Pos **Board B356**
APPLICATION OF NEXT-GENERATION SEQUENCING ANALYSIS IN THE DIRECTED EVOLUTION FOR CREATING ANTIBODY MIMIC. **Tomoyuki Ito**, Hafumi Nishi, Thuy Duong Nguyen, Yutaka Saito, Tomoshi Kameda, Hikaru Nakazawa, Koji Tsuda, Mitsuo Umetsu

423-Pos **Board B357**
SYNTHESIZING LONG AND REPETITIVE PROTEINS VIA A "LOOPABLE TRANSLATOR" SYSTEM. **Sea On Lee**, Stephen D. Fried

424-Pos **Board B358**
ENGINEERING OF GENOME EDITING PROTEIN CAS9 THAT SLIDES ALONG DNA FASTER AND MIGHT ENABLE EFFICIENT TARGET SEARCH. **Trishit Banerjee**, Dwiky Rendra Graha Subekti, Hiroto Takahashi, Satoshi Takahashi, Kiyoto Kamagata

425-Pos **Board B359**
MATHEMATICAL MODELS FOR LIVING FORMS IN MEDICAL PHYSICS SUBMODEL 2: INFORMATION CODING AND INFORMATION PROCESSING THROUGH NERVES. **Christina Pospisil**

426-Pos **Board B360**
MEASURING AND OPTIMIZING MG-63 OSTEOSARCOMA OSSEOINTEGRATION AND PROLIFERATION ON LASER ABLATED MEDICAL-GRADE TITANIUM. **Tara T. Hickman**

427-Pos **Board B361**
CELL PHENOTYPE DETERMINATION ON HYDROGEL SUBSTRATES USING RAMAN SPECTROSCOPY AND MULTIVARIATE ANALYSIS. **Apurva Godbole**, Sayani Majumdar, Isamar O. Pastrana, Brittney L. Gorman, Mary L. Kraft

428-Pos **Board B362**
BIOENGINEERING THE EXTRACELLULAR MATRIX TO IMPROVE THE CELLULAR AND MOLECULAR PHYSIOLOGY OF CELLS IN VITRO. **Hamed Ghazizadeh**, Elliot C. Fisher, Kevin Gray, Alec S. Smith, Deok-Ho Kim, Nicholas Geisse

429-Pos **Board B363**
LIPID COMPOSITION OF THE CELL MEMBRANE OUTER LEAFLET AFFECTS ENDOCYTOSIS AND INTRACELLULAR FATE OF NANOPARTICLES. **Saeed Nazemidashtarjandi**, Monica Burdick, Amir Farnoud

430-Pos **Board B364**
INHIBITION OF SARS-COV-2 SPIKE PROTEIN FUNCTION BY AMPHIPHILIC BLOCK COPOLYMERS. **Michelle X. Ling**, Michelle Nguyen, Kyle McCollum, Raphael C. Lee

431-Pos **Board B365**
ENGINEERING CRYSTALLINE PROTEIN ARRAYS FOR FUNCTIONALIZED 2D AND 3D BIOMATERIALS. **Behzad Rad**, Caroline M. Ajo-Franklin, Francesca Manea, Virginia G. Garda

432-Pos **Board B366**
SOLID TUMOR CURES BY COMPLETE DISRUPTION OF THE CD47:SIRPA MACROPHAGE CHECKPOINT, TUMOR OPSONIZATION, AND 'PHAGOCYTIC FEEDBACK'. **Lawrence J. Dooling**, Jason C. Andrechak, Brandon H. Hayes, Siddhant Kadu, Ruby Pan, Michael P. Tobin, Manasvita Vashisth, Dennis E. Discher

433-Pos **Board B367**
PH RESPONSIVE UPCONVERSION MESOPOROUS SILICA NANOPARTICLES FOR TARGETED PHOTODYNAMIC AND PHOTOTHERMAL CANCER THERAPY. **Palanikumar Loganathan**, Mazin M. Magzoub

Biophysics Education (Boards B368 - B374)

434-Pos **Board B368**
BIOMOLECULAR CONDENSATE MINI-REVIEW: AN OUTCOME OF A JOURNAL CLUB INSPIRED PEDAGOGICAL MODEL ENHANCED BY THE COVID ERA LEARNING ENVIRONMENT. Liam Cheng, Keva Li, Griffin Prieto, Annabelle Song, Victoria Stepanyants, **Carolyn Fitch**

435-Pos **Board B369**
NANOCAPILLARY-BASED SENSORS FOR DETECTION OF COPPER IONS IN BIOLOGICAL SYSTEMS. **Roman Timoshenko**, Alexander Vaneev, Nikita Savin, Nelly Chmelyuk, Olga Krasnovskaya, Alexander Majouga, Petr Gorelkin, Alexander Erofeev

436-Pos **Board B370**
A USER-FRIENDLY COMPUTATIONAL TOOL FOR MARKOV MODELLING CHANNEL GATING AND TRANSPORT CYCLING. Giovanni Zifarelli, Paolo Zuccolini, Sara Bertelli, **Michael Pusch**

437-Pos **Board B371**
BONDS, CATCH BONDS, AND STATISTICS. **Philip C. Nelson**

438-Pos **Board B372**
A DYNAMIC, INTERACTIVE, 3-D MODEL OF PROTEIN FOLDING FOR UNDERGRADUATE BIOCHEMISTRY. **Kelly E. Theisen**

439-Pos **Board B373**
TOTAL INTERNAL REFLECTION FLUORESCENCE MICROSCOPY AND SINGLE-MOLECULE KINETICS MODULES FOR AN UNDERGRADUATE LAB COURSE. **Jefferson Knight**, Daniel T. Giardina, Thao N. Huynh, Noha Alansari, Anthony Urban

440-Pos **Board B374**
A BIOPHYSICS LABORTORY COURSE FOCUSED ON IMAGE PROCESSING AND PYTHON. Ravi Tavakley, Dametre Thunberg, **Benjamin L. Stottrup**

Student Research Achievement Award (SRAA) Poster Competition

These posters marked S1–S116 will be reviewed by judges on Tuesday, February 23, 3:30 PM–6:30 PM EST, on a virtual platform. The posters will also be presented during the regular daily sessions as programmed below. Note that only the student applicant's name is listed. Please refer to the full abstract for all authors.

Bioenergetics, Mitochondria and Metabolism (Boards S1 - S3)

Board S1
STRUCTURAL AND FUNCTIONAL INSIGHTS OF AN UNPRECEDENTED MULTIHEME CYTOCHROME FROM *GEOBACTER SULFURREDUCENS*
Tomás M. Fernandes (572-Pos / B23)

Board S2
MECHANISM OF ELECTRON TRANSPORT IN MAMMALIAN STEAROYL-COA DESATURASE 1
Jiemin Shen (1470-Pos / B72)

Board S3
THEORETICAL COMPARISON OF REAL-TIME SINGLE PARTICLE TRACKING TECHNIQUES
Bertus van Heerden (901-Pos / B352)

Bioengineering (Boards S4 - S12)

Board S4
INTRODUCING CHEMICALLY MODIFIED NUCLEOTIDES TO IMPROVE MRNA-BASED THERAPEUTICS
Teena Bajaj (659-Pos / B110)

Board S5
ENGINEERING OF GENOME EDITING PROTEIN CAS9 THAT SLIDES ALONG DNA FASTER AND MIGHT ENABLE EFFICIENT TARGET SEARCH
Trishit Banerjee (424-Pos / B358)

Board S6
BLACK DOTS: MICROCONTACT PRINTED REFERENCE-FREE TRACTION FORCE MICROSCOPY
Kevin Beussman (1754-Pos / B356)

Board S7
INHIBITION OF SARS-COV-2 SPIKE PROTEIN FUNCTION BY AMPHIPHILIC BLOCK COPOLYMERS
Michelle Ling (430-Pos / B364)

Board S8
MOLECULAR MAP OF DNA-POLYETHYLENIMINE NANOPARTICLE DISSOCIATION UNDER ENDOSOMAL ACIDIFICATION
Subhamoy Mahajan (860-Pos / B311)

Board S9
DETAIL DYNAMICS AFTER ATP BINDING IN HSP90 CHAPERONE CYCLE AND THE EFFECT OF NOVEL PEPTIDE DRUG CANDIDATE USING MOLECULAR DYNAMICS SIMULATIONS
Lisa Matsukura (956-Pos / B6)

Board S10
COOPERATIVE DYNAMICS OF REC-NUC LOBES PRIME CAS12A FOR DNA PROCESSING
Aakash Saha (77-Pos / B11)

Board S11
BRAVE NEW SURFACTANT WORLD REVISITED BY LIPASES: ACTIVATION AND UNFOLDING IN SDS
Mohamed Shehata (1404-Pos / B6)

Board S12
INVESTIGATING ATOMIC LEVEL STRUCTURE IN PYRIFORM SILK PROTEINS
Jeff R. Simmons (1416-Pos / B18)

Biological Fluorescence (Boards S13 - S18)

Board S13
SRRF 'N' TIRF-FCS: NEW INSIGHTS INTO EGFR-CYTOSKELETON INTERACTIONS
Harikrushnan Balasubramanian (568-Pos / B19)

Board S14
METHYLTRANSFERASE ENZYME RSMC ACT AS AN RNA CHAPERONE DURING BACTERIAL RIBOSOME BIOGENESIS
Keshav G C (181-Pos / B115)

Board S15
UNRAVELLING GENE EXPRESSION NETWORKS AND INFERRING KINETIC PARAMETERS FROM SMFISH DATA
Camille Moyer (910-Pos / B361)

Board S16
PROBING LENGTH SCALE DEPENDANT DIFFUSION DYNAMICS OF THE NODAL MORPHOGEN SQUINT INLIVE ZEBRAFISH EMBRYOS THROUGH SPATIAL CROSS-CORRELATIONS IN IMAGING FLUORESCENCE CORRELATION SPECTROSCOPY
Ashwin V S Nelanuthala (895-Pos / B346)

Board S17
QUANTITATIVE MULTI-TARGET SUPER-RESOLUTION FOR ESTIMATING ANTIBODY LABELING EFFICIENCY
David Schodt (883-Pos / B334)

Board S18
SAMPLE PREPARATION AND LASER INTENSITIES AFFECT MEOS3.2 PHOTOPHYSICS IN LIVE AND FIXED FISSION YEAST CELLS
Mengyuan Sun (1710-Pos / B312)

Biopolymers in vivo (Boards S19 - S22)

Board S19
MODELING MULTIVALENT PROTEIN PHASE SEPARATIONS WITH NETWORK-FREE RULE-BASED MODELING
Aniruddha Chattaraj (111-Pos / B45)

Board S20
ANTIMICROBIAL PEPTIDE-MEMBRANE INTERACTIONS: INSIGHTS FROM MOLECULAR SIMULATIONS
Fathima T. Doole (683-Pos / B134)

Board S21
(A)SPECIFIC DNA BINDING OF ARCHAEAL HISTONES, THE FORMATION AND POSITIONING OF HYPERNUCLEOSOMES
Mandy Erkelens (1531-Pos / B133**)**

Board S22
STRUCTURAL BASES FOR THE DEGRADATION SELECTIVITY OF C2H2 ZINC FINGER BY THALIDOMIDE METABOLITE
Hirotake Furihata (103-Pos / B37)

Channels, Receptors and Transporters (Boards S23 - S37)

Board S23
THE ENERGETICS OF CHOLESTEROL TRANSPORT THROUGH PATCHED1: MD SIMULATIONS AND FREE ENERGY CALCULATIONS
T. Bertie Ansell (351-Pos / B285)

Board S24
CONFORMATIONAL LANDSCAPES OF LIGAND-GATED ION CHANNEL GLIC FROM MARKOV STATE MODELING
Cathrine C. Bergh (284-Pos / B218)

Board S25
INVESTIGATING YIDC-ASSISTED FOLDING PATHWAYS OF DIFFERENT ALPHA-HELICAL MEMBRANE PROTEINS
Nina Blaimschein (647-Pos / B98)

Board S26
IN SILICO INSIGHTS ON THE ALLOSTERIC MODULATION OF THE MU-OPIOID RECEPTOR AND G PROTEIN COMPLEX IN THE PRESENCE OF AGONIST LIGAND BU72 AND POTENTIAL POSITIVE ALLOSTERIC MODULATOR BMS-986121
Mac Kevin E. Braza (1443-Pos / B45)

Board S27
DESIGN OF A CHIMERIC KCNQ1 CHANNEL FOR E. COLI EXPRESSION AND STUDIES OF LQTS VARIANTS
Kathryn R. Brewer (1170-Pos / B220)

Board S28
SUBSTRATE RECOGNITION OF THE SMALL MULTIDRUG RESISTANCE (SMR) FAMILY
Olive E. Burata (1028-Pos / B78)

Board S29
MOLECULAR DETERMINANTS OF NEUROPEPTIDE POTENCY AT FMRFAMIDE GATED SODIUM CHANNELS FROM THE DEG/ENAC FAMILY
Mowgli Dandamudi (1630-Pos / B232)

Board S30
STRUCTURAL DYNAMICS AND ENERGETICS OF GLUCOSE TRANSPORT VIA RICE SWEET SUGAR TRANSPORTER
Ankita Gupta (356-Pos / B290)

Board S31
MOLECULAR MECHANISM OF POTASSIUM (K^+) ION SENSING HISTIDINE KINASE INVOLVED IN BIOFILM FORMATION
Rachael M. Lucero (124-Pos / B58)

Board S32
MOLECULAR MECHANISM OF HERG1 CHANNEL REGULATION BY CERAMIDES
Williams E. Miranda (763-Pos / B214)

Board S33
CHOLESTEROL INHIBITION OF BK CHANNELS IS MEDIATED BY THEIR RCK HIGH AFFINITY SITES
Kelsey C. North (1101-Pos / B151)

Board S34
MOLECULAR SIMULATIONS REVEAL THE DYNAMICS OF THE T-CELL RECEPTOR IN A T-CELL MODEL MEMBRANE
Dheeraj Prakaash (625-Pos / B76)

Board S35
ASIC ACTIVATION MECHANISMS DELINEATED THROUGH GENETIC CODE EXPANSION
Matthew L. Rook (1634-Pos / B236)

Board S36
MULTISCALE SIMULATIONS EXAMINING GLYCAN SHIELD EFFECTS ON DRUG BINDING TO INFLUENZA NEURAMINIDASE
Christian Seitz (589-Pos / B40)

Board S37
CONFORMATIONAL COUPLING ACROSS THE MEMBRANE BILAYER OF EPIDERMAL GROWTH FACTOR RECEPTOR
Shwetha Srinivasan (1594-Pos / B196)

Cryo-EM (Boards S38 - S42)

Board S38
STRUCTURAL STUDIES OF STRAIGHT AND SUPERCOILED FLAGELLAR FILAMENTS FROM CAMPYLOBACTER JEJUNI
Mark A. Kreutzberger (847-Pos / B298)

Board S39
HIGH RESOLUTION CRYO-EM STRUCTURE OF THE ESPA FILAMENT FROM EPEC
Bronwyn Lyons (90-Pos / B24)

Board S40
CENTRAL ROLE OF THE LOWEST PART OF S4 OF CI-VSP IN COUPLING MECHANISM
Natsuki Mizutani (285-Pos / B219)

Board S41
THE ATOMIC MODEL FOR MYOSIN II COILED-COIL SHOWS NOVEL OBSERVATIONS AND INSIGHTS INTO MUSCLE CONTRACTION
Hamidreza Rahmani (296-Pos / B230)

Board S42
MICRORNA-122 AND POLY-C BINDING PROTEIN 2 REGULATE HEPATITIS C REPLICATION BY COMPETING FOR OVERLAPPING BINDING SITES
Seth D. Scott (1516-Pos / B118)

Intrinsically Disordered Proteins (Boards S43 - S53)

Board S43
COMPREHENSIVE ANALYSIS OF INTRINSICALLY DISORDERED REGIONS TO ELUCIDATE THEIR PHYSICAL PROPERTIES USING A MODIFIED PARAMETER
Hayato Aida (1047-Pos / B97)

Board S44
COMPLETING THE PARTIALLY RESOLVED COMPLEX CRYSTAL STRUCTURE OF AURORA KINASE A / N-MYC BY MOLECULAR MODELING
Pinar Altiner (91-Pos / B25)

Board S45
UNCOVERING THE MECHANISM OF DYSTROPHIN THROUGH SPECTROSCOPIC CHARACTERIZATION
Althea Amaris (1487-Pos / B89)

Board S46
MICROTUBULE-BASED TRANSPORT IS CONTROLLED BY TUBULIN TAILS AND THEIR MODIFICATIONS
Lavi S. Bigman (1237-Pos / B287)

Board S47
SOLVENT ACCESSIBILITY OF INDIVIDUAL PROTEIN MOLECULES AND MOLECULAR COMPLEXES MEASURED AT A SINGLE MOLECULE LEVEL
Arpan Dey (1123-Pos / B173)

Board S48
GENOME WIDE SCREENS POINT TO DISORDERED PROTEINS AS SENSORS OF OSMOTIC STRESS
Karina Guadalupe (1500-Pos / B102)

Board S49
TAU FORMS OLIGOMERIC COMPLEXES ON MICROTUBULES THAT ARE DISTINCT FROM PATHOLOGICAL OLIGOMERS IN DISEASE
Melina Theoni Gyparaki (148-Pos / B82)

Board S50
COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS OF CA^{2+}-CALMODULIN
Jules Berlin Nde Kengne (1452-Pos / B54)

Board S51
GALLIC ACID: A NATURALLY OCCURING BIFUNCTIONAL INHIBITOR OF AMYLOID AND METAL INDUCED AGGREGATION WITH POSSIBLE IMPLICATION IN METAL BASED THERAPY
Asra N. Khan (1503-Pos / B105)

Board S52
MEMBRANE CHOLESTEROL REGULATES THE BINDING OF ALPHA-SYNUCLEIN TO SYNAPTIC VESICLES, AND ITS SUBSEQUENT FUNCTIONAL AND PATHOGENIC BEHAVIOR
Anindita Mahapatra (1049-Pos / B99)

Board S53
MEMBRANE INSERTION OF INTRINSICALLY DISORDERED PROTEINS PROBED BY ROTATIONAL AND TRIPLET STATE DYNAMICS
Vicky Vishvakarma (1491-Pos / B93)

Macromolecular Machines and Assemblies Subgroup (Boards S54 - S63)

Board S54
FACTORS THAT AFFECT THE BINDING OF THE N-TERMINAL HELIX OF HUMAN ACE2 TO SPIKE PROTEIN OF SARS-COV2
Anirban Das (70-Pos / B4)

Board S55
THE DYNAMIC ENSEMBLE OF A:G AND A:8-OXOGUANINE MISMATCHES IN DUPLEX DNA: IMPLICATIONS FOR REPLICATION ERRORS AND DAMAGE REPAIR
Stephanie Gu (1065-Pos / B115)

Board S56
EXPLORING THE TRANSLOCATION MECHANISM OF BACTERIOPHAGE T7 HELICASE
Shikai Jin (156-Pos / B90)

Board S57
THE TWO DEUBIQUITINATING ENZYMES FROM *CHLAMYDIA TRACHOMATIS* HAVE DISTINCT UBIQUITIN RECOGNITION PROPERTIES
Sebastian Kenny (1478-Pos / B80)

Board S58
A MULTIDISCIPLINARY APPROACH TO DESIGN AMYLOID-LIKE PEPTIDES TO FORM SUPRAMOLECULAR ASSEMBLIES
Laura Pérez-Chirinos Lallana (1013-Pos / B63)

Board S59
A PARALLEL RATCHET-STROKE MECHANISM LEADS TO AN OPTIMUM FORCE FOR MOLECULAR MOTOR FUNCTION
Upasana L. Mallimadugula (1421-Pos / B23)

Board S60
CRYSTALLOGRAPHIC STRUCTURES OF TITIN IMMUNOGLOBULIN-LIKE I21 DOMAINS INVOLVED IN DILATED CARDIOMYOPATHY
Ines Martinez-Martin (1219-Pos / B269)

Board S61
ROLE OF SALT BRIDGES IN UBIQUITIN IN MODULATING THERMODYNAMIC, KINETIC AND MECHANICAL STABILITIES
Tathagata Nandi (963-Pos / B13)

Board S62
REFINEMENT OF PROTEIN HOMOLOGY MODEL BY ENHANCED DIRECTIONAL SAMPLING GUIDED BY BIOINFORMATICS
Rajat Punia (95-Pos / B29)

Board S63
SOLVATION DRIVES G-PROTEIN-COUPLED RECEPTOR ACTIVATION
Nipuna Weerasinghe (620-Pos / B71)

Mechanobiology (Boards S64 - S69)

Board S64
ALLOSTERY AND EPISTASIS AS INHERENT PROPERTIES OF ANISOTROPIC NETWORKS
Paul Campitelli (1446-Pos / B48)

Board S65
DIRECT EVIDENCE FOR VOLTAGE-INDUCED CONFORMATIONAL CHANGES OF PRESTIN, THE ELECTROMECHANICAL TRANSDUCER IN OUTER HAIR CELLS
Makoto F. Kuwabara (344-Pos / B278)

Board S66
SUBCELLULAR INVESTIGATION OF THE INTERPLAY BETWEEN MEMBRANE TENSION AND MECHANOSENSITIVITY USING FORCE-CONTROLLED MICROPIPETTES
Ines Lüchtefeld (1144-Pos / B194)

Board S67
THE ROLE OF THE OUTER LIPID-FACING HELIX IN CATIONIC PLGICS IS DEPENDENT ON THE CELLULAR CONTEXT
Susanne Mesoy (283-Pos / B217)

Board S68
DISRUPTING ELKIN1-DEPENDENT MECHANOELECTRICAL TRANSDUCTION MODULATES CELL-CELL INTERACTIONS IN ORGANOTYPIC TUMOUR SPHEROIDS
Amrutha Patkunarajah (319-Pos / B253)

Board S69
ENHANCED SAMPLING MOLECULAR DYNAMICS TO DETERMINE FORCE RESPONSE IN PEPTIDE TENSION SENSORS
Yuvraj Singh (388-Pos / B322)

Membrane Structure and Function (Boards S70 - S81)

Board S70
SHAPE FLUCTUATIONS OF GIANT UNILAMELLAR VESICLES AND ITS APPLICATIONS TO STUDY ELECTRIFIED MEMBRANES AND MEMBRANE VISCOSITY
Hammad Ali Faizi (203-Pos / B137)

Board S71
FLOCCULATION OF FATTY ACID MEMBRANES DOES NOT DISRUPT ENCAPSULATION: IMPLICATIONS FOR THE ORIGIN OF CELLS IN EVAPORATIVE LAKE ENVIRONMENTS
Zachary R. Cohen (186-Pos / B120)

Board S72
A NEUTRON REFLECTOMETRY STUDY OF PULMONARY SURFACTANT COMPLEXES
Ainhoa Collada (234-Pos / B168)

Board S73
MEMBRANE ORDER - WHAT YOU MEASURE DEPENDS ON WHAT YOU PROBE
Ankur Gupta (1086-Pos / B136)

Board S74
COUPLING OF LEAFLET PHASE BEHAVIOR IN ASYMMETRIC GIANT UNILAMELLAR VESICLES PREPARED BY HEMIFUSION: INVESTIGATING THE INFLUENCE OF THE LOW-METLING LIPID
Kristen Kennison (189-Pos / B123)

Board S75
DYNAMICS OF FRACTAL RUPTURES IN BIOMEMBRANES
Aysu Kucukturhan Kubowicz (1089-Pos / B139)

Board S76
THE ROLE OF GROWTH TEMPERATURE AND LIPID COMPOSITION IN PHASE SEPARATION OF YEAST VACUOLE MEMBRANES
Chantelle Leveille (184-Pos / B118)

Board S77
DYNORPHIN A INDUCES MEMBRANE PERMEABILIZATION BY FORMATION OF PROTEOLIPIDIC PORES
Deborah Aurora Perini (688-Pos / B139)

Board S78
STABILITY OF MEMBRANES CONTAINING DIFFERENT TYPES OF ANIONIC LIPIDS
Fernanda dos Santos Costa Leomil (230-Pos / B164)

Board S79
BACTERIAL MIMETIC SYSTEMS FOR STUDYING BACTERIAL INACTIVATION AND INFECTION
Mareike Stephan (717-Pos / B168)

Board S80
USING MOLECULAR DYNAMICS SIMULATIONS TO ELUCIDATE A ROLE FOR BACTERIAL CERAMIDES
Anushriya Subedy (1575-Pos / B177)

Board S81
SEIPIN ACCUMULATES AND TRAPS DIACYLGLYCEROLS AND TRYGLYCERIDES IN ITS RING-LIKE STRUCTURE
Valeria Zoni (1122-Pos / B172)

Membrane Transport (Boards S82 - S90)

Board S82
ELECTROPHYSIOLOGICAL CHARACTERIZATION OF CATSPER CHANNEL IN SEA URCHIN SPERM
Veronica Loyo Celis (1195-Pos / B245)

Board S83
INHOMOGENEOUS SOLUBILITY-DIFFUSION MODEL GIVES INSIGHT IN EFFICACY OF COUNTING CROSSINGS METHOD TO CALCULATE THE MEMBRANE PERMEABILITY
Samaneh Davoudi (390-Pos / B324)

Board S84
INFLUENCE OF FULLERENES ON PEROXIDIZED LIPID MEMBRANES
Gülsah Gül, (213-Pos / B147)

Board S85
IN GATING OF OUTER MEMBRANE PORINS
Nandan Haloi (637-Pos / B88)

Board S86
STRUCTURE OF THE BACTERIAL LIPID ABC TRANSPORTER MLAFEDB REVEALS SUBSTRATE BOUND
Mark MacRae (1029-Pos / B79)

Board S87
MEASURING THE FLOW-MEDIATED TRANSPORT VELOCITY OF LIPID-ANCHORED PROTEINS IN SUPPORTED LIPID BILAYERS
Amanda M. Ratajczak (642-Pos / B93)

Board S88
HETERO-OLIGOMERIC PROTEIN PORES FOR CHEMICAL AND BIOSENSING
Remya S (1316-Pos / B366)

Board S89
CORONAVIRUS ENVELOPE PROTEIN: LIPID SENSITIVITY AND MEMBRANE BENDING
Jesse Sandberg (1102-Pos / B152)

Board S90
DISPLACEMENT OF THE NA^+/K^+-PUMP'S TRANSMEMBRANE DOMAINS DEMONSTRATE CONSERVED CONFORMATIONAL CHANGES IN P-TYPE 2 ATPASES
Victoria C. Young (363-Pos / B297)

Motility and Cytoskeleton (Boards S91 - S95)

Board S91
COUNTERACTIVE EFFECTS OF ELECTROSTATICS AND MACROMOLECULAR CROWDING ON ACTIN BUNDLE MECHANICS AND SECONDARY STRUCTURE
Nicholas Castaneda (773-Pos / B224)

Board S92
MODELLING THE EFFECTS OF MICROTUBULE PLUS END TAPERING ON EB1 BINDING
Samuel Gonzalez (1245-Pos / B295)

Board S93
OPPOSING MOTORS PROVIDE MECHANICAL AND FUNCTIONAL ROBUSTNESS IN THE MAMMALIAN SPINDLE
Lila Neahring (1678-Pos / B280)

Board S94
CROWDING TUNES THE ORGANIZATION AND MECHANICS OF ACTIN BUNDLES INDUCED BY ACTIN CROSSLINKING PROTEINS
Jinho Park (774-Pos / B225)

Board S95
NOVEL CARDIAC TROPONIN I S43/45N SUBSTITUTION DOES NOT CAUSE ABERRANT CARDIAC REMODELING OR DYSFUNCTION IN MICE
Vani S. Ravichandran (1654-Pos / B256)

Multiscale Genome Organization (Boards S96 - S98)

Board S96
CROWDING-INDUCED SPATIAL ORGANIZATION OF GENE EXPRESSION IN CELL-SIZED VESICLES
Gaurav Chauhan (1261-Pos / B311)

Board S97
REGULATION OF *PROVWX* TRANSCRIPTION BY LOCAL CHROMATIN REMODELLING
Fatema Zahra M. Rashid (1534-Pos / B136)

Board S98
UNSUPERVISED GENE REGULATORY NETWORK INFERENCE USING K-NEAREST-NEIGHBOR BASED MUTUAL INFORMATION
Lior Shachaf (1256-Pos / B306)

Nanoscale Approaches to Biology (Boards S99 - S108)

Board S99
QUANTITATIVE LIVE-CELL PALM REVEALS NANOSCOPIC FAA4 REDISTRIBUTIONS AND DYNAMICS ON LIPID DROPLETS DURING METABOLIC TRANSITIONS IN YEAST
Santosh Adhikari (880-Pos / B331)

Board S100
COUNTING FLUOROPHORES AND FINDING POTENTIALS FROM FRET, BAYESIAN NONPARAMETRICS FOR CHALLENGING PROBLEMS IN BIOPHYSICS
Shep Bryan IV (891-Pos / B342)

Board S101
COMPUTATIONAL STUDY OF SINGLE-PROTEIN SENSING USING NANOPORES
Sebastian Cardoch (1768-Pos / B370)

Board S102
DETERMINATION OF THE PARTITION COEFFICIENT OF PROTEIN-MEMBRANE REVERSIBLE ASSOCIATION BY FCS AND PCH
Arturo Garcia Vesga (1726-Pos / B328)

Board S103
USING ENZYME-LINKED MARKERS WITH CHROMOGENIC SUBSTRATES IN EXPANSION MICROSCOPY
Julia R. Migliore (1737-Pos / B339)

Board S104
RESOLUTION IMPROVEMENT IN CIDS SUPER-RESOLUTION MICROSCOPY USING A PHASOR PLOT APPROACH
Ali Mohebi (867-Pos / B318)

Board S105
SINGLE MOLECULE INVESTIGATION OF TANDEM G-QUADRUPLEX STRUCTURES FORMED BY HUMAN TELOMERIC SEQUENCE
Golam Mustafa (896-Pos / B347)

Board S106
NUCLEIC ACID SEQUENCE DETECTION BY A MULTI-TECHNIQUE APPROACH
Giulia Pinto (1748-Pos / B350)

Board S107
CHEMICALLY-TUNED SOLID-STATE NANOPORES FOR SINGLE-MOLECULE BIOPHYICS
Jugal Saharia (1749-Pos / B351)

Board S108
A BAYESIAN NONPARAMETRIC APPROACH TO LEARNING MOLECULAR SPECIES AND DIFFUSION DYNAMICS BASED ON PHOTON ARRIVAL DATA
Weiqing Xu (893-Pos / B344)

Physical Cell Biology (Boards S109 - S116)

Board S109
ANALYSIS OF LENGTH BIASES IN SINGLE-CELL RNA SEQUENCING OF UNSPLICED MRNA BY MARKOV MODELING
Gennady Gorin (396-Pos / B330)

Board S110
INFORMATION PROPAGATION IN TIME THROUGH ALLOSTERIC SIGNALING
Tushar Modi (1448-Pos / B50)

Board S111
MEASURING SINGLE-CELL PLATELET FORCES VIA MICROCONTACT-PRINTED, REFERENCE-FREE TRACTION FORCE MICROSCOPY REVEALS RELATIONSHIPS BETWEEN CELL SHAPE, F-ACTIN LOCALIZATION, AND FORCE
Molly Mollica (811-Pos / B262)

Board S112
MULTIMODAL MICROSCALE MECHANICAL MAPPING OF SINGLE CELLS AS A FUNCTION OF ENVIRONMENT GEOMETRY
Milos Nikolic (320-Pos / B254)

Board S113
THE MOLECULAR BASIS OF THE REGULATION OF THE TMEM16A CA^{2+}-ACTIVATED CL CHANNEL BY THE LYSOSOMAL NPC1 PROTEIN
Lara F. Scofano (1196-Pos / B246)

Board S114
SOLVATION IMPACTS OF RNA COLLAPSE
Clark Templeton (1525-Pos / B127)

Board S115
DIFFUSION NMR AND RHEOLOGY STUDY OF A MODEL POLYMER AND A DISORDERED PROTEIN IN THE PRESENCE OF BACTERIAL CELL LYSATE CROWDERS
Yanitza Trosel (1492-Pos / B94)

Board S116
IN SILICO PREDICTION OF DRUG-INDUCED VENTRICULAR ARRHYTHMIA USING HETEROGENEOUS TISSUE MODELS OF THE PURKINJE-VENTRICULAR SYSTEM
Mengya Yuan (1603-Pos / B205)

Wednesday, February 24, 2021

Daily Program Summary

9:00 AM-10:00 AM	**General Networking**
10:00 AM-11:30 AM	**Symposium: Best of *Biophysical Journal*: Genomes to Populations** **Chair**: *Jane Dyson, Scripps Research Institute, USA* X-RAY STRUCTURAL ANALYSIS OF SINGLE ADULT CARDIOMYOCYTES: TOMOGRAPHIC IMAGING AND MICRODIFFRACTION. *Tim Salditt* DIFFERENT VINCULIN BINDING SITES USE THE SAME MECHANISM TO REGULATE DIRECTIONAL FORCE TRANSDUCTION. *Viola Vogel* DYNAMIC CROWDING REGULATES TRANSCRIPTION. *Igal Szleifer* DIFFERENTIAL LOCAL STABILITY GOVERNS THE METAMORPHIC FOLD SWITCH OF BACTERIAL VIRULENCE FACTOR RFAH. *Cesar Ramirez-Sarmiento*
10:00 AM-11:30 AM	**Platform: Protein Structure and Conformation: Folding**
10:00 AM-11:30 AM	**Platform: Protein Dynamics and Allostery I**
10:00 AM-11:30 AM	**Platform: Membrane Dynamics**
10:00 AM-11:30 AM	**Platform: Mechanosensation**
10:00 AM-11:30 AM	**Platform: Muscles II**
10:00 AM-11:30 AM	**Platform: Membrane Pumps, Transporters, and Exchangers**
10:00 AM-11:30 AM	**Platform: Genetic, Cellular, Synthetic, and Systems Biology**
10:00 AM-11:30 AM	**Platform: Optical Microscopy and Superresolution Imaging II**
10:00 AM-5:00 PM	**Exhibits**
11:30 AM-12:00 PM	**Exhibitor Presentation: Bruker** **Bruker's BioAFM Nano-Toolkit for Investigation of Mechanics, Structures and Dynamic Processes in Life Science**
11:30 AM-12:00 PM	**Break**
12:00 PM-1:30 PM	**Global Pandemic Response: Charting a Path Forward Using Guides from the Past and Present**
12:00 PM-1:30 PM	**Platform: Protein Assemblies**
12:00 PM-1:30 PM	**Platform: Intrinsically Disordered Proteins (IDP) and Aggregates II**
12:00 PM-1:30 PM	**Platform: Nucleic Acid Replication, Transcription, Translation and Repair**
12:00 PM-1:30 PM	**Platform: Protein-Lipid Interactions I**
12:00 PM-1:30 PM	**Platform: Muscle, Calcium and Signaling I**
12:00 PM-1:30 PM	**Platform: Other Channels and Regulatory Mechanisms**
12:00 PM-1:30 PM	**Platform: Member Organized Session: Pattern Formation and Biochemical Excitability in Controlling Cell System Dynamics**
12:00 PM-1:30 PM	**Platform: Single-Molecule Spectroscopy**

1:00 PM-2:00 PM	General Networking
1:00 PM-4:00 PM	BPS Virtual Education and Career Fair
1:30 PM-2:00 PM	Exhibitor Presentation: Leica Microsystems High Photon-Count Rate FCS and STED-FCS to Study Diffusion Dynamics in Live Cells
1:30 PM-2:00 PM	Break
2:00 PM -3:30 PM	Poster Presentations and Late Posters
3:30 PM -4:00 PM	Exhibitor Presentation: LUMICKS Correlative Force–Fluorescence Measurements to Reveal the Dynamic Life of Single Biomolecules: Latest Technology Advancements by LUMICKS, and Latest Findings on Protein Disaggregation by Professor Sander Tans
3:30 PM -5:30 PM	Peer-to Peer Networking Mixer
4:00 PM-4:30 PM	Exhibitor Presentation: Carl Zeiss Microscopy LLC Discovering the Subcellular Dynamics of Life with ZEISS Lattice Lightsheet 7
4:00 PM-4:30 PM	Biophysical Society Business Meeting

Wednesday, February 24

General Networking

9:00 AM-10:00 AM

Catch up with colleagues and friends in the biophysical community during our networking hour. This event, which is open to all meeting attendees, provides meet-and-greet opportunities to enhance your virtual meeting experience.

Symposium
Best of *Biophysical Journal*: Genomes to Populations

10:00 AM - 11:30 AM

Chair
Jane Dyson, Scripps Research Institute, USA

NO ABSTRACT **10:00 AM**
X-RAY STRUCTURAL ANALYSIS OF SINGLE ADULT CARDIOMYOCYTES: TOMOGRAPHIC IMAGING AND MICRODIFFRACTION. **Tim Salditt**

NO ABSTRACT **10:22 AM**
DIFFERENT VINCULIN BINDING SITES USE THE SAME MECHANISM TO REGULATE DIRECTIONAL FORCE TRANSDUCTION. **Viola Vogel**

NO ABSTRACT **10:44 AM**
DYNAMIC CROWDING REGULATES TRANSCRIPTION. **Igal Szleifer**

NO ABSTRACT **11:06 AM**
DIFFERENTIAL LOCAL STABILITY GOVERNS THE METAMORPHIC FOLD SWITCH OF BACTERIAL VIRULENCE FACTOR RFAH. **Cesar Ramirez-Sarmiento**

Platform
Protein Structure and Conformation: Folding

10:00 AM - 11:30 AM

Chair
Roland Winter, TU Dortmund University, Germany

475-PLAT **10:00 AM**
TEMPERATURE, PRESSURE, AND COSOLUTE EFFECTS ON LIQUID-LIQUID PHASE SEPARATION IN PROTEIN CONDENSATES: PHYSICAL CHEMISTRY AND BIOLOGICAL IMPLICATIONS. **Roland Winter**

476-PLAT **10:30 AM**
CONFORMATIONAL PLASTICITY OF THE CLPAP AAA+ PROTEASE COUPLES PROTEIN UNFOLDING AND PROTEOLYSIS. **Alexandrea N. Rizo**, Kyle Eric Lopez, James Shorter, Daniel R. Southworth

477-PLAT **10:45 AM**
ELECTRICAL UNFOLDING OF CYTOCHROME C DURING TRANSLOCATION THROUGH A NANOPORE CONSTRICTION. **Prabhat Tripathi**, Abdelkrim Benabbas, Behzad Mehrafrooz, Hirohito Yamazaki, Aleksei Aksimentiev, Paul M. Champion, Meni Wanunu

478-PLAT **11:00 AM**
A NOVEL APPROACH COMBINING FLUORESCENCE-ANISOTROPY DECAYS AND MICROVISCOMETRY TO EXPLORE THE COTRANSLATIONAL COMPACTION OF NASCENT PROTEINS. **Rachel Hutchinson**, Xi Chen, Ningkun Zhou, Silvia Cavagnero

479-PLAT **11:15 AM**
SHORT ARGININE-BASED PEPTIDES AS PREDICTORS FOR THE EXTENDED STRUCTURE OF POLYARGININE SEQUENCES IN INTRINSICALLY DISORDERED PROTEINS. **Bridget Milorey**, Reinhard Schweitzer-Stenner, Brian Andrews, Harald Schwalbe, Brigita Urbanc

Platform
Protein Dynamics and Allostery I

10:00 AM - 11:30 AM

Chair
Judith Klinman, University of California, Berkeley, USA

480-PLAT **10:00 AM**
EMERGING EXPERIMENTAL PROBES FOR THE SPATIAL AND TEMPORAL RESOLUTION OF PROTEIN DYNAMICS IN ENZYME CATALYSIS. **Judith Klinman**, Shuaihua Gao, Emily J. Thompson, Jan Paulo Zaragoza

481-PLAT **10:30 AM**
HDXMS REVEALS THE ROLE OF DYNAMICS ON THE SERINE PROTEASE ACTIVITY OF THE UROKINASE-TYPE PLASMINOGEN ACTIVATOR (UPA). **Constanza Torres-Paris**, Lufan Xiao, Harriet Song, Elizabeth A. Komives

482-PLAT **10:45 AM**
ESSENTIAL DYNAMICS THAT DRIVE SARS-COV-2 SPIKE CONFORMATIONAL CHANGES. **Srirupa Chakraborty**, Rachael A. Mansbach, Kien Nguyen, Pedro D. Manrique, Sandrasegaram Gnanakaran

483-PLAT **11:00 AM**
DIRECT OBSERVATION OF THE CATALYTICALLY RELEVANT FULLY FOLDED-LOCALLY UNFOLDED EQUILIBRIUM IN PEROXIREDOXIN Q OF XANTHAMONAS CAMPESTRIS. **Aidan Estelle**, Patrick N. Reardon, Andrew Karplus, Elisar J. Barbar

484-PLAT **11:15 AM**
COMBINING SINGLE-MOLECULE FLUORESCENCE AND MD-SIMULATIONS TO DELINEATE THE KINETICS AND REGULATION OF PROTEINS. **Thorsten Hugel**, Sonja Schmid, Steffen Wolf, Bjoern Hellenkamp, Benedikt Sohmen, Johann Thurn, Gerhard Stock

Platform
Membrane Dynamics

10:00 AM - 11:30 AM

Chair
Petra Schwille, Max Planck Institute of Biochemistry, Germany

NO ABSTRACT **10:00 AM**
WHEN SIMPLE BECOMES COMPLEX - HIDDEN FUNCTIONS OF MEMBRANE PROTEINS. **Petra Schwille**

485-PLAT **10:30 AM**
MEASURING MEMBRANE DYNAMICS ON THE MESOSCALE. **Elizabeth G. Kelley**, Paul D. Butler, Michihiro Nagao

486-PLAT **10:45 AM**
SUBCOMPARTMENTALIZATION AND PSEUDO-DIVISION OF MODEL PROTOCELLS. **Karolina Spustova**, Elif S. Koksal, Alar Ainla, Irep Gozen

487-PLAT **11:00 AM**
REAL TIME MONITORING OF TRANSIENT LIPID-LIPID INTERACTIONS ON LIVE CELL MEMBRANES USING A DNA PROBE. **Yousef Bagheri**, Ahsan Ausaf Ali, Mingxu You

488-PLAT **11:15 AM**
MEMBRANE BIOPHYSICS AND CHEMICAL BIOLOGY PLATFORM TO MAP THE LANDSCAPE OF VIRULENT LIPID-INDUCED EFFECTS ON HOST CELL MEMBRANE AND SIGNALING. **Shobhna Kapoor**, Manjari Mishra

Platform
Mechanosensation
10:00 AM - 11:30 AM

Chair
Pascal Martin, Institut Curie, France

489-PLAT **10:00 AM**
MACHANICAL FREQUENCY TUNING BY THE HAIR BUNDLE OF MECHANOSENSORY HAIR CELLS. **Pascal Martin**, Mélanie Tobin, Atitheb Chaiyasitdhi

490-PLAT **10:30 AM**
TEMPORAL ANALYSIS OF T-CELL RECEPTOR-IMPOSED FORCES VIA QUANTITATIVE SINGLE MOLECULE FRET MEASUREMENTS. **Janett Goehring**, Florian Kellner, Lukas Schrangl, Rene Platzer, Hannes Stockinger, Johannes B. Huppa, Gerhard J. Schütz

491-PLAT **10:45 AM**
LIPID DROPLETS HAVE HIGH INTERFAFACIAL TENSION AND ARE SUFFICIENTLY RIGID TO RUPTURE THE NUCLEUS. **Irena L. Ivanovska**, Michael P. Tobin, Lawrence J. Dooling, Dennis E. Discher

492-PLAT **11:00 AM**
MECHANO-CHEMICAL PATTERN FORMATION IN SPHERICAL CELL SHEETS. **Stephanie S. Hoehn**, Moritz Mercker

493-PLAT **11:15 AM**
HETEROGENEOUSLY STRAINED TISSUE COLLAGEN RESISTS COLLAGENASE DEGRADATION WHERE STRAINS ARE HIGH. **Karanvir Saini**, Manu Tewari, Sangkyun Cho, Abdelaziz Jalil, Jerome Irianto, Manasvita Vashisth, Charlotte R. Pfeifer, Jason C. Andrechak, Lawrence J. Dooling, Cory Alvey, Alex Kasznel, David Chenoweth, Kazuhiro Yamamoto, Dennis E. Discher[10]

Platform
Muscles II
10:00 AM - 11:30 AM

Chair
Bailong Xiao, Tsinghua University, China

494-PLAT **10:00 AM**
THE MECHANOSENSITIVE PIEZO1 CHANNEL MEDIATES HEART MECHANO-CHEMO TRANSDUCTION. Fan Jiang, Kun Wu, Kunlun Yin, Mingmin Zhang, Shi-Qiang Wang, Heping Cheng, Zhou Zhou, **Bailong Xiao**

495-PLAT **10:30 AM**
MICROTUBULES ORCHESTRATE LOCAL TRANSLATION TO ENABLE CARDIAC GROWTH. **Keita Uchida**, Emily Scarborough, Maria Vogel, Benjamin L. Prosser, Izhak Kehat

496-PLAT **10:45 AM**
DYNAMIC REGULATION OF INTRACELLULAR PH IN THE HEART. Yankun Lyu, Phung Thai, Lu Ren, Valeriy Timofeyev, Zhong Jian, Seojin Park, Kenneth S. Ginsburg, James Overton, Julie Bossuyt, Donald M. Bers, Ebenezer N. Yamoah, Ye Chen-Izu, Nipavan Chiamvimonvat, **Xiao-Dong Zhang**

497-PLAT **11:00 AM**
BURST-LIKE TRANSCRIPTION OF SARCOMERIC GENES IN HYPERTROPHIC CARDIOMYOPATHY. Valentin Burkart, Julia Beck, David Aldag-Niebling, Kathrin Kowalski, Ante Radocaj, Jolanda van der Velden, Cris G. dos Remedios, Denise Hilfiker-Kleiner, Theresia Kraft, **Judith Montag**

498-PLAT **11:15 AM**
HIPSC DERIVED CARDIOMYOCYTES OVEREXPRESSING DEOXY ATP TO RESTORE CARDIAC FUNCTION IN MYOCARDIAL INFARCTION. **Ketaki N. Mhatre**, Farid Moussavi-Harami,, Julie Mathieu, Charles Murry, Michael Regnier

Platform
Membrane Pumps, Transporters, and Exchangers
10:00 AM - 11:30 AM

Chair
Jue Chen, The Rockefeller University, USA

499-PLAT **10:00 AM**
ABC TRANSPORTERS: MOLECULAR PUMPS POWERED BY ATP. **Jue Chen**

500-PLAT **10:30 AM**
STRUCTURE OF A VESICULAR GLUTAMATE TRANSPORTER DETERMINED BY CRYO-EM. **Fei Li**, Jacob Eriksen, Janet Finer-Moore, Robert H. Edwards, Robert M. Stroud

501-PLAT **10:45 AM**
ROLE OF INDIVIDUAL ZINC BINDING SITES IN THE CATION DIFFUSION FACILITATOR YIIP. **Maria L. Lopez**, Akiko Koide, Lorena Novoa Aponte, Shujie Fan, Oliver Beckstein, Jose M Arguello, Shohei Koide, David L. Stokes

502-PLAT **11:00 AM**
GLUTAMATE TRANSPORTERS (EAATS) CONTAIN A CONSERVED CHLORIDE CHANNEL WITH TWO HYDROPHOBIC GATES. Ichia Chen, Shashank Pant, Qianyi Wu, Rosemary J. Cater, Meghna Sobti, Robert J. Vandenberg, Alastair Stewart, Josep Font, Emad Tajkhorshid, **Renae M. Ryan**

503-PLAT **11:15 AM**
ION BINDING TO A MAMMALIAN SODIUM/PROTON EXCHANGER MEMBRANE PROTEIN FROM MOLECULAR DYNAMICS SIMULATIONS. **Chenou Zhang**, Ricky Sexton, Iven Winkelmann, Rei Matsuoka, Pascal Meier, Denis Shutin, Laura Orellana, Michael Landreh, Carol V. Robinson, David Drew, Oliver Beckstein

Platform
Genetic, Cellular, Synthetic, and Systems Biology
10:00 AM - 11:30 AM

Chair
Cristina Marchetti, University of California, Santa Barbara, USA

NO ABSTRACT **10:00 AM**
PHYSICAL MODELS OF THE RHEOLOGY OF DENSE BIOLOGICAL TISSUE. **M. Cristina Marchetti**

504-PLAT **10:30 AM**
THE TRANSCRIPTOME DYNAMICS OF SINGLE CELLS DURING THE CELL CYCLE. **Daniel Schwabe**, Sara Formichetti, Jan Philipp Junker, Martin Falcke, Nikolaus Rajewsky

505-PLAT **10:45 AM**
NEGATIVE SURFACE CHARGE REGULATES BIOCHEMICAL EXCITABILITY OF CORTEX AND LIMITS PROTRUSION FORMATION. **Tatsat Banerjee**, Debojyoti Biswas, Dhiman S. Pal, Yuchuan Miao, Pablo A. Iglesias, Peter N. Devreotes

506-PLAT **11:00 AM**
SPATIOTEMPORAL DYNAMICS OF RAC1 SIGNALING DURING WOUND HEALING IN FORSTER RESONANCE ENERGY TRANSFER BIOSENSOR MICE. **Rachel Cinco**, Morgan Dragan, Enrico Gratton, Heidi Welch, Paul Timpson, Xing Dai, Michelle A. Digman

507-PLAT **11:15 AM**
HYDROPHOBICITY BASED SEQUENCE BLOBULATION APPROACH CAPTURES FUNCTIONAL MODULARITY: DISEASE-ASSOCIATED MUTATIONS ARE ENRICHED IN HYDROPHOBIC BLOBS. **Ruchi Lohia**, Matthew Hansen, Grace H. Brannigan

Platform
Optical Microscopy and Superresolution Imaging II

10:00 AM - 11:30 AM

Chair
Thomas Surrey, Francis Crick Institute, United Kingdom

508-PLAT 10:00 AM
MICROTUBULE NUCLEATION PROPERTIES OF SINGLE HUMAN ΓTURCS INVESTIGATED BY TIRF MICROSCOPY AND CRYO-ELECTRON MICROSCOPY. Tanja Consolati, Julia Locke, Johanna Roostalu, Zhuo Angel Chen, Julian Gannon, Jayant Asthana, Wei Ming Lim, Fabrizio Martino, Milos A. Cvetkovic, Juri Rappsilber, Alessandro Costa, **Thomas Surrey**

509-PLAT 10:30 AM
HYPERSPECTRAL ANALYSIS OF FLUORESCENCE IMAGES IN SCATTERING MEDIA USING OPTICAL FILTERS. **Belén Torrado**, Alexander Dvornikov, Enrico Gratton

510-PLAT 10:45 AM
INFORMATION OPTIMAL PARTICLE TRACKING WITH A CONFOCAL OR 2-PHOTON MICROSCOPE. **Nicholas A. Vickers**, Fatemeh Sharifii, Samuel C. Pinto, Sean B. Andersson

511-PLAT 11:00 AM
ASSESSING THE RELIABILITY OF THE SUPPOSE ENHANCED DECONVOLUTION METHOD APPLIED TO DIFFERENT FLUORESCENT IMAGING TECHNIQUES. **Micaela Toscani**, Axel Lacapmesure, Guillermo D. Brinatti Vazquez, Oscar E. Martinez, Sandra R. Martinez

512-PLAT 11:15 AM
NEW CHROMOPHORES FOR FRET-BASED VOLTAGE SENSING SYSTEMS. **Ping Yan**, Julia K. Harrison, Daniel Fairchild, Corey D. Acker, Leslie M. Loew

Exhibits

10:00 AM - 5:00 PM

Exhibitor Presentation
Bruker

11:30 AM - 12:00 PM

Bruker's BioAFM Nano-Toolkit for Investigation of Mechanics, Structures and Dynamic Processes in Life Science
The ability of atomic force microscopy (AFM) to obtain three-dimensional topography images of biomolecules and complexes with nanometer resolution, and optical tweezers (OT) to measure sub-piconewton molecular forces under near-physiological conditions remains unmatched by other single molecule techniques. JPK BioAFM has developed the new NanoWizard® 4 XP and NanoRacer AFM's, and Nanotracker2 (NT2) optical tweezers to set the bar even higher in these areas. The NW4XP is capable of high-speed study of the time-resolved dynamics associated with cellular processes; Nanoracer is designed for studying single molecule dynamics at 50 frames/sec; and NT2 can measure intra/inter molecular forces with multiple laser/trap options (up to 10 mW). With the latest scanner technologies inbuilt into NW4XP, NT2 and their compact design also allows full integration of AFM and OT into advanced commercially available light microscopy techniques. This seminar will focus on how the advances in Bruker's latest BioAFM can be applied to study a wide-range of biological samples, from individual biomolecules to mammalian cells and tissues in real-time, in-situ experiments. We will present examples of how we are able to resolve the nanoscale structure of individual biomolecules at high-speed scan rates (150 - 5000 Hz), follow the dynamic reorganization of the membrane-associated cytoskeleton of living cells at high-temporal and high-spatial resolution, and automatically map the topography of cell cultures across the entire area of the microscope stage. We will also introduce our new scanning electrochemical microscopy (SECM) module and discuss the full suite of BioAFM modes and accessories for studying the nanomechanical properties of cells and tissues, including direct correlation of multiparametric, quantitative AFM and super-resolution (STED) datasets.

Speaker
Samrat Dutta, Sales Applications Scientist, Bruker

Break

11:30 AM - 12:00 PM

Global Pandemic Response
Charting a Path Forward Using Guides from the Past and Present

12:00 PM - 1:30 PM

A candid look at the global challenges facing a successful pandemic strategy. Can the lessons from other pandemics provide a framework for international cooperation? Can a strategy be developed that addresses both public health concerns and doubts in the general populace about the safety/efficacy of new interventions? Hear from global experts in science and policy as they weigh in on the challenge ahead.

Chair
Ranajeet Ghose, The City College of New York, USA

Speakers
Thurka Sangaramoorthy, University of Maryland, USA
Patrick McTamney, AstraZeneca, USA
Felix Rey, Pasteur Institute, France
Arturo Casadevall, Johns Hopkins University, USA

Platform
Protein Assemblies

12:00 PM - 1:30 PM

Chair
Sheena Radford, University of Leeds, United Kingdom

513-PLAT 12:00 PM
BUILDING THE BACTERIAL CELL WALL: HOW DO BACTERIA DO IT? **Sheena Radford**

514-PLAT 12:30 PM
EXPLORING THE MORPHOLOGICAL LANDSCAPE OF SELF-ASSEMBLED HIV-1 PROTEINS FROM A COARSE-GRAINED PERSPECTIVE. **Alexander J. Pak**, Gregory A. Voth

515-PLAT 12:45 PM
LOCALIZATION TO A MEMBRANE SURFACE CAN ACCELERATE THE PROTEIN ASSEMBLIES. **Bhavya Mishra**, Margaret E. Johnson

516-PLAT 1:00 PM
IN VITRO RECONSTITUTIONS AND FUNCTIONAL CHARACTERIZATIONS OF FIBRILLAR CENTERS OF NUCLEOLI. **Matthew R. King**, Rohit V. Pappu

517-PLAT 1:15 PM
KINETIC AND EQUILIBRIUM MEASUREMENT OF NUCLEATION OF PRION-LIKE DOMAIN PHASE SEPARATION. **Erik W. Martin**, Tyler S. Harmon, Jesse B. Hopkins, Srinivas Chakravarthy, Jeremias Incicco, Peter Schuck, Andrea Soranno, Tanja Mittag

Platform
Intrinsically Disordered Proteins (IDP) and Aggregates II

12:00 PM - 1:30 PM

Chair
David Drummond, University of Chicago, USA

No Abstract **12:00 PM**
RETHINKING STRESS-TRIGGERED PROTEIN AGGREGATION.
David Drummond

518-Plat **12:30 PM**
A GENERAL FRET-BASED METHOD TO MONITOR PROTEIN OLIGOMERIZATION AND CONDENSATE PHASE TRANSITION IN CELLS. **Qi Wan**, Sara Mavrova, Liesbeth Veenhoff, Arnold J. Boersma

519-Plat **12:45 PM**
CHARACTERIZATION OF THE STRUCTURAL FEATURES THAT MEDIATE PHASE SEPARATION OF INTRINSICALLY DISORDERED LOW-COMPLEXITY DOMAINS. **Ivan Peran**, Youlin Xia, Tanja Mittag

520-Plat **1:00 PM**
REAL-TIME MONITORING CONFORMATIONAL CHANGES OF A INTRINSICALLY DISORDERED PROTEIN WITH AEROLYSIN NANOPORE. **Hongyan Niu**, Xue-yuan Wu, Yi-Lun Ying, Yi-Tao Long

521-Plat **1:15 PM**
LIQUID-LIQUID PHASE SEPARATION OF REPEAT DISORDER SEQUENCES LEADS TO RNA CONFORMATIONAL AND DYNAMICAL HETEROGENEITY. **Hung T. Nguyen**, Dave Thirumalai

Platform
Nucleic Acid Replication, Transcription, Translation and Repair

12:00 PM - 1:30 PM

Chair
Alexandra Zidovska, New York University, USA

522-Plat **12:00 PM**
THE "SELF-STIRRED" GENOME: DYNAMICS, FLOWS AND RHEOLOGY.
Alexandra Zidovska

523-Plat **12:30 PM**
STRUCTURAL AND DYNAMICAL SIGNATURES OF LOCAL DNA DAMAGE IN LIVE CELLS. **Jonah A. Eaton**, Alexandra Zidovska

524-Plat **12:45 PM**
STOCHASTIC SPATIAL SIMULATION OF GENETIC INFORMATION PROCESSES IN THE MINIMAL CELL. **Zane R. Thornburg**, Benjamin R. Gilbert, Julio Maia, John E. Stone, Vinson Lam, Elizabeth Villa, Zaida Luthey-Schulten

525-Plat **1:00 PM**
SINGLE-MOLECULE FRET ANALYSIS OF KEY PROTEIN CONFORMATIONAL CHANGES DURING PROMOTER ESCAPE BY RNA POLYMERASE. **Anna Wang**, Abhishek Mazumder, Achillefs N. Kapanidis

526-Plat **1:15 PM**
THE ROLE TRNA-MEDIATED REGULATION OF RIBOSOME DYNAMICS PLAYS IN FRAMESHIFTING BY +1 FRAMESHIFT-INDUCING TRNAS. **Haixing Li**, Howard Gamper, Ya-Ming Hou, Ruben L. Gonzalez

Platform
Protein-Lipid Interactions I

12:00 PM - 1:30 PM

Chair
Aurélien Roux, University of Geneva, Switzerland

No Abstract **12:00 PM**
MECHANICS OF ESCRT-III MEMBRANE REMODELLING. **Aurélien Roux**

527-Plat **12:30 PM**
A WEB-BASED FRAMEWORK FOR THE AUTOMATED DATA ANALYSIS AND VISUALIZATION OF LIPID-PROTEIN INTERACTIONS. **Besian I. Sejdiu**, Peter D. Tieleman

528-Plat **12:45 PM**
ELUCIDATING THE MECHANISM OF MEMBRANE DESTABILIZATION BY THE PREFERRED MODES OF INSERTION OF THE SARS-COV2 FUSION PEPTIDE. **George Khelashvili**, Harel Weinstein

529-Plat **1:00 PM**
MEMBRANE SURFACE RECOGNITION BY THE ASAP1 PH DOMAIN AND CONSEQUENCES FOR INTERACTIONS WITH THE SMALL GTPASE ARF1. **Olivier Soubias**, Shashank Pant, Frank Heinrich, Yue Zhang, Paul Randazzo, Mathias Loesche, Emad Tajkhorshid, Robert A. Byrd

530-Plat **1:15 PM**
STRUCTURE AND FUNCTION OF VIROPORINS IN LIPID MEMBRANES: INSIGHTS FROM STUDIES BY EPR SPECTROSCOPY. Peter P. Borbat, Saman Majeed, Jack H. Freed, **Elka R. Georgieva**

Platform
Muscle, Calcium and Signaling I

12:00 PM - 1:30 PM

Chair
Claudia Moreno, University of Washington, USA

No Abstract **12:00 PM**
EFFECTS OF AGING ON THE FUNCTION AND MODULATION OF L-TYPE CALCIUM CHANNELS IN THE CARDIAC PACEMAKER. **Claudia Moreno**

531-Plat **12:30 PM**
CA2+ HANDLING IN NON-FAILING HYPERTROPHIC CARDIOMYOCYTES SUBJECTED TO INOTROPIC INTERVENTIONS. **Anna Krstic**, Marie-Louise Ward

532-Plat **12:45 PM**
HIGH FREQUENCY ACOUSTIC CELL STIMULATION PROMOTES EXOSOME GENERATION REGULATED BY A CALCIUM- DEPENDENT MECHANISM. **Lizebona August Ambattu**, Shwathy Ramesan, Chaitali Dekiwadia, Eric Hanssen, Haiyan Li, Leslie Yeo

533-Plat **1:00 PM**
THE MALIGNANT HYPERTHERMIA G2435R MUTATION CAUSES CONSTITUTIVE RYR1 OPENINGS. **Thomas M. Humberstone**, Chris Lindsay, Abigail D. Wilson, Elisa Venturi, Ahmed Alhussni, Charalampos Sigalas, Paul D. Allen, Rebecca M. Sitsapesan

534-Plat **1:15 PM**
TRPP1 CHANNEL CALCIUM SIGNALING AS A KEY DETERMINANT OF MYOGENESIS. **Sara Osorio Valencia**, Virdjinija Vuchkovska, Elisabeth DiNello, Ivana Y. Kuo

Platform
Other Channels and Regulatory Mechanisms

12:00 PM - 1:30 PM

Chair
Sara Liin, Linköping University, Sweden

535-PLAT 12:00 PM
RATIONAL DESIGN OF FATTY ACID ANALOGUES TARGETING THE CARDIAC KV7.1 CHANNEL. **Sara I. Liin**

536-PLAT 12:30 PM
K_{2P}CHANNEL C-TYPE GATING INVOLVES ASYMMETRIC SELECTIVITY FILTER ORDER-DISORDER TRANSITIONS. **Andrew M. Natale**, Marco Gaetano Lorenz Lolicato, Fayal Abderemane-Ali, David Crottès, Sara Capponi, Ramona Duman, Armin Wagner, John M. Rosenberg, Michael Grabe, Daniel L. Minor

537-PLAT 12:45 PM
TRPV2 MODULATION BY SMALL MOLECULES AND LIPIDS. **Anna D. Protopopova**, Ruth A. Pumroy, Jeanne de la Roche, Ferdinand M. Haug, Bárbara B. Sousa, Pamela N. Gallo, Gonçalo J.L. Bernardes, Andreas Leffler, Vera Y. Moiseenkova-Bell

538-PLAT 1:00 PM
CHLORIDE PERMEATION THROUGH THE CYSTIC FIBROSIS TRANSMEMBRANE CONDUCTANCE REGULATOR (CFTR): A MOLECULAR SIMULATION STUDY. **Zhi Wei Zeng**, Régis Pomès

539-PLAT 1:15 PM
STRUCTURAL AND FUNCTIONAL INVESTIGATION ON HUMAN PANNEXIN 1 (PANX1) REVEALS NOVEL INSIGHT INTO CHANNEL GATING, ION PERMEATION AND DRUG INHIBITION. **Zheng Ruan**, Orozco J. Ian, Juan Du, Wei Lu

Platform
Member Organized Session: Pattern Formation and Biochemical Excitability in Controlling Cell System Dynamics

12:00 PM - 1:30 PM

Co-chairs
Wolfgang Losert, University of Maryland College Park, USA
Tatsat Banerjee, Johns Hopkins University, USA

540-PLAT 12:00 PM
EXCITABLE NETWORKS IN DIRECTED CELL MIGRATION. **Peter N. Devreotes**, Tatsat Banerjee, Dhiman S. Pal, Debojyoti Biswas, Huiwang Zhan, Pablo A. Iglesias

541-PLAT 12:18 PM
CYTOSKELETAL DYNAMICS AND MECHANOSENSING IN IMMUNE CELLS. **Arpita Upadhyaya**

542-PLAT 12:36 PM
DIFFERENT CELL MIGRATION MODES: INSIGHTS FROM TRACTION FORCE MICROSCOPY AND MODELING. **Wouter-Jan Rappel**, Elisabeth Ghabache, Yuansheng Cao, Yuchuan Miao, Alexander Groisman, Peter N. Devreotes

543-PLAT 12:54 PM
PHYSICAL CONTROL OF INTRACELLULAR WAVES WITH NANOTOPOGRAPHY AND ELECTRIC FIELDS. **Qixin Yang**, Matt Hourwitz, Leonard Campanello, Peter N. Devreotes, John Fourkas, Wolfgang Losert

544-PLAT 1:12 PM
PULSATILE DYNAMICS OF EGFR/RAS/ERK SIGNALING: ROLES IN EPITHELIAL PHYSIOLOGY AND DISEASE. **John Albeck**

Platform
Single-Molecule Spectroscopy

12:00 PM - 1:30 PM

Chair
Gilad Haran, Weizmann Institute of Science, Israel

545-PLAT 12:00 PM
UNDERSTANDING MICROSECOND DYNAMICS OF PROTEIN MACHINES. **Gilad Haran**

546-PLAT 12:30 PM
DIRECT DIGITAL SENSING OF PROTEINS IN SOLUTION THROUGH SINGLE-MOLECULE OPTOFLUIDICS. **Georg Krainer**, Kadi Liis Saar, William E. Arter, Tuomas P.J. Knowles

547-PLAT 12:45 PM
ROTATION TRACKING USING DNA ORIGAMI ROTORS REVEALS SINGLE BASE PAIR STEPS DURING TRANSCRIPTION BY RNA POLYMERASE. **Pallav Kosuri**, Benjamin D. Altheimer, Mingjie Dai, Peng Yin, Xiaowei Zhuang

548-PLAT 1:00 PM
TUNING THE BAIRD AROMATIC TRIPLET STATE ENERGY OF CYCLOOCTATETRAENE TO MAXIMIZE THE SELF-HEALING MECHANISM IN ORGANIC FLUOROPHORES. **Avik K. Pati**, Ouissam El Bakouri, Steffen Jockusch, Zhou Zhou, Roger B. Altman, Gabriel A. Fitzgerald, Wesley B. Asher, Daniel S. Terry, Alessandro Borgia, Jonathan A. Javitch, Henrik Ottosson, Scott C. Blanchard

549-PLAT 1:15 PM
PROTEIN CONFORMATIONAL DYNAMICS *IN CELLULA* AND *IN VIVO* USING LIVE-CELL SINGLE-MOLECULE FRET HILO MICROSCOPY. **Abhinaya Anandamurugan**, Philipp Wortmann, Chenyang Lan, April Garcia Fernando, Marina Veil, Lukas Schrangl, Ritwick Sawarkar, Wolfgang Driever, Gerhard J. Schuetz, Thorsten Hugel

General Networking

1:00 PM-2:00 PM

Catch up with colleagues and friends in the biophysical community during our networking hour. This event, which is open to all meeting attendees, provides meet-and-greet opportunities to enhance your virtual meeting experience.

BPS Virtual Education and Career Fair

1:00 PM - 4:00 PM

Learn about the different leading biophysics programs and career opportunities. This virtual fair will give you the opportunity to speak to representatives from different institutions and companies about their biophysics programs and career opportunities. All those attending the Annual Meeting are encouraged to attend.

Exhibitor Presentation
Leica Microsystems

1:30 PM - 2:00 PM

High Photon-Count Rate FCS and STED-FCS to Study Diffusion Dynamics in Live Cells
Investigating diffusion dynamics of proteins and small molecules has become a routine measurement all across the life sciences, chemistry and physics. It provides valuable insights into reaction dynamics, oligomerization, molecular interactions or cellular (membrane) heterogeneities [1] on the other hand, routinely accessible by spectroscopic techniques such as fluorescence correlation spectroscopy (FCS. Fluorescence correlation spectroscopy (FCS) is a versatile tool to determine diffusion dynamics in membranes (2D diffusion) and solution or the cytoplasm (3D diffusion). Measuring the intensity fluctuations over time due to the diffusion of molecules through the observation volume is the basis for FCS. Temporal autocorrelation of the signal allows for the calculation of the autocorrelation

curve which provides insights into the underlying dynamics as well as the concentration of the observed species [2]. Until now, the concentration regime for reliable measurements has been limited by the detection electronics which could not efficiently and accurately time-tag photons at high photon-count rates. This restricted the range of measurable fluorophore concentrations and data quality of the FCS recordings, especially in combination with super-resolution stimulated emission depletion (STED)-FCS.

In this talk, we will show the applicability and reliability of FCS at high photon-count rates (average intensities of more than 1 MHz and concentrations higher than 1 µM) using novel detection equipment based on hybrid detectors, namely HyD SMDs, and real-time gigahertz sampling of the photon stream using the Leica SP8 STED FALCON FCS implementation [3]. By measuring the diffusion of fluorophores in solution and cytoplasm of live cells, as well as in model and cellular membranes, we show that accurate diffusion and concentration measurements are possible in these previously inaccessible high photon count regimes on a turn-key instrument. This may reduce the bias when performing live cell measurements where varying expression levels occur routinely and increases the experimental flexibility. In STED-FCS data quality suffers from the fluorescence depletion and can be greatly improved by using higher confocal count rates. The presented data show a path towards robust FCS and STED-FCS measurements in living cells.

Speakers
Giulia Ossato, Product Manager, Leica Microsystems
Julia Roberti, Product Manager, Leica Microsystems
Falk Schneider, University of Oxford

[1] E. Sezgin et al., "Measuring nanoscale diffusion dynamics in cellular membranes with super-resolution STED–FCS," Nat. Protoc., vol. 14, no. 4, pp. 1054–1083, Apr. 2019.

[2] J. Lackowicz, Principles of Fluorescence Spectroscopy, Third. Boston, MA: Springer US, 2006.

[3] F.Schneider et al., "High photon count rates improve the quality of super-resolution fluorescence fluctuation spectroscopy," J. Phys D: Appl. Phys., vol. 53, no. 16, 2020

Break

1:30 PM - 2:00 PM

Poster Presentations and Late Posters

2:00 PM - 3:30 PM

Exhibitor Presentation
LUMICKS

3:30 PM - 4:00 PM

Correlative Force–Fluorescence Measurements to Reveal the Dynamic Life of Single Biomolecules: Latest Technology Advancements by LUMICKS, and Latest Findings on Protein Disaggregation by Professor Sander Tans
To decipher complex molecular interactions, you need to be able to observe a biological process from multiple points of view. Using LUMICKS' groundbreaking C-Trap® Optical Tweezers – Fluorescence & Label-free Microscopy, you can simultaneously visualize individual molecules in real time and measure dynamic biological processes in great detail.

During our webinar, we will reveal how our latest technology development, the Trap Distance Lock, allows you to measure biomolecular equilibrium dynamics with unprecedented stability over extremely long periods of time. This new feature offers the ultimate system stability that enables you to capture the rarest, fastest, and smallest conformational changes that underlie the energy landscapes of biomolecules.

After a brief introduction by LUMICKS, we are honored to give the floor to our invited speaker Prof. Sander Tans who will present his work on polypeptide loop extrusion using correlative force–fluorescence measurements. Re-dissolving protein aggregates is crucial to cells, but the molecular basis has remained unknown. Using combined optical tweezers and single-molecule fluorescence detection, Prof. Tans and his team showed that the disaggregase ClpB extrudes loops of protein chains through its central pore, and hence forcibly extracts protein chains from aggregates. The data reveal notable processivity, power, step-dynamics, and switching between translocation modes. Protein disaggregation can thus be highly deterministic and energy-driven process, while polypeptide loop extrusion may be exploited by other systems including p97/cdc48.

Speakers
Olivier Heyning, CEO and Founder, LUMICKS
Aida Llauró Portell, Senior Application Scientist, LUMICKS
Sander Tans, AMOLF and Delft University of Technology, The Netherlands

Peer-to Peer Networking Mixer

3:30 PM - 5:30 PM

Looking for an opportunity to connect with your peers? This event is a great chance to compare notes with colleagues, make new connections, and discuss one-on-one your unique solutions to issues that arise in your particular career stage. Virtual networking space will be provided for Annual Meeting attendees at all career levels, from undergrads to established researchers.

Exhibitor Presentation
Carl Zeiss Microscopy LLC

4:00 PM - 4:30 PM

Discovering the Subcellular Dynamics of Life with ZEISS Lattice Lightsheet 7
In order to best understand the world around us it is necessary to observe microscopic specimins in as natural a state as possible. This requires a transition from imaging fixed to live specimins and expanding from 2D to 3D model organisms. The drive towards live-cell imaging over long timeframes and at high volume speeds brings new challenges. There is evidence that traditional imaging techniques can influence the behaviour of specimins due to phototoxicity, thus affecting the integrity of the results.

The most influential technological breakthroughs which address these challenges have been modifications to the shape of the excitation light. Classical laser-based imaging approaches utilize a gaussian excitation beam which is focussed to a spot or a sheet and scanned as required to excite the sample. As an alternative approach, bessel beams have been combined to introduce a structured pattern to the beam profile. The resulting 'lattice' of light has many benefits for live imaging. The most notable are a reduction of light exposure due to significant improvement in signal to noise while maintaining high resolution and optical sectioning. With lattice-lightsheet microscopy it is possible to capture dynamics at previously unreachable combinations of acquisition speed and resolution over hours and even days.

This talk will describe how the ZEISS Lattice Lighsheet 7 makes long-term volumetric imaging of living cells with subcellular resolution possible without having to change your standard sample preparation protocols to accomdate the instrument. With automatic alignment and easy acquisition workflows, lattice light-sheet imaging is now as accessible as using a standard inverted microscope.

Join us for this webinar to learn how ZEISS Lattice Lightsheet 7 allows you to discover the subcellular dynamics of life.

Speaker
Renée Dalrymple, Product Marketing Manager – Life Sciences Lattice Line, Carl Zeiss Microscopy LLC

Biophysical Society Business Meeting

4:00 PM - 4:30 PM

WEDNESDAY POSTER SESSIONS

2:00 PM–3:30 PM

Below is the list of poster presentations for Wednesday of abstracts submitted by October 1.
The list of late abstracts scheduled for Wednesday is available on page 109.

ODD-NUMBERED BOARDS 2:00 PM–2:45 PM | EVEN-NUMBERED BOARDS 2:45 PM–3:30 PM

Board Numbers	Category
B1 - B34	Protein Structure and Conformation II
B35 - B50	Protein-Small Molecule Interactions I
B51 - B75	Protein Dynamics and Allostery I
B76 - B93	Membrane Protein Dynamics I
B94 - B98	Membrane Protein Folding
B99 - B110	Transcription
B111 - B130	Protein-Nucleic Acid Interactions II
B131 - B148	Membrane Active Peptides and Toxins
B149 - B168	Membrane Structure I
B169 - B180	Intracellular Calcium Channels and Calcium Sparks and Waves
B181 - B188	Intracellular Transport
B189 - B195	Voltage-gated Na Channels
B196 - B199	Voltage-gated Ca Channels
B200 - B220	Ion Channel Regulatory Mechanisms
B221 - B233	Actin Structure, Dynamics, and Associated Proteins
B234 - B259	Kinesins, Dyneins, and Other Microtubule-based Motors
B260 - B280	Cell Mechanics, Mechanosensing, and Motility II
B281 - B288	Energy Transducing Membrane Protein Complexes
B289 - B298	Electron Microscopy
B299 - B317	Molecular Dynamics II
B318 - B339	Optical Microscopy and Superresolution Imaging I
B340 - B364	Single-Molecule Spectroscopy

Protein Structure and Conformation II (Boards B1 - B34)

550-Pos **Board B1**
HD-ANM A COMPUTATIONALLY EFFICIENT, HIGHLY CUSTOMIZABLE AND COMPREHENSIVE ELASTIC NETWORK MODEL. **Pranav M. Khade**, Domenico Scaramozzino, Ambuj Kumar, Robert L. Jernigan

551-Pos **Board B2**
DEVELOPING EFFICIENT TRANSFER FREE ENERGY CALCULATION METHODS FOR HYDROPHOBICITY PREDICTIONS. **Adithya Polasa**, Seyed Hamid Tabari, Mahmoud Moradi

552-Pos **Board B3**
INFERRING DELETERIOUS MUTATIONAL REGION IN CANCER FROM PROTEIN STRUCTURE. **Boshen Wang**, Xue Lei, Wei Tian, Yanyuan Tseng, Jie Liang

553-Pos **Board B4**
GENERATING PROTEIN ENSEMBLES BY APPLYING FORCES TO AN IMPROVED ELASTIC NETWORK MODEL. **Ambuj Kumar**, Pranav M. Khade, Domenico Scaramozzino, Karin Dorman, Robert L. Jernigan

554-Pos **Board B5**
IN SILICO GENERATION OF HOLO-LIKE CONFORMATIONS OF VERY FLEXIBLE ALLOSTERIC PROTEINS BEARING MULTIPLE BINDING SITES. **Andrea Basciu**, Attilio V. Vargiu, Giuliano Malloci, Paolo Ruggerone, Alexandre M. Bonvin

555-Pos **Board B6**
PREDICTION OF A PROTEIN'S FREE ENERGY SURFACE AND VALIDATION WITH HD EXCHANGE. **Xiangda Peng**, Nabil F. Faruk, Michael Baxa, Scott Houliston, Karl F. Freed, Cheryl Arrowsmith, Gabriel J. Rocklin, Tobin R. Sosnick

556-Pos **Board B7**
COMPUTATIONAL INSIGHTS INTO THE EFFECT OF GASTRIC PH ON THE STABILITY OF APO-LACTOFERRIN AND ITS INTERACTIONS WITH A-LACTALBUMIN AND B-LACTOGLOBULIN. **Kevion Darmawan**, Tom C. Karagiannis, Jeff Hughes, Darryl Small, Andrew Hung

557-Pos **Board B8**
A COMBINATORIAL APPROACH TO EXAMINE PROTEIN-PROTEIN INTERACTION BASED SUBSTRATE SELECTIVITY IN *E. COLI* FATTY ACID BIOSYNTHESIS. **Thomas Bartholow**

558-Pos **Board B9**
STRUCTURAL STUDIES OF DESIGNED CHIMERIC PROTEINS AND PREDICTIONS OF MUTATIONAL EFFECTS. **Victor Zhao**, João V. Rodrigues, Eugene I. Shakhnovich

559-Pos **Board B10**
HIGH-THROUGHPUT DISULFIDE SCANNING OF *IN VIVO* PROTEIN CONFORMATIONS. **Eugene Serebryany**, Eugene Shakhnovich

560-Pos **Board B11**
EMPLOYING AN UNNATURAL AMINO ACID TO EXAMINE LOCAL ENVIRONMENTS IN MULTIPLE PROTEIN SYSTEMS. **Christine M. Phillips-Piro**, Scott H. Brewer

561-Pos **Board B12**
LEVERAGING HDX-MS SOLUTION DATA AND HDX MODELING TO REFINE MOLECULAR DYNAMICS ENSEMBLES AND GAIN AN ATOMISTIC UNDERSTANDING OF BIOPHYSICAL PHENOMENA. **Kyle C. Kihn**, Daniel J. Deredge, Patrick L. Wintrode

562-Pos **Board B13**
MAPPING THE EPITOPE INTERACTIONS OF TRASTUZUMAB VIA PLASMA INDUCED MODIFICATION OF BIOMOLECULES (PLIMB). **Daniel Benjamin**, Faraz A. Choudhury, Benjamin Minkoff, Claire Bramwell, St John Skilton, Michael R. Sussman

563-Pos **Board B14**
FLUORESCENCE ANISOTROPY EEMS: ADDING A NEW DIMENSION TO THE STUDY OF PROTEIN LOCAL ENVIRONMENT. **Karen E. Gall**, Alex Siemiarczuk

564-Pos **Board B15**
EFFECTS OF CRYO-EM FREEZING ON STRUCTURAL ENSEMBLES. **Helmut Grubmuller**, Lars V. Bock

565-Pos **Board B16**
ACROSS THE E. COLI PROTEOME IT IS COMMON FOR PROTEINS TO BECOME KINETICALLY TRAPPED IN SOLUBLE, NEAR-NATIVE, NON-FUNCTIONAL CONFORMATIONS THAT BYPASS THE PROTEOSTASIS NETWORK. **Daniel A. Nissley**, Fabio Trovato, Ian M. Sitarik, Yang Jiang, Karthik Narayan, Edward P. O'Brien

566-Pos **Board B17**
THE TRANSITION PATHWAY BETWEEN THE CLOSED AND OPEN STATES OF INSULIN DEGRADING ENZYME SHOWS TWO DISTINCT MOTIONS: ROTATION AROUND A HINGE AND GRINDING BETWEEN TWO DOMAINS. **David Tang**, Wei-Jen Tang, Jordan Mancl, Esmael J. Haddadian

567-Pos **Board B18**
PRESSURE ACCELERATES THE CIRCADIAN CLOCK OF CYANOBACTERIA. **Ryo Kitahara**, Keita Mitsuhashi, Soichiro Kitazawa, Kazuki Terauchi

568-Pos **Board B19**
PRESSURE-TEMPERATURE LANDSCAPE OF THE UNFOLDED STATE OF CLT9-I98A PROTEIN. **Balasubramanian Harish**, Richard Gillilan, Daniel P. Raleigh, Catherine A. Royer

569-Pos **Board B20**
PROBING PRESSURE EFFECTS ON CORE PACKING OF A REPEAT PROTEIN USING 13C-1H NMR. **Siwen Zhang**, Scott McCallum, Catherine A. Royer

570-Pos **Board B21**
ULTRA-HIGH RESOLUTION AND CHARGE-DENSITY STUDIES ON THE TYPE-I COPPER PROTEIN AMICYANIN, *FROM PARACOCCUS DENITRIFICANS*. **Narayanasami Sukumar**, Igor Kurinov, Malcolm S. Capel, James Withrow, Sahana L. Sukumar, Victor L. Davidson

571-Pos **Board B22**
THE STRUCTURAL ENVIRONMENT AROUND THE HEME-BINDING SITE IN CYCLOOXYGENASE AND ITS IMPLICATION. **Inseok Song**

572-Pos **Board B23**
STRUCTURAL AND FUNCTIONAL INSIGHTS OF AN UNPRECEDENTED MULTIHEME CYTOCHROME FROM *GEOBACTER SULFURREDUCENS*. **Tomás M. Fernandes**, Leonor Morgado, Filipe Folgosa, Miguel Teixeira, Carlos A. Salgueiro

573-Pos **Board B24**
TEMPERATURE DEPENDENCE OF INFRARED LIGHT TIME COURSE UNDER OXYGENATION AND DEOXYGENATION OF THE BLOOD IN VITRO. **Marina Kirichenko**, George Rybalchenko, Sergey Gavrilkin, Alexey Kirichenko

574-Pos **Board B25** **Withdrawn**

575-Pos **Board B26**
STRUCTURAL BASIS FOR P450-MEDIATED OXYSTEROL METABOLISM BY *MYCOBACTERIUM TUBERCULOSIS*. **Sergey S. Bukhdruker**, Tatsiana Varaksa, Irina Grabovec, Egor Marin, Anton Kavaleuski, Polina Shabunya, Anastasiia Gusach, Kirill Kovalev, Ivan Kapranov, Alexey Mishin, Andrei Gilep, Natallia Strushkevich, Valentin Borshchevskiy

576-Pos **Board B27**
BIOCHEMICAL AND STRUCTURAL CHARACTERIZATION OF TWO CIF-LIKE EPOXIDE HYDROLASES FROM *BURKHOLDERIA CENOCEPACIA*. **Noor M. Taher**, Kelli L. Hvorecny, Cassandra M. Burke, Morgan S.A. Gilman, Gary E. Heussler, Jared Adolf-Bryfogle, Christopher D. Bahl, George A. O'Toole, Dean R. Madden

577-Pos **Board B28**
STRUCTURAL STUDIES OF THE NEURONAL APOPTOTIC COMPLEX OF THE PRONGF-P75^{NTR}-SORTILIN. **Purbasha Nandi**, Yu-Ping Poh, Po-Lin Chiu

578-Pos **Board B29**
ELABORATION OF MECHANISMS BY WHICH DISTINCT APELIN RECEPTOR BIOACTIVITY IS ELICITED BY ENDOGENOUS PEPTIDE LIGAND PROCESSING. **Tam Pham**, Jayatee Ray, Jan K. Rainey

579-Pos **Board B30**
ATOMISTIC INSIGHTS ON STRUCTURE AND DYNAMICS OF SPINACH ACYL CARRIER PROTEIN WITH SUBSTRATE LENGTH. **Marcel D. Baer**, John Shanklin, Simone Raugei

580-Pos **Board B31**
STRUCTURE AND DYNAMICS OF THE ENDOGENOUS MYCOBACTERIAL POLYKETIDE SYNTHASE PKS13 IN ACTION. **Sun Kyung Kim**

581-Pos **Board B32** **Withdrawn**

582-Pos **Board B33**
STRUCTURAL INVESTIGATION ON THE SUBSTRATE SPECIFICITY OF MYCOBACTERIAL 3-KETOSTEROID-1,2-DEHYDROGENASE. **Xin Li**, Xiyao Cheng, Yue Han, Zhengkun Kuang, Yongqi Huang, Zhengding Su

583-Pos **Board B34**
CHARACTERIZING THE STRUCTURE AND FUNCTION OF RHODOQUINONE BIOSYNTHESIS ENZYMES. **Trilok Neupane**, Sophia Whitworth, Jamie Spawn, Jennifer Shepherd, David N. Langelaan

Protein-Small Molecule Interactions I (Boards B35 - B50)

584-Pos **Board B35**
THE IMPACT OF LOCAL ENVIRONMENT ON SIMULATED METABOLITE CONFORMATIONS. **Meredith Rickard**, Ashley M. De Lio, Taras V. Pogorelov

585-Pos **Board B36**
ATOMIC RESOLUTION MECHANISM OF GTP RECOGNITION BY GTPASE. Bhupendra R. Dandekar, Navjeet Ahalawat, **Jagannath Mondal**

586-Pos **Board B37**
SOLVATION CONTRIBUTION TO THE FREE ENERGY OF LIGAND BINDING IS DETERMINED BY THE COUPLING BETWEEN SURFACE HYDRATION STRUCTURE AND SIDE CHAIN MOTION. **Jie Shi**, Jae-Hyun Cho, Wonmuk Hwang

587-Pos **Board B38**
CAPTURING PROTEIN-LIGAND RECOGNITION PATHWAYS IN COARSE GRAINED SIMULATIONS. **Bhupendra R. Dandekar**

588-Pos **Board B39**
ESTIMATING PROTEIN-LIGAND RELATIVE BINDING AFFINITIES USING THE SITE-IDENTIFICATION BY LIGAND COMPETITIVE SATURATION APPROACH. Himanshu Goel, **Anthony Hazel**, Vincent D. Ustach, Sunhwan Jo, Wenbo Yu, Alexander D. MacKerell

589-Pos **Board B40**
MULTISCALE SIMULATIONS EXAMINING GLYCAN SHIELD EFFECTS ON DRUG BINDING TO INFLUENZA NEURAMINIDASE. **Christian Seitz**, Lorenzo Casalino, Robert Konecny, Gary Huber, Rommie E. Amaro, J. Andrew McCammon

590-Pos **Board B41**
EXPLORING THE BINDING AFFINITIES OF FRUCTOSE AND GALACTOSE TO HUMAN SERUM ALBUMIN. **Prapasiri Pongprayoon**

591-Pos **Board B42**
COMPREHENSIVE CHARACTERIZATION OF LIGAND UNBINDING MECHANISMS AND KINETICS FOR T4 LYSOZYME MUTANTS. **Ariane Nunes-Alves**, Daria B. Kokh, Rebecca C. Wade

592-Pos **Board B43**
EXPLORING THE PROTEIN-LIGAND PATHS IN AURORA A/B KINASES WITH ENHANCED MOLECULAR DYNAMICS SIMULATIONS.
Felipe Bravo-Moraga, Ariela Vergara-Jaque, Jans Alzate-Morales

593-Pos **Board B44**
COMPUTATIONAL ANALYSIS OF THE NEUROKININ-1 RECEPTOR INTERACTIONS WITH ANTAGONISTS. **Marcelo Cardoso dos Reis Melo**, Cesar de la Fuente-Nunez

594-Pos **Board B45**
USING COMPUTATIONAL AND NEUROBIOLOGICAL METHODS TO CHARACTERISE THE STIMULANT PROPERTIES OF NOVEL PSYCHOACTIVE SUBSTANCES (NPS) AT THE DOPAMINE TRANSPORTER. **Michelle A. Sahai**, Barbara Loi, Maria Antonietta De Luca, Hana Shiref, Jolanta Opacka-Juffry

595-Pos **Board B46**
ANALYSIS OF L-DOPA AND DROXIDOPA BINDING TO HUMAN BETA 2-ADRENERGIC RECEPTOR. **Andrea Catte**, Akash Deep Biswas, Sara Del Galdo, Giordano Mancini, Vincenzo Barone

596-Pos **Board B47**
ASSESSING STATE DEPENDENT BETA-ADRENERGIC RECEPTOR - LIGAND INTERACTIONS FOR MULTISCALE MODELING. **John R.D. Dawson**, Kevin R. DeMarco, Pei-Chi Yang, Slava Bekker, Vladimir Yarov-Yarovoy, Igor V. Vorobyov

597-Pos **Board B48**
MOLECULAR DETERMINANTS OF THE NEUROTOXICITY OF ACRYLAMIDE THROUGH COVALENT DOCKING. Nicolas P. Müller, **Mercedes Alfonso Prieto**

598-Pos **Board B49**
INTERACTION AND INHIBITORY MECHANISMS OF KOLAFLAVANONE, A GARCINIA BIFLAVONOID, WITH KINESIN EG5. **Tomisin H. Ogunwa**, Kei Sadakane, Takayuki Miyanishi, Shinsaku Maruta

599-Pos **Board B50**
COMPUTATIONAL ASSESSMENT OF RECEPTOR-LIGAND UNBINDING UNDER APPLIED FORCE. **Willmor J. Pena**, Glen M. Hocky

Protein Dynamics and Allostery I (Boards B51 - B75)

600-Pos **Board B51**
SITE-SPECIFIC PHOTOINDUCED DYNAMICS OF THE LOV PROTEIN EL222 MONITORED BY MULTIPLE GENETICALLY ENCODED INFRARED PROBES. Aditya S. Chaudhari, Catarina A. Oliveira, Yingliang Liu, Prokopis C. Andrikopoulos, Inger Andersson, Bohdan Schneider, **Gustavo Fuertes**

601-Pos **Board B52**
CONFORMATIONAL REARRANGEMENT DURING ACTIVATION OF A METABOTROPIC GLUTAMATE RECEPTOR. **Brandon W. Liauw**, Hamid S. Afsari, Reza Vafabakhsh

602-Pos **Board B53**
EFFECT OF DONOR IDENTITY ON FRET SENSOR SENSITIVITY TO ENVIRONMENTAL MACROMOLECULAR CROWDING. **Chioma Nwachuku**, Emmanuel Tetteh-Jada, Malachy Brink, Scarlet Hoffman, Elsie Johnson, Arnold J. Boersma, Erin D. Sheets, Ahmed A. Heikal

603-Pos **Board B54**
CHARACTERIZATION OF A NEW HETERO-FRET BIOSENSOR TO MEASURE ENVIRONMENTAL IONIC STRENGTH. Chioma Nwachuku, Emmanuel Tetteh-Jada, **Malachy Brink**, Scarlet Hoffman, Boqun Liu, Arnold J. Boersma, Ahmed A. Heikal, Erin D. Sheets

604-Pos **Board B55**
ROLE OF LIGAND-BINDING AND NON-ACTIVE SITE RESIDUES IN THE DYNAMICS, CONFORMATIONAL INTEGRITY, AND CATALYSIS OF THE DISORDERED ENZYME MONOMERIC CHORISMATE MUTASE. **Shrutidhara Biswas**, Rajaram Swaminathan

605-Pos **Board B56**
PROBING ALLOSTERY IN OLIGOMERIC M_2 RECEPTORS USING SMFRET. **Dennis D. Fernandes**, Aimen Malik, Claudiu C. Gradinaru

606-Pos **Board B57**
SINGLE-MOLECULE INSIGHTS INTO ALLOSTERIC REGULATION OF THE NUCLEAR RECEPTOR PROTEIN RXRA. **Jakub Jungwirth**, Sayan Mondal, Mahran Shehade, Demian Liebermann, Dorit Levy, Inbal Riven, Gilad Haran

607-Pos **Board B58**
RESURRECTED ANCESTRAL TIM-BARREL GLYCOSIDASE DISPLAYS HEME BINDING AND ALLOSTERIC MODULATION. **Luis I. Gutierrez-Rus**, Gloria Gamiz-Arco, Valeria A. Risso, Beatriz Ibarra-Molero, Yosuke Hoshino, Dušan Petrović, Jose Justicia, Juan Manuel Cuerva, Adrian Romero-Rivera, Burckhard Seelig, Jose A. Gavira, Shina C.L. Kamerlin, Eric A. Gaucher, Jose M. Sanchez-Ruiz

608-Pos **Board B59**
ANISOTROPIC TERAHERTZ MICROSCOPY OF LYSOZYME IN DIFFERENT CRYSTAL LATTICE SYSTEMS. **Jeffrey A. McKinney**, Deepu K. George, Yanting Deng, Andrea G. Markelz

609-Pos **Board B60**
UTILIZING PH-DRIVEN TIME-RESOLVED CRYSTALLOGRAPHY TO ELUCIDATE THE HYDRIDE TRANSFER MECHANISM IN BACTERIAL HMG-COA REDUCTASE. **Vatsal Purohit**, Calvin Steussy, Tim Schmidt, Chandra J. Critchelow, Tony Rosales, Paul Helquist, Olaf Wiest, Cynthia V. Stauffacher

610-Pos **Board B61**
MECHANISTIC BASIS FOR UBIQUITIN MODULATION OF A PROTEIN ENERGY LANDSCAPE. **Emma Carroll**, Naomi R. Latorraca, Johanna Lindner, Jeff Pelton, Brendan Maguire, Susan Marqusee

611-Pos **Board B62**
MAPPING BINDING EPITOPES AND ALLOSTERIC EFFECTS IN STAPH ENTEROTOXINS. **Clint Vorauer**, Miklos Guttman

612-Pos **Board B63**
STRUCTURAL DYNAMICS OF THE HETERODIMERIZATION BETWEEN THE DNA-BINDING DOMAINS FROM HUMAN FOXP1 AND FOP2 TRANSCRIPTION FACTORS. Exequiel Medina, Ricardo Coñuecar, Cesar A. Ramirez-Sarmiento, **Hugo Sanabria**, Jorge Babul

613-Pos **Board B64**
HDX-MS GUIDED ENSEMBLE REWEIGHTING APPROACH CHARACTERIZES A LARGE CONFORMATIONAL REARRANGEMENT IN THE CYTOPLASMIC HEME BINDING PROTEIN PHUS. Kyle C. Kihn, Tyree Wilson, Richard T. Bradshaw, Patrick L. Wintrode, Lucy R. Forrest, Angela Wilks, **Daniel J. Deredge**

614-Pos **Board B65**
THERMAL TRANSFER FROM THE SURFACE LOOP TO THE IRON ACTIVE SITE OF SOYBEAN LIPOXYGENASE. **Jan Paulo Zaragoza**

615-Pos **Board B66**
ALLOSTERIC REGULATION OF THE ACTIVITY OF BY-KINASES, A UNIQUE FAMILY OF BACTERIAL PROTEIN TYROSINE KINASES. **Fatlum Hajredini**, Andrea Piserchio, Rinat Abzalimov, Ranajeet Ghose

616-Pos **Board B67**
MAPPING BINDING INTERFACES AND ALLOSTERIC CHANGES IN THE SARS-COV-2 SPIKE PROTEIN USING HYDROGEN/DEUTERIUM EXCHANGE MASS SPECTROMETRY. **Shawn M. Costello**, Helen T. Hobbs, Sophie R. Shoemaker, Abigail E. Powell, Shion A. Lim, James A. Wells, Peter S. Kim, John E. Pak, Susan Marqusee

617-Pos **Board B68**
CONFORMATIONAL DYNAMICS IN NF-κB TRANSCRIPTIONAL REGULATION. **Wei Chen**, Elizabeth A. Komives

618-Pos **Board B69**
INSIGHT INTO CULLIN RING LIGASE AND SUBSTRATE BINDING. **Philip R. Belzeski**, Ryan Lumpkin, Christopher Condon, Elizabeth A. Komives

619-Pos **Board B70**
DISULFIDE REDUCTION ALLOSTERICALLY DESTABILIZES THE B-LADDER SUB-DOMAIN ASSEMBLY WITHIN THE NS1 DIMER OF ZIKV. **Priti Roy**, Subhajit Roy, Neelanjana Sengupta

620-Pos **Board B71**
SOLVATION DRIVES G-PROTEIN-COUPLED RECEPTOR ACTIVATION. **Nipuna Weerasinghe**, Steven D.E. Fried, Andrey V. Struts, Suchithranga M.D.C. Perera, Michael F. Brown

621-Pos **Board B72**
CALCIUM DISSOCIATION OF HCM CAUSATIVE R21C TROPONIN I MUTATION. **Romi Castillo**, Anthony Baldo, Matthew M. Klass, Melissa L. Lynn, Steven D. Schwartz, Jil C. Tardiff

622-Pos **Board B73**
ALLOSTERIC REGULATION IN CRISPR/CAS1-CAS2 ACQUISITION OF PROTOSPACER DNA IN CLOSE ASSOCIATION WITH CAS2. **Chunhong Long**, Liqiang Dai, Chao E, Jin Yu

623-Pos **Board B74**
SODIUM BINDING IN CYSTEINYL LEUKOTRIENE G PROTEIN-COUPLED RECEPTORS. **Viktoriia Shaulskaia**, Aleksandra Luginina, Polina Khorn, Anastasiia Gusach, Olga Sukhacheva, Ekaterina Smirnova, Valentin Borshchevskiy, Alexey Mishin, Vadim Cherezov

624-Pos **Board B75**
PROTEOME-SCALE ANALYSIS OF VERTEBRATE PROTEIN THERMOADAPTATION MODULATED BY DYNAMIC ALLOSTERY AND PROTEIN SOLVATION. **Zhenlu Li**, Matthias Buck

Membrane Protein Dynamics I (Boards B76 - B93)

625-Pos **Board B76**
MOLECULAR SIMULATIONS REVEAL THE DYNAMICS OF THE T-CELL RECEPTOR IN A T-CELL MODEL MEMBRANE. **Dheeraj Prakaash**, Oreste Acuto, Graham Cook, Antreas Kalli

626-Pos **Board B77**
MOLECULAR DYNAMICS INVESTIGATION OF THE INFLUENZA HEMAGGLUTININ CONFORMATIONAL CHANGES. **Shadi Asadian Ghahfarokhi**, Vivek Govind Kumar, Mahmoud Moradi

627-Pos **Board B78**
A COMPUTATIONAL STUDY OF THE DYNAMICS OF CADHERIN-CATENIN COMPLEX REGULATED BY ACTIN CYTOSKELETON. **Qilin Yu**, Taeyoon Kim, Vijay Rajagopal

628-Pos **Board B79**
STRUCTURE AND DYNAMICS OF HIV-1 ENV TRIMERS ON NATIVE VIRIONS ENGAGED IN LIVING T CELLS. **Irene Carlon Andres**, Tomas Malinauskas, Sergi Padilla-Parra

629-Pos **Board B80**
CONTROLLING PHOTOSYNTHETIC LIGHT HARVESTING AT THE SINGLE PROTEIN LEVEL. **Tjaart P. Krüger**

630-Pos **Board B81**
HYDRATION AND PROTONATION EFFECTS ON ACTIVATION OF G-PROTEIN-COUPLED RECEPTORS. **Steven D.E. Fried**, Benjamin H.C. Cabrera, Anna R. Eitel, Kushani S.K. Hewage, Andrey V. Struts, Nipuna Weerasinghe, Suchithranga M.D. Perera, Michael F. Brown

631-Pos **Board B82**
PRESTIN GENERATES INSTANTANEOUS FORCE IN OUTER HAIR CELL MEMBRANES. **Jashan Sandhu**, Tamara Bidone, Richard D. Rabbitt

632-Pos **Board B83**
ACTIVATION MICROSWITCHES IN ADENOSINE RECEPTOR A_{2A}FUNCTION AS RHEOSTATS IN CELL MEMBRANE. **Ning Ma**, Sangbae Lee, Nagarajan Vaidehi

633-Pos **Board B84**
DEMONSTRATION OF ANTIBIOTIC TRANSPORT BY THE MTRD EFFLUX PUMP FROM NEISSERIA GONORRHOEAE. **Lauren Ammerman**, Sarah B. Mertz, Chanyang Park, John G. Wise

634-Pos **Board B85**
ROLE OF BURIED WATER IN THE MECHANISM OF PHOTOACTIVATION OF KR2 RHODOPSIN. **Suman Chakrabarty**

635-Pos **Board B86**
MECHANISTIC ORIGIN OF PARTIAL AGONISM OF Δ^9-TETRAHYDROCANNABINOL FOR CANNABINOID RECEPTORS. **Soumajit Dutta**, Balaji Selvam, Diwakar Shukla

636-Pos **Board B87**
VITAMIN B_{12} CARRIES PEPTIDE NUCLEIC ACIDS TO *E. COLI* CELLS THROUGH THE OUTER-MEMBRANE BTUB RECEPTOR. Tomasz Pienko, Jakub Czarnecki, Marcin Równicki, Monika Wojciechowska, Aleksandra J. Wierzba, Dorota Gryko, Dariusz Bartosik, **Joanna Trylska**

637-Pos **Board B88**
ROLE OF THE INTERNAL LOOPS IN GATING OF OUTER MEMBRANE PORINS. **Nandan Haloi**, Archit Vasan, Paul Hergenrother, Emad Tajkhorshid

638-Pos **Board B89**
FUNCTIONAL EXPANSION OF G-PROTEIN-COUPLED RECEPTOR SHOWN BY TIME-RESOLVED X-RAY SCATTERING. **C. Swathi K. Menon**, Konstantinos Karpos, Thomas D. Grant, Andrey V. Struts, Steven D.E. Fried, Suchithranga M.D.C. Perera, Irina V. Kosheleva, Leslie Salas-Estrada, Alan Grossfield, Petra Fromme, Richard A. Kirian, Michael F. Brown

639-Pos **Board B90**
BACTERIORHODOPSIN PHOTOCYCLE CAPTURED AT THE SINGLE MOLECULE LEVEL BY HS-AFM. **Alma P. Perrino**, Simon Scheuring

640-Pos **Board B91**
AN INVESTIGATION OF THE CONFORMATIONAL DYNAMICS OF ABC EXPORTER PCAT1 USING MICROSECOND-LEVEL MD SIMULATIONS. **Vivek Govind Kumar**, Dylan S. Ogden, Mahmoud Moradi

641-Pos **Board B92**
ULTRAFAST MEMBRANE PROTEIN DYNAMICS REVEALED BY X-RAY SCATTERING WITH A FEMTOSECOND FREE-ELECTRON LASER. **Thomas D. Grant**, Suchithranga M.D.C. Perera, Leslie A. Salas-Estrada, Andrey V. Struts, Udeep Chawla, Steven D.E. Fried, Nipuna Weerasinghe, Kostantinos Karpos, Domingo Meza, Nadia A. Zatsepin, Alan Grossfield, Derek Mendez, Petra Fromme, Richard A. Kirian, Michael F. Brown

642-Pos **Board B93**
MEASURING THE FLOW-MEDIATED TRANSPORT VELOCITY OF LIPID-ANCHORED PROTEINS IN SUPPORTED LIPID BILAYERS. **Amanda M. Ratajczak**, Ethan J. Miller, Xaymara Rivera, Aurelia R. Honerkamp-Smith

Membrane Protein Folding (Boards B94 - B98)

643-Pos **Board B94**
TOPOLOGY-SWITCHING MEMBRANE PEPTIDES FOR DETERMINATION OF THE ACTIVE TRANSMEMBRANE DIMER INTERFACE OF THE EPHA2 RECEPTOR. **Justin M. Westerfield**, Amita Sahoo, Jennifer Schuster, Katherine M. Stefanski, Alayna Cameron, Mikayla Maxwell, Matthew Jansen, Andrew C. Dixson, Daiane S. Alves, Matthias Buck, Francisco N. Barrera

644-Pos **Board B95**
LIPID BILAYER STRENGTHENS THE SIDE CHAIN INTERACTION NETWORK OF A MEMBRANE PROTEIN. **Fathima Shaima Muhammed Nazaar**, Ruiqiong Guo, Seung-Hyo Rhee, Seung-gu Kang, Heedeok Hong

645-Pos **Board B96**
DIMERIZATION OF THE FLUORIDE CHANNEL FLUC IN MEMBRANES. **Melanie Ernst**, Randy Stockbridge, Janice L. Robertson

646-Pos **Board B97**
THE ROLE OF THE MEMBRANE-WATER INTERFACE IN CO-TRANSLATIONAL MEMBRANE PROTEIN FOLDING. **Jan Steinkühler**, Sharon M. Loverde, Neha P. Kamat

647-Pos **Board B98**
INVESTIGATING YIDC-ASSISTED FOLDING PATHWAYS OF DIFFERENT ALPHA-HELICAL MEMBRANE PROTEINS. **Nina Blaimschein**, Andreas Kuhn, Nora Jahnen, Povilas Uzdavinys, Christine M. Ziegler, Hariharan Parameswaran, Lan Guan, Daniel J. Mueller

Transcription (Boards B99 - B110)

648-Pos **Board B99**
KINETICS AND MECHANISM OF *E. COLI* TRANSCRIPTION INITIATION. **Dylan Plaskon**, Kate Henderson, Lindsey Felth, Claire Evensen, Sarah Dyke, Cristen Molzahn, Tristan Gunther, Guanyu Liao, Irina A. Shkel, M. Thomas Record

649-Pos **Board B100**
LIVE MEASUREMENTS OF TRANSCRIPTIONAL BURSTING AND DYNAMIC GENE REGULATION IN EARLY FLY EMBRYOS. **Po-Ta Chen**, Benjamin Zoller, Michal Levo, Thomas Gregor

650-Pos **Board B101**
DENGUE VIRUS NS5 TRANSCRIBES METABOLITE-CAPPED, RIG-I SENSITIVE VRNAS. **Brandon Schweibenz**, Mihai Solotchi, Etienne Decroly, Barbara Selisko, Bruno Canard, Smita S. Patel

651-Pos **Board B102**
LEARNING THE DYNAMICS OF BURSTY TRANSCRIPTION AND SPLICING USING ULTRA-FAST PARAMETER INFERENCE AND NEW ANALYTICAL SOLUTIONS OF THE CHEMICAL MASTER EQUATION. **John J. Vastola**, Gennady Gorin, Lior Pachter, William R. Holmes

652-Pos **Board B103**
NONRECIPROCAL AND CONDITIONAL COOPERATIVITY DIRECTS THE PIONEER ACTIVITY OF PLURIPOTENCY TRANSCRIPTION FACTORS. **Sai Li**, Eric B. Zheng, Li Zhao, Shixin Liu

653-Pos **Board B104**
LIGAND DEPENDENCE OF HORMONE ACTION IN GLUCOCORTICOID RECEPTOR STUDIED BY 3D ORBITAL TRACKING FLUORESCENCE CROSS CORRELATION SPECTROSCOPY. **Julianna Goelzer**, Diana Stavreva, Gordon Hager, Matthew L. Ferguson

654-Pos **Board B105**
MYC AMPLIFIES GENE EXPRESSION THROUGH GLOBAL CHANGES IN TRANSCRIPTION FACTOR DYNAMICS. **Daniel R. Larson**

655-Pos **Board B106**
INFLUENCE OF T_3 ON ACTIVE TRANSCRIPTION OF *MYBPC3* AND *TNNI3*. **Kathrin Kowalski**, Jan N. Riesselmann, Natalie Weber, Birgit Piep, Annika Franke, Ulrich Martin, Robert Zweigerdt, Theresia Kraft

656-Pos **Board B107**
CHARACTERIZATION OF THE FUNCTIONAL RELEVANCE OF INTRANUCLEAR TRANSCRIPTION FACTOR AGGREGATES IN LIVING FLY EMBRYOS. **Rahul Munshi**, Michal Levo, Eric Wieschaus, Thomas Gregor

657-Pos **Board B108**
DETERMINING LONG NONCODING RNA MECHANISMS IN STEM CELLS USING AUTOMATED IMAGE ANALYSIS AND SINGLE MOLECULE RNA-FLUORESCENT IN SITU HYBRIDIZATION. **Benjamin Kesler**, Gregor Neuert

658-Pos **Board B109**
COMPARISON OF BIAS AND RESOLVABILITY IN SINGLE-CELL AND SINGLE-TRANSCRIPT METHODS. **Jayan Rammohan**, Steven P. Lund, Nina Alperovich, Vanya Paralanov, Elizabeth A. Strychalski, David Ross

659-Pos **Board B110**
INTRODUCING CHEMICALLY MODIFIED NUCLEOTIDES TO IMPROVE MRNA-BASED THERAPEUTICS. **Teena Bajaj**

Protein-Nucleic Acid Interactions II (Boards B111 - B130)

660-Pos **Board B111**
RESIDUE-LEVEL FUNCTIONAL COUPLINGS AND THEIR EFFECT ON RNA REMODELLING BY THE ZIKA VIRUS NS3 HELICASE. Sunaina Banerjee, Divya K, **Rahul Roy**

661-Pos **Board B112**
CHARACTERIZING THE IMPACT OF CANCER MUTATIONS IN DNA BASE EDITING ENZYMES. **Gerardo A. Cisneros**

662-Pos **Board B113**
COORDINATED MOTION OF DIMERIC INTERFACES IN EUKARYOTIC TYPE IIA TOPOISOMERASES. **Nilusha L. Kariyawasam**, John L. Nitiss, Jeffery M. Wereszczynski

663-Pos **Board B114**
RAPID SEARCH AND REPAIR STRATEGIES OF DNA DAMAGE REPAIR PROTEINS ON CHROMATIN. **Genesis M. Ferrer**, Shankar Lalitha Sridhar, Jeffrey Dunagin, Loren Hough

664-Pos **Board B115**
HUMAN MITOCHONDRIAL HELICASE TWINKLE CATALYZES TOEHOLD MEDIATED DNA STRAND DISPLACEMENT. **Anupam Singh**, Gayatri Patel, Laura C. Johnson, Smita S. Patel

665-Pos **Board B116**
CRITICAL ROLE OF CONSERVED HISTIDINE RESIDUES IN GENOME EDITING AND RECOMBINATION. **Lukasz Nierzwicki**, Lorenzo Casalino, Martin Jinek, Giulia Palermo

666-Pos **Board B117**
MASSIVELY PARALLEL KINETIC PROFILING OF NATURAL AND ENGINEERED CRISPR NUCLEASES. **Stephen K. Jones**, John A. Hawkins, Nicole V. Johnson, Cheulhee Jung, Kuang Hu, James R. Rybarski, Janice S. Chen, Jennifer A. Doudna, William H. Press, Ilya J. Finkelstein

667-Pos **Board B118**
TIN2 IS AN ARCHITECTURE PROTEIN THAT FACILITATES TRF2-MEDIATED HIGHER-ORDER DNA AND RNA STRUCTURES AT TELOMERES. **Parminder Kaur**, Hai Pan, Hong Wang, Robert Riehn

668-Pos **Board B119**
TIN2 FACILITATES TRF1-MEDIATED TRANS- AND CIS-INTERACTIONS ON PHYSIOLOGICALLY RELEVANT LONG TELOMERIC DNA. **Hai Pan**, Parminder Kaur, Ryan Barnes, Qingyu Tang, Keith R. Weninger, Robert Riehn, Susan Smith, Patricia L. Opresko, Hong Wang

669-Pos **Board B120**
A STRUCTURALLY CONSERVED HUMAN AND TETRAHYMENA TELOMERASE CATALYTIC CORE. **Yaqiang Wang**, Marcus Gallagher-Jones, Lukas Sušac, He Song, Juli Feigon

670-Pos **Board B121**
AN AUTOINHIBITORY ROLE FOR THE GRF ZINC FINGER DOMAIN OF DNA GLYCOSYLASE NEIL3. **Alyssa A. Rodriguez**

671-Pos **Board B122**
SEQUENCE DEPENDENT BARRIERS TO NUCLEOSOME UNWRAPPING. William Hu, Phu Tang, Anjela Manandhar, Kaushik Chakraborty, **Sharon M. Loverde**

672-Pos **Board B123**
DNA DYNAMICS DURING SWR1-CATALYZED H2A.Z HISTONE EXCHANGE. **Xinyu A. Feng**, Matthew F. Poyton, Anand Ranjan, Myung Hyun Jo, Jasmin Zarb, Robert K. Louder, Giho Park, Qin Lei, Sheng Liu, Carl Wu, Taekjip Ha

673-Pos **Board B124**
ATOMIC-SCALE MOLECULAR DIFFUSION OF A TRANSCRIPTION FACTOR DOMAIN PROTEIN ALONG DNA. Liqiang Dai, Yongping Xu, Zhengwei Du, Xiaodong Su, **Jin Yu**

674-Pos **Board B125**
OCT4 PIONEERS GENOMIC NUCLEOSOMES IN MOTION. Jan Huertas, Caitlin MacCarthy, Hans Robert Schoeler, **Vlad Cojocaru**

675-Pos **Board B126**
A MODEL OF BZIP PROTEIN/DNA RECOGNITION USING KNOB-SOCKET ANALYSIS. **Aaron Tran**, Hyun Joo, Jerry Tsai

676-Pos **Board B127**
INCHWORM STEPPING OF MYC-MAX HETERODIMER PROTEIN DIFFUSION ALONG DNA. **Liqiang Dai**, Jin Yu

677-Pos **Board B128**
A NOVEL G1/S TRANSCRIPTION FACTOR FEEDBACK LOOP IN THE START TRANSITION IN BUDDING YEAST REVEALED BY SCANNING NUMBER AND BRIGHTNESS. **Pooja Goswami**, Savanna Dorsey, Carleton Coffin, Ghada Ghazal, Yogitha Thattikota, Jing Cheng, Sylvain Tollis, Mike Tyers, Catherine A. Royer

678-Pos **Board B129**
IN SILICO INVESTIGATIONS ON SWITCHING PROMOTOR RECOGNITION OF PHAGE RNA POLYMERASE VARIANTS FOLLOWING PATH ALONG LAB DIRECTED EVOLUTION. **Chao E**, Liqiang Dai, Jin Yu

679-Pos **Board B130**
LOW TEMPERATURE INDUCED CONFINED EFFECT FOR AEROLYSIN NANOPORE SENSING. **Bo-Qiang He**, Yi-Lun Ying, Yi-Tao Long

Membrane Active Peptides and Toxins (Boards B131 - B148)

680-Pos **Board B131**
TOWARD BRIDGING A GAP BETWEEN MODEL AND NATURAL MEMBRANES FOR BIOPHYSICAL STUDIES. Andrée E Gravel, Alexandre Arnold, Matthieu Fillion, Michele Auger, Dror E. Warschawski, **Isabelle Marcotte**

681-Pos **Board B132**
THE EFFECT OF LIPID ENVIRONMENTS ON THE SECONDARY STRUCTURE OF MEMBRANE-ACTIVE PEPTIDES. **Monika Wojciechowska**, Joanna D. Trylska

682-Pos **Board B133**
CATION-SELECTIVITY OF A SELF-ASSEMBLED PEPTIDE PORE IN PLANAR PHOSPHOLIPID BILAYERS USING ELECTRICAL IMPEDANCE SPECTROSCOPY. **Evelyne Deplazes**, Lissy M. Hartmann, Charles G. Cranfield, Alvaro Garcia

683-Pos **Board B134**
ANTIMICROBIAL PEPTIDE-MEMBRANE INTERACTIONS: INSIGHTS FROM MOLECULAR SIMULATIONS. **Fathima T. Doole**, Chun Kit Chan, Ellen Streitwieser, Daipayan Sarkar, Minkyu Kim, Abhishek Singharoy, Michael F. Brown

684-Pos **Board B135**
VESICLE AGGREGATION AND FUSION INFLUENCE MEMBRANE PERMEABILIZATION INDUCED BY ANTIMICROBIAL POLYCATIONS. **Shuai Shi**, Runhui Liu, Maria Hoernke

685-Pos **Board B136**
COMPUTATIONAL INVESTIGATION INTO THE EFFECT OF SS-31 ON MEMBRANE ION DISTRIBUTIONS, PORE FORMATION AND ION LEAKAGE IN THE PRESENCE OF TRANSMEMBRANE POTENTIALS. **Jeffrey D. Tamucci**, Nathan N. Alder, Eric R. May

686-Pos **Board B137**
A PORE IS NOT A PORE IS NOT A PORE. **Maria Hoernke**

687-Pos **Board B138**
DELIVERING THE CYCLIC PEPTIDE PHALLOIDIN TO THE CELL CYTOSOL BY MEMBRANE TRANSLOCATING CARRIER PEPTIDES. **Ryan P. Ferrie**, Jenisha Ghimire, Taylor Fuselier, William C. Wimley

688-Pos **Board B139**
DYNORPHIN A INDUCES MEMBRANE PERMEABILIZATION BY FORMATION OF PROTEOLIPIDIC PORES. **Deborah Aurora Perini**, Maria Queralt-Martin, Alex Peralvarez-Marin, Antonio Alcaraz

689-Pos **Board B140**
C-TERMINUS AMIDATION INFLUENCES BIOLOGICAL ACTIVITY AND MEMBRANE INTERACTION OF MACULATIN 1.1. **Shiying Zhu**, Frances Separovic, Marc-Antoine Sani

690-Pos **Board B141**
INVESTIGATING THE EFFECT OF PROLINE LINKERS ON HYBRID ANTIMICROBIAL PEPTIDE STRUCTURE AND ACTIVITY. **Hannah Klim**, Michelle Shui, Louise E. Darling, Donald E. Elmore

691-Pos **Board B142**
SYNTHETIC MOLECULAR EVOLUTION TO IDENTIFY HEMOCOMPATIBLE ANTIMICROBIAL PEPTIDES EFFECTIVE AGAINST DRUG-RESISTANT, BIOFILM-FORMING BACTERIA. **Jenisha Ghimire**, Charles G. Starr, Shantanu Guha, Joseph P. Hoffmann, Yihui Wang, Benjamin J. Nelson, Marc A. Gebara, Lisa A. Morici, William C. Wimley

692-Pos **Board B143**
SYNERGY BETWEEN HISTONE-DERIVED ANTIMICROBIAL PEPTIDES AND CONVENTIONAL ANTIBIOTICS. **Jane Zen**, Louise E. Darling, Donald E. Elmore

693-Pos **Board B144**
INTERACTION BETWEEN ANTIMICROBIAL PEPTIDES AND NON-LIPID COMPONENTS IN BACTERIAL OUTER MEMBRANE. **Sheyla Montero Vega**

694-Pos **Board B145**
INVESTIGATING THE EFFECTS OF CROWDING ON ANTIMICROBIAL PEPTIDES USING MEMBRANE DYNAMICS. **Jessie Huang**, Donald E. Elmore

695-Pos **Board B146**
MESSAGING ACROSS MEMBRANES THROUGH SYNTHETIC ALPHA HELICAL PORE ASSEMBLIES. **Smrithi Krishnan R**, Puthumadathil Neethu Narayanan Anitha, Kozhinjampara R. Mahendran

696-Pos **Board B147**
CYTOSOLIC DELIVERY OF PROTEINS. **Eric Wu**, Ramsey M. Jenschke, Sarah Y. Kim, Kalina Hristova, William C. Wimley

697-Pos **Board B148**
STRUCTURAL MODELING OF PEPTIDE TOXIN - ION CHANNEL INTERACTIONS. **Diego Lopez Mateos**, Vladimir Yarov-Yarovoy

Membrane Structure I (Boards B149 - B168)

698-Pos **Board B149**
BINDING, UNBINDING AND AGGREGATION OF CRESCENT-SHAPED PARTICLES ON TUBULAR MEMBRANES. Alexander D. Olinger, Eric J. Spangler, P.B. Sunil Kumar, **Mohamed Laradji**

699-Pos **Board B150**
ALTERATIONSIN MEMBRANE LIPIDS OF LIVE RED BLOOD CELLSAFFECTTHEIR INTERACTIONS WITH EXOGENOUS PARTICLES. **Amid Vahedi**, Douglas J. Goetz, Amir Farnoud

700-Pos **Board B151**
LIPIDOMIC ATLAS OF MAMMALIAN CELL MEMBRANES REVEALS HIERARCHICAL VARIATION INDUCED BY CULTURE CONDITIONS, SUBCELLULAR MEMBRANES, AND CELL LINEAGES. **Jessica L. Symons**, Ilya Levental, Kandice R. Levental

701-Pos **Board B152**
MECHANICAL FEEDBACK IN PROTEIN RECRUITMENT TO MEMBRANES. **Yiben Fu**, Wade F. Zeno, Jeanne C. Stachowiak, Margaret E. Johnson

702-Pos **Board B153**
PROBING THE ROLE OF ACTIN IN MEMBRANE ORGANIZATION. **Jennifer C. Flanagan**, Sarah L. Veatch

703-Pos **Board B154**
NANOSIMS TOOLS AND PROBES FOR IMAGING INTRACELLULAR STRUCTURES. **Brittney L. Gorman**, Mary L. Kraft

704-Pos **Board B155**
DEVELOPMENT OF A TOPOGRAPHIC Z-CORRECTION ALGORITHM FOR 3D DEPTH PROFILING NANOSIMS IMAGES. **Melanie A. Brunet**, Brittney L. Gorman, Mary L. Kraft

705-Pos **Board B156**
A NEW STANDARD FOR MEMBRANE STRUCTURE? INVESTIGATING FACTORS THAT INFLUENCE MEASURED BILAYER THICKNESS IN CRYO-EM IMAGES. **Ryan C. McLendon**, Haden L. Scott, Kristen Kennison, James R. Baker, Frederick A. Heberle, Neal Waxham, Aaron Frederick

706-Pos **Board B157**
STABILIZING LEAFLET ASYMMETRY IN A HIGHLY COARSE-GRAINED LIPID MEMBRANE MODEL. **Samuel Foley**, Markus Deserno

707-Pos **Board B158**
SYSTEMATIC MEASUREMENTS OF INTERLEAFLET FRICTION IN SUPPORTED LIPID BILAYERS. **Autumn A. Anthony**, Aurelia R. Honerkamp-Smith

708-Pos **Board B159**
STIFFENING TRANSITION IN ASYMMETRIC LIPID BILAYERS: THE ROLE OF HIGHLY-ORDERED DOMAINS AND THE EFFECT OF TEMPERATURE AND SIZE. **Amirali Hossein**, Markus Deserno

709-Pos **Board B160**
CHALLENGING THE DOGMA - CELL PLASMA MEMBRANES ARE ASYMMETRIC NOT ONLY IN PHOSPHOLIPID COMPOSITION BUT ALSO ABUNDANCE. **Milka Doktorova**, Jessica L. Symons, Kandice R. Levental, Edward R. Lyman, Ilya Levental

710-Pos **Board B161**
INTER- AND INTRA-PLANE INTERACTIONS CONTROL THE EXISTENCE OF MACRODOMAINS IN ASYMMETRIC GIANT UNILAMELLAR VESICLES. **Thais A. Enoki**, Haden L. Scott, Gerald W. Feigenson, Frederick A. Heberle

711-Pos **Board B162**
CHICKEN-OR-EGG CONUNDRUM: ORDERING OF LIPIDS VS. CHOLESTEROL LOCALIZATION IN THE ASYMMETRIC LIPID BILAYERS. **Mohammadreza (Reza) Aghaaminiha (Amini)**, Sumit Sharma

712-Pos **Board B163**
DISTRIBUTION OF CHOLESTEROL IN ASYMMETRIC MEMBRANES DRIVEN BY COMPOSITION AND DIFFERENTIAL STRESS. **Malavika Varma**, Markus Deserno

713-Pos **Board B164**
PLASMALOGEN LIPIDS INFLUENCE LATERAL AND TRANSVERSE ORGANIZATION IN MODEL MEMBRANES. **Haden L. Scott**, Alison Leonard, Edward R. Lyman, Frederick A. Heberle

714-Pos **Board B165**
ASYMMETRIC PHASE DIAGRAM OF A THREE COMPONENT MODEL MEMBRANE MIXTURE CONTAINING SPHINGOMYELIN: COUPLING OF LATERAL AND TRANSVERSE LIPID ORGANIZATION. **Aaron Frederick**, Frederick A. Heberle

715-Pos **Board B166**
NANOSCALE CURVATURE OF NANOCELLULOSE PAPER PROMOTES HIGH YIELD SPONTANEOUS FORMATION OF GIANT VESICLES. **Joseph Pazzi**, Anand Subramaniam

716-Pos **Board B167**
UNDERSTANDING THE YIELDS OF GIANT UNILAMELLAR VESICLES COMPOSED OF CHARGED MEMBRANES. **Vaishnavi Girish**

717-Pos **Board B168**
BACTERIAL MIMETIC SYSTEMS FOR STUDYING BACTERIAL INACTIVATION AND INFECTION. **Mareike Stephan**, Stefanie Barbirz, Tom Robinson, Naresh Yandrapalli, Rumiana Dimova

Intracellular Calcium Channels and Calcium Sparks and Waves (Boards B169 - B180)

718-Pos **Board B169**
HIGH-THROUGHPUT SCREENING AND DRUG DEVELOPMENT TO FIX RYR PATHOLOGY. **Robyn T. Rebbeck**, Kaja Rozman, Gabrielle M. Evans, Jacob Schwarz, Marzena Baran, Courtney C. Aldrich, Donald M. Bers, David D. Thomas, Razvan L. Cornea

719-Pos **Board B170**
STRUCTURAL INSIGHTS INTO THE DIAMIDE MODULATION OF RYANODINE RECEPTOR. **Ruifang Ma**, Omid Haji-Ghassemi, Dan Ma, Heng Jiang, Lianyun Lin, Li Yao, Arthur Samurkas, Yuxin Li, Yiwen Wang, Shian Wu, Yan Zhang, Takashi Murayama, Bernard Moussian, Filip Van Petegem, Zhiguang Yuchi

720-Pos **Board B171**
MODELING THE CROSSTALK BETWEEN RYANODINE AND IP3 RECEPTORS IN CARDIAC MYOCYTES. **DeAnalisa C. Jones**, Eric A. Sobie

721-Pos **Board B172**
MITOCHONDRIAL CALCIUM UNIPORTER OVEREXPRESSION EXACERBATES ARRHYTHMOGENIC CALCIUM MISHANDLING IN DISEASED RAT VENTRICULAR MYOCYTES. **Shanna Hamilton**, Radmila Terentyeva, Fruzsina Perger, Dmitry A. Terentyev

722-Pos **Board B173**
RYR1 AND RYR2 RESPOND DIFFERENTLY TO TOXICOLOGICALLY RELEVANT ETHANOL CONCENTRATIONS. **Jerusalem Alleyne**, Kelsey C. North, Yanping Ye, Anna N. Bukiya, Alex M. Dopico

723-Pos **Board B174**
CRYSTAL STRUCTURES OF INSECT RYANODINE RECEPTOR DOMAINS. **Lianyun Lin**

724-Pos **Board B175**
VISUALIZING UNRESOLVED SEGMENTS IN RYANODINE RECEPTOR CRYO-EM STRUCTURES. **Bengt Svensson**, David D. Thomas, Razvan L. Cornea

725-Pos **Board B176**
A HOMOLOGY MODELLING STUDY OF POTENTIAL RYR2 STRUCTURAL CHANGES IN R2474S AND V2475F CPVT1. **Jianshu Hu**, Rebecca M. Sitsapesan, Maria Musgaard

726-Pos **Board B177**
INCREASED SUBCELLULAR HETEROGENEITY IN CARDIAC MYOCYTES CAN LEAD TO ARRHYTHMIAS. **Enes Haxhimali**, Daisuke Sato

727-Pos **Board B178**
DIFFERENTIAL SENSITIVITY TO HALOTHANE AMONG SUBGROUPS OF MALIGNANT HYPERTHERMIA SUSCEPTIBLE PATIENTS. INSIGHTS INTO DUAL PATHOPHYSIOLOGICAL MECHANISMS. **Lourdes C. Figueroa**, Natalia Kraeva, Carlo D. Manno, Sheila Riazi, Eduardo Rios

728-Pos **Board B179**
POST-TRANSLATIONAL MODIFICATIONS PROMOTE FUNCTIONAL HETEROGENEITY IN CARDIAC MYOCYTES. **Bardia Ghayoumi**, Anna Fasoli, Christopher Y. Ko, Donald M. Bers, Daisuke Sato

729-Pos **Board B180**
DEFECTIVE MITOCHONDRIA ELECTRON TRANSPORT CHAIN SUPERCOMPLEX ASSEMBLY UNDERLIES ABNORMAL CA^{2+} RELEASE IN RAT MYOCYTES FROM HYPERTROPHIC HEARTS. **Radmila Terentyeva**, Shanna Hamilton, Fruzsina Perger, Wenzhuo Ma, Sandor Gyorke, Richard T. Clements, Dmitry A. Terentyev

Intracellular Transport (Boards B181 - B188)

730-Pos **Board B181**
PUROMYCIN CAUSES PROTEIN UPTAKE BY CELLS FROM THE MEDIUM. **Andrey O. Bogorodskiy**, Ivan Maslov, Dmitry Burkatovsky, Alexey Mishin, Ivan Okhrimenko, Georg Bueldt, Joachim Altschmied, Judith Haendeler, Thomas Gensch, Valentin Borshchevskiy

731-Pos **Board B182**
MODELING SELECTIVE TRAPPING OF WEAK-BASE LIGANDS IN ACIDIC INTRACELLULAR VESICLES. **Philip Jordache**, Benoit Roux, William N. Green, Esmael J. Haddadian

732-Pos **Board B183**
AN INTERACTION BETWEEN B'-COP AND ITS ARFGAP, GLO3, IS REQUIRED TO MAINTAIN POST-GOLGI CARGO RECYCLING. **Boyang Xie**, Clara Guillem, Christian Jung, Amy K. Kendall, Jordan Best, Todd Graham, Lauren P. Jackson

733-Pos **Board B184**
PROBING BIOPHYSICAL PROPERTIES OF THE CYTOPLASM IN FISSION YEAST USING NANO-RHEOLOGY. **Rikki M. Garner**, Arthur T. Molines, Chenlei Hu, Joel Lemiere, Julie A. Theriot, Fred Chang

734-Pos **Board B185**
DECTIN-1 MEDIATED DC-SIGN RECRUITMENT TO*CANDIDA ALBICANS*-CONTACT SITES. **Rohan Choraghe**, Aaron Neumann

735-Pos **Board B186**
SIMULTANEOUS IMAGING OF DYNAMICS AND BIOCHEMICAL ACTIVITIES OF SINGLE PHAGOSOMES. **Yanqi Yu**, Zihan Zhang, Glenn F.W. Walpole, Yan Yu

736-Pos **Board B187**
COMPUTATIONAL ACCOUNT OF THE FIRST STAGES IN THE ELEVATOR MOTION OF THE HUMAN EAAT3 GLUTAMATE TRANSPORTER. **Ekaterina Kots**, Harel Weinstein

737-Pos **Board B188**
STICS ANALYSIS REVEALS THE ROLE OF TAU PHOSPHORYLATION IN REGULATING LYSOSOME TRANSPORT. **Pamela Yaninska**

Voltage-gated Na Channels (Boards B189 - B195)

738-Pos **Board B189**
ELIMINATING INDUCED POLARIZATION DRIVES CHANNEL TRANSITION FROM INSULATING TO CONDUCTING. **H. Richard Leuchtag**

739-Pos **Board B190**
STRUCTURAL MODELING OF NA_V-LIGAND INTERACTIONS WITH ROSETTA'S GALIGANDDOCK. **Brandon J. Harris**, Phuong T. Nguyen, Vladimir Yarov-Yarovoy

740-Pos **Board B191**
HETEROLOGOUS FUNCTIONAL EXPRESSION OF AN ASCIDIAN NAV1 CHANNEL WITH CLOSE RELATIONSHIP WITH ANCESTOR OF VERTEBRATE NEURONAL NAV CHANNELS. **Yasushi Okamura**, Takafumi Kawai, Masaki Hashimoto, Yuka Jinno, Måns Aspåker

741-Pos **Board B192**
STRUCTURAL STUDIES OF THE INTERACTION BETWEEN THE PADDLE MOTIF FROM NA_V1.5DIV AND THE SEA ANEMONE TOXIN ANTHOPLEURIN-A. **Adel K. Hussein**, Mohammed H. Bhuiyan, Jianqin Zhuang, Boris Arshava, Sebastien F. Poget

742-Pos **Board B193**
MARKOV AND EYRING MODELING PREDICT DIFFERENTIAL CONTRIBUTIONS OF HOMOLOGOUS MUTATIONS IN HYPOKALEMIC PERIODIC PARALYSIS TO SKELETAL MUSCLE FIBER EXCITABILITY. **James R. Groome**, Landon Bayless-Edwards, Lance Port, Frank Lehmann-Horn, Karin Jurkat-Rott

743-Pos **Board B194**
TARGETING THE VASCULAR ENDOTHELIAL BARRIER TO PREVENT NANOSCALE CARDIAC REMODELING: A NOVEL STRATEGY TO PREVENT ATRIAL FIBRILLATION. **Louisa Mezache**, Amara Greer-Short, Przemyslaw Radwanski, Thomas J. Hund, Rengasayee Veeraraghavan

744-Pos **Board B195**
COMPUTATIONAL STUDY OF ION SELECTIVITY IN EUKARYOTIC VOLTAGE-GATED SODIUM CHANNELS. **Boris S. Zhorov**

Voltage-gated Ca Channels (Boards B196 - B199)

745-Pos **Board B196**
NIFEDIPINE MODULATES THE ACTIVATION OF CA_V1.1 VOLTAGE-SENSING DOMAINS. **Marina Angelini**, Nicoletta Savalli, Federica Steccanella, Riccardo Olcese

746-Pos **Board B197**
VOLTAGE SENSOR OPERATION IN THE EMBRYONIC SPLICE VARIANT OF SKELETAL CA_V1.1 CHANNELS. **Nicoletta Savalli**, Marina Angelini, Federica Steccanella, Alan Neely, Riccardo Olcese

747-Pos **Board B198**
DISSECTING THE ROLE OF CA_V1.2 DYSFUNCTION IN THE PATHOGENESIS OF AUTISM SPECTRUM DISORDER. **Kevin G. Herold**, Moradeke A. Bamgboye, Deborah DiSilvestre, John Hussey, Josiah O. owoyemi, Andrea Meredith, Ivy E. Dick

748-Pos **Board B199**
ASSESSING THE IMPACT OF CALMODULINOPATHIC MUTATIONS ON NEURONAL ION CHANNEL REGULATION. **John W. Hussey**, Emily DeMarco, Deborah DiSilvestre, Helene H. Jensen, Mette Nyegaard, Michael T. Overgaard, Ivy E. Dick

Ion Channel Regulatory Mechanisms (Boards B200 - B220)

749-Pos **Board B200**
REGULATION OF THE ACTIVITY OF MITOCHONDRIAL LARGE-CONDUCTANCE CALCIUM-ACTIVATED POTASSIUM CHANNEL THROUGH A NEW EXTERNAL HEME-BINDING SITE. **Agnieszka Walewska**, Piotr Koprowski, Adam M. Szewczyk

750-Pos **Board B201**
ASSESSING THE ROLE OF ELECTROSTATIC INTERACTIONS IN THE MECHANISM OF BETA-BARREL CHANNEL GATING. Deborah Aurora Perini, Antonio Alcaraz, Vicente M. Aguilella, **Maria Queralt-Martin**

751-Pos **Board B202**
ELUCIDATING THE STRUCTURAL CONSTITUENTS OF FIBROBLAST GROWTH FACTOR 14 THAT CONFER ITS MODULATORY EFFECTS ON THE VOLTAGE-GATED SODIUM CHANNEL 1.6. **Nolan M. Dvorak**, Paul Wadsworth, Pingyuan Wang, Haiying Chen, Jia Zhou, Fernanda Laezza

752-Pos **Board B203**
IDENTIFICATION OF GATING SENSITIVE RESIDUES IN TREK-2. **Chun Kei Lam**, Bert L. de Groot

753-Pos **Board B204**
PATHWAYS FOR QUATERNARYAMMONIUM BLOCKER ENTRY INTO CLOSED CALCIUM ACTIVATED POTASSIUM CHANNELS. **Chen Fan**, Emelie Flood, Nattakan Sukomon, Toby W. Allen, Crina M. Nimigean

754-Pos **Board B205**
CHARACTERIZATION OF ION TRANSPORT BASED ON CONDUCTANCE VERSUS CONCENTRATION CURVES. A THEORETICAL ANALYSIS. **Suren A. Tatulian**

755-Pos **Board B206**
IN SITU, LABEL-FREE STUDY OF THE CORRELATION BETWEEN MG2+ UPTAKE PROTEINS AND MOTILITY OF *SALMONELLA TYPHIMURIUM* USING TIME-RESOLVED DYNAMIC LASER SPECKLE IMAGING. Keren Zhou, **Cassandra N. Nunez**, Varasiddhi J. Govindraj, Aida Ebrahimi

756-Pos **Board B207**
CONDUCTANCE MECHANISM OF MUTANT K^+ CHANNELS. **Andrei Mironenko**, Bert L. de Groot, Wojciech Kopec

757-Pos **Board B208**
THE PH MODULATION OF THE VOLTAGE SENSOR IN THE VOLTAGE-GATED PROTON CHANNEL (H_V1). **Emerson M. Carmona**, Osvaldo Alvarez, Alan Neely, Peter H. Larsson, Jose-Antonio Garate, Miguel Fernandez, Ramon Latorre, Carlos L. Gonzalez

758-Pos **Board B209**
MODELLING WATER BEHAVIOUR IN HYDROPHOBIC GATES OF ION CHANNELS. **Charlotte I. Lynch**, Shanlin Rao, Gianni Klesse, Stephen J. Tucker, Mark S.P. Sansom

759-Pos **Board B210**
LIPID-PROTEIN INTERACTIONS MODULATE THE CONFORMATIONAL EQUILIBRIUM OF A POTASSIUM CHANNEL. **Ruo-Xu Gu**, Bert L. de Groot

760-Pos **Board B211**
INTERMOLECULAR COOPERATIVE GATING IN PIEZO1 CHANNELS. **Tharaka D. Wijerathne**, Alper D. Ozkan, Jerome J. Lacroix

761-Pos **Board B212**
MAPPING THE CONFORMATIONAL STATES OF THE OUTER VESTIBULE OF KCSA, A PROKARYOTE POTASSIUM CHANNEL, USING THE LONG CHAIN QUATERNARY AMMONIUM BLOCKER, TETRAOCTYLAMMONIUM. **Clara Díaz-García**, Maria Lourdes Renart, Ana Marcela Giudici, Jose Antonio Poveda, Aleksander Fedorov, Jose M. Gonzalez-Ros, Mário Nuno Berberan-Santos, Manuel Prieto, Ana Coutinho

762-Pos **Board B213**
BREAKING THE DIMER OF THE VOLTAGE SENSING PHOSPHATASE. **Joshua A. Davisson**, Vamseedhar Rayaprolu, William J. Ratzan, John Kelley, Guillaume Sandoz, Susy C. Kohout

763-Pos **Board B214**
MOLECULAR MECHANISM OF HERG1 CHANNEL REGULATION BY CERAMIDES. **Williams E. Miranda**, Jiqing Guo, Haydee Mesa Galloso, Valentina Corradi, Peter D. Tieleman, Henry J. Duff, Sergei Y. Noskov

764-Pos **Board B215**
STRUCTURES OF A CONSTITUTIVELY ACTIVE MUTANT OF THE CALCIUM-ACTIVATED CHLORIDE CHANNEL TMEM16A IN LIGAND-FREE AND -BOUND STATES. **Andy K.M. Lam**, Jan Rheinberger, Cristina Paulino, Raimund Dutzler

765-Pos **Board B216**
ACTIVATION OF TWO DISTINCT POTASSIUM CURRENTS IN MELANOMA CELLS BY OXIDATION. Loretta Ferrera, Raffaella Barbieri, Cristiana Picco, Paolo Zuccolini, Giovanni Zifarelli, Alessia Remigante, Maria Rita Fumagalli, Caterina La Porta, Paola Gavazzo, **Michael Pusch**

766-Pos **Board B217**
MAGNETOGENETICS: THE DEBATE IS ON. **Gerardo Abbandonato**, Lorenzo Brocca, Federica Gasparri, Matteo Giannangeli, Caterina Ricci, Alessandro Caselli, Laura Cantù, Elena Del Favero, Alberto Boffi, Alessandra Bonamore, Alessandro Podestà, Gerhard Thiel, Anna Moroni

767-Pos **Board B218**
THE ION PERMEATION AND SELECTIVITY MECHANISMS OF RYANODINE RECEPTORS - MOLECULAR DYNAMICS STUDY WITH A NEW MULTI-SITE CA^{2+} MODEL. **Chunhong Liu**, Aihua Zhang, Hua Yu, Chen Song

768-Pos **Board B219**
REGULATION OF LOW VOLTAGE-ACTIVATED CALCIUM CHANNELS BY NEDD4 FAMILY OF E3 UBIQUITIN LIGASES. **Arden Darko-Boateng**, Henry M. Colecraft

769-Pos **Board B220**
A SCREENING STRATEGY TO IMPROVE SURFACE EXPRESSION OF THE SYNTHETIC CHANNEL BLINK IN MAMMALIAN CELLS. **Lorenzo Brocca**, Shadi Hambo, Anna Moroni

Actin Structure, Dynamics, and Associated Proteins (Boards B221 - B233)

770-Pos **Board B221**
APPLICATION OF FLORY-STOCKMAYER THEORY TO ACTOMYOSIN NETWORKS REVEALS MULTIPLE CONNECTIVITY STATES THAT GIVE RISE TO DISTINCT BEHAVIORS OF THE NETWORK. **Carlos A. Bueno Basurco**, James Liman, Nicholas P. Schafer, Margaret S. Cheung, Peter G. Wolynes

771-Pos **Board B222**
INSIGHTS FROM GRAPH THEORY ON THE MORPHOLOGIES OF ACTOMYOSIN NETWORKS WITH MULTILINKERS. Yossi Eliaz, Francois Nedelec, Gregory Morrison, Herbert Levine, **Margaret S. Cheung**

772-Pos **Board B223**
SIMULATING THE ARCHITECTURE OF THE ACTIN CORTEX DURING BLEB NUCLEATION. Calvin Calvin Pozderac, Joshua Riber, **Wanda Strychalski**

773-Pos **Board B224**
COUNTERACTIVE EFFECTS OF ELECTROSTATICS AND MACROMOLECULAR CROWDING ON ACTIN BUNDLE MECHANICS AND SECONDARY STRUCTURE. **Nicholas Castaneda**, Briana Lee, Jinho Park, Laurene Tetard, Ellen H. Kang

774-Pos **Board B225**
CROWDING TUNES THE ORGANIZATION AND MECHANICS OF ACTIN BUNDLES INDUCED BY ACTIN CROSSLINKING PROTEINS. **Jinho Park**, Myeongsang Lee, Briana Lee, Nicholas Castaneda, Laurene Tetard, Ellen H. Kang

775-Pos **Board B226**
THE THREE-DIMENSIONAL MODEL OF THE TROPOMODULIN ASSEMBLY AT THE POINTED END OF ACTIN FILAMENT. **Balaganesh Kuruba**, Garry E. Smith, Dmitri Tolkatchev, Alla S. Kostyukova

776-Pos **Board B227**
ACTIN TURNOVER REGULATION THROUGH MYOSIN ACTIVITY AND NETWORK ARCHITECTURE. **Danielle R. Scheff**, Margaret L. Gardel

777-Pos **Board B228**
INTERDEPENDENCE OF FILAMENT NUCLEATION, ELONGATION AND CROSSLINKING IN ACTIN BUNDLE ASSEMBLY. **Laura A. Sherer**, Naomi Courtemanche

778-Pos **Board B229**
CALPONIN 2 REGULATES THE RATE OF CYTOKINESIS. **Tzu-Bou Hsieh**, Airong Qian, Md Moazzem Hossain, Jian-Ping Jin

779-Pos **Board B230**
MOLECULAR MECHANISM OF LEIOMODIN ACTING AS A LEAKY CAP AT THE POINTED END OF THIN FILAMENTS. **Garry E. Smith**, Dmitri Tolkatchev, Alla S. Kostyukova

780-Pos **Board B231**
EXPLORING THE IMPACT OF ARP2/3 CONCENTRATION ON ACTOMYOSIN DYNAMICS. **Chengxuan Li**, James Liman, Yossi Eliaz, Margaret S. Cheung

781-Pos **Board B232**
REGULATION OF ACTIN FILAMENT ELONGATION BY A FORMIN-PROFILIN CHIMERA. Mark E. Zweifel, **Naomi Courtemanche**

782-Pos **Board B233**
STUDYING THE LOCAL YOUNG'S MODULUS OF PC-3 CELLS VIA SCANNING ION-CONDUCTANCE MICROSCOPY. **Vasilii Kolmogorov**, Alexander Vaneev, Yuri M. Efremov, Nikita Savin, Aleksei Iakovlev, Anna Alova, Svetlana Lavrushkina, Alexander Erofeev, Petr Gorelkin, Natalia Klyachko, Igor Kireev, Alexander Majouga, Pavel Novak, Yuri E. Korchev

Kinesins, Dyneins, and Other Microtubule-based Motors (Boards B234 - B259)

783-Pos **Board B234**
CARGO-SPECIFIC REGULATION OF TRANSPORT BY TAU. **Daniel Beaudet**, Abdullah R. Chaudhary, Christopher L. Berger, Adam G. Hendricks

784-Pos **Board B235**
CARGO BINDING TO MICROTUBULES. **Matthew J. Bovyn**, Babu Reddy Janakaloti Narayanareddy, Steven Gross, Jun F. Allard

785-Pos **Board B236**
KINESIN ATP HYDROLYSIS REQUIRES PROTON TUNNELING WITHIN THE ZUNDEL CATION AND A SECOND PROTON TRANSFER. **Micquel Downs**, Jessica M. Richard, Courtney Bryan Parke, Minmin Luo, Elizabeth Kim, Liqiong Liu, Edward Wojcik, Sunyoung Kim

786-Pos **Board B237**
THE REGULATORY FUNCTION OF THE AAA4 ATPASE DOMAIN OF CYTOPLASMIC DYNEIN. **Xinglei Liu**, Lu Rao, Arne Gennerich

787-Pos **Board B238**
PATHOGENIC MUTATIONS IN THE KINESIN-3 MOTOR KIF1A DIMINISH FORCE GENERATION AND MOVEMENT THROUGH ALLOSTERIC MECHANISMS. **Lu Rao**, Breane G. Budaitis, Shashank Jariwala, Yang Yue, David Sept, Kristen Verhey, Arne Gennerich

788-Pos **Board B239**
THE FAST AND SUPERPROCESSIVE KIF1A PREDOMINATELY RESIDES IN A VULNERABLE ONE-HEAD-BOUND STATE DURING ITS CHEMOMECHANICAL CYCLE. **Taylor M. Zaniewski**, William O. Hancock

789-Pos **Board B240**
STOCHASTIC MODEL ANALYSIS OF TRANSPORT BY DISSIMILAR COOPERATIVE MOLECULAR MOTORS. **Peter Kramer**, Joseph Klobusicky, John Fricks

790-Pos **Board B241**
AN SSDNA BASED FORCE SENSOR FOR MULTI MOTOR TRANSPORT AS AN ALTERNATIVE TO OPTICAL TWEEZERS. **Saurabh Shukla**, Alice Troitskaia, Barun K. Maity, Nikhila Swarna, Marco Tjioe, Carol S. Bookwalter, Kathleen M. Trybus, Yann R. Chemla, Paul R. Selvin

791-Pos **Board B242**
EVALUATION OF MICROTUBULES BINARY COLLISIONS USING NANOPATTERNED KINESINS. **Tamanna Ishrat Farhana**, Taikopaul Kaneko, Yuya Tojo, Ryuji Yokokawa

792-Pos **Board B243**
MOVEMENT ON-DEMAND: REGULATION OF THE KINESIN MOTOR ACTIVITY BY KINESIN-BINDING PROTEIN. **April L. Solon**, Zhenyu Tan, Sarah Haynes, Michael A. Cianfrocco, Alexey Nesvizhskii, Ryoma Ohi

793-Pos **Board B244**
COILED-COIL REGISTRY SHIFTS IN THE F684I MUTANT OF BICAUDAL D RESULT IN CARGO-INDEPENDENT ACTIVATION OF DYNEIN MOTILITY. Heying Cui, M. Yusuf Ali, Puja Goyal, Kaiqi Zhang, Jia-Ying Loh, Kathleen M. Trybus, **Sozanne R. Solmaz**

794-Pos **Board B245**
THE ROLE OF MOTOR CLUSTERING IN KINESIN-DRIVEN VESICLE TRANSPORT. **Rui Jiang**, Qingzhou Feng, You Jung Kang, William O. Hancock

795-Pos **Board B246**
TUNING CARGO RUN LENGTH VIA FRACTIONAL CHANGE IN KINESIN NUMBER. **John O. Wilson**, Jing Xu, Arturo Zaragoza

796-Pos **Board B247**
INTER-ORGANELLE INTERACTIONS BETWEEN THE ER AND MITOTIC APPARATUS FACILITATES ZIKA PROTEASE CLEAVAGE OF HUMAN KINESIN-5 AND CONTRIBUTES TO DISTINCT MITOTIC DEFECTS. **Edward Wojcik**, Liqiong Liu, Micquel Downs, Jesse Guidry

797-Pos **Board B248**
IDENTIFICATION OF INTERFACE RESIDUES OF THE RAB6/BICD2 COMPLEX. **David L. Moraga**, Sozanne R. Solmaz

798-Pos **Board B249**
ANALYZING THE THREE STATES INHIBITORY ACTIVITY OF PHOTOCHROMIC KINESIN EG5 INHIBITOR SPSAB. **Islam Md Alrazi**, Kei Sadakane, Shinsaku Maruta

799-Pos **Board B250**
SYNAPTIC VESICLE PRECURSOR TRANSPORT BY UNC-104/KIF1A REGULATING SPATIAL DISTRIBUTION OF SYNAPSES: MATHEMATIC MODELING. **Ryo Sasaki**, Kimiko Nagino, Kazuo Sasaki, Shinsuke Niwa, Kumiko Hayashi

800-Pos **Board B251**
OPTICAL TWEEZER-BASED MICRORHEOLOGY OF AXONEMAL DYNEIN-BASED ACTIVE MATERIAL SYSTEMS USING LARGE BEADS EXHIBIT MULTIPLE NONLINEARITIES NOT FOUND IN MEASUREMENTS MADE WITH SMALLER BEADS. **Megan C. Keech**, Maureen Buckley, Ashok Pabbathi, Joshua Alper

801-Pos **Board B252**
X-RAY FIBER DIFFRACTION AND NUMERICAL SIMULATION STUDIES ON THE CHANGE IN THE HELICAL SYMMETRY OF *CHLAMYDOMONAS* FLAGELLAR AXONEMES COUPLED WITH THE CHANGE IN CA^{2+} CONCENTRATIONS. Kenta Ishibashi, Hiroyuki Iwamoto, Hitoshi Sakakibara, **Kazuhiro Oiwa**

802-Pos **Board B253**
PHOSPHORYLATION OF KIF18A ALTERS ITS MITOTIC FUNCTION AND LOCALIZATION. **Katelyn A. Queen**, Sarah Vandal, Alex F. Thompson, Jason K. Stumpff

803-Pos **Board B254**
ADAPTOR PROTEINS FOR OPPOSING MOTORS INTERACT SIMULTANEOUSLY TO NUCLEAR PORE PROTEIN NUP358. **Crystal R. Noell**, Heying Cui, Rachael Behler, Jacqueline Zahn, Lynn Terry, Blaine Russ, Sozanne R. Solmaz

804-Pos **Board B255**
EFFECTS OF DYNEIN INHIBITOR ON THE NUMBER OF MOTOR PROTEINS TRANSPORTING SYNAPTIC CARGOS. **Kumiko Hayashi**, Miki G. Miyamoto, Shinsuke Niwa

805-Pos **Board B256**
THE EFFECT OF A REARWARD CONSERVATIVE FORCE AND A DRAGGED LOAD ON A SYNTHETIC NANO-MOTOR INSPIRED BY KINESIN. **Martin J. Zuckermann**, Christopher N. Angstmann, Nancy R. Forde, Paul Curmi, Heiner Linke

806-Pos **Board B257**
PURIFICATION AND CHARACTERIZATION OF OUTER ARM DYNEIN FROM TRYPANOSOMA BRUCEI. **Subash Godar**, James Oristian, Valerie Hinsch, Joshua Alper

807-Pos **Board B258**
CARGO RECOGNITION BY DYNEIN ADAPTOR BICAUDAL D_2. **Xiaoxin Zhao**

808-Pos **Board B259**
RECONSTITUTION OF DDB-KINESIN BIDIRECTIONAL TRANSPORT IN VITRO. **Allison Gicking**, William O. Hancock

Cell Mechanics, Mechanosensing, and Motility II (Boards B260 - B280)

809-Pos **Board B260**
INVESTIGATION OF SINGLE PROTON MOTIVE FORCE OF THE BACTERIAL FLAGELLAR MOTORS. **Ilyong Jung**

810-Pos **Board B261**
THE ROLES OF CYTOSKELETAL REGULATING PROTEINS ON THE MODULATION OF CORTICAL ACTIN AND THE IMPACT ON NEUTROPHIL DEFORMATION AND TRANSIT THROUGH MODEL PULMONARY CAPILLARY CONSTRICTIONS. **Brittany M. Neumann**, Yasmin Roye, Zachary S. Wilson, Craig Lefort

811-Pos **Board B262**
MEASURING SINGLE-CELL PLATELET FORCES VIA MICROCONTACT-PRINTED, REFERENCE-FREE TRACTION FORCE MICROSCOPY REVEALS RELATIONSHIPS BETWEEN CELL SHAPE, F-ACTIN LOCALIZATION, AND FORCE. **Molly Y. Mollica**, Kevin M. Beussman, Wendy E. Thomas, Nathan J. Sniadecki

812-Pos **Board B263**
UNDERSTANDING THE CROSSTALK BETWEEN MECHANICAL AND CHEMICAL GUIDANCE IN 3D CELL MIGRATION. **Pedram Esfahani**, Bo Sun

813-Pos **Board B264**
A NOVEL ROLE FOR THE ANTIOXIDATIVE ENZYME HEME OXYGENASE-1 IN BIOPHYSICAL CELL-ECM INTERACTIONS AND COLLECTIVE MIGRATION. **Will D. Leineweber**, Stephanie I. Fraley

814-Pos **Board B265**
THE MECHANICS OF PROSTATE CANCER PROGRESSION: TOWARD CHARACTERIZING METASTATIC POTENTIAL AS A FUNCTION OF CELL CONTRACTILITY. **Clayton W. Molter**, Allen J. Ehrlicher

815-Pos **Board B266**
MECHANICAL REGULATION OF EXTRAVASATION INTO BRAIN PARENCHYMA *IN VIVO*. **Woong Young So**, Patricia Gordon, Kandice Tanner

816-Pos **Board B267**
LIVE CELL CHROMOSOME LOSS REPORTER SHOWS MECHANICAL CONFINEMENT ASSOCIATES WITH CHROMOSOME MIS-SEGREGATION. **Kuangzheng Zhu**, Brandon Hayes, Mai Wang, Michael P. Tobin, Jason C. Andrechak, Yuntao Xia, Lawrence J. Dooling, Charlotte R. Pfeifer, Jerome Irianto, Dennis E. Discher, Junhong Du

817-Pos **Board B268**
DYNAMIC FLNA AND FILGAP BINDING IS REQUIRED FOR CONTRACTILE MECHANOTRANSDUCTION RESPONSE TO SHEAR-STRESS. **Louis-Philippe Bergeron-Sandoval**, Allen J. Ehrlicher

818-Pos **Board B269**
REGULATION OF THREE-DIMENSIONAL EPITHELIAL CELL SHAPE IN A TWO-DIMENSIONAL TISSUE. **Theresa A. Chmiel**, Margaret L. Gardel

819-Pos **Board B270**
LAMIN A/C-MEDIATED INTRACELLULAR POLARIZATION RECAPITULATES CELL-ECM CONTACT GUIDANCE. **Dong-Hwee Kim**

820-Pos **Board B271**
INTERFACIAL AND COHESIVE PROPERTIES OF CORNEAL EPITHELIUM. **Chunzi Liu**, Gerald G. Fuller

821-Pos **Board B272**
PROGRAMMABLE STRAIN GRADIENTS IN 3D HYDROGELS FOR GUIDING COMPLEX TISSUE ARCHITECTURE. **Avraham S. Kolel**, Hila Rushkin, Avishy Roitblat Riba, Sari Natan, Oren Tchaicheeyan, Ayelet Lesman

822-Pos **Board B273**
SPATIAL DISTRIBUTION OF LAMIN A DETERMINES NUCLEAR STIFFNESS AND STRESS-MEDIATED DEFORMATION. **Luv Kishore Srivastava**, Zhaoping Ju, Ajinkya Ghagre, Allen J. Ehrlicher

823-Pos **Board B274**
HIGH HYDROSTATIC PRESSURE INDUCES NUCLEUS TRANSLOCATION OF FOXO3. **Masatoshi Morimatsu**, Ayano Fujita, Masayoshi Nishiyama, Keiji Naruse

824-Pos **Board B275**
SURFACE AREA-TO-VOLUME RATIO, NOT CELLULAR VISCOELASTICITY IS THE MAJOR DETERMINANT OF RED BLOOD CELL TRAVERSAL THROUGH SMALL CHANNELS. Arman Namvar, Adam Blanch, Matthew Dixon, Olivia Carmo, Boyin Liu, Snigdha Tiash, Oliver Looker, Dean Andrew, Li-Jin Chan, Wai-Hong Tham, Peter V.S. Lee, **Vijay Rajagopal**, Leann Tilley

825-Pos **Board B276**
ENZYME-DEPENDENT INITIATION OF FIBRONECTIN FIBRILLOGENESIS DRIVES CELL MIGRATION AND MECHANOSENSING. Shay Melamed, Peleg Hasson, **Haguy Wolfenson**

826-Pos **Board B277**
THEORETICAL MODEL FOR OPTICAL GUIDANCE OF NEURONAL GROWTH CONES. **Kahmina R. Ford**, Erin M. Craig

827-Pos **Board B278**
MODELS OF GALVANOTAXIS: COUPLING CELL MIGRATION AND SHAPE. **Ifunanya Nwogbaga**, Brian Camley

828-Pos **Board B279**
EFFECTS OF CELL DENSITY AND CELL ADHESION ON MITOTIC NUCLEAR MIGRATION FROM A 3D DYNAMIC CELLULAR FINITE ELEMENTS MODEL (3DDYCELFEM). **Pourya Delafrouz**, Jie Liang

829-Pos **Board B280**
IMPACT OF SINGLE-WALLED CARBON NANOTUBES ON NEURAL PROGENITORS: FROM ENDOCYTOSIS TO DIFFERENTIATION. **Swetha Chandrasekar**, Sabrina Jedlicka

Energy Transducing Membrane Protein Complexes (Boards B281 - B288)

830-Pos **Board B281**
A NOVEL CHLORIDE CONDUCTING CONFORMATION IN HUMAN GLUTAMATE TRANSPORTERS. **Shashank Pant**, Ichia Chen, Qianyi Wu, Rosemary Cater, Meghna Sobti, Robert J. Vandenberg, Alastair G. Stewart, Josep Font, Renae M. Ryan, Emad Tajkhorshid

831-Pos **Board B282**
DISCOVERY WITH PROTONIC BIOENERGETICS: ISOTHERMAL ENVIRONMENTAL HEAT ENERGY UTILIZATION IN MITOCHONDRIA. **James W. Lee**

832-Pos **Board B283**
COMPUTATIONAL MODELING OF MITOCHONDRIAL K^+ AND H^+-DRIVEN ATP SYNTHESIS AND VOLUME REGULATION. **Sonia C. Cortassa**, Miguel A. Aon, Magdalena Juhaszova, Evgeny Kobrinsky, Dmitry B. Zorov, Steven J. Sollott

833-Pos **Board B284**
EVALUATION OF P. *DENITRIFICANS* F1-ATPASE ROTARY MOTION USING AUTOMATED METHODS TO DETECT HIDDEN STATES. **Nathan M. Suiter**, Jordan M. Bettencourt, Sandor Volkan-Kacso, Ricardo A. Matute

834-Pos **Board B285**
MULTI-STATE THEORY OF VELOCITIES AND TORQUES IN TRANSITIONS OF SINGLE-MOLECULE F1-ATPASE ROTATION. Luan Q. Le, **Sandor Volkan-Kacso**

835-Pos **Board B286**
REVEALING THE DIMERIC NATURE OF THE PRIMARY ACCEPTOR IN PHOTOSYSTEM I. **Michael J. Gorka**, Philip Charles, K V. Lakshmi, John H. Golbeck

836-Pos **Board B287**
DETERMINING THE ELECTRONIC STRUCTURE PARAMAGNETIC INTERMEDIATES IN MEMBRANE PROTEINS: A HIGH-RESOLUTION 2D 1H HYPERFINE SUBLEVEL CORRELATION STUDY OF THE REDOX-ACTIVE TYROSINES OF PHOTOSYSTEM II. **Brian Mark**, Christopher S. Coates, Sawako Sugimura, Amgalanbataar Baldansuren, Richard J. Debus, K V. Lakshmi

837-Pos **Board B288**
UNDERSTANDING THE MECHANISM OF PROTON-COUPLED ELECTRON TRANSFER IN THE BIOINSPIRED ARTIFICIAL PHOTOSYNTHETIC MIMIC, BENZIMIDAZOLE PHENOL PORPHYRIN. **K V. Lakshmi**, Dalvin D. Mendez-Hernandez, Amgalanbaatar Baldansuren, Vidmantas Kalendra, Philip Charles, Brian Mark, William Marshall, Brian Molnar, Thomas A. Moore, Ana L. Moore

Electron Microscopy (Boards B289 - B298)

838-Pos **Board B289**
LATTICE MICROPATTERNING OF ELECTRON MICROSCOPY GRIDS FOR IMPROVED CELLULAR CRYO-ELECTRON TOMOGRAPHY THROUGHPUT. **Leeya Engel**, Claudia G. Vasquez, Elizabeth A. Montabana, Belle M. Sow, Marcin P. Walkiewicz, William I. Weis, Alexander R. Dunn

839-Pos **Board B290**
BEYOND STRUCTURE. IMAGING PROTEIN DYNAMICS AT PHYSIOLOGICAL TEMPERATURES. **Silvia Acosta Gutierrez**, Gabriele Marchello, Cesare De Pace, Gabriel Ing, Ciro Lopez Vazquez, Simona Pilotto, Finn Werner, Neil Wilkinson, Francesco L. Gervasio, Lorena Ruiz-Perez, Giuseppe Battaglia

840-Pos **Board B291**
BALANCING STEREOCHEMISTRY AND GOODNESS-OF-FIT FOR AUTOMATED SIMULATION-BASED REFINEMENT INTO CRYO-EM MAPS. **Linnea S. Axelsson**, Urska Rovsnik, Christian Blau, Marie Lycksell, Victoria Lim, Rebecca J. Howard, Erik R. Lindahl

841-Pos **Board B292**
USE OF DUAL ELECTRON PROBES REVEALS ROLE OF FERRITIN IN EX VIVO HUMAN ERYTHROPOIESIS. **Maria A. Aronova**, Seung-Jae Noh, Colleen D. Byrnes, Guofeng Zhang, Youngchan Kim, Emily R. Meier, Richard D. Leapman

842-Pos **Board B293**
STATISTICAL CORRECTION OF IDP OLIGOMER VALENCY BY ITERATIVE SYNTHETIC RECONSTRUCTION OF EM MICROGRAPHS. **Barmak Mostofian**, Russell McFarland, Aidan Estelle, Jesse J. Howe, Elisar J. Barbar, Steve L. Reichow, Daniel M. Zuckerman

843-Pos **Board B294**
STRUCTURAL INSIGHTS INTO MODULATION OF 5-HT3AR FUNCTION. **Sandip Basak**, Kevin Felt, Arvind Kumar, Steven Ramsey, Marta Filizola, Sudha Chakrapani

844-Pos **Board B295**
STRUCTURE AND MECHANISM OF THE MULTIDRUG EFFLUX PUMP NORA. **Douglas N. Brawley**, David B. Sauer, Xuhui Zheng, Patrick M. Tate, Jinmei Song, Zheng Liu, Akiko Koide, Shohei Koide, Victor J. Torres, Da-Neng Wang, Nathaniel J. Traaseth

845-Pos **Board B296**
ARRANGEMENT AND SYMMETRY OF THE FUNGAL E3BP-CONTAINING CORE OF THE PYRUVATE DEHYDROGENASE COMPLEX. Bjorn Forsberg, Shintaro Aibara, Rebecca J. Howard, Narges Mortezaei, **Erik Lindahl**

846-Pos **Board B297**
CROSS A-HELICAL NANOTUBES: MINING THE DESIGNABILITY LANDSCAPE FOR FILAMENTOUS PEPTIDE NANOMATERIALS. **Fengbin Wang**, Ordy Gnewou, Charles Modlin, Leticia Beltran, Edward H. Egelman, Vincent Conticello

847-Pos **Board B298**
STRUCTURAL STUDIES OF STRAIGHT AND SUPERCOILED FLAGELLAR FILAMENTS FROM *CAMPYLOBACTER JEJUNI*. **Mark A. Kreutzberger**, Cheryl P. Ewing, Volker Kiessling, Tomasz Osinski, Frederic Poly, Fengbin Wang, Edward H. Egelman

Molecular Dynamics II (Boards B299 - B317)

848-Pos **Board B299**
HOW RIB43A AND ACETYLATION OF K40 CONTROL THE RIGIDITY OF MICROTUBULES. **Shintaroh Kubo**, Ahmad Khalifa, Muneyoshi Ichikawa, Daniel Dai, Corbin S. Black, Katya Peri, Shun Kai Yang, Javier Vargas, Khanh Huy Bui

849-Pos **Board B300**
ACID/BASE EFFECTS ON MITIGATING THE MOLECULAR INTERACTIONS OF PER- AND POLYFLUORO-ALKYL SUBSTANCES WITH PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR GAMMA (PPARG). **Nuno M.S. Almeida**, Yigitcan Eken, Angela K. Wilson

850-Pos **Board B301**
ADAPTIVE EVOLUTION OF PEPTIDE INHIBITORS FOR MUTATING SARS-COV-2. **Parth Chaturvedi**, Yanxiao Han, Petr Král, Lela Vukovic

851-Pos **Board B302**
FCSLIB: AN OPEN-SOURCE TOOL FOR FLUORESCENCE FLUCTUATION SPECTROSCOPY ANALYSIS FOR MOBILITY, NUMBER, AND MOLECULAR BRIGHTNESS IN R. **Alejandro Linares**, Raúl Pinto-Cámara, David Moreno, Haydee Hernández, José Martínez, Juan Rendón-Mancha, Christopher Wood, Adán Guerrero

852-Pos **Board B303**
INTRODUCTION OF POLARIZED EMBEDDING QMMM TECHNIQUE IN CHARMM WITH PSI4. **Anmol Kumar**, Andrew Simmonett, Alexander D. MacKerell

853-Pos **Board B304**
A CUDA FAST MULTIPOLE METHOD WITH HIGHLY EFFICIENT M2L FAR FIELD EVALUATION. **Bartosz Kohnke**, Carsten Kutzner, Helmut Grubmuller

854-Pos **Board B305**
PROBING MECHANICAL AND THERMODYNAMIC PROPERTIES OF *VIBRIO CHOLERAE* TOXT BINDING TO DNA BY MOLECULAR DYNAMICS SIMULATIONS. Mehdi Shams, Andreas Hanke, **Rim Touhami**, Ahmed Touhami

855-Pos **Board B306**
PROBING DRUGGABILITY OF THE ZIKA VIRUS ENVELOPE PROTEINS USING A NOVEL COMPUTATIONAL APPROACH. **Hyun Park**, Emad Tajkhorshid

856-Pos **Board B307**
STRUCTURAL EFFECTS OF MODIFICATIONS ON INTERACTIONS OF THROMBIN BINDING APTAMER WITH THROMBIN: A MOLECULAR DYNAMIC STUDY. **Walid M. Fahssi**, Vibhav Valsangkar, Goh Woon Lee, Sweta Vangaveti, Jia Sheng, Alan A. Chen

857-Pos **Board B308**
THE EFFECT OF MUTATIONS ON BINDING INTERACTIONS BETWEEN THE SARS-COV-2 RECEPTOR BINDING DOMAIN AND NEUTRALIZING ANTIBODIES. **Jonathan E. Barnes**, Peik K. Lund-Andersen, Jagdish S. Patel, F. Marty Ytreberg

858-Pos **Board B309**
UNBIASED TRAJECTORY-BASED ESTIMATION OF STATIONARY DISTRIBUTIONS AND SPLITTING PROBABILITIES. **John D. Russo**, David Aristoff, Gideon Simpson, Jeremy T. Copperman, Daniel M. Zuckerman

859-Pos **Board B310**
SINGLE PARTICLE TRACKING MODEL SEGMENTATION USING CHANGE DETECTION TECHNIQUES. **Boris I. Godoy**, Sean B. Andersson

860-Pos **Board B311**
MOLECULAR MAP OF DNA-POLYETHYLENIMINE NANOPARTICLE DISSOCIATION UNDER ENDOSOMAL ACIDIFICATION. **Subhamoy Mahajan**, Tian Tang

861-Pos **Board B312**
A GPU-ACCELERATED FAST MULTIPOLE METHOD FOR GROMACS. PERFORMANCE AND ACCURACY. Bartosz Kohnke, **Carsten Kutzner**, Helmut Grubmuller

862-Pos **Board B313**
A COMPUTATIONAL PIPELINE TO DESIGN BH3-MIMETIC PEPTIDE INHIBITORS THAT CAN BIND SPECIFICALLY TO MCL-1 OR BCL-XL: ROLE OF NON-HOTSPOT RESIDUES. **Narendra Reddy C**, Nishat Manzar, Bushra Ateeq, Ramasubbu Sankararamakrishnan

863-Pos **Board B314**
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864-Pos **Board B315**
LOOS, A BETTER TOOL TO ANALYZE MOLECULAR DYNAMICS SIMULATIONS. **Alan Grossfield**, Tod D. Romo

865-Pos **Board B316**
IN SILICO TRANSMISSION OF CYCLIC AMP THROUGH CONNEXIN 26 VIA MILESTONING AND EXTERNAL ELECTRIC FIELD MOLECULAR DYNAMICS SIMULATIONS. **Wesley M. Botello-Smith**, Yichun Lin, Wenjuan Jiang, Luca Maragliano, Jorge E. Contreras, Andrew L. Harris, Yun Lyna Luo

866-Pos **Board B317**
MAGNESIUM COORDINATION OF ATP - FORCE FIELD EVALUATION AND STRUCTURE-DRIVEN CORRECTION. **Floris Buelens**, Hadas Leonov, Bert L. de Groot, Helmut Grubmuller

Optical Microscopy and Superresolution Imaging I (Boards B318 - B339)

867-Pos **Board B318**
RESOLUTION IMPROVEMENT IN CIDS SUPER-RESOLUTION MICROSCOPY USING A PHASOR PLOT APPROACH. **Ali Mohebi**, Aymeric Le Gratiet, Riccardo Marongiu, Fabio Callegari, Paolo Bianchini, Alberto Diaspro

868-Pos **Board B319**
VERSATILE, HIGH-RESOLUTION, AND LARGE FIELD-OF-VIEW SINGLE-MOLECULE IMAGING BY OBLIQUE PLANE MICROSCOPY. Peter Brown, Rory Kruithoff, Lei Zhou, Yoshihiko Kobayashi, Purushothama Rao Tata, Alfred Millet-Sikking, Andrew G. York, Kevin M. Dean, Reto P. Fiolka, **Douglas P. Shepherd**

869-Pos **Board B320**
INVESTIGATION OF ONCOGENE-INDUCED ALTERATIONS IN CHROMATIN ORGANIZATION IN VITRO BY STRUCTURED ILLUMINATION MICROSCOPY. **Isotta Cainero**, Elena Cerutti, Mario Faretta, Gaetano Ivan Dellino, Pier Giuseppe Pelicci, Alberto Diaspro, Luca Lanzano'

870-Pos **Board B321**
A NOVEL DIGITAL-MICROMIRROR DEVICE BASED STRUCTURED ILLUMINATION MICROSCOPE FOR MULTICOLOR LIVE CELL IMAGING. **Peter T. Brown**, Rory Kruithoff, Gregory J. Seedorf, Douglas P. Shepherd

871-Pos **Board B322**
ISM-ASSISTED TOMOGRAPHIC STED MICROSCOPY ALLOWS FOR SAMPLE-GENTLE SUPERRESOLUTION IMAGING. **Julia Kratz**, Claudia Geisler, Alexander Egner

872-Pos **Board B323**
CORRELATING INTERFERENCE REFLECTION MICROSCOPY WITH 3D SUPERRESOLUTION FLUORESCENCE MICROSCOPY. **Lukas Velas**, Philipp Zelger, Alexander Jesacher, Gerhard J. Schütz

873-Pos **Board B324**
OPTIMIZED SUPER-RESOLUTION IMAGING OF NUCLEAR SITES IN AN ENGINEERED LEUKEMIA CELL LINE. **Elena Cerutti**, Isotta Cainero, Gaetano Ivan Dellino, Mario Faretta, Pier Giuseppe Pelicci, Alberto Diaspro, Luca Lanzano'

874-Pos **Board B325**
DYNAMICS OF THREE GLYCOSIDE HYDROLASES PROBED BY SINGLE-MOLECULE FLUORESCENCE MICROSCOPY. **Laurent Geffroy**, Haley A. Brown, Nicole M. Koropatkin, Julie S. Biteen

875-Pos **Board B326**
SINGLE CELL PHYSIOLOGICAL CHARACTERIZATION IN LIVING TISSUE. **Enrico Gratton**

876-Pos **Board B327**
SIM-PTYCHOGRAPHY IMAGING OF HUTCHINSON-GILFORD PROGERIA SYNDROME (HGPS) CELLS. **Alberta Trianni**, Nicholas Anthony, Isotta Cainero, Alberto Diaspro

877-Pos **Board B328**
LABEL-FREE SUPER-RESOLUTION MICROSCOPY BY MEANS OF TRANSIENT ABSORPTION SATURATION. **Behjat Sadat Kariman**, Takahiro Deguchi, Marco Scotto d'Abbusco, Giulia Zanini, Alberto Diaspro, Paolo Bianchini

878-Pos **Board B329**
STRUCTURAL CHANGES AND DYNAMICS OF DISASSEMBLING MICROTUBULES REVEALED BY LABEL-FREE SUPER-RESOLUTION MICROSCOPY. **Milan Vala**, Łukasz Bujak, Antonio G. Marin, Kristýna Holanová, Verena Henrichs, Marcus Braun, Zdenek Lansky, Marek Piliarik

879-Pos **Board B330**
PYME: AN INTEGRATED PLATFORM FOR HIGH-THROUGHPUT SMART NANOSCOPY. **Andrew E.S. Barentine**, Yu Lin, Phylicia Kidd, Miao Liu, Leonhard Balduf, Michael R. Grace, Edward Courchaine, Zach Marin, Juliana Rios Chen, Siyuan Wang, Joerg Bewersdorf, David Baddeley

880-Pos **Board B331**
QUANTITATIVE LIVE-CELL PALM REVEALS NANOSCOPIC FAA4 REDISTRIBUTIONS AND DYNAMICS ON LIPID DROPLETS DURING METABOLIC TRANSITIONS IN YEAST. **Santosh Adhikari**, Joe Moscatelli, Elias M. Puchner

881-Pos **Board B332**
COMPREHENSIVE FLUOROPHORE BLINKING ANALYSIS PLATFORM AS A PREREQUISITE FOR CLUSTER DETECTION VIA PHOTOAVTICATED LOCALIZATION MICROSCOPY. **Mario Brameshuber**, Benedikt K. Rossboth, René Platzer, Magdalena Schneider, Eva Sevcsik, Florian Baumgart, Hannes Stockinger, Gerhard J. Schuetz, Johannes B. Huppa

882-Pos **Board B333**
AXIAL LINE-SCANNING STED-FCS. Peng Gao, **Karin Nienhaus**, G. Ulrich Nienhaus

883-Pos **Board B334**
QUANTITATIVE MULTI-TARGET SUPER-RESOLUTION FOR ESTIMATING ANTIBODY LABELING EFFICIENCY. **David J. Schodt**, Sandeep Pallikkuth, Keith A. Lidke

884-Pos **Board B335**
3D PARTICLE LOCALIZATION IN LIVING CELLS BY DEEP LEARNING. **John Kohler**, Kwang-Ho Hur, Jesse Donahue, Rayna M. Addabbo, Joachim D. Mueller

885-Pos **Board B336**
ASSESSING LOCATION AND DISTRIBUTION OF PROTEINS AT THE NUCLEAR ENVELOPE FROM DUAL COLOR Z-SCAN INTENSITY PROFILES. **Siddarth Reddy Karuka**, Isaac Angert, Justyn Fine, Shivani Mahajan, G. W. Gant Luxton, Joachim D. Mueller

886-Pos **Board B337**
VISUALIZING DYNAMIC PROCESSES WITH RAPIDFLIM^{HIRES}: ULTRA FAST FLIM WITH OUTSTANDING 10 PS TIME RESOLUTION. Maria Loidolt-Krüger, Fabian Jolmes, Matthias Patting, Michael Wahl, Evangelos Sisamakis, André Devaux, **Marcelle Koenig**, Uwe Ortmann, Felix Koberling, Rainer Erdmann

887-Pos **Board B338**
SPIRAL PHASE PLATE FOR TRACKING 3D MOTION IN CELLS. **Keith Bonin**, Sudhakar Prasad, Paul Kefer, Stephen Baker, George Holzwarth, Pierre-Alexandre Vidi

888-Pos **Board B339**
THE RELIABILITY OF FLUORESCENCE Z-SCAN ANALYSIS IN THE COMPLEX ENVIRONMENT OF THE LIVING CELL. **Isaac Angert**, Siddarth Reddy Karuka, John Kohler, Yan Chen, Joachim D. Mueller

Single-Molecule Spectroscopy (Boards B340 - B364)

889-Pos **Board B340**
SINGLE-MOLECULE FLUORESCENCE-BASED MEASUREMENTS OF CONFORMATIONAL DYNAMICS OF CALCIUM-BINDING PROTEIN RECOVERIN. **Ivan Maslov**, Polina Khorn, Andrey Bogorodskiy, Alisa Volgozhannikova, Ilia Zykov, Anatoli Belousov, Sergei Permyakov, Evgeni Zernii, Johan Hofkens, Jelle Hendrix, Thomas Gensch, Valentin Borshchevskiy

890-Pos **Board B341**
SINGLE MOLECULE FLOURESCENCE METHODS TO MONITOR SITE-SPECIFIC FLUCTUATIONS OF CY3 MONOMER AND DIMER LABELED DNA CONSTRUCTS WITHIN MACROMOLECULAR MACHINES. **Jack Maurer**, Amr Tamimi, Anabel Chang, Andrew H. Marcus

891-Pos **Board B342**
COUNTING FLUOROPHORES AND FINDING POTENTIALS FROM FRET, BAYESIAN NONPARAMETRICS FOR CHALLENGING PROBLEMS IN BIOPHYSICS. **Shep Bryan IV**

892-Pos **Board B343**
COMBINEFLUENT: AN OPEN SOURCE, LOW-COST LASER SYSTEM FOR SINGLE-MOLECULE MICROSCOPY. **Dylan George**, Ashley Cadby, Timothy D. Craggs

893-Pos **Board B344**
A BAYESIAN NONPARAMETRIC APPROACH TO LEARNING MOLECULAR SPECIES AND DIFFUSION DYNAMICS BASED ON PHOTON ARRIVAL DATA. **Weiqing Xu**

894-Pos **Board B345**
DNA/RNA SMRT SEQUENCING USING ELECTRO-OPTICAL WAVEGUIDES. **Fatemeh Farhangdoust**

895-Pos **Board B346**
PROBING LENGTH SCALE DEPENDANT DIFFUSION DYNAMICS OF THE NODAL MORPHOGEN SQUINT INLIVE ZEBRAFISH EMBRYOS THROUGH SPATIAL CROSS-CORRELATIONS IN IMAGING FLUORESCENCE CORRELATION SPECTROSCOPY. **Ashwin V.S. Nelanuthala**, Jagadish Sankaran, Karuna Sampath, Thorsten Wohland

896-Pos **Board B347**
SINGLE MOLECULE INVESTIGATION OF TANDEM G-QUADRUPLEX STRUCTURES FORMED BY HUMAN TELOMERIC SEQUENCE. **Golam Mustafa**, Sajad Sheikh, Keshav G C, Sanjaya Abeysirigunawardena, Hamza Balci

897-Pos **Board B348**
BAYESIAN CLASSIFICATION AND MODELING OF SINGLE MOLECULE FLUORESCENCE COLOCALIZATION IMAGES. **Yerdos A. Ordabayev**, Larry J. Friedman, Douglas L. Theobald, Jeff Gelles

898-Pos **Board B349**
HIGHLY SENSITIVE PROTEIN QUANTIFICATION BY DIRECT KINETIC FINGERPRINTING OF SINGLE PROTEIN MOLECULES. **Tanmay Chatterjee**, Achim Knappik, Erin Sandford, Muneesh Tewari, Sung Won Choi, Willium B. Strong, Evan P. Thrush, Kenneth J. Oh, Ning Liu, Nils G. Walter, Alexander Johnson-Buck

899-Pos **Board B350**
SRRF 'N' TIRF-FCS: NEW INSIGHTS INTO EGFR-CYTOSKELETON INTERACTIONS. **Harikrushnan Balasubramanian**, Jagadish Sankaran, Wai Hoh Tang, Xue Wen Ng, Adrian Röllin, Thorsten Wohland

900-Pos **Board B351**
COMBINING ACOUSTIC FORCE SPECTROSCOPY AND DNA SCAFFOLD FOR HIGH THROUGHPUT MEASUREMENT OF LIGAND-RECEPTOR KINETICS AT SINGLE MOLECULE RESOLUTION. **Yong Jian Wang**, Claire Valotteau, Adrien Aimard, Lorenzo Villanueva, Dorota Kostrz, Maryne Follenfant, Terence Strick, Charlie Gosse, Patrick Chames, Felix Rico, Laurent Limozin

901-Pos **Board B352**
THEORETICAL COMPARISON OF REAL-TIME SINGLE PARTICLE TRACKING TECHNIQUES. **Bertus van Heerden**, Tjaart Krüger

902-Pos **Board B353**
A CONTINUOUS TIME REPRESENTATION OF SMFRET FOR THE EXTRACTION OF RAPID KINETICS. **Zeliha Kilic**, Ioannis Sgouralis, Wooseok Heo, Kunihiko Ishii, Tahei Tahara, Steve Pressé

903-Pos **Board B354**
COMBINING FLUORESCENCE MICROSCOPY AND ACOUSTIC FORCE SPECTROSCOPY TO MEASURE DNA AND PROTEIN MECHANICS. **Kees-Karel H. Taris**, Gijs J.L. Wuite, Erwin J.G. Peterman

904-Pos **Board B355**
VISUALIZING THE PHOSPHORYLATION CYCLES OF SINGLE MOLECULES IN SOLUTION. **Quan Wang**

905-Pos **Board B356**
UNTETHERING SINGLE MOLECULE SPECTROSCOPY WITH 3D-SMART. **Kevin D. Welsher**

906-Pos **Board B357**
SINGLE MOLECULE SHAPE DETERMINATION OF BIOMOLECULES USING DNA NANOSWITCH CALIPERS. **Prakash Shrestha**, Darren Yang, William Shih, Wesley P. Wong

907-Pos **Board B358**
APPLY DUAL-COLOR FCCS METHOD TO QUANTIFY PHASE SEPARATION AT THE NANOSCALE. **Chunlai Chen**

908-Pos **Board B359**
A BAYESIAN NONPARAMETRIC METHOD FOR TRACKING MULIPLE MOLECULES WITH A MULTI-FOCUS CONFOCAL MICROSCOPE. **Sina Jazani**, Ioannis Sgouralis, Douglas P. Shepherd, Steve Pressé

909-Pos **Board B360**
SINGLE-MOLECULE FINGERPRINT SPECTRUM FOR BIOLOGICAL NANOPORE SENSING. **Xinyi Li**, Meng-Yin Li, Xixin Fu, Yongjing Wan, Yi-Lun Ying, Yi-Tao Long

910-Pos **Board B361**
UNRAVELLING GENE EXPRESSION NETWORKS AND INFERRING KINETIC PARAMETERS FROM SMFISH DATA. **Camille Moyer**, Zeliha Kilic, Douglas Shepherd, Steve Presse

911-Pos **Board B362**
SINGLE-MOELECULE IMAGING OF FET FUSION ONCOPROTEINS. Linyu Zuo, Guanwei Zhang, Matthew Massett, Jun Cheng, Zicong Guo, Liang Wang, Yifei Gao, Ru Li, Xu Huang, Pilong Li, **Zhi Qi**

912-Pos **Board B363**
JOINT ESTIMATION OF TRAJECTORY AND MOTION MODEL PARAMETERS IN THREE-DIMENSIONAL SINGLE PARTICLE TRACKING USING THE DOUBLE-HELIX POINT SPREAD FUNCTION. Ye Lin, Fatemeh Sharifi, **Sean B. Andersson**

913-Pos **Board B364**
SEQUENCE AND STRUCTURE BASED APPROACH FOR AUTOMATED FRET NETWORK DESIGN. **George L. Hamilton**, Hugo Sanabria, Faruck Morcos, Narendar Kolimi, Aishwarya Krishnamohan

Thursday, February 25, 2021

Daily Program Summary

9:00 AM-10:00 AM	**General Networking**
10:00 AM-11:30 AM	**Symposium: New and Notable** **Co-chairs:** *Patricia Bassereau, Institut Curie, France, Bertrand Garcia-Moreno, Johns Hopkins University, USA* PHOTOBIOLOGY OF NEW MICROBIAL RHODOPSINS. Keiichi Inoue A MEMBRANE ASSOCIATED ACTIN-SPECTRIN PERIODIC LATTICE ACTS AS A SHOCK ABSORBER TO PROTECT AXONS UNDER MECHANICAL STRESS. Pramod Pullarkat STRUCTURAL BASIS OF WNT SECRETION BY ITS CARRIER. Rie Nygaard LIFE OF VIMENTIN INTERMEDIATE FILAMENTS INSIDE AND OUTSIDE THE CELL. Alison Patteson
10:00 AM-11:30 AM	**Platform: Protein Dynamics and Allostery II**
10:00 AM-11:30 AM	**Platform: Membrane Protein Dynamics and Folding I**
10:00 AM-11:30 AM	**Platform: Membrane Peptides, Fusion, and Non-Bilayers**
10:00 AM-11:30 AM	**Platform: Ligand-gated Channels**
10:00 AM-11:30 AM	**Platform: Cytoskeletal Assemblies, Cell Mechanics, Mechanosensing and Motility**
10:00 AM-11:30 AM	**Platform: Mitochondria and Energy**
10:00 AM-11:30 AM	**Platform: Molecular Dynamics and Bioinformatics II**
10:00 AM-11:30 AM	**Platform: Bioengineering, Biosurfaces, and Biomaterials**
10:00 AM-5:00 PM	**Exhibits**
11:30 AM-12:00 PM	**Exhibitor Presentation: Nanion Technologies** **Automated Electrophysiology For Any Kinetics: Ion Channels & Transporters**
11:30 AM-12:00 PM	**Break**
12:00 PM -1:30 PM	**Poster Presentations and Late Posters**
1:00 PM-2:00 PM	**General Networking**
1:30 PM-2:00 PM	**Exhibitor Presentation: Andor Technology** **SRRF-Stream$^+$ - A Flexible and Effective Solution For Real-Time and Live Cell Superresolution Microscopy**
1:30 PM-2:00 PM	**Break**
2:00 PM-3:30 PM	**Meet the Editors**
2:00 PM-3:30 PM	**Platform: Protein Structure and Conformation: Viruses**
2:00 PM-3:30 PM	**Platform: Protein Prediction, Design, and Stability II**
2:00 PM-3:30 PM	**Platform: Protein-Nucleic Acid Interactions and Chromatin II**
2:00 PM-3:30 PM	**Platform: Membrane Structure**
2:00 PM-3:30 PM	**Platform: Muscle, Calcium and Signaling II**
2:00 PM-3:30 PM	**Platform: Actin and Associated Proteins - Myosins**
2:00 PM-3:30 PM	**Platform: Neuroscience**
2:00 PM-3:30 PM	**Platform: Spectroscopy, Diffraction and Microscopy**
3:30 PM -4:00 PM	**Exhibitor Presentation: Oxford Instruments NanoAnalysis** **Multi-Colour Electron Microscopy: Using Energy Dispersive X-ray Spectrometry to Image and Analyse Biological Samples**
3:30 PM -5:30 PM	**Speed Networking**
4:00 PM-4:30 PM	**Exhibitor Presentation: Molecular Devices** **Streamlining Electrophysiology Data Acquisition and Analysis in Ion Channel Study with Axon pCLAMP 11 Software**

Thursday, February 25

General Networking

9:00 AM-10:00 AM

Catch up with colleagues and friends in the biophysical community during our networking hour. This event, which is open to all meeting attendees, provides meet-and-greet opportunities to enhance your virtual meeting experience.

Symposium
New and Notable

10:00 AM - 11:30 AM

Co-chairs
Patricia Bassereau, Institut Curie, France
Bertrand Garcia-Moreno, Johns Hopkins University, USA

NO ABSTRACT **10:00 AM**
PHOTOBIOLOGY OF NEW MICROBIAL RHODOPSINS. **Keiichi Inoue**

NO ABSTRACT **10:22 AM**
A MEMBRANE ASSOCIATED ACTIN-SPECTRIN PERIODIC LATTICE ACTS AS A SHOCK ABSORBER TO PROTECT AXONS UNDER MECHANICAL STRESS. **Pramod Pullarkat**

NO ABSTRACT **10:44 AM**
STRUCTURAL BASIS OF WNT SECRETION BY ITS CARRIER. **Rie Nygaard**

NO ABSTRACT **11:06 AM**
LIFE OF VIMENTIN INTERMEDIATE FILAMENTS INSIDE AND OUTSIDE THE CELL. **Alison Patteson**

Platform
Protein Dynamics and Allostery II

10:00 AM - 11:30 AM

Chair
Faruck Morcos, The University of Texas at Dallas, USA

914-PLAT **10:00 AM**
EVOLUTIONARY DETERMINED EPISTASIS ADVANCES CONFORMATIONAL SAMPLING, MOLECULAR DESIGN AND EVOLUTIONARY MODELS. **Faruck Morcos**

915-PLAT **10:30 AM**
INVESTIGATION OF ALLOSTERIC MECHANISM FROM AN EVOLUTIONARY PERSPECTIVE. **Riya Samanta**, Calvin Muth, Neel Sanghvi, Dorothy Beckett, Silvina Matysiak

916-PLAT **10:45 AM**
UREA AS A PROTEIN LID OPENER: OVERCOMING SUBSTRATE INHIBITION IN ADENYLATE KINASE BY TUNING CONFORMATIONAL DYNAMICS. **David Scheerer**, Haim Yuval Aviram, Hisham Mazal, Inbal Riven, Gilad Haran

917-PLAT **11:00 AM**
REFINING PROTEIN CONFORMATIONAL ENSEMBLES FROM SEPARATE EXPERIMENTAL MEASUREMENTS. **Emily Boland**, Jennifer M. Hays, Peter Kasson

918-PLAT **11:15 AM**
ALLOSTERIC COMMUNICATION IN PDZ3 IS ORCHESTRATED BY THE CHARGED N-TERMINUS. **Tandac Furkan Guclu**, Nazli Kocatug, Canan Atilgan, Ali Rana Atilgan

Platform
Membrane Protein Dynamics and Folding I

10:00 AM - 11:30 AM

Chair
Dirk Slotboom, University of Groningen, The Netherlands

NO ABSTRACT **10:00 AM**
MEMBRANE-ASSISTED DOMAIN MOVEMENTS IN SOLUTE TRANSPORTERS. **Dirk Slotboom**

919-PLAT **10:30 AM**
TEMPERATURE DEPENDENCY OF CLC-EC1 DIMERIZATION IN LIPID BILAYERS. **Rahul Chadda**, Taeho Lee, Priyanka Sandal, Robyn Mahoney-Kruszka, Janice L. Robertson

920-PLAT **10:45 AM**
REGULATING THE MEMBRANE TRANSPORT PROCESSES FOR BIO-MOLECULES VIA AN ENGINEERED AEROLYSIN. **Meng-Yin Li**, Xue-yuan Wu, Yi-Lun Ying, Yi-Tao Long

921-PLAT **11:00 AM**
DEVELOPING A COARSE-GRAINED MODEL FOR SECRETION OF THE PASSENGER DOMAIN OF THE AUTOTRANSPORTER ESPP TO REACH REALISTIC SIMULATION TIME SCALES. **Lixinhao Yang**, Jinchan Liu, James C. Gumbart

922-PLAT **11:15 AM**
THE INTERPLAY BETWEEN THE SELF-ORGANIZATION AND CURVATURE SENSING IN SEPTIN ASSEMBLIES. Ehssan Nazockdast, **Wenzheng Shi**, Kevin Cannon, Amy Gladfelter

Platform
Membrane Peptides, Fusion, and Non-Bilayers

10:00 AM - 11:30 AM

Chair
Pedro Carvalho, University of Oxford, United Kingdom

923-PLAT **10:00 AM**
STRUCTURE OF THE YEAST SEIPIN REVEALS DETERMINANTS FOR LIPID DROPLET BIOGENESIS. **Pedro Carvalho**, Yoel Klug, Justin Deme, Susan Lea

924-PLAT **10:30 AM**
BINDING MODE OF SARS-COV2 FUSION PEPTIDE TO HUMAN CELLULAR MEMBRANES. **Defne Gorgun**, Muyun Lihan, Karan Kapoor, Emad Tajkhorshid

925-PLAT **10:45 AM**
DESCRIBING ANTIFUNGAL DRUG -STEROL INTERACTIONS INSIDE THE MEMBRANE: THE ROLE OF DYNAMICS. **Kevin J. Cheng**, Ashley M. De Lio, Agnieszka Lewandowska, Corinne P. Soutar, Martin D. Burke, Chad M. Rienstra, Taras V. Pogorelov

926-PLAT **11:00 AM**
EBOLA VIRUS GLYCOPROTEIN INTERACTS WITH CHOLESTEROL TO ENHANCE MEMBRANE FUSION AND CELL ENTRY. Jinwoo Lee, Alex J.B. Kreutzberger, **Laura Odongo**, Elizabeth A. Nelson, David Nyenhuis, Volker Kiessling, Binyong Liang, David S. Cafiso, Judith M. White, Lukas K. Tamm

927-PLAT **11:15 AM**
NANOMECHANICAL CHARACTERIZATION OF THE SYNERGISM OF ANTIMICROBIAL PEPTIDES PGLA AND MAG2 FOR LIPID MEMBRANE DISRUPTION. **Fabio Perissinotto,** Sebastien Janel, Javier Lopez-Alonso, Vincent Dupres, Burkhard Bechinger, Frank Lafont, Lorena Redondo-Morata

Platform
Ligand-gated Channels

10:00 AM - 11:30 AM

Chair
Andrea Brüggemann, Nanion Technologies, Germany

No Abstract **10:00 AM**
THE ABC AND D OF NMDA RECEPTORS AS POTENTIAL TARGETS FOR THE TREATMENT OF DEPRESSION AND CHRONIC PAIN. **Andrea Brüggemann**

928-Plat **10:30 AM**
STRUCTURAL BASIS OF FUNCTIONAL TRANSITIONS IN MAMMALIAN NMDA RECEPTORS. **Tsung-Han Chou**, Nami Tajima, Annabel Romero-Hernandez, Hiro Furukawa

929-Plat **10:45 AM**
HETEROGENEOUS POPULATIONS OF LIGAND-GATED ION CHANNEL, GLIC, REVEALED BY CRYO-ELECTRON MICROSCOPY AND SIMULATIONS. **Urska Rovsnik**, Yuxuan Zhuang, Bjorn Forsberg, Marta Carroni, Linnea Axelsson, Christian Blau, Rebecca J. Howard, Erik R. Lindahl

930-Plat **11:00 AM**
STRUCTURES OF HUMAN PROTON-ACTIVATED CHLORIDE CHANNEL (PAC) REVEAL MECHANISM OF PH SENSING AND GATING. **James Osei-Owusu**, Zheng Ruan, Juan Du, Wei Lu, Zhaozhu Qiu

931-Plat **11:15 AM**
ROLE OF D-SERINE BINDING TO THE NMDA RECEPTOR LIGAND-BINDING DOMAIN. **Remy A. Yovanno**, Albert Y. Lau

Platform
Cytoskeletal Assemblies, Cell Mechanics, Mechanosensing and Motility

10:00 AM - 11:30 AM

Chair
Erika Holzbaur, University of Pennsylvania, USA

No Abstract **10:00 AM**
NAVIGATING COMPLEX CYTOSKELETAL ARRAYS: KINESIN MOTILITY ALONG BIPOLAR MICROTUBULES IN DENDRITES. **Erika Holzbaur**

932-Plat **10:30 AM**
PATIENT-DERIVED GLIOBLASTOMA (GBM) CELLS EXHIBIT DISTINCT RHEOLOGICAL PROFILES ASSOCIATED WITH ALTERED CYTOSKELETON REGULATION. **Amelia Foss**, Woong Young So, Michael M. Gottesman, Kandice Tanner

933-Plat **10:45 AM**
NON-LINEAR MECHANICAL RESPONSE TRANSFORMS A GRADED MOLECULAR DISTRIBUTION INTO A STEP-WISE OUTPUT IN CELL BEHAVIOR. Sourabh Bhide, Denisa Gombalova, Johannes Stegmaier, Gregor Moenke, **Julio M. Belmonte**, Maria Leptin

934-Plat **11:00 AM**
HIERARCHICAL BAYESIAN 3D TRACTION FORCE MICROSCOPY WITH LOCAL REGULARIZATION BASED ON IMAGE QUALITY. **Adithan Kandasamy**, Yi-Ting Yeh, Amy B. Schwartz, Juan C. Lasheras, Juan C. del Alamo

935-Plat **11:15 AM**
DIFFERENTIAL ADHESION AND PERIODIC OSCILLATIONS OF MYOSIN-II MECHANICALLY PROOFREAD FILOPODIA INTERACTIONS DURING EMBRYONIC HEART FORMATION. **Timothy E. Saunders**, Shaobo Zhang, Sham Tlili

Platform
Mitochondria and Energy

10:00 AM - 11:30 AM

Chair
Edward Lyman, University of Delaware, USA

936-Plat **10:00 AM**
MEMBRANE FLUIDITY: BOTH FUNDAMENTAL AND FUNCTIONAL. **Edward Lyman**

937-Plat **10:30 AM**
THE SPATIO-TEMPORAL ORGANIZATION OF MITOCHONDRIAL F1FO-ATP SYNTHASE IS DETERMINED BY ITS ACTIVITY AND CONTROLLED BY IF1. **Karin B. Busch**, Kirill Salewskij, Bettina Rieger, Verena Weissert, Frances Hager, Tasnim Arroum, Sara Cogliati, Christian P. Richter, Olympia E. Psathaki, Thomas Zobel, José A. Enríquez, Timo Dellmann

938-Plat **10:45 AM**
TRACKING MOTILITY AND MORPHOLOGY OF INDIVIDUAL MITOCHONDRIA REVEALS LARGE HETEROGENEITIES IN BREAST CANCER SUBTYPES. **Austin E.Y.T. Lefebvre**, Dennis Ma, Kai Kessenbrock, Devon A. Lawson, Michelle A. Digman

939-Plat **11:00 AM**
WETTING TRANSITIONS IN THE ATP SYNTHASE C-SUBUNIT RING, A LARGE-CONDUCTANCE ION CHANNEL. Rachel J. Dotson, Nelli Mnatsakanyan, Elizabeth A. Jonas, **Sally C. Pias**

940-Plat **11:15 AM**
ASYNUCLEIN REGULATES MITOCHONDRIAL CALCIUM TRANSPORT THROUGH THE VOLTAGE DEPENDENT ANION CHANNEL. **William M. Rosencrans**, Vicente M. Aguilella, Tatiana K. Rostovtseva, Sergey M. Bezrukov

Platform
Molecular Dynamics and Bioinformatics II

10:00 AM - 11:30 AM

Chair
Aleksandra Walczak, École Normale Supérieure, France

941-Plat **10:00 AM**
RESPONSE IN IMMUNE REPERTOIRES. **Aleksandra M. Walczak**

942-Plat **10:30 AM**
DEVELOPMENT OF A HYBRID NEURAL NETWORK/MOLECULAR MECHANICS APPROACH FOR METALLOPROTEIN SIMULATIONS. **Bettina Lier**, Peter Poliak, Julia Westermayr, Philipp Marquetand, Chris Oostenbrink

943-Plat **10:45 AM**
ENHANCED SAMPLING OF RNA FOLDING/UNFOLDING CONFIGURATIONS USING MACHINE LEARNING/GRAND CANONICAL MONTE CARLO. **Mert Y. Sengul**, Abhishek A. Kognole, Alexander D. MacKerell

944-Plat **11:00 AM**
AMPLIFICATION-FREE DETECTION OF VIRUSES IN MINUTES USING SINGLE-PARTICLE IMAGING AND MACHINE LEARNING. **Nicolas Shiaelis**, Leon Peto, Andrew McMahon, Chritof Hepp, Erica Bickerton, Cyril Favard, Delphine Muriaux, Monique Andersson, Alison Vaughan, Philippa Matthews, Nicole Stoesser, Derrick Crook, Achillefs N. Kapanidis, Nicole C. Robb

945-Plat **11:15 AM**
COMPUTING ABSOLUTE FREE ENERGY WITH DEEP GENERATIVE MODELS. **Xinqiang Ding**, Bin Zhang

Platform
Bioengineering, Biosurfaces, and Biomaterials

10:00 AM - 11:30 AM

Chair
Thomas Pucadyil, Indian Institute of Science Education and Research, India

946-PLAT 10:00 AM
MEMBRANE FISSION: INSIGHTS FROM RECONSTITUTING ORGANELLE FORM AND CHEMISTRY. **Thomas Pucadyil**

947-PLAT 10:30 AM
RAPID CLINICAL DIAGNOSTIC VIRAL DETECTION WITH SALIVA BY A NOVEL SINGLE STEP NESTED MANGO-NASBA ASSAY. **Haruki Iino**, Amir Abdolahzadeh, Elena Dolgosheina, Paul Poudevigne-Durance, George Moore, Paul Girvan, Artur Kaczmarczyk, Tianyi Zhang, Matt D. Newton, Peter J. Unrau, David S. Rueda

948-PLAT 10:45 AM
ERYTHRO-VLP: ERYTHROCYTE VIRUS-LIKE-PARTICLES. **Sebastian Himbert**, Maikel Rheinstädter

949-PLAT 11:00 AM
IDENTIFYING ENTHALPIC BARRIERS TO ENTROPICALLY-DRIVEN STRUCTURAL DISRUPTION IN BREAST CANCERS. **Vasudha Srivastava**, Jennifer L. Hu, James C. Garbe, Martha R. Stampfer, Mark A. LaBarge, Matthew Thomson, Zev J. Gartner

950-PLAT 11:15 AM
INVESTIGATING DPPC LIPOSOMES AND THEIR CAPACITY TO ASSIMILATE 2,2',3,3',4,4'-HEXACHLOROBIPHENYL, AN EMERGING ENVIRONMENTAL POLLUTANT. **Monica D. Rieth**, Andrew J. Lozano

Exhibits

10:00 AM - 5:00 PM

Exhibitor Presentation
Nanion Technologies

11:30 AM - 12:00 PM

Automated Electrophysiology For Any Kinetics: Ion Channels & Transporters
Ion channels and transporters are important physiological and pharmacological targets. Electrophysiology remains the gold standard for studying these important targets and automation of the technique ensures higher throughput is achieved whilst maintaining high data quality. In this virtual symposium, Nanion Technologies provides two case studies where automated patch clamp (APC) or solid-supported membrane (SSM)-based electrophysiology devices were used in different applications. After a short greeting by Dr. Niels Fertig, CEO, Nanion Technologies will welcome two exceptional speakers, Dr Nina Braun (University of Copenhagen) and Dr. Matthias Quick (Columbia University).

Dr. Nina Braun presents recent work, with focus on establishing a high-throughput protocol to conduct functional and pharmacological investigations of non-canonical amino acids (ncAA)-containing hASIC1a (human acid-sensing ion channel 1a) variants in transiently transfected mammalian cells. Incorporation of ncAAs can endow proteins with novel functionalities, such as crosslinking or fluorescence. Function of these variants in ion channels can be studied with great precision using standard electrophysiology, but this approach is typically labor intensive and low throughput. During the study, three different photocrosslinking ncAAs were introduced into 103 positions and the function of the resulting 309 variants was assessed with SyncroPatch 384i automated patch-clamp platform, demonstrating that the approach is efficient and versatile, as it is amenable to assessing even complex pharmacological modulation by peptides. The data show that the acidic pocket is a major determinant for current decay and live-cell crosslinking provides insight into the hASIC1a-psalmotoxin-1 interaction. Overall, this protocol aims to enable future APC-based studies of ncAA-containing ion channels in mammalian cells.

Next, Dr. Matthias Quick is focusing on the study of ion-dependent transporters with special emphasis on Na^+ or H^+-coupled symporters. Whereas flux studies with radiolabeled solutes use the target protein reconstituted in proteoliposomes provided a wealth of information, the determination of the thermodynamically-coupled solute transport-associated flux of H^+ or Na^+ has been challenging. By using the SURFE^{2}R N1 SSM platform, his team was able to quickly collect data of solute transport-associated flux of co-transported ions across the membrane of proteoliposomes containing different target proteins. Additionally, with SURFE^{2}R technology it is possible to collect data for a full kinetic characterization of a target protein such as its dependence on substrate and ion concentrations, pH, and potential essential additives, as well as its substrate recognition profile. The SURFE2R system also enables the use of a wide range of substrates that are readily commercially available, avoiding the use of radiolabeled compounds.

Speakers
Nina Braun, Post-Doctoral Fellow, Department of Drug Design and Pharmacology, University of Copenhagen
Matthias Quick, Associate Professor of Neurobiology (Psychiatry), Columbia University Medical Center (CUMC)

Break

11:30 AM - 12:00 PM

Poster Presentations and Late Posters

12:00 PM - 1:30 PM

General Networking

1:00 PM-2:00 PM

Catch up with colleagues and friends in the biophysical community during our networking hour. This event, which is open to all meeting attendees, provides meet-and-greet opportunities to enhance your virtual meeting experience.

Exhibitor Presentation
Andor Technology

1:30 PM - 2:00 PM

SRRF-Stream$^+$ - A Flexible and Effective Solution For Real-Time and Live Cell Superresolution Microscopy
Much of the inner workings of the cell are hidden from view below the classical diffraction limit of light-based imaging microscopy. Superresolution techniques such as STORM, PALM, STED and SIM have smashed past this barrier and have helped enable cell biology to be studied in considerably more detail.

However, there are limitations to these techniques especially when considering live cell imaging. Superresolution techniques may require costly microscopy equipment, high illumination intensities, long acquisition times or specialised fluorophores. SRRF (Superresolution Radial Fluctuations) offers an alternative software-based approach that counters many of these limitations (Gustafsson *et al* 2016).
Specifically, it allows for superresolution at low illumination intensities, using standard fluorophores on a conventional microscope. Understandably SRRF has become widely used. One development of SRRF is SRRF-Stream. This version is exclusive to Andor Technology and optimizes GPU processing to unlock real-time live superresolution from a microscope.

We now present an updated version of SRRF-Stream called "SRRF-Stream$^+$" which allows for improvements in the image quality over the original version of SRRF-Stream. We also show that SRRF-Stream+ can be

used on Andor Sona back-illuminated sCMOS cameras having previously been available solely on Andor iXon EMCCD cameras. These new developments add to the previous benefits of SRRF-Stream, making it an even more flexible and useful part of the microscopists imaging toolbox.

Speaker
Alan Mullan, Product Application Specialist – Microscopy Cameras, Andor Technology

Break

1:30 PM - 2:00 PM

Meet the Editors

2:00 PM - 3:30 PM

Take this opportunity to meet editors of the Society's three Journals: *Biophysical Journal*, *Biophysical Reports*, and *The Biophysicist*. Editors will be available to discuss their respective journals and to answer questions about where you should submit your work, what will help to get your work published, and what you can expect when you submit to these Society journals.

Platform
Protein Structure and Conformation: Viruses

2:00 PM - 3:30 PM

Chair
Charlotte Uetrecht, Heinrich Pette Institute, Germany

1327-PLAT 2:00 PM
FLYING VIRUSES - FROM BIOPHYSICAL TO STRUCTURAL CHARACTERIZATION. **Charlotte Uetrecht**

1328-PLAT 2:30 PM
REAL-TIME CONFORMATIONAL DYNAMICS OF SARS-COV-2 SPIKES ON VIRUS PARTICLES. **Maolin Lu**, Pradeep D. Uchil, Wenwei Li, Daniel S. Terry, Jason Gorman, Baoshang Zhang, Tongqing Zhou, Shilei Ding, Lihong Liu, David D. Ho, John R. Mascola, Andrés Finzi, Peter Kwong, Scott C. Blanchard, Walther Mothes

1329-PLAT 2:45 PM
SARS-COV-2 GLYCOSYLATED SPIKE ACTIVATION MECHANISM - SIMULATIONS OF THE FULL UNBIASED PATHWAY. **Terra Sztain-Pedone**, Surl-Hee Ahn, Anthony Bogetti, Lorenzo Casalino, Zied Gaieb, James A. McCammon, Lillian T. Chong, Rommie E. Amaro

1330-PLAT 3:00 PM
DIFFERENTIAL DYNAMIC BEHAVIOR OF PREFUSION SPIKE GLYCOPROTEINS OF SARS CORONAVIRUSES 1 AND 2. **Mahmoud Moradi**, Vivek Govind Kumar, Dylan S. Ogden, Ugochi Isu, James Losey

1331-PLAT 3:15 PM
STRUCTURAL BASIS FOR GERMLINE ANTIBODY BINDING TO ZIKA VIRUS ENVELOPE DOMAIN III. **Shannon R. Esswein**, Pamela J. Bjorkman

Platform
Protein Prediction, Design, and Stability II

2:00 PM - 3:30 PM

Chair
Dorothy Beckett, University of Maryland, USA

NO ABSTRACT 2:00 PM
SHIFTING ENSEMBLES OF RESIDUE NETWORKS IN EVOLUTION OF PROTEIN ALLOSTERY. **Dorothy Beckett**

1332-PLAT 2:30 PM
DIRECT OBSERVATION OF THE CONTRACTION OF AN UNFOLDED PROTEIN WITH TEMPERATURE. **Michael C. Baxa**, Xiaoxuan Lin, Srinivas Chakravarthy, Joseph R. Sachleben, Joshua A. Riback, Isabelle Gagnon, Patricia L. Clark, Tobin R. Sosnick

1333-PLAT 2:45 PM
PROBING THE IMPACT OF MOLECULAR CHAPERONES ON THE REFOLDABILITY OF THE *E. COLI* PROTEOME. **Philip To**, Stephen D. Fried

1334-PLAT 3:00 PM
EXPLORING EXHAUSTIVELY THE CONFORMATIONS OF A TANDEM DOMAINS PROTEIN USING A DISCRETE DISTANCE GEOMETRY APPROACH. Florence Cordier, Benjamin Bardiaux, Antonio Mucherino, Jerome Idier, Nicolas Wolff, Leo Liberti, **Therese E. Malliavin**

1335-PLAT 3:15 PM
EMERGING FEATURES OF RHEOSTAT POSITIONS. **Liskin Swint-Kruse**, Aron W. Fenton, S. Banu Ozkan, Bruno Hagenbuch, paul campitelli, Melissa Ruggiero, John Karanicolas, Shipra Malhotra, Joseph Fontes, Audrey Lamb, Alexey Ladokhin, Paul E. Smith

Platform
Protein-Nucleic Acid Interactions and Chromatin II

2:00 PM - 3:30 PM

Chair
Joshua Riback, Princeton University, USA

NO ABSTRACT 2:00 PM
MODELING CHROMATIN ARCHITECTURE TRANSITIONS IN BIOLOGICAL PROCESSES. **Tamar Schlick**

1336-PLAT 2:30 PM
CHROMATIN AND CYTOSKELETAL TETHERING DETERMINE NUCLEAR MORPHOLOGY IN PROGERIN EXPRESSING CELLS. **Maria Chiara Lionetti**, Silvia Bonfanti, Maria Rita Fumagalli, Francesc Font-Clos, Giulio Costantini, Oleksandr Chepizhko, Stefano Zapperi, Caterina La Porta

1337-PLAT 2:45 PM
SPATIALLY CONSTRAINED TRANSCRIPTIONAL SOURCES DRIVE ASPHERICITY OF INTRACELLULAR LIQUIDS. **Joshua A. Riback**, Daniel S.W. Lee, Jorine M. Eeftens, David W. Sanders, Lien Beckers, Clifford P. Brangwynne

1338-PLAT 3:00 PM
SUPER-RESOLUTION IMAGING REVEALS SPATIO-TEMPORAL PROPAGATION OF HUMAN REPLICATION FOCI MEDIATED BY CTCF-ORGANIZED CHROMATIN STRUCTURES. **Ziqing Winston Zhao**, Qian Peter Su, X Sunney Xie, Yujie Sun

1339-PLAT 3:15 PM
CHROMATIN ORGANIZATION AND PHASE SEPARATION OF HISTONES. **Anisha Shakya**, John King

Platform
Membrane Structure

2:00 PM - 3:30 PM

Chair
Ilpo Vattulainen, University of Helsinki, Finland

1340-PLAT 2:00 PM
BARRIERS IN THE EYE AND LUNGS THAT MAINTAIN BIOLOGICAL FUNCTIONS. **Ilpo Vattulainen**

1341-PLAT 2:30 PM
GM1 LEAFLET ASYMMETRY STABILIZES MEMBRANE PORES. **Mina Aleksanyan**, Rafael Lira, Jan Steinkuehler, Rumiana Dimova

1342-PLAT 2:45 PM
EXTRACTING ORGANELLE MEMBRANE TOPOLOGY FROM SUPER-RESOLUTION MICROSCOPY DATA. **Zach Marin**, Lukas A. Fuentes, Joerg Bewersdorf, David Baddeley

1343-PLAT 3:00 PM
LIPID BILAYER PASSIVE AREA REGULATION IN RESPONSE TO FLUID FLOWS. **Ethan J. Miller**, Aurelia R. Honerkamp-Smith

1344-PLAT **3:15 PM**
PROBING THE MEMBRANE ENVIRONMENT OF PLASMA MEMBRANE PROTEINS: A MICROPATTERNING APPROACH. **Veronika Brumovska**, Gergö Fülöp, Gerhard J. Schütz, Eva Sevcsik

Platform
Muscle, Calcium and Signaling II
2:00 PM - 3:30 PM

Chair
Madeline Shea, University of Iowa, USA

NO ABSTRACT **2:00 PM**
CA2+-SATURATED CALMODULIN BINDS TIGHTLY TO THE N-TERMINAL DOMAIN OF A-TYPE FIBROBLAST GROWTH FACTOR (FGF) HOMOLOGOUS FACTORS. **Madeline Shea**

1345-PLAT **2:30 PM**
MULTISCALE MODELING OF DYADIC STRUCTURE-FUNCTION RELATION IN VENTRICULAR CARDIAC MYOCYTES. Filippo Giovanni Cosi, Wolfgang Giese, **Wilhelm Neubert**, Stefan Luther, Chamakuri Nagaiah, Ulrich Parlitz, Martin Falcke

1346-PLAT **2:45 PM**
QUANTITATIVE ASSESSMENT OF CARDIAC INTERCALATED DISK ULTRASTRUCTURE AND MOLECULAR ORGANIZATION BY INDIRECT CORRELATIVE LIGHT AND ELECTRON MICROSCOPY. **Heather Struckman**, Nicolae Moise, Celine Dagher, Seth H. Weinberg, Rengasayee Veeraraghavan

1347-PLAT **3:00 PM**
MACHINE LEARNING TECHNIQUES TO CLASSIFY THE SEVERITY OF NOVEL SCN5A VARIANTS. **Chiara Campana**, Eric A. Sobie

1348-PLAT **3:15 PM**
FUNCTIONAL AND STRUCTURAL INTERACTIONS BETWEEN CA^{2+}, ATP AND CAFFEINE BINDING SITES OF SKELETAL MUSCLE RYANODINE RECEPTOR (RYR1). **Venkat R. Chirasani**, Daniel A. Pasek, Hannah G. Addis, Naohiro Yamaguchi, Gerhard Meissner

Platform
Actin and Associated Proteins - Myosins
2:00 PM - 3:30 PM

Chair
Glen Hocky, New York University, USA

1349-PLAT **2:00 PM**
PASSIVE VERSUS ACTIVE REGULATION IN THE ACTIN CYTOSKELETON. **Glen M. Hocky**

1350-PLAT **2:30 PM**
MYOSIN'S POWERSTROKE OCCURS WITH PHOSPHATE STILL IN THE ACTIVE SITE. **Brent Scott**, Christopher Marang, Laura K. Gunther, Mike K. Woodward, Christopher M. Yengo, Edward P. Debold

1351-PLAT **2:45 PM**
STRUCTURE OF THE SHUTDOWN STATE OF MYOSIN-2. **Charlotte A. Scarff**, Glenn Carrington, David E. Casas-Mao, Joseph M. Chalovich, Peter J. Knight, Neil A. Ranson, Michelle Peckham

1352-PLAT **3:00 PM**
STRUCTURAL PERSPECTIVE INTO ACTIVATION OF ARP2-3 COMPLEX FOR NUCLEATING LINEAR AND BRANCHED ACTIN ASSEMBLIES. **Bojian Ding**, Heidy Narvaez Ortiz, Brad Nolen, Saikat Chowdhury

1353-PLAT **3:15 PM**
THE ACTIN CYTOSKELETON REGULATES MACROPHAGE ACTIVATION AND INFLAMMATION. **Elsa Ronzier**, Jeremy D. Rotty

Platform
Neuroscience
2:00 PM - 3:30 PM

Chair
Guo-Li Ming, University of Pennsylvania, USA

1354-PLAT **2:00 PM**
MODELING HUMAN BRAIN ORGANOGENESIS USING PLURIPOTENT STEM CELLS. **Guo-Li Ming**

1355-PLAT **2:30 PM**
MARGARIC ACID COUNTERACTS NEURONAL MECHANICAL SENSITIZATION. **Luis O. Romero**, Rebeca C. Caires Mugarra, Alec R. Nickolls, Alexander T. Chesler, Julio F. Cordero-Morales, Valeria Vasquez

1356-PLAT **2:45 PM**
OPTOGENETIC ACTIVATION OF ERK AND AKT SIGNALING PROMOTES AXON REGENERATION AND FUNCTIONAL RECOVERY IN DROSOPHILA. Qin Wang, Huaxun Fan, Feng Li, Savanna S. Skeeters, Vishnu Krishnamurthy, Yuanquan Song, **Kai Zhang**

1357-PLAT **3:00 PM**
STOCHASTIC REACTION-DIFFUSION MODELING OF CALCIUM DYNAMICS IN 3D-DENDRITIC SPINES OF PURKINJE CELLS. **Victor Nicolai Friedhoff**, Gabriela Antunes, Martin Falcke, Fábio Marques Simões de Souza

1358-PLAT **3:15 PM**
TARGETED SENSORS FOR GLUTAMATERGIC NEUROTRANSMISSION. **Yuchen Hao**, Estelle Toulmé, Benjamin König, Ljudmila Katchan, Andrew J. Plested

Platform
Spectroscopy, Diffraction and Microscopy
2:00 PM - 3:30 PM

Chair
Marvin Bayro, University of Puerto Rico, USA

1359-PLAT **2:00 PM**
SOLID-STATE NMR ANALYSIS OF INTERFACE FLEXIBILITY IN PLEOMORPHIC PROTEIN ASSEMBLIES. Guivert Michel, Jeremy J. Gonzalez, Carlos A. Figueroa-Morales, Naomi C. Rodriguez, **Marvin J. Bayro**

1360-PLAT **2:30 PM**
DEEP LEARNING FOR FAST ATOMIC FORCE MICROSCOPY DATA ANALYTICS. **Anwesha Sarkar**, Joshua Waite, Soumik Sarkar

1361-PLAT **2:45 PM**
COMBINATORIAL METHODS TO ENHANCE SUPERCRITICAL ANGLE FLUORESCENCE MEASUREMENTS. **Aaron Au**, Christopher M. Yip

1362-PLAT **3:00 PM**
SUPER RESOLUTION CRYO-EM MAPS WITH 3D DEEP GENERATIVE NETWORKS. **Sai Raghavendra Maddhuri Venkata Subramaniya**, Genki Terashi, Daisuke Kihara

1363-PLAT **3:15 PM**
BAYESIAN STRUCTURE DETERMINATION FROM ULTRAFAST SINGLE MOLECULE X-RAY DIFFRACTION. **Steffen Schultze**, Helmut Grubmuller

Exhibitor Presentation
Oxford Instruments NanoAnalysis

3:30 PM - 4:00 PM

Multi-Colour Electron Microscopy: Using Energy Dispersive X-ray Spectrometry to Image and Analyse Biological Samples
The visualisation and analysis of life science samples has been a challenge throughout the history of electron microscopy. Biological sample preparation and the absence or addition of contrasting agents often play a key role in the development of imaging methodology. But the signals generated in an electron microscope are mostly underutilised by biologists. While energy dispersive x-ray spectrometry (EDS) has been used in materials science for many decades, sample stability and detector sensitivity have prevented a broader adoption in life sciences until recently [1]. Multi-colour electron microscopy (MCEM) combines elemental information about samples produced using EDS with ultrastructural electron data, providing a powerful and informative imaging technique [2].

MCEM addresses key research topics for the biological electron microscopist. What is it, where is it and how much? Using examples from biomedical research, animal cells and tissues, and plant cell biology, this talk will demonstrate how the addition of elemental maps to electron images contributes key information that could be used for a variety of biological imaging applications, such as region of interest profiling or automated segmentation of volumetric data). EDS is not only a powerful imaging tool, providing accurate identification of stains, labels, and ultrastructural features, but it can also be used to conduct analysis on the relative quantities of a wide range of elements, providing compositional data on native elements and exogenous features.

Speaker
Louise Hughes, Product Manager Life Science, Oxford Instruments

[1] Pirozzi, N.M., Hoogenboom, J.P. and Giepmans, B.N., 2018. ColorEM: analytical electron microscopy for element-guided identification and imaging of the building blocks of life. Histochemistry and cell biology, 150(5), pp.509-520.

[2] Scotuzzi, M., Kuipers, J., Wensveen, D.I., De Boer, P., Hoogenboom, J.P. and Giepmans, B.N., 2017. Multi-color electron microscopy by element-guided identification of cells, organelles and molecules. Scientific reports, 7(1), pp.1-8.

Speed Networking

3:30 PM-5:00 PM

Networking is made simple at the Virtual Speed Networking session. Connect with many biophysicists (including Biophysical Society committee members) through small group discussions in a short amount of time. Mid-career and more experienced scientists could learn how to get more involved in the Society or network for open positions in their labs. Early career scientists could discuss career goals and challenges, get advice on tenure, or grant writing, or find out how to gain recognition for their work. Graduate students and postdocs could make contacts to find their next position.

Pre-registration was required for participation.

Exhibitor Presentation
Molecular Devices

4:00 PM - 4:30 PM

Streamlining Electrophysiology Data Acquisition and Analysis in Ion Channel Study with Axon pCLAMP 11 Software
Axon pCLAMP™ 11 software suite provides ion channel researchers with greater capability in electrophysiology data acquisition and analysis. Recent updates to this include an improved Protocol Editor, which allows the user to more easily create complex experimental protocols with many command stimulations, as well as a new Batch Analysis feature which streamlines analysis of multiple data sets. In this webinar, Dr. Jeffrey Tang will highlight these and other new features in pCLAMP 11 to streamline the data acquisition and analysis in your ion channel study, and how this software package allows you to perform more experiments and obtain more data in your electrophysiology research.

Speaker
Jeffrey Tang, Senior Application Scientist, Molecular Devices

THURSDAY POSTER SESSIONS

12:00 PM–1:30 PM

Below is the list of poster presentations for Thursday of abstracts submitted by October 1.
The list of late abstracts scheduled for Thursday is available on page 113.

ODD-NUMBERED BOARDS 12:00 PM–12:45 PM | EVEN-NUMBERED BOARDS 12:45 PM–1:30 PM

Board Numbers	Category
B1 - B27	Protein Stability, Folding, and Chaperones
B28 - B49	Protein-Small Molecule Interactions II
B50 - B65	Protein Assemblies II
B66 - B81	Membrane Protein Structures II
B82 - B99	Intrinsically Disordered Proteins (IDP) and Aggregates II
B100 - B106	Ribosomes and Translation
B107 - B132	DNA Structure and Dynamics
B133 - B147	Membrane Dynamics II
B148 - B158	Protein-Lipid Interactions: Channels
B159 - B185	General Protein-Lipid Interactions
B186 - B202	Mechanosensation
B203 - B211	Excitation-Contraction Coupling
B212 - B235	Voltage-gated K Channels
B236 - B252	Ion Channels, Pharmacology, and Disease
B253 - B278	Cardiac Muscle Mechanics and Structure
B279 - B296	Microtubules, Structure, Dynamics, and Associated Proteins
B297 - B310	Cellular, Metabolic and Genetic Networks
B311 - B318	Systems and Synthetic Biology
B319 - B326	Optical Microscopies and Diffraction Techniques
B327 - B350	Computational Methods and Bioinformatics II
B351 - B368	Micro- and Nanotechnology
B369 - B376	Biomaterials

Protein Stability, Folding, and Chaperones (Boards B1 - B27)

951-Pos **Board B1**
THE MOLECULAR ORIGINS OF THE INFLUENCE OF TRANSLATION-ELONGATION KINETICS ON THE SPECIFIC ACTIVITY OF ENZYMES. **Yang Jiang**, Edward P. O'Brien

952-Pos **Board B2**
STRUCTURAL BASIS FOR RECOGNITION OF THE HSP90 CLOSED, ATP STATE BY THE TPR-CONTAINING CO-CHAPERONE FKBP51. **Kanghyun Lee**, Aye Thwin, Daniel R. Southworth

953-Pos **Board B3**
MAPPING STRUCTURAL INTERMEDIATES DURING CO-TRANSLATIONAL FOLDING OF HSP70 WITH CROSSLINKING MASS SPECTROMETRY. **Anneliese M. Faustino**, Stephen D. Fried

954-Pos **Board B4**
INTERACTION BETWEEN RIBOSOME-BOUND NASCENT PROTEINS AND A SPECIFIC REGION OF THE RIBOSOMAL SURFACE. **Valeria Guzman Luna**, Andrew M. Fuchs, Rayna M. Addabbo, Anna J. Allen, Silvia Cavagnero

955-Pos **Board B5**
PROBING THE ROLE OF CHAIN CONNECTIVITY IN THE CO-TRANSLATIONAL FOLDING PROCESS OF HALOTAG THROUGH CIRCULAR PERMUTATION. **Natalie R. Dall**, Susan Marqusee

956-Pos **Board B6**
DETAIL DYNAMICS AFTER ATP BINDING IN HSP90 CHAPERONE CYCLE AND THE EFFECT OF NOVEL PEPTIDE DRUG CANDIDATE USING MOLECULAR DYNAMICS SIMULATIONS. **Lisa Matsukura**, Naoyuki Miyashita

957-Pos **Board B7**
SPATIAL RELATIONSHIP BETWEEN MEMBRANE, AAA+ DOMAIN AND BOUND PROTEIN SUBSTRATE DETERMINES THE UNFOLDASE ACTIVITY OF THE MEMBRANE-INTEGRATED AAA+ PROTEASE FTSH. **Mihiravi Gunasekara**, Heedeok Hong

958-Pos **Board B8**
DOMAIN INTERACTIONS DETERMINE THE CONFORMATIONAL ENSEMBLE OF THE PERIPLASMIC CHAPERONE SURA. **Mathis J. Leblanc**, Dagan C. Marx, Ashlee M. Plummer, Susan Krueger, Karen G. Fleming

959-Pos **Board B9**
THE HSP70 CHAPERONE IS MOST EFFICIENT AT CIRCUMVENTING AGGREGATION IF CLIENT PROTEINS FOLD BEFORE THEIR RELEASE IN SOLUTION. **Miranda Mecha**, Jasmine Machhi, Silvia Cavagnero

960-Pos **Board B10**
OPTIMAL PREVENTION OF CLIENT-PROTEIN AGGREGATION ON THE SURFACE OF THE HSP70 CHAPERONE: A COMPUTATIONAL STUDY. **Jasmine Machhi**, Miranda Mecha, Silvia Cavagnero

961-Pos **Board B11**
MOLECULAR DETAILS OF PROTEIN MISFOLDING IN MYOCILIN-ASSOCIATED GLAUCOMA. **Raquel L. Lieberman**

962-Pos **Board B12**
NEGATIVE INTERDOMAIN COUPLING OF DYSTROPHIN SPECTRIN REPEATS. **Kari S. Olson**, Althea Amaris, Adeesha Jayathilaka, Jonathan Tigner, John Shortreed, Michael Fealey, Anne Hinderliter

963-Pos **Board B13**
ROLE OF SALT BRIDGES IN UBIQUITIN IN MODULATING THERMODYNAMIC, KINETIC AND MECHANICAL STABILITIES. **Tathagata Nandi**, Sri Rama Koti Ainavarapu

964-Pos **Board B14**
PROBING FOLDING BARRIERS IN HIGH THROUGHPUT USING PROTEOLYSIS AND YEAST DISPLAY. **Miriam R. Hood**, Eva Gerber, Susan Marqusee

965-Pos **Board B15**
SELECTION ORIGINATING FROM PROTEIN STABILITY AND FOLDABILITY: RELATIONSHIPS BETWEEN FOLDING FREE ENERGY, SEQUENCE ENSEMBLE, AND FITNESS. **Sanzo Miyazawa**

966-Pos **Board B16**
CHARACTERIZATION OF CAMKIIALPHA HOLOENZYME STABILITY. **Ana P. Torres-Ocampo**, Can Özden, Alexandra Hommer, Anne Gardella, Emily Lapinskas, Alfred Samkutty, Edward Esposito, Scott C. Garman, Margaret Stratton

967-Pos **Board B17**
AN INVESTIGATION OF THE DISULFIDE BRIDGE FORMATION OF A THYLAKOID PROTEASE USING NANOSECOND-LEVEL MD SIMULATIONS. **Alaa El-Khouly**, Adithya Polasa, Vivek Govind Kumar, Mahmoud Moradi

968-Pos **Board B18**
IDENTIFYING HOTSPOTS IN BINDING OF SARS-COV-2 SPIKE GLYCOPROTEIN AND HUMAN ACE2. **Jenny Mendis**, Ekrem Kaya, Tugba G. Kucukkal

969-Pos **Board B19**
MODELLING PH DEPENDENCE OF THE INTERACTION OF ALPHA-B CRYSTALLIN WITH CLIENT PROTEINS. Yusrah B. Kaudeer, Esi Obeng, **Patricia B. O'Hara**

970-Pos **Board B20**
EFFECT OF THE ANTI-SICKLE CELL DRUG GBT440 (VOXELOTOR) ON METHEMOLOBIN. **Aldo J. Munoz**, Melanie J. Cocco

971-Pos **Board B21**
NON-CLASSICAL PROTEIN KINASE A ACTIVATION BY AGGREGATION OF THE PKA R-SUBUNITS AS A MECHANISM OF INHERITED CARNEY COMPLEX MUTATIONS. **Naeimeh Jafari**, Jason Delrio, Madoka Akimoto, Olivia Byun, Stephen Boulton, Kody Moleschi, Yousif Sayyed, Pascale Swanson, Jinfeng Huang, Chi Lee, Jian Wu, Susan S. Taylor, Giuseppe Melacini

972-Pos **Board B22**
GENERATION OF ENHANCED RIBOSOMES FOR OPTIMAL PROTEIN OVEREXPRESSION VIA CRISPR-CAS9-ASSISTED RECOMBINEERING. **Anna J. Allen**, Valeria Guzman Luna, Hunter J. Furley, Silvia Cavagnero

973-Pos **Board B23**
MOLECULAR DYNAMICS MODELING OF SURFACTANT BLOCK COPOLYMER CATALYSIS OF PROTEIN DISAGGREGATION AND REFOLDING. **Kyle McCollum**, Michelle Ling, Raphael C. Lee

974-Pos **Board B24**
DUAL MECHANISM OF IONIC LIQUID-INDUCED PROTEIN UNFOLDING. **Pei-Yin Lee**, Onkar Singh, Harry Bermudez, Silvina Matysiak

975-Pos **Board B25**
INTERPRETING SMFRET-BASED CALCULATION OF TRANSITION PATH TIME WITH MOLECULAR SIMULATIONS. **Grace H. Taumoefolau**, Robert B. Best

976-Pos **Board B26**
GENERALIZATION OF THE GIBBS-THOMSON EQUATION AND PREDICTING MELTING TEMPERATURES OF BIOMACROMOLECULES IN CONFINED GEOMETRIES. **David V. Svintradze**

977-Pos **Board B27**
CRYO-EM STRUCTURE OF AN ACTIVE TETRADECAMERIC AAA+ CHAPERONE CLPL. **Gyuhee Kim**, Seong-Gyu Lee, Seungsu Han, Jaeeun Jung, Hyeong Seop Jeong, Jae-kyung Hyun, Dong-Kwon Rhee, Ho Min Kim, Sangho Lee

Protein-Small Molecule Interactions II (Boards B28 - B49)

978-Pos **Board B28**
INVESTIGATION OF MOLECULAR COUNTERMEASURES TO MODULATE THE POPULATIONS AND TOXICITY OF AB42 OLIGOMERS. **Aidan K. Wright**, Ryan P. Kreiser, Lam T. Nguyen, Jared E. Hollows, Ryan Limbocker

979-Pos **Board B29**
CONTROL OVER PROTEIN MULTIMERIZATION INDUCED BY WATER-SOLUBLE PORPHYRINS. **Tyler Brittain**, Oleksandr Kokhan

980-Pos **Board B30**
DETERMINING VITRONECTIN'S ROLE IN FORMING THE HALLMARK OF AGE-RELATED MACULAR DEGENERATION. **Kyungsoo Shin**, L. Miya Fujimoto, James E. Kent, Alexander Aleshin, Ye Tian, Andrey A. Bobkov, Wonpil Im, Francesca M. Marassi

981-Pos **Board B31**
PREDICTING ARRHYTHMOGENICITY: STRUCTURAL MODELING OF SAFE AND UNSAFE HERG BLOCKERS. **Aiyana M. Emigh**, Kevin R. DeMarco, Kazuharu Furutani, Jon T. Sack, Colleen E. Clancy, Igor V. Vorobyov, Vladimir Yarov-Yarovoy

982-Pos **Board B32**
A NOVEL MODEL OF THE DIMERIC HUMAN HV1 CHANNEL REVEALS A PUTATIVE ATP BINDING SITE. **Manuel A. Llanos**, Pedro Martín, Nicolas Enrique, Juan Ignacio Felice, Agustín Aguaje, Luciana Gavernet, Veronica Milesi, Clara Ventura

983-Pos **Board B33**
MOLECULAR MECHANISM OF THE POTENT BENZOPYRAN-G1 BLOCKER OF HETEROMERIC G-PROTEIN GATED POTASSIUM CHANNELS. **Meng Cui**, Yaser Alhamshari, Lucas Cantwell, Said EI-Haou, Giasemi C. Eptaminitaki, Mengmeng Chang, Obada Abou-Assali, Haozhou Tan, Keman Xu, Meghan Masotti, Leigh D. Plant, Ganesh Thakur, Sami Noujaim, James T. Milnes, Diomedes E. Logothetis

984-Pos **Board B34**
THE NOVEL SMALL MOLECULE 3HI2ONE-G4 SELECTIVELY ACTIVATES HOMOMERIC GIRK4 CHANNELS. **Meng Cui**, Keman Xu, Michelle Ban, Giasemi C. Eptaminitaki, Diomedes E. Logothetis

985-Pos **Board B35**
MONITORING LIGAND BINDING TO PURIFIED HCN4 CHANNEL PROTEINS. **Andrea Saponaro**, Atiyeh Sadat Sharifzadeh, Anna Moroni

986-Pos **Board B36**
BEYOND VOLUME EXCLUSION-NANOPORE-BASED PROTEIN SEQUENCING. **Ming-Zhu Huo**, Meng-Yin Li, Yi-Lun Ying, Yi-Tao Long

987-Pos **Board B37**
PREDICTION AND ANALYSIS OF MULTIPLE SITES AND INHIBITORS OF SARS-COV-2 PROTEINS. **Suhasini M. Iyengar**, Kelton Barnsley, Hoang Yen Vu, Ryan Dilworth, Jana Sefcikova, Penny Beuning, Mary Jo Ondrechen

988-Pos **Board B38**
THE DESIGN OF A DESTABILIZER PEPTIDE TO DISRUPT SARS-COV-2 FUSION WITH ITS TARGETED CELL MEMBRANE. **Motamed Qadan**

989-Pos **Board B39**
MECHANISM AND PATHWAYS OF INHIBITOR BINDING TO THE HUMAN ACE2 RECEPTOR FOR SARS-COV1/2. **Apurba Bhattarai**, Shristi Pawnikar, Yinglong Miao

990-Pos **Board B40**
IDENTIFICATION OF FDA APPROVED ANTIVIRAL DRUGS FOR COVID-19 TREATMENT USING UNBIASED VIRTUAL SCREENING. **Rory Greer**, Yuwei Song, Michael J. Patton, Matthew Might, Kevin Harrod, Chad M. Petit, Yuhua Song

991-Pos **Board B41**
INHIBITOR BINDING INFLUENCES THE PROTONATION STATE OF HISTIDINES IN SARS-COV-2 MAIN PROTEASE. **Anna Pavlova**, Diane L. Lynch, Micholas Dean Smith, Jeremy D. Smith, James C. Gumbart

992-Pos **Board B42**
VITAMIN D AND ITS DERIVATIVES AS PROMISING DRUGS AGAINST COVID-19 - A COMPUTATIONAL STUDY. **Yuwei Song**, Shariq Qayyum, Radomir Slominski, Chander Raman, Andrzej Slominski, Yuhua Song

993-Pos **Board B43**
INVESTIGATING BACTERIAL MALONYL-COA:ACYL TRANSFERASE AS A POTENTIAL SECONDARY TARGET OF 3-HYDROXY-3-METHYL-GLUTARYL-COA REDUCTASE INHIBITORS. **Gillian M. Barth**, Calvin Steussy, Tim Schmidt, Cynthia V. Stauffacher

994-Pos **Board B44**
DISCOVERY OF SMALL MOLECULE INHIBITORS AND ACTIVATORS OF DEATH RECEPTOR 5 SIGNALING USING HIGH THROUGHPUT SCREENING. **Malaney Young**, Nagamani Vunnam, Chih Hung Lo, Jonathan N. Sachs

995-Pos **Board B45**
INVESTIGATING THE BINDING INTERACTION BETWEEN B-LACTOGLOBULIN AND VITAMIN B12: A SPECTROSCOPIC AND COMPUTATIONAL APPROACH. **Janmejaya Rout**, Bikash C. Swain, Suchismita Subadini, Sakshi Sakshi, Padmaja P. Mishra, Harekrushna Sahoo, Umakanta Tripathy

996-Pos **Board B46**
MAPPING THE INTERACTIONS OF PKNB WITH SMALL MOLECULE INHIBITORS USING PLASMA INDUCED MODIFICATIONS OF BIOMOLECULES (PLIMB). **Faraz A. Choudhury**, Nathan Wlodarchak, Benjamin Minkoff, Daniel Benjamin, Claire Bramwell, Rob Striker, Michael R. Sussman

997-Pos **Board B47**
PROTEIN-LIGAND RECOGNITION ACCORDING TO LOCK-AND-KEY PRINCIPLE. **Daumantas Matulis**, Vaida Paketuryte, Denis Baronas, Asta Zubrien, Joana Gylyte, Virginija Dudutiene

998-Pos **Board B48**
YEAST HSP110 HAS A UNIQUE SUBSTRATE BINDING SITE ESSENTIAL FOR CHAPERONE ACTIVITY. **Ying Wang**, Ying Yang, Hongtao Li, Jiayue Su, Lei Zhou, Qingdai Liu, Qinglian Liu

999-Pos **Board B49**
MECHANISM OF HIV-1 NC PROTEIN-INDUCED CONDENSATION OF DOUBLE STRANDED DNA AS A MODEL FOR DNA COMPACTION DURING REVERSE TRANSCRIPTION. **Helena Gien**, Michael Morse, Jonathan Kitzrow, Ioulia F. Rouzina, Karin Musier-Forsyth, Mark C. Williams

Protein Assemblies II (Boards B50 - B65)

1000-Pos **Board B50**
PROTEIN SUPERSATURATION DRIVES INNATE IMMUNITY SIGNALING. Alejandro Rodriguez Gama, Shriram Venkatesan, Tejbir Kandola, Tayla Miller, **Randal Halfmann**

1001-Pos **Board B51**
CONTRASTING EFFECTS OF SOFT AND HARD CROWDERS ON AMYLOID AGGREGATION. **Myeongsang Lee**

1002-Pos **Board B52**
STRUCTURE AND DYNAMICS OF THE *E. COLI* CHEMOTAXIS CORE SIGNALLING COMPLEX. **Keith Cassidy**

1003-Pos **Board B53**
DYNAMICS OF BIOFILM MATRIX ASSEMBLY IN THE MODEL ORGANISM *PSEUDOMONAS AERUGINOSA*. **Courtney Reichhardt**, Michael Matwichuk, Holly M. Jacobs, Matthew R. Parsek

1004-Pos **Board B54**
COMPARTMENTALIZED SIGNALING WITHIN A LIQUID CRYSTAL REGULATES MEIOTIC DNA BREAK REPAIR. **Lexy von Diezmann**, Ofer Rog

1005-Pos **Board B55**
DEVELOPING A FUNCTIONALLY VALID MODEL OF THE TREM2-APOE COMPLEX TO BETTER UNDERSTAND ITS ROLE IN ALZHEIMER'S DISEASE. **Hunter B. Dean**, Thomas J. Brett, Erik D. Roberson, Yuhua Song

1006-Pos **Board B56**
UNVEILING THE CONTRIBUTIONS OF SECONDARY STRUCTURE AND DISULFIDE BONDS FOR BACTERIAL ADHESION PILI EXTENSION USING A MULTISCALE APPROACH. Joseph Baker, Tobias Dahlberg, **Esther Bullitt**, Magnus Andersson

1007-Pos **Board B57**
SOLUBILITY PRODUCT CONSTANT GOVERNS MULTIVALENT PROTEIN PHASE SEPARATIONS. **Aniruddha Chattaraj**, Michael L. Blinov, Leslie M. Loew

1008-Pos **Board B58**
A QUANTITATIVE FRAMEWORK FOR HETEROTYPIC BUFFERING ENABLED BY MULTICOMPONENT BIOMOLECULAR CONDENSATES. **Furqan Dar**, Rohit V. Pappu, J. Paul Taylor

1009-Pos **Board B59**
PATHWAYS OF GENOME RELEASE DETERMINED BY VIRION PROPERTIES. Lukáš Sukeník, Pavel Plevka, **Robert Vacha**

1010-Pos **Board B60**
QUANTIFYING BTUBA/B ASSEMBLY IN LIVING CELLS. **Yuhan Wang**, Mahima Unnikrishnan, Brooke Ramsey, Martin Gruebele

1011-Pos **Board B61**
A PIPELINE FOR INTEGRATIVE STRUCTURAL MODELLING OF VERY COMPLEX MOLECULAR COMPLEXES. **Jan Kosinski**, Vasileios Rantos, Kai Karius

1012-Pos **Board B62**
RESOLVING STRUCTURAL CHANGES IN FIBERS DURING FIBRINOLYSIS. **Spencer R. Lynch**, Brittany E. Bannish, Nathan E. Hudson

1013-Pos **Board B63**
A MULTIDISCIPLINARY APPROACH TO DESIGN AMYLOID-LIKE PEPTIDES TO FORM SUPRAMOLECULAR ASSEMBLIES. **Laura Pérez-Chirinos Lallana**, Ivan R. Sasselli, Aitziber L. Cortajarena

1014-Pos **Board B64**
TOPOLOGY PROTECTS ROBUST GLOBAL CYCLES IN STOCHASTIC SYSTEMS. **Evelyn M. Tang**, Jaime Agudo-Canalejo, Ramin Golestanian

1015-Pos **Board B65**
UNRAVELING THE DRIVING FORCES BEHIND THE BIOGENESIS OF BACTERIAL MICROCOMPARTMENTS. **Gaurav Kumar**, Sharmistha Sinha

Membrane Protein Structures II (Boards B66 - B81)

1016-Pos **Board B66**
ISOTHERMAL TITRATION CALORIMETRIC ANALYSIS OF MEMBRANE PROTEIN-PROTEIN INTERACTIONS; CYTOCHROME B_6F - FERREDOXIN $NADP^+$ REDUCTASE. **William A. Cramer**, Stanislav D. Zakharov, Genji Kurisu, Yuko Misumi

1017-Pos **Board B67**
ELECTROPHYSIOLOGICAL AND BIOCHEMICAL CHARACTERIZATION OF THE HUMAN P2X7B RECEPTOR INXENOPUS LAEVISOOCYTES. **Sanaria Hawro Yakoob**, Guenther Schmalzing, Fritz Markwardt

1018-Pos **Board B68**
STRUCTURE BASIS AND GATING MECHANISM OF CALCIUM HOMEOSTASIS MODULATOR 2 CHANNEL. **Wooyoung Choi**

1019-Pos **Board B69**
SYSTEMATIC ANALYSIS OF SYMMETRY IN MEMBRANE PROTEINS. **Antoniya A. Aleksandrova**, Edoardo Sarti, Emily L. Yaklich, Lucy R. Forrest

1020-Pos **Board B70**
UNDERSTANDING THE MECHANISM OF LIPID TRANSPORT THROUGH THE MLA SYSTEM IN *E.COLI*. **Dhenesh Puvanendran**, Max Haase, Gira Bhabha, Damian C. Ekiert

1021-Pos **Board B71**
BIOPHYSICAL BASIS OF KDEL RECEPTOR-LIPID INTERACTIONS IN SECRETORY SIGNALING. **Asma Rehman**, Amanda Altieri, Wenbo Yu, Stefan M. Ivanov, Brian G. Pierce, Alexander D. MacKerell, Syed Saif Hasan

1022-Pos **Board B72**
A FAB-TAG FOR SMALL MEMBRANE PROTEIN STRUCTURE DETERMINATION. **Benjamin McIlwain**, Amanda Erwin, Melanie D. Ohi, Randy B. Stockbridge

1023-Pos **Board B73**
EXPLORING THE THREE-DIMENSIONAL ARCHITECTURES OF TWO FAMILIES OF LARGE PORE CHANNELS (CALHM1,2 AND PANNEXIN1). **Johanna L. Syrjanen**, Kevin Michalski, Tsung-Han Chou, Shanlin Rao, Eric Henze, Julia M. Kumpf, Noriko Simorowski, Tim Grant, Nikolaus Grigorieff, Stephen J. Tucker, Toshimitsu Kawate, Hiro Furukawa

1024-Pos **Board B74**
REFINEMENT OF THE TRANSMEMBRANE DOMAIN IN CONSTRUCTING THE MEMBRANE-EMBEDDED SARS-COV-2 SPIKE PROTEIN MODEL. **Tianle Chen**, Karan Kapoor, Emad Tajkhorshid

1025-Pos **Board B75**
HOW GPCRS ENGAGE GPCR KINASES IN THE FIRST STEP OF HOMOLOGOUS DESENSITIZATION. **John J. Tesmer**, Qiuyan Chen, Manolo Plasencia, Zhuang Li, Leifu Chang, Philip C. Andrews

1026-Pos **Board B76**
CHALLENGES WITH THE PREPARATION OF A SOLUBLE AND ACTIVE FORM OF LRAT. **Sarah Roy**, Line Cantin, Jordan Grondin, Vincent Boulanger, Marie-Eve Gauthier, Stephane M. Gagne, Christian Salesse

1027-Pos **Board B77**
THE ANTI-APOPTOTIC BCL-2 PROTEIN BEHAVES AS AN INTEGRAL MEMBRANE PROTEIN. Ameeq Ul Mushtaq, Jörgen Åden, Tobias Sparrman, Artur P.G. Dingeldein, Hanna P. Wacklin, Luke A. Clifton, **Gerhard Grobner**

1028-Pos **Board B78**
SUBSTRATE RECOGNITION OF THE SMALL MULTIDRUG RESISTANCE (SMR) FAMILY. **Olive E. Burata**, Christian B. Macdonald, Ali A. Kermani, Randy Stockbridge

1029-Pos **Board B79**
STRUCTURE OF THE BACTERIAL LIPID ABC TRANSPORTER MLAFEDB REVEALS SUBSTRATE BOUND. **Mark R. MacRae**, Nicolas Coudray, Georgia L. Isom, Mariyah N. Saiduddin, Gira Bhabha, Damian C. Ekiert

1030-Pos **Board B80**
STRUCTURAL SWITCHES REGULATING THE ALTERNATING ACCESS MECHANISM OF HUMAN P-GLYCOPROTEIN. **Karan Kapoor**, Sepehr Dehghanighahnaviyeh, Emad Tajkhorshid

1031-Pos **Board B81**
CRYSTAL STRUCTURES OF A MELIBIOSE SYMPORTER MELB WITH BOUND SUGAR SUBSTRATE. **Lan Guan**, Hariharan Parameswaran

Intrinsically Disordered Proteins (IDP) and Aggregates II (Boards B82 - B99)

1032-Pos **Board B82**
INVESTIGATION OF DYNAMICS ALONG DIVERGENT TAU AGGREGATION PATHWAYS. **Ellie I. James**, Abhinav Nath, Miklos Guttman

1033-Pos **Board B83**
DYNAMICAL HETEROGENEITY IN THE MEASLES VIRUS IDP N_{TAIL} IN ITS FREE AND BOUND STATES. **John Kunkel**, Gerdenis Kodis, Gabor Nagy, Christophe Bignon, Sonia Longhi, Andrea C. Vaiana, Helmut Grubmuller, Wenwei Zheng, Sara M. Vaiana

1034-Pos **Board B84**
REENTRANT PHASE TRANSITION AND OUT-OF-EQUILIBRIUM BEHAVIOR OF LIQUID POLYPHOSPHATE CONDENSATE. **Hannah M. Seppala**, Priya R. Banerjee

1035-Pos **Board B85**
SEQUENCE AND CHEMICAL ENVIRONMENT DETERMINE THE GLOBAL DIMENSION OF INTRINSICALLY DISORDERED PROTEIN ENSEMBLES. **Feng Yu**, David Moses, Alex S. Holehouse, Shahar Sukenik

1036-Pos **Board B86**
SOLVENT RELAXATION SIGNIFICANTLY CONTRIBUTES TO ELECTRON TRANSFER RATES BETWEEN TRYPTOPHAN TRIPLET STATE AND CYSTINE. Gerdenis Kodis, John D. Kunkel, Wenwei Zheng, Dmitry V. Matyushov, **Sara M. Vaiana**

1037-Pos **Board B87**
HOW DO LIGANDS TUNE THE ASSEMBLY AND DISSOLUTION OF BIOMOLECULAR CONDENSATES? **Kiersten M. Ruff**, Furqan Dar, Rohit V. Pappu

1038-Pos **Board B88**
MODELING CHROMATIN CONDENSATION WITH COARSE-GRAINED MODELS. **Kathryn M. Lebold**, Robert B. Best

1039-Pos **Board B89**
INVESTIGATING THE ROLE OF THE INTRINSICALLY DISORDERED TRANSACTIVATION DOMAIN OF NF-KAPPAB IN DNA BINDING AND CO-ACTIVATOR INTERACTIONS. **Hannah E.R. Baughman**, Amalia C. Villagran-Suarez, Francis X. Alipranti, Dominic Narang, Elizabeth A. Komives

1040-Pos **Board B90**
TOWARD EFFICIENT *Q*-CANONICAL MONTE CARLO SIMULATIONS OF THE IMPACT OF CHARGE REGULATION ON CONFORMATIONAL ENSEMBLES OF INTRINSICALLY DISORDERED PROTEINS. **Martin J. Fossat**, Rohit V. Pappu

1041-Pos **Board B91**
SEQUENCE-DEPENDENT VISCOELASTICITY OF BIOMOLECULAR CONDENSATES. **Ibraheem Alshareedah**, Priya R. Banerjee

1042-Pos **Board B92**
MODELLING THE MULTIFARIOUS CONFORMATIONS OF THE INTRINSICALLY DISORDERED PROTEIN 4E-BP2 WITH SM-FRET, SAXS & PRE RESTRAINTS. **Spencer Smyth**, Thomas Tsangaris, Alaji Bah, Julie D. Forman-Kay, Claudiu C. Gradinaru

1043-Pos **Board B93**
AB(1-42) OLIGOMER INDUCED PERFORATION OF MEMBRANES REVEALS A MECHANISM FOR NEUROTOXICITY AND NEW MODES OF DRUG TARGETING. **Andres S. Arango**, Soumyo Sen, Moeen Meigooni, Emad Tajkhorshid

1044-Pos **Board B94**
NOVEL DISEASE VARIANTS REVEAL CRITICAL FUNCTIONS FOR INTRINSICALLY DISORDERED REGIONS ENCODED BY THE DIABETES GENE *CLEC16A*. **Morgan Gingerich**

1045-Pos **Board B95**
A HYDRODYNAMIC INSTABILITY DRIVES PROTEIN DROPLET FORMATION ON MICROTUBULES TO NUCLEATE BRANCHES. **Bernardo Gouveia**, Sagar U. Setru, Ray Alfaro-Aco, Joshua W. Shaevitz, Howard A. Stone, Sabine Petry

1046-Pos **Board B96**
ALLOSTERIC REGULATION OF NUCLEOPORIN ASSEMBLIES BY PROTEIN INTRINSIC DISORDER. **Bartlomiej J. Blus**, Aleksandra Krolak, Junseock Koh, Hyuk-Soo Seo, Elias Coutavas

1047-Pos **Board B97**
COMPREHENSIVE ANALYSIS OF INTRINSICALLY DISORDERED REGIONS TO ELUCIDATE THEIR PHYSICAL PROPERTIES USING A MODIFIED PARAMETER. **Hayato Aida**, Ryuhei Harada, Yasuteru Shigeta, Kentaro Tomii

1048-Pos **Board B98**
SHINING LIGHT ON THE 'DARK MATTER' OF THE NUCLEAR PORE COMPLEX. **Miao Yu**, Sofya Mikhaleva, Piau Siong Tan, Christopher D. Reinkemeier, Edward A. Lemke

1049-Pos **Board B99**
MEMBRANE CHOLESTEROL REGULATES THE BINDING OF ALPHA-SYNUCLEIN TO SYNAPTIC VESICLES, AND ITS SUBSEQUENT FUNCTIONAL AND PATHOGENIC BEHAVIOR. **Anindita Mahapatra**, Narattam Mandal, Krishnananda Chattopadhyay

Ribosomes and Translation (Boards B100 - B106)

1050-Pos **Board B100**
SINGLE-MOLECULE DYNAMICS OF EIF4F-MEDIATED MRNA RECOGNITION. **Burak Cetin**, Gary Song, Seán E. O'Leary

1051-Pos **Board B101**
A CONSERVED ARGININE IN SWITCH I IS CRITICAL FOR PPGPP BINDING TO THE PROKARYOTIC TRANSLATIONAL GTPASE BIPA. **Victoria L. Robinson**, Gilman Dionne, Kevin J. Boyd, Ala M. Shaqra, Heidi Erlandsen, Madhubrata Ghosh, Ganesh S. Anand, Eric R. May

1052-Pos **Board B102**
ELONGATION FACTOR G MUTATIONS AND BACTERIAL RESISTANCE TO AMINOGLYCOSIDES. **Sara Gabrielli**, Lars V. Bock, Helmut Grubmueller

1053-Pos **Board B103**
ELUCIDATING THE MECHANISM OF EUKARYOTIC POLYPEPTIDE ELONGATION BY SINGLE-MOLECULE FRET. **Clark Fritsch**, Arpan Bhattacharya, Martin Ng, Hong Li, Barry S. Cooperman, Yale E. Goldman

1054-Pos **Board B104**
MECHANISM OF THE ACTIVATION OF RIBOSOME RESCUE FACTOR ARFB. **Lars V. Bock**

1055-Pos **Board B105**
ELECTROSTATIC INTERACTIONS BETWEEN NASCENT CHAINS AND THE RIBOSOME EXIT TUNNEL GENERATE FORCES THAT MODIFY TRANSLATION RATES. **Sarah E. Leininger**, Judith Rodriguez, Quyen Vu, Yang Jiang, Mai S. Li, Edward P. O'Brien

1056-Pos **Board B106**
LIVE-CELL SINGLE-MOLECULE TRACKING OF THE TRANSLATION MACHINERY. **Ivan L. Volkov**, Mikhail Metelev, Erik Lundin, Javier Aguirre, Magnus Johansson

DNA Structure and Dynamics (Boards B107 - B132)

1057-Pos **Board B107**
HIGH-COVERAGE NUCLEIC ACID PROBES FOR DISTINGUISHING SARS-COV-2 FROM INFLUENZA. **Samantha J. Courtney**, Zachary R. Stromberg, James Theiler, Brian T. Foley, Jason D. Gans, Karina Yusim, Jessica Z. Kubicek-Sutherland

1058-Pos **Board B108**
EXAMINING THE EFFECTS OF NETROPSIN ON THE MOBILITY OF DNA USING CAPILLARY ELECTROPHORESIS. **Jillian Miller**, Justin P. Peters

1059-Pos **Board B109**
CONFORMATION OF IMMUNE STIMULATORY SINGLE STRANDED DNA BY BIOMOLECULAR SIMULATIONS AND NMR. Barna Tóth, **Krisztina Fehér**

1060-Pos **Board B110**
VOLUMETRIC INTERPLAY BETWEEN THE CONFORMATIONAL STATES ADOPTED BY DNA STRANDS FROM THE PROMOTER REGION OF THE C-MYC ONCOGENE. **Lutan Liu**, Lily Scott, Takuma Kume, Tigran V. Chalikian

1061-Pos **Board B111**
DETERMINING LOCAL CONFORMATIONS AND CONFORMATIONAL DISORDER AT AND NEAR SINGLE-STRANDED (SS) AND DOUBLE-STRANDED (DS) DNA FORKS AND JUNCTIONS. **Dylan Heussman**, Patrick J. Herbert, Jack W. Maurer, Justin Kittell, Amr Tamimi, Tom Steinberg, Peter H. von Hippel, Andrew H. Marcus

1062-Pos **Board B112**
CONNECTING STRUCTURE WITH KINETICS OF SINGLE-STRANDED DNA FLUCTUATIONS THAT PROVIDE POTENTIAL BINDING SITES FOR REPLICATION PROTEINS. **Claire Albrecht**, Brett A. Israels, Chloe Chvatal, Peter H. von Hippel, Andrew H. Marcus

1063-Pos **Board B113**
ANHARMONIC BENDING OF DNA BASE-PAIR MISMATCH. **Michael L. Ryan**, Jiyoun Jeong, Tony Lemos, Harold D. Kim

1064-Pos **Board B114**
BENDING FLUCTUATIONS IN MISMATCHED DNA REVEALED BY FLUORESCENCE CORRELATION SPECTROSCOPY. **Timour B. Ten**, Viktoriya Zvoda, Manas K. Sarangi, Anjum Ansari

1065-Pos **Board B115**
THE DYNAMIC ENSEMBLE OF A:G AND A:8-OXOGUANINE MISMATCHES IN DUPLEX DNA: IMPLICATIONS FOR REPLICATION ERRORS AND DAMAGE REPAIR. **Stephanie Gu**, Eric S. Szymanski, Atul Kaushik Rangadurai, Hashim M. Al-Hashimi

1066-Pos **Board B116**
THERMODYNAMIC PARAMETERS AND DESIGN CONSIDERATIONS FOR EXPANDED ALPHABET P-Z AND G-Z BASE PAIRS IN DNA. **Jason D. Kahn**, Terrel Miffin, Kenneth K. Sharp, Xiaoyu Wang, Shuichi Hoshika, Hongying Sun, Mingyi Zhu, Tuan M. Pham, Raymond J. Peterson, Steven A. Benner, David H. Mathews

1067-Pos **Board B117**
NUCLEIC ACID CONFORMATIONAL PENALTIES FROM OPTICAL MELTING EXPERIMENTS. **Atul Kaushik Rangadurai**, Honglue Shi, Yu Xu, Bei Liu, Hashim M. Al-Hashimi

1068-Pos **Board B118**
KINETICS OF DNA MELTING AND ANNEALING UNDER SMALL TENSION. **Derek Hart**

1069-Pos **Board B119**
CORRELATIVE SINGLE-MOLECULE FORCE-FRET MEASUREMENTS OF DNA HAIRPIN CONFORMATIONAL DYNAMICS. **Nastaran Hadizadeh Yazdi**, Jordi Cabanas-Danés, Sheema Rahmanseresht, Ann Mukhortava, Rosalie P.C. Driessen, Ali Raja

1070-Pos **Board B120**
FIRST PASSAGE TIME STUDY OF DNA STRAND DISPLACEMENT. **Alexander W. Cook**, Bo Broadwater, Harold D. Kim

1071-Pos **Board B121**
HOW THE CIRCULAR AND LINEAR CONFORMATIONAL FLUCTUATIONS OF GIANT DNA MOLECULES CHANGE WITH THE VISCOSITY OF THE SOLVENT. **Masato Tanigawa**, Takafumi Iwaki

1072-Pos **Board B122**
RESTRICTED MOBILITY AND JAMMING OF DENSELEY PACKED DNA PULLED OUT FROM PHAGE PHI29 VIRUS CAPSIDS. **Mounir Fizari**, Nicholas A. Keller, Douglas E. Smith

1073-Pos **Board B123**
SHAPE AND SEDIMENTATION COEFFICIENTS OF SUPERCOILED DNA MINICIRCLES. **Radost Waszkiewicz**, Maciej Lisicki, Daniel J. Catanese, Jonathan Fogg, Magdalena Gruziel, Maria L. Ekiel-Jeżewska, Borries Demeler, E. Lynn Zechiedrich, Piotr Szymczak

1074-Pos **Board B124**
INFLUENCE OF DNA LENGTH ON SUPERCOILING-DEPENDENT 3-D SHAPE. **Nathan Corman**, Cecilia Quijano, Jonathan Fogg, B. Montgomery Pettitt, E. Lynn Zechiedrich

1075-Pos **Board B125**
SUPERCOILING AND LOOPING PROMOTE DNA BASE ACCESSIBILITY AND COORDINATION AMONG DISTANT SITES. **Jonathan M. Fogg**, Allison Judge, Erik Stricker, Hilda L. Chan, E. Lynn Zechiedrich

1076-Pos **Board B126**
BIPHASIC EFFECT OF POLYAMINES ON GENE EXPRESSION IN RELATION TO THE SPECIFIC CHANGE OF THE HIGHER-ORDER STRUCTURE OF DNA. **Tomoki Kitagawa**, Takashi Nishio, Naoki Umezawa, Tsunehiko Higuchi, Yuko Yoshikawa, Takahiro Kenmotsu, Kenichi Yoshikawa

1077-Pos **Board B127**
GENERATING CHROMOSOME GEOMETRIES AT THE SINGLE-CELL LEVEL FROM CRYO-ELECTRON TOMOGRAMS. **Benjamin R. Gilbert**, Zane R. Thornburg, Vinson Lam, Elizabeth Villa, Fatema Zahra M. Rashid, Remus T. Dame, Zaida Luthey-Schulten

1078-Pos **Board B128**
ACCURATE SEQUENCE-DEPENDENT COARSE-GRAINED MODEL FOR CONFORMATIONAL AND ELASTIC PROPERTIES OF DOUBLE-STRANDED DNA. **Salvatore Assenza**, Ruben Perez

1079-Pos **Board B129**
CTAG VS. GATC: STRUCTURAL BASIS FOR REPRESENTATIONAL DIFFERENCES IN REVERSE PALINDROMIC DNA TETRANUCLEOTIDE SEQUENCES. **Mahmoud Sharawy**, Artemis Louyakis, Johann P. Gogarten, Eric R. May

1080-Pos **Board B130**
ION BINDING TO THE *BCL-2* G-QUADRUPLEX FROM POLARIZABLE SIMULATIONS WITH THE DRUDE FORCE FIELD. **Brian D. Ratnasinghe**, Alexa M. Salsbury, Justin A. Lemkul

1081-Pos **Board B131**
COMPUTER SIMULATIONS OF NUCLEIC ACID CONDENSATION MECHANISM: THE ROLE OF INTERFACIAL CATIONS DISTRIBUTION. **Weiwei He**, Xiangyun Qiu, Serdal Kirmizialtin

1082-Pos **Board B132**
TWO-PHASE DYNAMICS OF DNA SUPERCOILING BASED ON DNA POLYMER PHYSICS MODEL. **Biao Wan**, Xinliang Xu, Jin Yu

Membrane Dynamics II (Boards B133 - B147)

1083-Pos **Board B133**
TIME-LAPSE, LIVE-CELL IMAGING OF POTASSIUM EFFLUX IN CELL EXPOSED TO NANOSECOND PULSED ELECTRIC FIELDS. **Flavia Mazzarda**, Esin B. Sozer, Julia L. Pittaluga, Claudia Muratori, P. Thomas Vernier

1084-Pos **Board B134**
SURFACE-ASSISTED FORMATION OF MODEL PROTOCELLS FROM FATTY ACID AND PHOSPHOLIPID MIXTURES. **Inga Põldsalu**, Elif S. Koksal, Irep Gozen

1085-Pos **Board B135**
REGULATION OF ENDOCYTOSIS BY INTRACELLULAR MEMBRANE TENSION DISTRIBUTION. **Tithi Mandal**

1086-Pos **Board B136**
MEMBRANE ORDER - WHAT YOU MEASURE DEPENDS ON WHAT YOU PROBE. **Ankur Gupta**, Mamata Kallianpur, Vicky Vishvakarma, Daniel Huster, Sudipta Maiti

1087-Pos **Board B137**
ESTABLISHING AN IDEALIZED PLANT PLASMA MEMBRANE FOR BIOMOLECULAR SIMULATION. **Austin T. Weigle**, Matthew Carr, Diwakar Shukla

1088-Pos **Board B138**
LIPOSOME-ASSISTED DELIVERY OF BIOMEMBRANE-IMPERMEABLE CARGO TO PRIMITIVE CELLS. **Lin Xue**, Anna B Stephenson, Irep Gozen

1089-Pos **Board B139**
DYNAMICS OF FRACTAL RUPTURES IN BIOMEMBRANES. **Aysu Kucukturhan Kubowicz**, Alar Ainla, Paul Dommersnes, Irep Gozen

1090-Pos **Board B140**
USING MOLECULAR DYNAMICS TO GAIN ATOMIC-LEVEL INSIGHT INTO BILAYER PROPERTIES MEASURED WITH NMR AND NEUTRON SPIN-ECHO SPECTROSCOPY. **Milka Doktorova**, George Khelashvili, Trivikram R. Molugu, Rana Ashkar, Michael F. Brown

1091-Pos **Board B141**
MOLECULAR SIMULATIONS OF OCULAR LENS MEMBRANES AT VARIOUS STAGES OF AGE AND CATARACT. **Joshua B. Fernandes**, Jeffery B. Klauda

1092-Pos **Board B142**
CONSTRUCTING BACTERIAL MEMBRANE- MIMICKING VESICLE MODELS AS A TOOL TO MONITOR UPTAKE OF MOLECULES. **Karthika S Nair**, Gayathri Mohanan, Harsha Bajaj

1093-Pos **Board B143**
LIPID DOMAIN FORMATION AND DYNAMICS IN MULTICOMPONENT MEMBRANES: EXPERIMENTAL VALIDATION OF A PHASE-FIELD MODEL. **Yifei Wang**, Alexander Zhiliakov, Annalisa Quaini, Maxim Olshanskii, Sheereen Majd

1094-Pos **Board B144**
EXAMINATION OF BREAST-CANCER-ASSOCIATED LIPID TAIL LENGTH EFFECTS ON BILAYER OXYGEN PERMEABILITY. **Qi Wang**, Rachel J. Dotson, Sally C. Pias

1095-Pos **Board B145**
GIANT VESICLES MIMICKING OUTER MEMBRANE OF GRAM-NEGATIVE BACTERIUM. **Neethu B. Raj**, Karthika S Nair, Harsha Bajaj

1096-Pos **Board B146**
MOLECULAR SIMULATION OF PROPERTIES OF THE LONG PERIODICITY PHASE IN THE STRATUM CORNEUM. **Christian Jorgensen**, Peter D. Olmsted, Fabien Léonforte, Ann Detroyer

1097-Pos **Board B147**
THE EFFECT OF MELATONIN AND AZITHROMYCIN ON MODEL PULMONARY MEMBRANES. **Teshani Kumarage**, John F. Ankner, Minh D. Phan, John Katsaras, Rana Ashkar

Protein-Lipid Interactions: Channels (Boards B148 - B158)

1098-Pos **Board B148**
CONTROL OF OUTER MEMBRANE PHOSPHOLIPASE A (OMPLA) FUNCTIONS ON AN ARTIFICIAL LIPID BILAYER MEMBRANE. **Seren Ohnishi**, Koki Kamiya

1099-Pos **Board B149**
CHARACTERIZING KCNE3 IN DIFFERENT MEMBRANE MIMIC SYSTEMS USING EPR SPECTROSCOPY. **Matthew Scheyer**, William D. Carbo, Alberto Perez, Samuel Haralu, Gary A. Lorigan, Indra D. Sahu

1100-Pos **Board B150**
MOLECULAR DYNAMIC SIMULATIONS SUGGEST NOVEL PIP2 BINDING SITES FOR SK2 CHANNEL REGULATION. **Adith V. Srivatsa**, Ryan L. Woltz, Phuong T. Nguyen, Kevin DeMarco, Xiao-Dong Zhang, Igor V. Vorobyov, Vladimir Yarov-Yarovoy, Nipavan Chiamvimonvat

1101-Pos **Board B151**
CHOLESTEROL INHIBITION OF BK CHANNELS IS MEDIATED BY THEIR RCK HIGH AFFINITY SITES. **Kelsey C. North**, Alexandria Slayden, Anna N. Bukiya, Alex M. Dopico

1102-Pos **Board B152**
CORONAVIRUS ENVELOPE PROTEIN: LIPID SENSITIVITY AND MEMBRANE BENDING. **Jesse Sandberg**, Grace H. Brannigan

1103-Pos **Board B153**
THE USE OF ENHANCED SAMPLING MOLECULAR DYNAMICS (ES-MD) TO DETERMINE PIP_2 BINDING IN SK2-CALMODULIN COMPLEX. **Ryan L. Woltz**, Adith Srivatsa, Phuong T. Nguyen, Kevin DeMarco, Xiao-Dong Zhang, Igor V. Vorobyov, Vladimir Yarov-Yarovoy, Nipavan Chiamvimonvat

1104-Pos **Board B154**
MECHANISMS UNDERLYING DRUG-MEDIATED REGULATION OF MEMBRANE PROTEIN FUNCTION. **Radda Rusinova**, Olaf S. Andersen

1105-Pos **Board B155**
MOLECULAR DYNAMICS SIMULATIONS REVEAL THAT THE PIEZO1 CHANNEL CREATES A UNIQUE TOPOLOGY IN A COMPLEX MODEL MEMBRANE. **Jiehan Chong**, Dario De Vecchis, Jian Shi, David J. Beech, Antreas Kalli

1106-Pos **Board B156**
MOLECULAR DYNAMICS SIMULATION OF PH-MEDIATED CONFORMATIONAL CHANGE IN CONNEXIN CHANNELS. **Chinmay Sen**, Wesley M. Botello-Smith, Yi-Chun Lin, Yun Lyna Luo

1107-Pos **Board B157**
AN OPEN STATE WAS INDUCED BY MIMICKING MECHANOSENSITIVE PIEZO1 CHANNEL CLUSTERS IN MOLECULAR DYNAMIC SIMULATIONS. **Wenjuan Jiang**, John Del Rosario, Wesley M. Botello-Smith, Siyuan Zhao, Yi-chun Lin, Han Zhang, Jerome J. Lacroix, Tibor Rohacs, Yun Lyna Luo

1108-Pos **Board B158**
MOLECULAR INSIGHTS INTO LIPID-MODULATION OF THE CYCLIC NUCLEOTIDE-GATED CHANNEL STHK. **Philipp Schmidpeter**, Di Wu, Jan Rheinberger, Haiping Tang, Carol V. Robinson, Crina M. Nimigean

General Protein-Lipid Interactions (Boards B159 - B185)

1109-Pos **Board B159**
EFFECT OF PEPTIDE SEQUENCE MUTATIONS ON THE TRANSLOCATION OF CHARGED PEPTIDE LOOPS ACROSS LIPID BILAYERS WITH MOLECULAR DYNAMICS SIMULATIONS. **Samarthaben J. Patel**, Reid C. Van Lehn

1110-Pos **Board B160**
PREDICTING THE BEHAVIOUR OF ANTIBIOTICS IN A VIRTUAL *E. COLI* CELL ENVELOPE. **Syma Khalid**, Conrado Pedebos

1111-Pos **Board B161**
INOSITOL PHOSPHOLIPID INTERACTIONS WITH INWARD RECTIFIER POTASSIUM CHANNELS AND THEIR ROLE IN DISEASE. **Tanadet Pipatpolkai**

1112-Pos **Board B162**
ACTIVATION OF G-PROTEIN COUPLED RECEPTORS IS THERMODYNAMICALLY LINKED TO LIPID SOLVATION. **Alison N. Leonard**, Edward R. Lyman

1113-Pos **Board B163**
ANALYSIS OF PROTEIN-CARDIOLIPIN INTERACTIONS IN THE *E. COLI* INNER MEMBRANE. **Robin A. Corey**, Wanling Song, Anna L. Duncan, T. Bertie Ansell, Mark S. Sansom, Phillip J. Stansfeld

1114-Pos **Board B164**
INTERACTION OF ALPHA-CRYSTALLIN WITH FOUR MAJOR PHOSPHOLIPIDS OF EYE LENS FIBER CELL PLASMA MEMBRANES: AN EPR SPIN-LABELING METHOD. **Raju Timsina**, Nawal K. Khadka, David Maldonado, Laxman Mainali

1115-Pos **Board B165**
INVOLVEMENT OF A CONSERVED INTRAMEMBRANE ACIDIC RESIDUE IN CHOLESTEROL BINDING OF MITOCHONDRIAL VDAC1 REVEALED BY MICROSECOND-SCALE SIMULATIONS. **Muyun Lihan**, Emad Tajkhorshid

1116-Pos **Board B166**
PREDICTING GPCR-CHOLESTEROL INTERACTION SITES BY COARSE-GRAINED MD. **Ricky Sexton**, James Geiger, Zina Al-Sahouri, Wei Liu, Oliver Beckstein

1117-Pos **Board B167**
MECHANISM OF PHOSPHOINOSITIDE-DEPENDENT MODULATION OF PROTEIN TRAFFICKING. Tiffany G. Roach, Wen Xiong, Tuo-Xian Tang, Wei Song, Anne M. Brown, **Daniel G. Capelluto**

1118-Pos **Board B168**
LIPIDATION BY ACYL TRANSFER FROM MEMBRANE LIPIDS - AN UNDERAPPRECIATED PROCESS IN CELL BIOLOGY. **John M. Sanderson**

1119-Pos **Board B169**
MOLECULAR DYNAMIC SIMULATIONS OF MEMBRANE TRANSITION IN CYCLIC HEXA-PEPTIDES USING ALL-ATOM AND COARSE-GRAINED MODELS. **Daniela Rodea**, Maziar S. Ardejani, Afra Panahi

1120-Pos **Board B170**
SNX9: AN UNCONVENTIONAL BAR DOMAIN PROTEIN? **Feng-Ching Tsai**, Senthil Arumugam, John Manzi, Patricia M. Bassereau

1121-Pos **Board B171**
RETAINING THE NATIVE LIPID COMPOSITION OF THE PLASMA MEMBRANE PROVIDES INSIGHT INTO MEMBRANE ASSOCIATED PROTEIN DYNAMICS. **Madeline R. Sponholtz**, Eric N. Senning

1122-Pos **Board B172**
SEIPIN ACCUMULATES AND TRAPS DIACYLGLYCEROLS AND TRYGLYCERIDES IN ITS RING-LIKE STRUCTURE. **Valeria Zoni**, Wataru Shinoda, Stefano Vanni

1123-Pos **Board B173**
SOLVENT ACCESSIBILITY OF INDIVIDUAL PROTEIN MOLECULES AND MOLECULAR COMPLEXES MEASURED AT A SINGLE MOLECULE LEVEL. **Arpan Dey**, Vicky Vishvakarma, Simli Dey, Anirban Das, Sudipta Maiti

1124-Pos **Board B174**
LIQUID-LIQUID PHASE SEPARATION STUDIES OF ANIONIC LIPOSOMES COMPLEXED WITH MICROTUBULE-ASSOCIATED PROTEIN TAU. **Christine Tchounwou**, Dylan Lasher, Arjun Bhaduri, Rebecca L. Best, Leslie Wilson, S. C. Feinstein, Cyrus R. Safinya

1125-Pos **Board B175**
A REDUCTIONIST MODEL OF MIXED-BILAYER MECHANICS BUILT USING MOLECULAR SIMULATION. **Henry J. Lessen**, Alexander J. Sodt

1126-Pos **Board B176**
BIOPHYSICAL CHARACTERIZATION OF HUMAN LIPOPROTEINS FOR DIAGNOSTIC ASSAY DEVELOPMENT. **Katja E. Klosterman**, Kiersten D. Lenz, Harshini Mukundan, Jessica Kubicek-Sutherland

1127-Pos **Board B177**
PHLIP ARG-MUTANT INTERACTIONS WITH THE MEMBRANE LIPID BILAYER. **Hannah M. Visca**, Oleg A. Andreev, Yana K. Reshetnyak

1128-Pos **Board B178**
ESTIMATING THE ACCURACY OF THE MARTINI MODEL TOWARDS THE INVESTIGATION OF PERIPHERAL PROTEIN - MEMBRANE INTERACTIONS. **Sriraksha Srinivasan**, Valeria Zoni, Stefano Vanni

1129-Pos **Board B179**
PROBING THE IMPACT OF LIPID COMPOSITION ON STRUCTURE AND DYNAMICS OF *E. COLI*PROTEIN INSERTASE YIDC. **Matt Sinclair**, Emad Tajkhorshid

1130-Pos **Board B180**
CAVEOLIN MEDIATED CURVATURE AND CLUSTERING : FROM SIMPLE TO COMPLEX MEMBRANE. **Shikha Prakash**, Anjali Krishna, Durba Sengupta

1131-Pos **Board B181**
CONGENITAL GENERALIZED LIPODYSTROPHY MUTATION P.GLU176ARGFS RENDERS CAVIN-1 LEUCINE ZIPPER DOMAIN 2 TO OFF-TARGETS. **Anshuman Mohapatra**, Sowmya Bekshe Lokappa, Nitin Chaudhary

1132-Pos **Board B182**
DEEP LEARNING REVEALS WILD-TYPE AND MUTANT RAS DIMER INTERFACE FORMATION IN MEMBRANES. **Anda Trifan**

1133-Pos **Board B183**
LIPID-DEPENDENT ENSEMBLE OF CONFORMATIONAL SUBSTATES IN RHODOPSIN ACTIVATION STUDIED BY FTIR AND UV-VISIBLE SPECTROSCOPY. Andrey V. Struts, Eglof Ritter, Paul Fischer, Blake Mertz, Franz Bartl**, Michael F. Brown**

1134-Pos **Board B184**
ENERGETICS AND KINETICS OF PEPTIDE-LIPID MEMBRANE INTERACTION: A MOLECULAR DYNAMICS STUDY. **Ryan Smith**, Ioan Kosztin

1135-Pos **Board B185**
SPECIFICITY OF *LOXOSCELES* A CLADE PHOSPHOLIPASE D ENZYMES FOR CHOLINE-CONTAINING LIPIDS: ROLE OF A CONSERVED AROMATIC CAGE. **Emmanuel E. Moutoussamy**, Qaiser Waheed, Greta Binford, Matthew Cordes, Hanif Muhammad Khan, Nathalie Reuter

Mechanosensation (Boards B186 - B202)

1136-Pos **Board B186**
EXPLORING HOW VARYING GROWTH CONDITIONS AFFECT THE GENE EXPRESSION OF MECHANOSENSITIVE ION CHANNELS IN *ESCHERICHIA COLI*. **Sarah C. Johnson**, Hannah R. Malcolm

1137-Pos **Board B187**
THE ENERGETICS OF RAPID CELLULAR MECHANOTRANSDUCTION. **Michael N. Young**, Jörg M. Grandl

1138-Pos **Board B188**
THE INTERFACIAL ELECTROSTATICS DEFINES MSCS GATING AND INACTIVATION. Joseph Maramba, **Elissa Moller**, Madolyn Britt, Andriy Anishkin, Sergei I. Sukharev

1139-Pos **Board B189**
STRUCTURAL RESPONSE OF THE PIEZO CHANNEL TO FORCE APPLICATION AT DIFFERENT FREQUENCIES. **Yi-Chih Lin**, Yusong R. Guo, Atsushi Miyagi, Roderick MacKinnon, Simon Scheuring

1140-Pos **Board B190**
NANOSCALE STRUCTURE AND MECHANICS OF SKIN IN A *C. ELEGANS* MODEL OF TOUCH SENSATION. **Ehsan Rezaei**, Cathy Savage-Dunn, Miriam B. Goodman

1141-Pos **Board B191**
PIEZO1 IS ESSENTIAL FOR CELL REMODELING ON MICROPATTERNS. Mohammad Reza Bahrani Fard, Deekshitha Jetta, Katie Munechika, **Susan Z. Hua**

1142-Pos **Board B192**
MOTILITY AND BEHAVIOR OF S. COERLEUS DURING REGENERATION. **Janet Y. Sheung**, Megan Otsuka, Athena Lin, Gabriella Seifert, Wallace Marshall

1143-Pos **Board B193**
ALTERED TENSION TRANSMISSION VIA FOCAL ADHESIONS IN DYSTROPHIC MUSCLE CELLS DYSREGULATES MECHANOTRANSDUCTION. **Maria Paz Ramirez Lopez**, Sophia J. Wenthe, Eric J. Aird, James M. Ervasti, Wendy R. Gordon

1144-Pos **Board B194**
SUBCELLULAR INVESTIGATION OF THE INTERPLAY BETWEEN MEMBRANE TENSION AND MECHANOSENSITIVITY USING FORCE-CONTROLLED MICROPIPETTES. **Ines Lüchtefeld**, Christoph Gäbelein, Janos Voros, Boris Martinac, Tomaso Zambelli, Massimo Vassalli

1145-Pos **Board B195**
A-CATENIN FORMS AN UNCONVENTIONAL SLIP BOND WITH ACTIN THAT SWITCHES COOPERATIVELY INTO A CATCH BOND. Marios Sergides, Claudia Arbore, Lucia Gardini, Francesco S. Pavone, **Marco Capitanio**

1146-Pos **Board B196**
MICROENVIRONMENT STIFFNESS REQUIRES FETAL EXTRACELLULAR PROTEINS TO INCREASE CARDIOMYOCYTE PROLIFERATION IN NEONATAL MOUSE. **Xinming Wang**, Paul Park, Samuel E. Senyo

1147-Pos **Board B197**
COMPUTATIONAL MODEL OF E-CADHERIN CLUSTERING UNDER CORTICAL TENSION. **Yang Chen**, Colin McNabb, Tamara Bidone

1148-Pos **Board B198**
SPATIAL MODELING OF YAP/TAZ MECHANOTRANSDUCTION REVEALS HOW MULTIPLEXED PHYSICAL CUES TRANSFER INFORMATION TO THE NUCLEUS. Kiersten Scott, Padmini Rangamani, **Stephanie I. Fraley**

1149-Pos **Board B199**
MODIFIED N-LINKED GLYCOSYLATION STATUS PREDICTS TRAFFICKING DEFECTIVE PIEZO1 CHANNEL MUTATIONS. Jinyuan Li, Chai Ann Ng, Delfine Cheng, **Charles D. Cox**

1150-Pos **Board B200**
SELF-PROPELLED VESICLES DRIVEN BY INTERNAL ACTIVE FILAMENTS. **Thorsten Auth**, Clara Abaurrea-Velasco, Gerhard Gompper

1151-Pos **Board B201**
BIOPHYSICS OF THERMAL AND MECHANICAL ULTRASONIC NEUROMODULATION. Muye He, **Arnd Pralle**

1152-Pos **Board B202**
TIME LAPSE NANOSCALE IMAGING OF THE SURFACE OF MECHANOSENSORY STEREOCILIA BUNDLES IN LIVE MAMMALIAN AUDITORY HAIR CELLS. **Carolina Galeano-Naranjo**, A. Catalina Velez-Ortega, Gregory I. Frolenkov

Excitation-Contraction Coupling (Boards B203 - B211)

1153-Pos **Board B203**
CHANGES IN CONTRACTILE FUNCTION OF SINGLE CARDIOMYOCYTES FROM THE DIFFERENT HEART CHAMBERS IN TYPE 2 DIABETES MELLITUS. **Tatiana Myachina**, Xenia Butova, Ksenia Sokolova, Irina Gette, Anastasia Khokhlova

1154-Pos **Board B204**
EFFECTS OF POINT MUTATIONS OF DYSFERLIN ON CA^{2+} SIGNALING IN MURINE SKELETAL MYOFIBERS. **Valeriy I. Lukyanenko**, Joaquin M. Muriel, Robert J. Bloch

1155-Pos **Board B205**
THE ROLE OF T-TUBULE ORGANIZATION IN REGULATION OF INTRACELLULAR CA^{2+} HANDLING BY MUSCARINIC RECEPTOR STIMULATION IN VENTRICULAR MYOCYTES. **Andriy E. Belevych**, Vladimir Bogdanov, Dmitry A. Terentyev, Sandor Gyorke

1156-Pos **Board B206**
CLEAVAGE AND MIGRATION OF JUNCTOPHILIN 1 IN MUSCLE OF PATIENTS WITH CYTOSOLIC LEAK OF STORED CALCIUM. **Eshwar Reddy Tammineni**, Lourdes Figueroa, Natalia Kraeva, Carlo Manno, Sheila Riazi, Eduardo Rios

1157-Pos **Board B207**
TUBULAR (T-) SYSTEM SOCE-PMCA BALANCE IS REGULATED BY RYR LEAK IN RESTING SKELETAL MUSCLE. Luke Pearce, Cedric Lamboley, Crystal Seng, Aldo Meizoso Huesca, Daniel P. Singh, Christopher J. Barclay, **Bradley S. Launikonis**

1158-Pos **Board B208**
AUTOSOMAL-DOMINANT CASQ2-K180R CAUSES CPVT BY ALTERING INTRA-SR CALCIUM BUFFERING WITHOUT REDUCING CASQ2 PROTEIN LEVELS. **Matthew Wleklinski**, Shan Parikh, Daniel Blackwell, Bjorn C. Knollmann

1159-Pos **Board B209**
ARRHYTHMOGENIC CROSSTALK OF SODIUM, CALCIUM, REACTIVE OXYGEN SPECIES AND CAMKII SIGNALING IN THE FAILING RABBIT VENTRICULAR MYOCYTE - INSIGHTS FROM A COMPUTATIONAL STUDY. Caroline Liu, Haibo Ni, Bence Hegyi, Donald M. Bers, Eleonora Grandi, **Stefano Morotti**

1160-Pos **Board B210**
CRYO-EM STUDIES OF PHOSPHOMIMETIC AND PHOSPHO-NULL TRIPLE MUTANTS OF CARDIAC RYANODINE RECEPTOR (RYR2). **Yifan Hu**, Kavita Iyer, Ashok R. Nayak, Thomas Klose, Jose M. Eltit, Nagomi Kurebayashi, Takashi Murayama, Montserrat Samso

1161-Pos **Board B211**
THE SARCOPLASMIC RETICULUM OXIDOREDUCTASE SYSTEM MODULATES LUMINAL CA^{2+} REGULATION OF THE RYANODINE RECEPTOR IN CARDIAC DISEASE. **Shanna Hamilton**, Radmila Terentyeva, Tae Yun Kim, Benjamin Martin, Vladimir Bogdanov, Andriy E. Belevych, Christopher H. George, Sandor Gyorke, Bum-Rak Choi, Jonathan P. Davis, Dmitry A. Terentyev

Voltage-gated K Channels (Boards B212 - B235)

1162-Pos **Board B212**
HV1 PROTON CHANNEL OPENING TRANSITION REVEALED BY EXPERIMENTAL AND COMPUTATIONAL APPROACHES. Ashley L. Bennett, **I. Scott Ramsey**

1163-Pos **Board B213**
QUANTUM CALCULATIONS ON THE TRANSPORT OF PROTONS IN THE VOLTAGE SENSING DOMAIN OF THE KV1.2 POTASSIUM CHANNEL: MULTIPLE PATHS, CHARGED GROUPS, AND A SWITCH. **Michael E. Green**

1164-Pos **Board B214**
MEASURING TEMPERATURE TIME COURSE USING MEMBRANE CAPACITANCE. **Bernardo Pinto**, Carlos Alberto Z. Bassetto Jr, Ramon Latorre, Francisco Bezanilla

1165-Pos **Board B215**
ROLE OF THE NMDAR-NR2B SUBUNIT IN THE FUNCTION OF SUPRAMOLECULAR NMDAR-BK COMPLEXES. **Rebeca Martínez Lázaro**, David Bartolome-Martin, Ricardo Gomez, Teresa Giraldez

1166-Pos **Board B216**
DEVELOPMENT AND OPTIMIZATION OF CALCIUM FLUORESCENT SENSORS BASED ON BK ION CHANNELS. **David Bartolome-Martin**, Roger Gimeno, Belinda Rivero-Perez, Alejandro Cerrada, Alberto J. Gonzalez-Hernandez, Diego Alvarez de la Rosa, Teresa Giraldez

1167-Pos **Board B217**
CURRENT REGULATION IN POTASSIUM CHANNELS. **Wojciech Kopec**, Andrei Mironenko, Ben Goold, Bert L. de Groot

1168-Pos **Board B218**
A HYDROPHOBIC PATCH IN THE PAS-CAP ALPHA-HELIX IS CRITICAL FOR SLOW DEACTIVATION IN HERG CHANNELS. **Whitney A. Stevens-Sostre**, Lisandra Flores Aldama, Gail A. Robertson

1169-Pos **Board B219**
NON-CANONICAL MECHANISM OF THE VSD-PD COUPLING IN KCNQ1/KCNE1 CHANNELS. **Xiaoan Wu**, Marta E. Perez, Peter H. Larsson

1170-Pos **Board B220**
DESIGN OF A CHIMERIC KCNQ1 CHANNEL FOR E. COLI EXPRESSION AND STUDIES OF LQTS VARIANTS. **Kathryn R. Brewer**, Hope Woods, Georg Kuenze, Charles R. Sanders

1171-Pos **Board B221**
VOLTAGE-SENSING MECHANISM OF NEURONAL KCNQ CHANNELS. **Michaela Edmond**, Marta E. Perez, Rene Barro-Soria

1172-Pos **Board B222**
VOLTAGE ACTIVATION MECHANISMS OF EPILEPSY- AND ASD-ASSOCIATED MUTATIONS IN NEURONAL KCNQ CHANNELS. **Andy Hinojo-Perez**, Marta E. Perez, Rene Barro-Soria

1173-Pos **Board B223**
STRUCTURAL DETERMINANTS FOR RUBIDIUM BINDING AFFINITY IN THE SELECTIVITY FILTER OF POTASSIUM CHANNELS. D. Marien Cortes, **Luis G. Cuello**

1174-Pos **Board B224**
INVESTIGATION OF THE INACTIVATION OF HERG USING MOLECULAR DYNAMICS SIMULATIONS OF NEW CRYO-EM STRUCTURES. **Emelie Flood**, Caurus Lau, Mark Hunter, Chai-An Ng, Eduardo Perozo, Toby W. Allen, Jamie I. Vandenberg

1175-Pos **Board B225**
PIP2 INDUCED CONFORMATIONAL CHANGES IN KIR CHANNELS - A MOLECULAR DYNAMICS STUDY. **Michael Bründl**, Sarala Pellikan, Anna Stary-Weinzinger

1176-Pos **Board B226**
THE ROLE OF D AND E HELICES IN HCN CHANNELS. **Alessandro Porro**, Federica Gasparri, Viviana Prota, Gerhard Thiel, Federico Thei, Bina Santoro, Andrea Saponaro, Anna Moroni

1177-Pos **Board B227**
STRUCTURAL REQUIREMENTS FOR THE STABILITY AND TRAFFICKING OF THE KCNQ1 POTASSIUM CHANNEL. **Hui Huang**, Alfred L. George, Charles R. Sanders

1178-Pos **Board B228**
DIFFERENTIAL HERG SUBUNIT TRANSCRIPTION DRIVES CHANGES IN I_{KR} DURING CARDIAC MATURATION. **Chiamaka U. Ukachukwu**, André Monteiro Da Rocha, Eric N. Jiménez-Vázquez, Abhilasha Jain, David K. Jones

1179-Pos **Board B229**
INFORMING NMR EXPERIMENTS WITH MOLECULAR DYNAMICS SIMULATIONS TO CHARACTERIZE THE DOMINANT OPEN STATE OF KCSA. **Sergio Pérez Conesa**, Eric G. Keeler, Ann E. McDermott, Lucie Delemotte

1180-Pos **Board B230**
STRUCTURAL MODELING OF THE HERG CHANNEL IN AN INACTIVATED STATE AND ASSOCIATED DRUG INTERACTIONS. **Jan Maly**, Aiyana M. Emigh, Kevin DeMarco, Jon T. Sack, Igor V. Vorobyov, Colleen E. Clancy, Vladimir Yarov-Yarovoy

1181-Pos **Board B231**
STRUCTURAL CHANGES IN KIR3.2 CHANNELS LEADING TO LOSS OF K^+ SELECTIVITY. Theres Friesacher, Harald Bernsteiner, **Anna Stary-Weinzinger**

1182-Pos **Board B232**
A SECOND S4 MOVEMENT OPENS HYPERPOLARIZATION-ACTIVATED HCN CHANNELS. **Rosamary Ramentol**, Marta E. Perez, Peter Larsson

1183-Pos **Board B233**
MODULATION OF VENTRICULAR CARDIOMYOCYTES ELECTROPHYSIOLOGY BY GLYPICAN 1 HEPARAN SULFATE PROTEOGLYCAN. Diego Souza, Andreia Chignalia, **Joao L. Carvalho-de-Souza**

1184-Pos **Board B234**
QUANTUM CALCULATIONS ON THE ROLE OF TWO AMINO ACID GROUPINGS THAT INCLUDE THREE POSITIVE, TWO NEGATIVE CHARGED RESIDUES ON THE TRANSPORT OF PROTONS IN THE VOLTAGE SENSING DOMAIN OF THE $K_V1.2$ POTASSIUM CHANNEL. **Alisher M. Kariev**, Michael E. Green

1185-Pos **Board B235**
COVID-19 DRUGS CHLOROQUINE AND HYDROXYCHLOROQUINE, BUT NOT AZITHROMYCIN AND REMDESIVIR, BLOCK HERG POTASSIUM CHANNELS. Mark Szendrey, Jun Guo, Wentao Li, Tonghua Yang, **Shetuan Zhang**

Ion Channels, Pharmacology, and Disease (Boards B236 - B252)

1186-Pos **Board B236**
AGE-DEPENDENT INTERCALATED DISC PERINEXAL NARROWING CONCEALS LONG-QT SYNDROME TYPE 3 PHENOTYPE. **Xiaobo Wu**, Robert G. Gourdie, Gregory Hoeker, Seth H. Weinberg, Steven Poelzing

1187-Pos **Board B237**
CHLORPROMAZINE ANALOGUES BIND TO PAS DOMAIN AND INHIBIT EAG POTASSIUM CHANNELS. **Ze-Jun Wang**, Tinatin I. Brelidze

1188-Pos **Board B238**
AN ASYMMETRIC C-TYPE INACTIVATED STRUCTURE OF HERG CHANNEL AND ITS BINDING TO CHEMICALLY DIVERSE DRUGS. **Jing Li**, Rong Shen, Eduardo Perozo, Benoit Roux

1189-Pos **Board B239**
MOLECULAR DETERMINANTS OF D AND L-SOTALOL STEREOSELECTIVE PROARRHYTHMIA PROCILIVTIES. Kevin R. DeMarco, Pei-Chi Yang, Kazuharu Furutani, John R.D. Dawson, Slava Bekker, Van A. Ngo, Sergei Y. Noskov, Vladimir Yarov-Yarovoy, Jon T. Sack, Colleen E. Clancy, **Igor Vorobyov**

1190-Pos **Board B240**
ELECTROPHYSIOLOGICAL ANALYSIS OF THE CARDIAC KV CHANNEL WITH THE NEW POINT MUTATION FOUND IN THE PATIENT WITH LQTS. **Julia Kacher**, Maria Karlova, Valeria Rusinova, Denis Abramochkin, Elena Zaklyazminskaya, Olga Sokolova

1191-Pos **Board B241**
SINGLE CHANNEL BIOPHYSICAL PROPERTIES OF THE LEFT VENTRICULAR MITOCHONDRIAL CALCIUM UNIPORTER COMPLEX. **Lucile Fossier**, Mathieu Panel, Albano C. Meli, Jeremy Fauconnier, Alain Lacampagne

1192-Pos **Board B242**
CA^{2+}-ACTIVATED K^+ CHANNEL K_{CA}3.1 REGULATES IL-10 EXPRESSION IN REGULATORY T CELLS AT THE RECOVERY PHASE OF INFLAMMATORY BOWEL DISEASE MODEL. **Susumu Ohya**, Miki Matsui, Junko Kajikuri, Kyoko Endo, Hiroaki Kito

1193-Pos **Board B243**
SUPPRESSION OF KV1.1 CHANNEL ACTIVITY BY BETA-AMYLOID PEPTIDES INVOLVES BOTH INTRACELLULAR CALCIUM-SIGNALING AND DIRECT PEPTIDE-PEPTIDE INTERACTIONS. **Joseph Farley**, Kristi DeBoeuf, Mohammad F. Islam, Nicholas Thelen, Joshua M. Watkins

1194-Pos **Board B244**
A NOVEL SPIDER PEPTIDE THAT AFFECTS THE VOLTAGE GATED POTASSIUM CHANNEL KV1.5. Agota Csoti, Diana Alvarado, Samuel Cardoso-Arenas, Ligia-Luz Corrales-García, Herlinda Clement, Iván Arenas, Pavel Andrei Montero-Dominguez, Timoteo Olamendi-Portugal, Fernando Z. Zamudio, Jesús Borrego, Gyorgy Panyi, Zoltan Varga, Gerardo Corzo, **Ferenc Papp**

1195-Pos **Board B245**
ELECTROPHYSIOLOGICAL CHARACTERIZATION OF CATSPER CHANNEL IN SEA URCHIN SPERM. **Veronica Loyo Celis**, Gerardo Orta, Carmen Beltran, Alberto Darszon

1196-Pos **Board B246**
THE MOLECULAR BASIS OF THE REGULATION OF THE TMEM16A CA^{2+}-ACTIVATED CL^- CHANNEL BY THE LYSOSOMAL NPC1 PROTEIN. **Lara F. Scofano**, Kathryn E. Acheson, Claire Smith, Frances Platt, Paolo Tammaro

1197-Pos **Board B247**
MOLECULAR DYNAMICS TO EXPLAIN THE PATHOGENESIS OF GATING CLASS CYSTIC FIBROSIS MUTATIONS. **Miro A. Astore**, Po-Chia Chen, Shafagh Waters, Serdar Kuyucak

1198-Pos **Board B248**
KINETIC MODEL DISTINGUISHES SUBANESTHETIC DOSES OF KETAMINE BLOCK ON SINGLE CHANNEL N-METHYL-D-ASPARTATE RECEPTORS FROM EFFECTS OF PROTONS. **Jamie A. Abbott**

1199-Pos **Board B249**
MECHANISTIC INSIGHTS INTO VOLATILE ANESTHETIC MODULATION OF K2P CHANNELS. **Paul M. Riegelhaupt**

1200-Pos **Board B250**
A "RECEPTOPHORE MODEL" FOR LOCAL ANESTHETICS BINDING SITE IN CARDIAC ION CHANNELS. **Wendy Gonzalez**, Gabriel Nuñez-Vivanco, David Ramírez, Aytug K. Kiper, Susanne Rinne, Mauricio Bedoya, Bárbara Arévalo, José Márquez-Montesinos, Miguel Reyes-Parada, Vladimir Yarov-Yarovoy, Niels Decher

1201-Pos **Board B251**
IDENTIFYING NOVEL ISOFORM-SPECIFIC HCN CHANNEL LIGANDS USING SPR. **Pareesa E. Kamgar-Dayhoff**, Purushottam Tiwari, Tinatin I. Brelidze

1202-Pos **Board B252**
UNATTENDED DRUG DISCOVERY SCREENING WORKFLOW IN A 384-WELL AUTOMATED PATCH CLAMP SYSTEM. Nina Brinkwirth, Alison Obergrussberger, Nadine Becker, **Tim Strassmaier**, James L. Costantin, Claudia S. Haarmann, Rodolfo Haedo, Niels Fertig, Sonja Stoelzle-Feix

Cardiac Muscle Mechanics and Structure (Boards B253 - B278)

1203-Pos **Board B253**
INVESTIGATING THE EFFECTS OF MUTATIONS WITHIN THE COILED-COIL TAIL OF CARDIAC AND SKELETAL MYOSIN. **Glenn Carrington**, Francine Parker, Marta Giralt-Pujol, Michelle Peckham

1204-Pos **Board B254**
THE M DOMAIN OF CARDIAC MYOSIN BINDING PROTEIN-C IS NECESSARY TO DAMP SPOC IN SPY-C CARDIOMYOCYTES. **Nichlas M. Engels**, Rachel Sadler, Samantha Harris

1205-Pos **Board B255**
ENHANCING CARDIAC MYOSIN FUNCTION WITH AN ABIOTIC ENERGY SOURCE. **Mike K. Woodward**, Eric Ostrander, Brent D. Scott, Christopher Marang, Xiaorong Liu, Jianhan Chen, Dhandapani Venkataraman, Edward P. Debold

1206-Pos **Board B256**
OMECAMTIV MECARBIL MODULATION OF FORCE GENERATION IN SINGLE MYOFIBRILS FROM HUMAN CARDIAC MUSCLE. Beatrice Scellini, Nicoletta Piroddi, Marica Dente, Giulia Vitale, Raffaele Coppini, Cecilia Ferrantini, Corrado Poggesi, **Chiara Tesi**

1207-Pos **Board B257**
AMPLIFICATION OF CARDIAC MOTOR FUNCTIONS BY PRESTIN (SLC26A5). **Xiao-Dong Zhang**, Phung Thai, Lu Ren, Maria Cristina Perez Flores, Hannah A. Ledford, Seojin Park, Jeong Han Lee, Choong-Ryoul Sihn, Che-Wei Chang, Wei Chun Chen, Valeriy Timofeyev, Jian Zuo, James W. Chan, Ebenezer N. Yamoah, Nipavan Chiamvimonvat

1208-Pos **Board B258**
MOLECULAR MECHANISM OF FORCE GENERATION BY THE ACTIN-MYOSIN COMPLEX DURING CARDIAC MUSCLE CONTRACTION. **Wen Ma**, Shengjun You, Michael Regnier, J. Andrew McCammon

1209-Pos **Board B259**
SIMULATING CARDIAC MUSCLE MUTATIONS IN A COMPLIANT LATTICE WITH COMMONLY USED ASSAYS. **Anthony Asencio**, Michael Regnier, Thomas L. Daniel, Farid Moussavi-Harami

1210-Pos **Board B260**
MAPPING THE CARDIAC TROPONIN T LINKER REGION TO ACTIN AND DETERMINING PATHOGENIC POINT MUTATIONAL EFFECTS. **Andrea E. Deranek**, Anthony Baldo, Steven D. Schwartz, Jil C. Tardiff

1211-Pos **Board B261**
CARDIAC TROPONIN I N-TERMINAL PSEUDO-PHOSPHORYLATION REGULATES POWER OUTPUT AND STRETCH ACTIVATION. **Joel C. Robinett**, Laurin M. Hanft, Brandon J. Biesiadecki, Kerry S. McDonald

1212-Pos **Board B262**
ELUCIDATING THE STRUCTURAL INTERACTION BETWEEN N- AND C-TERMINI OF HUMAN ADULT CARDIAC TROPONIN T. **Garrett Crosby**

1213-Pos **Board B263**
AN ATOMIC MODEL OF THE THIN FILAMENT DESCRIBING TROPONIN-I -TROPOMYOSIN BINDING AT LOW-CALCIUM. **William Lehman**, Michael J. Rynkiewicz

1214-Pos **Board B264**
HIGH-THROUGHPUT FLUORESCENCE LIFETIME-BASED SCREEN DETECTS COMPOUNDS THAT BIND TO MYOSIN-BINDING PROTEIN C AND MODULATE INTERACTIONS WITH ACTIN. Thomas A. Bunch, Piyali Guhathakurta, Andrew R. Thompson, Victoria C. Lepak, David D. Thomas, **Brett A. Colson**

1215-Pos **Board B265**
CONFORMATION OF S1-S2 COMPLEX OF HUMAN CARDIAC MYOSIN REVEALED BY FRET. **Alexandra N. Hurst**, Akhil Gargey, Yuri Nesmelov

1216-Pos **Board B266**
STRUCTURAL CHANGES IN THE MYOSIN MOTORS INDUCED BY STRETCH AND PHOSPHORYLATION OF THE MYOSIN REGULATORY LIGHT CHAIN IN RAT CARDIAC TRABECULAE. So-Jin Park-Holohan, Elisabetta Brunello, Thomas Kampourakis, Martin Rees, Malcolm Irving, **Luca Fusi**

1217-Pos **Board B267**
CALCIUM DEPENDENCE OF MYOSIN FILAMENT STRUCTURE IN DEMEMBRANATED TRABECULAE FROM RAT HEART. Luca Fusi, **Yanhong Wang**, So-Jin Park-Holohan, Andrea Ghisleni, Theyencheri Narayanan, Malcolm Irving, Elisabetta Brunello

1218-Pos **Board B268**
UNUSUAL MOBILITY OF THE ELASTIC PROTEIN TITIN IN THIRTEEN-LINED GROUND SQUIRREL HEARTS. Jonathan R. Groening, Mark A. Hiske, Po-Jen Chiang, Maighdlin R. Patterson, Hannah V. Carey, Karen A. Ball, **Charles S. Chung**

1219-Pos **Board B269**
CRYSTALLOGRAPHIC STRUCTURES OF TITIN IMMUNOGLOBULIN-LIKE I21 DOMAINS INVOLVED IN DILATED CARDIOMYOPATHY. **Ines Martinez-Martin**, Audrey Crousilles, Elias Herrero-Galan, Diana Velazquez-Carreras, Simon A. Mortensen, Pablo Garcia-Pavia, Jorge Alegre-Cebollada, Matthias Wilmanns

1220-Pos **Board B270**
CREATION OF A MOLECULAR BAND-AID: DISEASE-LINKED DESMOPLAKIN MUTATIONS ARE RESISTANT TO CALPAIN CLEAVAGE. **Catherine A. Hoover**, Heather R. Manring, Taylor Albertelli, Trevor Dew, Kendahl Ott, Nathan T. Wright, Maegen Borzok

1221-Pos **Board B271**
MEMBRANE YOUNG'S MODULUS AS A FUNCTION OF PLAKOPHILIN-2 EXPRESSION: IMPLICATIONS TO ARRHYTHMOGENIC RIGHT VENTRICULAR CARDIOMYOPATHY. **Pamela Swiatlowska**, Mario Delmar

1222-Pos **Board B272**
MOLECULAR MECHANISMS AND CELLULAR MODELS OF HYPERTROPHIC CARDIOMYOPATHY: INSIGHTS FROM A SURPRISING MUTATION. **Alison S. Vander Roest**, Chao Liu, Kristina B. Kooiker, Makenna M. Morck, Beth Pruitt, Kenneth S. Campbell, Kathleen Ruppel, James A. Spudich, Daniel Bernstein

1223-Pos **Board B273**
THE PROGRESSION OF DYSTROPHIN-DEFICIENT DILATED CARDIOMYOPATHY THROUGH MECHANICAL AND CA^{2+} DYSFUNCTION IN A DUCHENNE MUSCULAR DYSTROPHY RAT MODEL. **Saffie Mohran**, Shawn M. Luttrell, Tim McMillen, Kristina B. Kooiker, David L. Mack, Michael Regnier

1224-Pos **Board B274**
A NOVEL METHOD TO MEASURE MYOFIBRIL STRAIN IN INTACT HUMAN STEM CELL DERIVED CARDIOMYOCYTES. **Abigail Nagle**, Michael Regnier, Jennifer M. Davis

1225-Pos **Board B275**
STRUCTURE-FUNCTION INVESTIGATION OF THE E258K-*MYBPC3* MUTATION IN HCM PATIENT-DERIVED CARDIOMYOCYTES. **Sonette Steczina**, J. Manuel Pioner, Saffie Mohran, Marianna Langione, Giulia Vitale, Beatrice Scellini, Nicoletta Piroddi, Cecilia Ferrantini, Chiara Tesi, Michael A. Geeves, Corrado Poggesi, Michael Regnier

1226-Pos **Board B276**
DISEASE IN A DISH CRISPR-EDITED HIPSC-CMS TO STUDY THE CELLULAR AND SUBCELLULAR MECHANISMS OF HCM. **Kerry Y. Kao**, Matthew C. Childers, Saffie Mohran, Anthony Asencio, Michael Regnier

1227-Pos **Board B277**
INVESTIGATING THE ROLE OF CONTRACTION DURING MYOFIBRIL FORMATION USING HUMAN STEM CELL-DERIVED CARDIOMYOCYTES. **Dasom Yoo**, An-yue Tu, Aidan Fenix, Michael Regnier

1228-Pos **Board B278**
INVESTIGATING THE EFFECT OF HCM-ASSOCIATED TPM1 MUTATION S215L ON HUMAN ENGINEERED HEART TISSUES. **Saiti S. Halder**, Lorenzo R. Sewanan, Michael J. Rynkiewicz, Lindsey Howland, Jeffrey R. Moore, William Lehman, Stuart G. Campbell

Microtubules, Structure, Dynamics, and Associated Proteins (Boards B279 - B296)

1229-Pos **Board B279**
A STRUCTURE-BASED MECHANISTIC MODEL OF MICROTUBULE PLUS-END CATASTROPHE. **Kenneth K. Tsui**, Shannon F. Stewman, Ao Ma

1230-Pos **Board B280**
CATCHING THE CONFORMATIONAL WAVE: TUNING THE WORKING STROKES OF PROTOFILAMENTS AS THEY CURL OUTWARDS FROM DISASSEMBLING MICROTUBULE TIPS. **Lucas Murray**, Haein Kim, Luke Rice, Charles L. Asbury

1231-Pos **Board B281**
DYNAMIC INSTABILITY FROM NON-EQUILIBRIUM STRUCTURAL TRANSITIONS ON THE ENERGY LANDSCAPE OF MICROTUBULE. Shannon F. Stewman, Kenneth Tsui, **Ao Ma**

1232-Pos **Board B282**
DIVALENT CATIONS INDUCE NON-EQUILIBRIUM PHASE TRANSITIONS IN TAU-MEDIATED MICROTUBULE BUNDLES UNDERGOING DYNAMIC INSTABILITY. **Bretton Fletcher**, Phillip A. Kohl, Chaeyeon Song, Christine Tchounwou, Peter J. Chung, Herbert P. Miller, Youli Li, Myung Chul Choi, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

1233-Pos **Board B283**
TWIST-BENDING ELASTICITY AND ENERGETICS OF THE PLUS-END MICROTUBULE TIP CAPTURED BY EXASCALE ATOMISTIC SIMULATIONS. **Maxim Igaev**, Helmut Grubmueller

1234-Pos **Board B284**
ELECTRICAL OSCILLATIONS OF ISOLATED BRAIN MICROTUBULES. Brenda C. Gutierrez, Horacio F. Cantiello, **María del Rocío Cantero**

1235-Pos **Board B285**
OXIDATIVE STRESS-INDUCED STRUCTURAL DEFECTS WITHIN THE MICROTUBULE LATTICE INDUCE TUBULIN ACETYLATION BY ATAT1. **Rebecca R. Goldblum**, Scout Allendorf, Mark McClellan, Kyle White, Joseph M. Metzger, Melissa K. Gardner

1236-Pos **Board B286**
MICROTUBULE GROWTH IS SLOWED THROUGH TRANSIENT EXPOSURE OF GDP TUBULIN. **Joseph M. Cleary**, Tae Kim, Luke M. Rice, William O. Hancock

1237-Pos **Board B287**
MICROTUBULE-BASED TRANSPORT IS CONTROLLED BY TUBULIN TAILS AND THEIR MODIFICATIONS. **Lavi S. Bigman**, Koby Levy

1238-Pos **Board B288**
INFLUENCE OF KINESIN-1 GLIDING ON MICROTUBULE RIGIDITY. Brandon J. Harris, Augustus Lowry, Kendra M. Kreienbrink, Anh T. Hoang, **Douglas S. Martin**, Taviare L. Hawkins

1239-Pos **Board B289**
THE INFLUENCE OF MICROTUBULE PERSISTENCE LENGTH ON THEIR COLLECTIVE MOTION. **Hang Zhou**, Wonyeong Jung, Tamanna Ishrat Farhana, Taeyoon Kim, Ryuji Yokokawa

1240-Pos **Board B290**
DIFFERENTIAL REGULATION OF SINGLE MICROTUBULES AND CROSS-LINKED BUNDLES BY A MINIMAL THREE-PROTEIN MODULE. **Nandini Mani**, Shuo Jiang, Alex E. Neary, Sithara S. Wijeratne, Radhika Subramanian

1241-Pos **Board B291**
TWO MODES OF PRC1-MEDIATED MECHANICAL RESISTANCE TO KINESIN-DRIVEN MICROTUBULE NETWORK DISRUPTION. **April C. Alfieri**, Ignas R. Gaska, Scott T. Forth

1242-Pos **Board B292**
MICROTUBULE SELF-ORGANIZATION IN PRESENCE OF CROSS-LINKERS AND CROWDERS. **Sumon Sahu**, Lena Herbst, Ryan Quinn, Jennifer L. Ross

1243-Pos **Board B293**
NOVEL EFFECT OF TAU N-TERMINAL MUTATION, R5L, ON MICROTUBULE MEDIATED CONDENSATION. **Alisa Cario**, Neil B. Wood, Zhu Liu, Adam G. Hendricks, Michael J. Previs, Christopher L. Berger

1244-Pos **Board B294**
EFFICIENT TIP TRACKING AND ANALYSIS OF EB1-DECORATED DYNAMIC MICROTUBULES FROM IN VITRO TIME-LAPSE IMAGES. **Wonmuk Hwang**, Goker Arpag, Veronica J. Farmer, Elizabeth Lawrence, Marija Zanic

1245-Pos **Board B295**
MODELLING THE EFFECTS OF MICROTUBULE PLUS END TAPERING ON EB1 BINDING. **Samuel Gonzalez**, Taylor Reid, Rebecca R. Goldblum, Melissa K. Gardner

1246-Pos **Board B296**
DCX USES DISTINCT DOMAINS TO SEQUENTIALLY NUCLEATE AND STABILIZE MICROTUBULES. **Sofía Cruz Tetlalmatzi**, Adam G. Hendricks, Gary Brouhard

Cellular, Metabolic and Genetic Networks (Boards B297 - B310)

1247-Pos **Board B297**
MODELING THE LIVING GENOME. **Ethan J. Davis**, Julianna Goelzer, Matthew L. Ferguson

1248-Pos **Board B298**
ROLE OF LEF5 NUCLEAR LOCALIZATION SIGNALING IN THE PRODUCTION OF *HELICOVERPA ARMIGERA* NUCLEOPOLYHEDROVIRUS PROGENY. **Chen Chen**, Hang Wu, Yao Chen

1249-Pos **Board B299**
UNDERSTANDING THE ROLE OF THE SAGA COMPLEX IN GENE EXPRESSION HETEROGENEITY AND TRANSCRIPTIONAL MEMORY. **Jason J. Hughes**, Gregor Neuert

1250-Pos **Board B300**
RELATIVE CONTRIBUTIONS OF PM2.5 CHEMICAL CONSTITUENTS TO OVERALL ROS PRODUCTION IN ALVEOLAR MACROPHAGES. **Devon C. Lee**

1251-Pos **Board B301**
EXPLORING EFFECT OF P53 SIGNAL TRANSDUCTION ON MMS BY USE OF PREMATURE TERMINATION CODON STRATEGY. **Xiyao Cheng**, Zixin Yang, Jingjing Zhou, Zhengding Su

1252-Pos **Board B302**
ROTATIONAL PROBABILITY FLUX FROM DISCRETE DIFFERENTIAL FORMS OF STOCHASTIC REACTION KINETICS IN HIGH DIMENSIONAL REACTION NETWORKS. **Farid Manuchehrfar**, Jie Liang

1253-Pos **Board B303**
ROLES OF CRO_2 AND CI_2 BINDING TO O_R OPERATORS IN CONTROLLING LYSOGENY STABILITY DURING PROPHAGE INDUCTION. **Yiyu Pang**, Xue Lei, Farid Manuchehrfar, Jie Liang

1254-Pos **Board B304**
USE OF A TRANSGENIC YEAST LINE TO DETERMINE THE ESTROGENICITY AND POTENTIAL HEALTH RISK OF BISPHENOL PLASTICIZERS BINDING TO THE ESTROGEN RECEPTOR. **Waleed Babar**, Danny Jeong, Patricia B. O'Hara

1255-Pos **Board B305**
DIRECT QUANTIFICATION OF GENE REGULATION BY TRANSCRIPTION-FACTOR BINDING AT AN ENDOGENOUS GENE LOCUS. Jingyao Wang, Yijing Dong, Anna M. Sokac, Ido Golding, **Heng Xu**

1256-Pos **Board B306**
UNSUPERVISED GENE REGULATORY NETWORK INFERENCE USING K-NEAREST-NEIGHBOR BASED MUTUAL INFORMATION. **Lior Shachaf**, Jie Xiao, Elijah Roberts

1257-Pos **Board B307**
ROBUSTNESS AND PRECISION OF BACTERIAL QUORUM SENSING IN FLUID FLOW. Mohit Dalwadi, **Philip Pearce**

1258-Pos **Board B308**
DIVERSE TIME-VARYING CELL STIMULATIONS IDENTIFY PREDICTIVE SIGNAL TRANSDUCTION MODELS. **Hossein Jashnsaz**, Zachary Fox, Jason J. Hughes, Guoliang Li, Brian Munsky, Gregor Neuert

1259-Pos **Board B309**
A RATE THRESHOLD MECHANISM REGULATES MAPK STRESS SIGNALING AND SURVIVAL. **Gregor Neuert**, Amanda Johnson, Guoliang Li, Hossein Jashnsaz, Alexander Thiemicke, Benjamin K. Kesler, Dustin C. Rogers

1260-Pos **Board B310**
BCL-2 AND BCL-XL USE DIFFERENT MOLECULAR MECHANISMS TO REGULATE CARBOHYDRATE METABOLISM. **Laurent Dejean**, Catalina Olea, Itzel Lopez, Fabian Filipp, Krish Krishnan

Systems and Synthetic Biology (Boards B311 - B318)

1261-Pos **Board B311**
CROWDING-INDUCED SPATIAL ORGANIZATION OF GENE EXPRESSION IN CELL-SIZED VESICLES. **Gaurav Chauhan**, Elizabeth Norred, Michael Simpson, Steven Abel

1262-Pos **Board B312**
OPTOGENETIC CONTROL OF NON-APOPTOTIC CELL DEATH. **Ji Jing**

1263-Pos **Board B313**
ENGINEERING ADAPTIVE GENE CIRCUITS IN BACTERIA MASTERING GAME PLAYING BY REINFORCEMENT LEARNING. Satya Prakash, Adrian Racovita, Clenira Varela, Mark Walsh, Roberto Galizi, Mark Isalan, **Alfonso Jaramillo**

1264-Pos **Board B314**
MODELING AND MANIPULATING ANTIBODY RESPONSE AGAINST INFLUENZA AND CORONAVIRUS SPIKE PROTEINS AND EXPLORING THEIR ROLE IN DIRECTING SPIKE EVOLUTION. **Assaf Amitai**, Maya Sangesland, Daniel Lingwood, Arup K. Chakraborty

1265-Pos **Board B315**
CELL CYCLE DEPENDENCE OF P53 DYNAMICS DURING THE DNA DAMAGE RESPONSE. **Zhilin Yang**, Eric Batchelor

1266-Pos **Board B316**
MASK ON, MASK OFF: AN SEIAR MODEL TO EVALUATE THE ROLE OF MASK IN PREVENTING DISEASE TRANSMISSION. **Anthony J. Morciglio**, Yi Jiang

1267-Pos **Board B317**
ESTIMATING BACTERIAL QUANTITATIVE PROTEOMES FROM CELLULAR RAMAN SPECTRA. **Ken-ichiro F. Kamei**, Koseki J. Kobayashi-Kirschvink, Hidenori Nakaoka, Yuichi Wakamoto

1268-Pos **Board B318**
RAMAN SPECTROSCOPY AND MACHINE LEARNING FOR PREDICTION AND CHARACTERIZATION OF STEM CELLS DURING IPS REPROGRAMMING. **Arno Germond**, Yulia Panina, Miko Shiga, Hirohiko Niioka, Tomonobu Watanabe

Optical Microscopies and Diffraction Techniques (Boards B319 - B326)

1269-Pos **Board B319**
THE INVESTIGATION OF LIPID COMPONENTS IN SERUM OF METABOLIC SYNDROME PATIENTS BY USING ATR-FTIR SPECTRAL ANALYSIS. **Hsiang-Chun Lee**, Yi-Hsiung Lin, Pei-Yu Huang, Yao-Chang Lee

1270-Pos **Board B320**
HYPERSPECTRAL LIGHT-SHEET RAMAN MICROSCOPE FOR IMAGING LEAF METABOLISM. **Sandeep Pallikkuth**, Roxana Khoshravesh, David T. Hanson, Jerilyn A. Timlin, Keith A. Lidke

1271-Pos **Board B321**
MONITORING CELLULAR NAD(P)H CONFORMATION UNDER HIGH PRESSURE DURING CHEMICALLY INDUCED UV-EXCITED AUTOFLUORESCENCE RESPONSE. **Bibek Dhakal**, Martin Heidelman, Andrew I. Rodriguez, Max Kreider, Fumiyoshi Abe, Paul K. Urayama

1272-Pos **Board B322**
CONTINUOUS AND DISCRETE PHASOR ANALYSIS OF BINNED OR TIME-GATED PERIODIC DECAYS. **Xavier Michalet**

1273-Pos **Board B323**
OPTIMIZING MODEL CALIBRATIONS FOR NATURAL PRODUCT CHEMICAL COMPOSITIONS WITH ABSORBANCE-TRANSMITTANCE EXCITATION-EMISSION (A-TEEM) SPECTROSCOPY. **Adam M. Gilmore**

1274-Pos **Board B324**
REFRACTIVE INDEX IMAGING OF CELLULAR STRUCTURES. **Nicholas Anthony**, Alberta Trianni, Paolo Bianchini, Alberto Diaspro

1275-Pos **Board B325**
ASSESSMENT AND CORRECTION OF SMALL-ANGLE SCATTERING DATA FOR COMBINATION WITH OTHER EXPERIMENTAL DATA AND WITH MOLECULAR SIMULATIONS. **Andreas H. Larsen**, Michael Horrell, Mark S. Sansom, Phillip J. Stansfeld, Martin C. Pedersen, Robin A. Corey

1276-Pos **Board B326**
FEMTOSECOND SINGLE-PARTICLE DIFFRACTIVE IMAGING OF 3D DNA-ORIGAMI MOLECULAR SCAFFOLDS WITH XFEL PULSES. **P Lourdu Xavier**, Kartik Ayyer, Oleksandr Yefanov, Luca Gelisio, Johan Bielecki, Amit K. Samanta, Saša Bajt, Ruojie Sha, David A. Bushnell, Roger D. Kornberg, Yevheniy Ovcharenko, Jochen Kuepper, Michael Meyer, Nadrian C. Seeman, Henry N. Chapman

Computational Methods and Bioinformatics II (Boards B327 - B350)

1277-Pos **Board B327**
3D MODEL OF CELL MIGRATION AND PROLIFERATION IN A TISSUE SCAFFOLD. **Samuel H. Campbell**, Tamara Bidone

1278-Pos **Board B328**
CAPTURING WATER NETWORKS DURING LIGAND BINDING WITH THE SITE-IDENTIFICATION BY LIGAND COMPETITIVE SATURATION-MONTE CARLO APPROACH. **Himanshu Goel**, Anmol Kumar, Alexander D. MacKerell

1279-Pos **Board B329**
TITRATIONANALYSIS: A TOOL FOR HIGH THROUGHPUT ANALYSIS OF BINDING KINETICS DATA FOR MULTIPLE LABEL-FREE PLATFORMS. **Kan Li**, Gillian Q. Horn, S. Munir Alam, Georgia D. Tomaras, S. Moses Dennison

1280-Pos **Board B330**
ARCHIVING INTEGRATIVE STRUCTURAL MODELS. **Brinda Vallat**, Benjamin Webb, John Westbrook, Hongsuda Tangmunarunkit, Serban Voinea, Carl Kesselman, Andrej Sali, Helen M. Berman

1281-Pos **Board B331**
A FAST AND FULLY AUTOMATED HMM FITTING ALGORITHM ENABLES ACCURATE ANALYSIS OF BIOPHYSICAL DATA WITH NUMEROUS STATES. **Hanjin Liu**, Tomohiro Shima, Sotaro Uemura

1282-Pos **Board B332**
MATHEMATICAL MODELING OF CELLULAR PHAGOCYTOSIS DURING EMBRYOGENESIS OF THE UROGENITAL SYSTEM. **Khoren Ponsin**

1283-Pos **Board B333**
DECODING THE VARIANCE IN INTEGRATED INTRACELLULAR ORGANIZATION OF THE UNDIFFERENTIATED HIPS CELL. Matheus Palhares Viana, **Susanne M. Rafelski**

1284-Pos **Board B334**
VALIDATING EXPERIMENTAL RESULTS OF CARDIAC GLYCOSIDES AND MONOTERPENE INDOLE ALKALOIDS USING CHEMINFORMATICS. **Beauty A. Kolade**, Jacob C. Miner, Robert F. Williams

1285-Pos **Board B335**
3D IMAGING OF WHOLE-MOUNT OPTICALLY CLEARED ORGANS AS A TOOL TO ESTIMATE PATHOGEN DISTRIBUTION IN THE LUNGS. **Mariia Pavelchenko**, Ilia Zykov, Andrey O. Bogorodskiy, Ivan Maslov, Elena Bolkhovitina, Natalia Troyanova, Valentin Borshchevskiy, Marina Shevchenko

1286-Pos **Board B336**
AUTOMATING, ANALYZING, AND DATABASING QUANTUM MECHANICAL ENZYME SIMULATIONS. **Nathan J. DeYonker**

1287-Pos **Board B337**
INVESTIGATING THE EFFECT OF A NON-CONSERVATIVE MUTATION (G273D) ON INTEGRIN ALPHA6-BETA4 BINDING INTERACTIONS. **Kim Ivan A. Abesamis**, Camille S. Bagoyo, Neil Andrew D. Bascos

1288-Pos **Board B338**
STATISTICAL AND BIOPHYSICAL ANALYSIS OF FORCE-PULLING OPTICAL TWEEZERS DATA IN COMPLEX PROTEIN SYSTEMS. **Lydia L. Good**, Sahar Foroutannejad, Lihui Bai, Rodrigo A. Maillard

1289-Pos **Board B339**
A NEW CLASSIFICATION OF AMINO ACIDS AND NEWER METHODOLOGY FOR PROTEIN FUNCTION PREDICTION. **Amita Pathak**, Bhyravabhotla Jayaram

1290-Pos **Board B340**
COMPERHENSIVE CHARACTERIZATION OF ACTIVE AND INACTIVE CHROMATIN IN HUMAN CELLS BY SUPER-RESOLUTION MICROSCOPY AND COMPUTER SIMULATIONS. **Tilo Zülske**, Katharina Brandstetter, Hartmann Harz, Gero Wedemann

1291-Pos **Board B341**
STOCHASTIC ORDERING OF COMPLEXOFORM PROTEIN ASSEMBLY BY GENETIC CIRCUITS. **Mikkel H. Jensen**, Eliza J. Morris, Hai Tran, Michael A. Nash, Cheemeng Tan

1292-Pos **Board B342**
IDENTIFYING THE 'BIO' IN BIOPHYSICS. **Charles F. Walter**, Michael Heather

1293-Pos **Board B343**
QUANTIZED DIHEDRAL ENERGY AS SIGNATURE OF CHEMICAL BOND BREAKING AND POTENTIAL APPLICATIONS IN LARGE BIO-MOLECULES. **Rejwan Ali**

1294-Pos **Board B344**
CONSTRUCTION OF POTENTIAL GRAPHS FROM RELATIVE FREE ENERGIES. **Ian M. Kenney**, Steve Pressé, Oliver Beckstein

1295-Pos **Board B345**
NU-DASH: A TOOL TO CONDUCT MOLECULAR DYNAMICS SIMULATION STUDIES OF NUCLEOSOMES. **Ran Sun**, Tom C. Bishop

1296-Pos **Board B346**
COMPUTATIONAL STUDY OF *PM*HMGR THIOHEMIACETAL BREAKDOWN TRANSITION STATE. **Himani Patel**

1297-Pos **Board B347**
PREDICTION OF DELETERIOUS PROTEIN MUTATIONS. Óscar Álvarez-Machancoses, Eshel Faraggi, Enrique L. deAndrés-Galiana, Juan Luis Fernández-Martínez, **Andrzej Kloczkowski**

1298-Pos **Board B348**
IMMUNOFLUORESCENCE IMAGE ANALYSIS PIPELINE FOR DISTINGUISHING EPITHELIAL-MESENCHYMAL TRANSITION. **Shreyas U. Hirway**, Nadiah T. Hassan, Michael Sofroniou, Christopher A. Lemmon, Seth H. Weinberg

1299-Pos **Board B349**
CHEMICAL-STATE-DEPENDENT FREE ENERGY PROFILE FROM SINGLE-MOLECULE TRAJECTORIES OF BIOMOLECULAR MOTORS: APPLICATION TO PROCESSIVE CHITINASE. **Kei-ichi Okazaki**, Akihiko Nakamura, Ryota Iino

1300-Pos **Board B350**
WHO IS TO THANK FOR THE RHYTHMS OF MY TAIL: A MATHEMATICAL STUDY OF CIRCADIAN RHYTHM IN THE MRNA POLY(A) TAIL. Xiangyu Yao, Shihoko Kojima, **Jing Chen**

Micro- and Nanotechnology (Boards B351 - B368)

1301-Pos **Board B351**
ITERATIVE KINETIC PROOFREADING FOR HIGH-SPECIFICITY DNA SEQUENCE DISCRIMINATION. **Chandler Petersen**, Alexander Johnson-Buck, Nils G. Walter

1302-Pos **Board B352**
OPEN-VOLUME MICROFLUIDICS FOR BIOPRINTING OF *IN VITRO* TUMOR MODELS. **Tatsiana Lobovkina**, Vladimir Kirejev, Shijjun Xu, Avadhesh Kumar Singh, Adina Elena Lupu, Gavin D.M. Jeffries

1303-Pos **Board B353**
DETECTION OF SURFACE CHARGE ENHANCEMENT IN MAGNETOELECTRIC NANOPARTICLES INDUCED BY AC MAGNETIC FIELD STIMULATION USING SINGLE ENTITY APPROACH. **Popular Pandey**, Ajeet Kaushik, Jin He

1304-Pos **Board B354**
EFFECT OF NANOPARTICLES GENERATED IN ACOUSTIC PLASMA DISCHARGE ON MICROBIOLOGICAL OBJECTS IN LIQUID MEDIA. **Nikolay Bulychev**

1305-Pos **Board B355**
ADDRESSING THE STABILITY OF POLYGONAL DNA NANOSTRUCTURES *IN VITRO* AND *IN VIVO*. **Christina Kolonelou**

1306-Pos **Board B356**
CLOGGING PROBABILITY OF NICKED DNA MOLECULES ON SOLID-STATE NANOPORES. **Shimba Ichino**, Kento Lloyd, Yuuta Moriyama, Toshiyuki MIitsui

1307-Pos **Board B357**
ELECTRIC FIELD MODULATED PEPTIDE NANO-ASSEMBLY. **Vivek Prakash**, Vibin Ramakrishnan

1308-Pos **Board B358**
CORRELATION BETWEEN SPECTROSCOPIC AND STRUCTURAL FEATURES OF DIMERIC DNA-TEMPLATED SILVER NANOCLUSTERS USING MASS SPECTROMETRY. **Soonwoo Hong**, Ines C. Santos, Yu-An Kuo, Yuan-I Chen, Trung D. Nguyen, Hsin-Chin Li, Pranav Anbarasu, Jennifer S. Brodbelt, Tim Yeh

1309-Pos **Board B359**
NANOSCALE SPATIAL REGULATION OF INSULIN RECEPTOR SIGNALLING CLUSTERS USING DNA NANOSTRUCTURES. **Joel Spratt**

1310-Pos **Board B360**
HIGH-THROUGHPUT OPTIMIZATION OF NANOCLUSTER BEACONS USING AN NGS PLATFORM. **Yu-An Kuo**, Oliver S. Zhao, Soonwoo Hong, Trung D. Nguyen, Yuan-I Chen, Hsin-Chih Li, Tim Yeh

1311-Pos **Board B361**
DIFFUSION LIMITATIONS AND TRANSLOCATION BARRIERS IN ATOMICALLY THIN BIOMIMETIC PORES. **Michael Zwolak**, Subin Sahu

1312-Pos **Board B362**
TEMPERATURE STUDIES REVEAL THE ROLES OF ENTROPY AND ENTHALPY IN POLYMER-NANOPORE INTERACTIONS. **Joseph W.F. Robertson**, Christopher Angevine, Amala Dass, Joseph Reiner

1313-Pos **Board B363**
MEASURING SIZE AND ZETA POTENTIAL OF NANOPARTICLES WITH A SALT GRADIENT. Martin K. Rasmussen, Jonas N. Pedersen, **Rodolphe Marie**

1314-Pos **Board B364**
NANOPORE-BASED LOCALIZATION OF POST-TRANSLATIONAL MODIFICATION MIMIC. **David P. Hoogerheide**, Tatiana K. Rostovtseva, Sergey M. Bezrukov

1315-Pos **Board B365**
IN SITU UNZIPPING OF LONG, HIGH MOLECULAR WEIGHT DNA IN SOLID STATE NANOPORES . Ravipa Losakul, Dayana E. Tobar, Akira Pimenov, Aracely Gutierrez, Robin Schipper, Wolf A. Jehle, **Henk W.C. Postma**

1316-Pos **Board B366**
HETERO-OLIGOMERIC PROTEIN PORES FOR CHEMICAL AND BIOSENSING. **Remya Satheesan**, Kozhinjampara R. Mahendran

1317-Pos **Board B367**
EXOSOMES ARE SECRETED AT DISTINCT DENSITIES IN HUMAN CANCER CELLS AND ARE PROMISING VECTORS FOR HYDROPHOBIC DRUG DELIVERY. **William S. Fisher**, Christine Tchounwou, Kai K. Ewert, Sophia Wei, Logan Roberts

1318-Pos **Board B368**
A DNA NANOASSEMBLY-BASED APPROACH TO MAP MEMBRANE PROTEIN NANOENVIRONMENTS. **Elena Ambrosetti**, Giulio Bernardinelli, Ian T. Hoffecker, Leonard Hartmanis, Georges Kiriako, Ario de Marco, Rickard Sandberg, Björn Högberg, Ana Teixeira

Biomaterials (Boards B369 - B376)

1319-Pos **Board B369**
OPTIMIZATION OF PROTOCOLS FOR FRUSTULE EXTRACTION AND THEIR CHARACTERIZATION. **Elena Sanchez-Brenes**, Ana M. Silva-Benavides, Leonardo Lesser-Rojas

1320-Pos **Board B370**
THE DEGRADATION AND TISSUE INTEGRATION OF HYDROXYAPATITE IMPLANTS ANALYSED USING ENERGY DISPERSIVE X-RAY SPECTROMETRY. **Louise C. Hughes**, Zhidao Xia

1321-Pos **Board B371**
INVESTIGATION ON THE EFFECTS OF DILUTED SYNOVIAL FLUID ADSORPTION TO MODEL SURFACES. **Amar Mann**, Nawshin Sultana Jenifar, Roberto C. Andresen Eguiluz

1322-Pos **Board B372**
ADHESIVE PROPERTIES OF SYNTHETIC CEMENT-DERIVED BIOMATERIALS FROM THE BARNACLE *AMPHIBALANUS AMPHITRITE*. **Elizabeth A. Yates**, Michael C. Wilson, Christopher R. So

1323-Pos **Board B373**
MULTISCALE MODELING REVEALS PHYSICAL INTERACTIONS THAT INFLUENCE THE MECHANICAL BEHAVIOUR OF POLYSACCHARIDE-SURFACTANT HYDROGELS. **Suhas Gotla**, Silvina Matysiak

1324-Pos **Board B374**
NANOSCALE CHARACTERIZATION OF SPECIFIC INTERACTION OF LYTIC BACTERIOPHAGES WITH BIOFILMS. **Evgeny V. Dubrovin**, Natalia V. Kuzmina, Ekaterina A. Varlamova, Vasily S. Kolmogorov, Petr V. Gorelkin, Alexander S. Erofeev, Anastasia V. Popova, Oleg V. Batishchev

1325-Pos **Board B375**
DESIGNING GOLD BINDING PEPTIDES: MODELLING AND EXPERIMENT AT THE BIO-ABIOTIC INTERFACE. **Meagan C. Small**, Deborah A. Sarkes, Hong Dong, Jessica L. Terrell, Justin P. Jahnke, Theresah Zu, Dimitra N. Stratis-Cullum, Margaret M. Hurley

1326-Pos **Board B376**
MECHANOCHEMISTRY AT THE ORIGINS OF LIFE? **Helen G. Hansma**

Friday, February 26, 2021

Daily Program Summary

9:00 AM-10:00 AM	General Networking
10:00 AM-11:00 AM	**President's Symposium: Building an Inclusive Biophysical Society** **Chair:** *Catherine A. Royer, Rensselaer Polytechnic Institute, USA* **Speakers** Catherine A. Royer, Rensselaer Polytechnic Institute, USA David Asai, Howard Hughes Medical Institute, USA Bil Clemons, California Institute of Technology, USA Yadilette Rivera-Colón, Bay Path University, USA Billy Williams, American Geophysical Union, USA
10:00 AM-5:00 PM	Exhibits
11:00 AM-12:00 PM	Awards and 2021 Biophysical Society Lecture
12:00 PM-1:30 PM	Responding to the Coronavirus Threat through Investments in Fundamental Biomedical Research
12:00 PM-1:30 PM	Platform: Protein-Small Molecule Interactions
12:00 PM-1:30 PM	Platform: Membrane Protein Dynamics and Folding II
12:00 PM-1:30 PM	Platform: Intrinsically Disordered Proteins (IDP) and Aggregates III
12:00 PM-1:30 PM	Platform: RNA Structure and Dynamics
12:00 PM-1:30 PM	Platform: Protein-Lipid Interactions II
12:00 PM-1:30 PM	Platform: Ion Channels, Pharmacology, and Disease
12:00 PM-1:30 PM	Platform: Microtubule-associated Motors -Cytoskeleton-based Intracellular Transport
12:00 PM-1:30 PM	Platform: Molecular Dynamics and Bioinformatics III
1:00 PM-2:00 PM	General Networking
1:30 PM-2:00 PM	Exhibitor Presentation: Curi Bio Bioengineering the Cell Environment for More Mature and Predictive 2D and 3D Models
1:30 PM-2:00 PM	Break
2:00 PM -3:30 PM	Poster Presentations and Late Posters

Friday, February 26

General Networking

9:00 AM-10:00 AM

Catch up with colleagues and friends in the biophysical community during our networking hour. This event, which is open to all meeting attendees, provides meet-and-greet opportunities to enhance your virtual meeting experience.

President's Symposium: Building an Inclusive Biophysical Society

10:00 AM - 11:00 AM

The scientific community, and indeed the world, has been faced with a great deal of introspection recently on the topics of inclusion and diversity. Organizations, associations, and institutions are faced with identifying a pathway that will create and sustain an inclusive community. However, before we begin to discuss what an inclusive Biophysical Society (BPS) would look like, we must first understand the baseline from which we begin. How do we define inclusion? Where are we starting from, and where do we want to go? How do we measure successful change in culture and attitudes outside of metrics? Join BPS President Catherine A. Royer as she leads a forum discussion based on input from BPS members, featuring invited speakers with extensive experience in working to enhance diversity, equity, and inclusion for scientists at their organizations and across the scientific enterprise. We hope this one-hour session will serve as the beginning of the discussion for creating a welcoming, inclusive Biophysical Society.

Chair
Catherine A. Royer, Rensselaer Polytechnic Institute, USA

Speakers
Catherine A. Royer, Rensselaer Polytechnic Institute, USA
David Asai, Howard Hughes Medical Institute, USA
Bil Clemons, California Institute of Technology, USA
Yadilette Rivera-Colón, Bay Path University, USA
Billy Williams, American Geophysical Union, USA

Exhibits

10:00 AM - 5:00 PM

Awards and 2021 Biophysical Society Lecture

11:00 AM - 12:00 PM

PRESENTATION OF AWARDS 11:00 AM

NO ABSTRACT 11:10 AM
VISUALIZING STRUCTURE, DYNAMICS AND INTERACTIONS OF COMPLEX MACROMOLECULAR ASSEMBLIES. **Eva Nogales**

Responding to the Coronavirus Threat through Investments in Fundamental Biomedical Research

12:00 PM - 1:30 PM

Effectively containing and limiting the spread of COVID-19, as well as responding to future pandemics by emerging, as yet unknown, infectious diseases, will require substantial increases in our knowledge of how this virus and other pathogens infect humans, how the human immune system responds to infection, and how to leverage this understanding to develop new vaccines and drugs. These needs can only be addressed by substantial increased funding for fundamental biomedical research, as supported through congressional appropriations to federal agencies such as the NIH, NSF and DOE.

Chair
Eric Sundberg, Emory University , USA

Speakers
Michael Lauer, National Institutes of Health, USA
Victoria McGovern, Burroughs Wellcome Fund, USA
Jennifer Cama, House Appropriations Subcommittee on Labor, USA

Platform Protein-Small Molecule Interactions

12:00 PM - 1:30 PM

Chair
Chair to be announced.

NO ABSTRACT 12:00 PM
P-GLYCOPROTEIN AND SMALL MOLECULE DRUG INTERACTIONS. **Qinghai Zhang**

1364-PLAT 12:30 PM
INFLUENCE OF FORCE ON THE FIMH CATCH BOND. **Laura Carlucci**, Wendy E. Thomas

1365-PLAT 12:45 PM
RAPID RANKING OF HETEROCYCLE-SIDE CHAIN STACKING INTERACTIONS BASED ON NEW MOLECULAR DESCRIPTORS. **Andrea Bootsma**

1366-PLAT 1:00 PM
PAVING THE WAY TO FIGHT MULTI-DRUG RESISTANT TUBERCULOSIS. **Joaquim T. Marquês**, Catarina Faria, Susana Santos, Maria da Soledade Santos, Filomena Martins, Rodrigo F.M. De Almeida

1367-PLAT 1:15 PM
DEVELOPMENT OF A HIGH-THROUGHPUT FLUORESCENT-BASED ASSAY TO ASSESS CYTOCHROME P450 3A7 ACTIVITY IN NEONATAL HUMAN LIVER MICROSOMES. **Hannah M. Work**, Sylvie E. Kandel, Jed N. Lampe

Platform Membrane Protein Dynamics and Folding II

12:00 PM - 1:30 PM

Chair
Patrick van der Wel, University of Groningen, The Netherlands

1368-PLAT 12:00 PM
HOW LIPIDS MOBILISE MEMBRANE-BOUND CYTOCHROME C SEEN BY SOLID-STATE NMR. **Patrick C.A. van der Wel**

1369-PLAT 12:30 PM
NONEQUILIBRIUM DYNAMICS OF DIRECTIONAL H+ TRANS-MEMBRANE TRANSPORT. Saurabh Talele, **John King**

1370-PLAT 12:45 PM
A NEWLY DISCOVERED CLASS OF CURVATURE SENSITIVE PROTEINS: TRIMERIC ANNEXINS. **Christoffer D. Florentsen**, Guillermo S. Moreno Pescador, Alexander K. Sonne, Weria Pezeshkian, Joshua Daniels, Iliriana Qoqaj, Ali Asghar Hakami Zanjani, Himanshu Khandelia, Jesper Nylandsted, Poul Martin Bendix

1371-PLAT 1:00 PM
MOLECULAR ASSEMBLY PATHWAY OF MITOCHONDRIAL SAM50 IN NATIVE MEMBRANES. Pankaj B. Tiwari, **Radhakrishnan Mahalakshmi**

1372-Plat **1:15 PM**
GPCR OLIGOMERISATION MODULATION BY CONFORMATIONAL STATE AND LIPID INTERACTIONS REVEALED BY MD SIMULATIONS AND MARKOV MODELS. **Wanling Song**, Anna L. Duncan, Mark S. Sansom

Platform
Intrinsically Disordered Proteins (IDP) and Aggregates III
12:00 PM - 1:30 PM

Chair
Andela Saric, University College London, United Kingdom

No Abstract **12:00 PM**
PATHWAYS OF AMYLOID FORMATION IN SOLUTION AND ON LIPID MEMBRANES. **Andela Saric**

1373-Plat **12:30 PM**
THE INTERACTION BETWEEN POLY-PR DIPEPTIDE REPEAT PROTEINS AND THE NUCLEAR PORE COMPLEX. **Hamidreza Jafarinia**, Erik Van der Giessen, Patrick R. Onck

1374-Plat **12:45 PM**
MECHANISM FOR SCAVENGING OF AMYLOID-B BY HYBRID SILICA NANOBOWLS: DIAGNOSTIC AND THERAPEUTIC APPLICATIONS FOR AB PATHOLOGY. **Vrinda Sant**, Madhura Som, Ratnesh Lal

1375-Plat **1:00 PM**
MOLECULAR ORIGINS OF FREE ENERGIES ASSOCIATED WITH COMPLEX INTERACTIONS OF BIOLOGICAL POLYELECTROLYTE-LIKE DISORDERED PROTEINS. **Aritra Chowdhury**, Andrea Sottini, Alessandro Borgia, Madeleine B. Borgia, Miloš T. Ivanović, Daniel Nettels, Robert B. Best, Benjamin Schuler

1376-Plat **1:15 PM**
THERAPEUTICS AGAINST PROTEIN MISFOLDED OLIGOMERS IN NEURODEGENERATIVE DISEASES. **Ryan Limbocker**, Aidan Wright, Ryan P. Kreiser, Benedetta Mannini, Michele Vendruscolo

Platform
RNA Structure and Dynamics
12:00 PM - 1:30 PM

Chair
Yamuna Krishnan, University of Chicago, USA

No Abstract **12:00 PM**
THE MEMBRANE POTENTIAL OF ORGANELLES. **Yamuna Krishnan**

1377-Plat **12:30 PM**
COMPREHENSIVE SEQUENCE-TO-FUNCTION MAPPING OF LIGAND-DEPENDENT RNA CATALYSIS. **Andrew Savinov**, Johan O.L. Andreasson, Steven M. Block, William J. Greenleaf

1378-Plat **12:45 PM**
SINGLE BASE-PAIR CONFORMATIONAL SWITCH MODULATES MIR-34A TARGETING OF SIRT1 MRNA. **Katja Petzold**

1379-Plat **1:00 PM**
MAGNESIUM MEDIATED FLUORIDE BINDING ANCHORS THE DOCKED CONFORMATION OF THE FLUORIDE RIBOSWITCH. **Rajeev Yadav**, Julia R. Widom, Nils G. Walter

1380-Plat **1:15 PM**
ANTI-FRAMESHIFTING LIGAND ACTIVE AGAINST SARS CORONAVIRUS-2 IS RESISTANT TO NATURAL MUTATIONS OF THE FRAMESHIFT-STIMULATORY PSEUDOKNOT. Krishna Neupane, **Sneha Munshi**, Meng Zhao, Dustin Ritchie, Sandaru M. Ileperuma, Michael T. Woodside

Platform
Protein-Lipid Interactions II
12:00 PM - 1:30 PM

Chair
Ling-Gang Wu, NIH, NINDS, USA

1381-Plat **12:00 PM**
VISUALIZING MEMBRANE TRANSFORMATION IN MEDIATING ENDOCYTOSIS AND GENERATING VARIOUS ENDOCYTIC MODES IN LIVE CELLS. **Ling-Gang Wu**, Wonchul Shin, Lisi Wei

1382-Plat **12:30 PM**
INTERFACIAL DELIVERY OF SURFACTANT PROTEIN SP-D THROUGH ITS ASSOCIATION WITH PULMONARY SURFACTANT. **Cristina García Mouton**, Alberto Hidalgo, Raquel Arroyo, Mercedes Echaide, Antonio Cruz, Jesus Perez-Gil

1383-Plat **12:45 PM**
PIP_2 PROMOTES CONFORMATION-SPECIFIC DIMERIZATION OF THE EPHA2 TRANSMEMBRANE DOMAIN THROUGH JUXTAMEMBRANE INTERACTIONS. **Katherine M. Stefanski**, Charles M. Russeull, Justin M. Westerfield, Rajan Lamichhane, Francisco N. Barrera

1384-Plat **1:00 PM**
PDK1 FORMS HOMODIMERS ON SUPPORTED LIPID BILAYERS IN A PIP_3 DEPENDENT MANNER. **Moshe T. Gordon**, Joseph J. Falke

1385-Plat **1:15 PM**
REVEALING THE DYNAMICS OF KRAS4B DIMERIZATION ON ANIONIC MEMBRANE FROM ONE MILLISECOND ALL ATOM MOLECULAR DYNAMICS SIMULATIONS. **Van A. Ngo**, Angel E. Garcia

Platform
Ion Channels, Pharmacology, and Disease
12:00 PM - 1:30 PM

Chair
Alexis Rohou, Genentech Inc., USA

No Abstract **12:00 PM**
STRUCTURE OF THE SODIUM LEAK CHANNEL NALCN REVEALS INSIGHTS INTO ITS DISEASE MUTATIONS, UNIQUE PHARMACOLOGY AND GATING. **Marc Kschonsak**

1386-Plat **12:30 PM**
INTERPLAY OF NAV1.5 DISEASE-CAUSING MUTATIONS AND PHOSPHORYLATION REVEALED BY PROTEIN SEMI-SYNTHESIS AND MOLECULAR DYNAMICS SIMULATIONS. Iacopo Galleano, **Hendrik Harms**, Koushik Choudhury, Keith K. Khoo, Lucie Delemotte, Stephan A. Pless

1387-Plat **12:45 PM**
HERG1A/1B SUBUNIT IMBALANCE IN LONG QT SYNDROME 2 PATIENT-SPECIFIC IPSC-CARDIOMYOCYTES. **Li Feng**, Jianhua Zhang, ChangHwan Lee, Gina Kim, Fang Liu, Andrew J. Petersen, Evi Lim, Corey Anderson, Kate M. Orland, Gail A. Robertson, Lee Eckhardt, Craig T. January, Timothy J. Kamp

1388-Plat **1:00 PM**
AN EPILEPSY-ASSOCIATED MUTATION AT THE $K_V1.2$ (KCNA2) CHARGE TRANSFER CENTER STRONLY SUPPRESSES CHANNEL SURFACE TRAFFICKING. **Sarah H. Lindström**, Maki Kaneko, Michelle Nilsson, Federica Steccanella, Marina Angelini, Deborah Holder, Michela Ottolia, Riccardo Olcese, Antonios Pantazis

1389-Plat **1:15 PM**
STRUCTURAL BASIS FOR GATING OF THE TWO-PORE DOMAIN K^+ (K_{2P}) CHANNELS TASK-1 AND TALK-2. **Marcus Schewe**, Elena B. Riel, Susanne Rinné, Wojciech Kopec, Jan Langer, Peter Lindemann, Björn C. Jürs, Marc Nazaré, Bert L. de Groot, Niels Decher, Thomas Baukrowitz

Platform
Microtubule-associated Motors-Cytoskeleton-based Intracellular Transport

12:00 PM - 1:30 PM

Chair
Lukas Kapitein, Utrecht University, The Netherlands

No Abstract **12:00 PM**
CYTOSKELETAL DYNAMICS AND KINESIN-1 SELECTIVITY IN DEVELOPING NEURONS. **Lukas Kapitein**

1390-Plat **12:30 PM**
THE MITOTIC KINESIN-6 KIF20A IS AN UNCONVENTIONAL TRANSPORTER AND NETWORK BUILDER. **Fanomezana M. Ranaivoson**, Amna Abdalla Mohammed Khalid, Steven Rosenfeld, Christoph F. Schmidt, Anne M. Houdusse

1391-Plat **12:45 PM**
LONG-RANGE COUPLING BETWEEN KINESINS REGULATES COLLECTIVE MOTOR BEHAVIOR. **Shane A. Fiorenza**, Sithara Wijeratne, Meredith D. Betterton, Radhika Subramanian

1392-Plat **1:00 PM**
ENGINEERED ICOSAHEDRAL PROTEIN CAGE AS A FLEXIBLE MODEL SYSTEM TO STUDY PROPERTIES OF MULTI-MOTOR TRANSPORT OF VIRAL CARGOES. **Somaye Badieyan**, Michael P. Andreas, Tobias W. Giessen, Michael A. Cianfrocco

1393-Plat **1:15 PM**
PATHOGENIC MUTATIONS IN THE CHROMOKINESIN KIF22 DISRUPT ANAPHASE CHROMOSOME SEGREGATION. **Alex F. Thompson**, Patrick R. Blackburn, Jane B. Lian, Eric W. Klee, Jason Stumpff

Platform
Molecular Dynamics and Bioinformatics III

12:00 PM - 1:30 PM

Chair
Matthieu Wyart, EPFL, Switzerland

1394-Plat **12:00 PM**
ARCHITECTURE AND CO-EVOLUTION OF ALLOSTERIC MATERIALS. **Matthieu Wyart**

1395-Plat **12:30 PM**
PERMUT - SPATIALLY RESOLVED HYDRATION ENTROPIES FROM ATOMISTIC SIMULATIONS. **Leonard P. Heinz**, Helmut Grubmueller

1396-Plat **12:45 PM**
GOLEM: AUTOMATED AND ROBUST CRYO-EM-GUIDED LIGAND DOCKING WITH EXPLICIT WATER MOLECULES. **Zhiyu Zhao**, Emad Tajkhorshid

1397-Plat **1:00 PM**
REPLICA EXCHANGE MONTE CARLO METHOD FOR PROTON AND X-RAY INDUCED DNA DAMAGE AND REPAIR. **Thienbao N. Carpency**, Megan Cordone, Camila Quintero Hilsaca, Zachary Condon, Sarah Castro

1398-Plat **1:15 PM**
GEOMETRIC DEEP LEARNING ON BIOMOLECULAR STRUCTURE. **Raphael Townshend**, Ligia Melo, David Liu, Ron O. Dror

General Networking

1:00 PM-2:00 PM

Catch up with colleagues and friends in the biophysical community during our networking hour. This event, which is open to all meeting attendees, provides meet-and-greet opportunities to enhance your virtual meeting experience.

Exhibitor Presentation
Curi Bio

1:30 PM - 2:00 PM

Bioengineering the Cell Environment for More Mature and Predictive 2D and 3D Models
Cells in the body use a variety of cues (structural, mechanical, electrochemical, etc.) from the extracellular matrix (ECM) to develop and mature physiologically. These influential cues help regulate a broad spectrum of processes such as cell signaling, division, and differentiation. Many in vitro platforms seek to combine and incorporate these cues into the cell's microenvironment but often fail, suffering from lack of reproducibility and incompatibility with other well-established end-point assays.

Here, we demonstrate biomimetic in vitro platforms capable of reliably reproducing these essential cues. These platforms markedly improve the structural and functional development of a variety of cell types, including stem cells, cardiomyocytes, muscle cells, and more. These cutting-edge strategies can be deployed in both 2D and 3D model systems for high-throughput assessment of metabolism, electrophysiology, and contractility. We describe how the differentiation of stem cells can be enhanced by providing a more biomimetic culture environment, with a particular focus on iPSC-derived cardiomyocytes and skeletal muscle cells. Further, we highlight how an active mechanical environment combined with aligned cell-nanotopography cues improves adhesion, signaling, and polarity across many cell applications. Finally, we demonstrate how to scale these technologies to 3D organoid systems, and how these approaches can improve the development of in vitro disease models to support the discovery of new therapies.

Speaker
Hamed Ghazizadeh, Product Manager, Curi Bio

Break

1:30 PM - 2:00 PM

Poster Presentations and Late Posters

2:00 PM - 3:30 PM

FRIDAY POSTER SESSIONS

2:00 PM–3:30 PM

Below is the list of poster presentations for Friday of abstracts submitted by October 1.
The list of late abstracts scheduled for Friday is available on page 117.

ODD-NUMBERED BOARDS 2:00 PM–2:45 PM | EVEN-NUMBERED BOARDS 2:45 PM–3:30 PM

Board Numbers	Category
B1 - B34	Protein Structure and Conformation III
B35 - B56	Protein Dynamics and Allostery II
B57 - B71	Membrane Protein Dynamics II
B72 - B83	Enzyme Function, Cofactors, and Post-translational Modifications
B84 - B105	Intrinsically Disordered Proteins (IDP) and Aggregates III
B106 - B131	RNA Structure and Dynamics
B132 - B148	Chromatin and the Nucleoid
B149 - B164	Membrane Fusion and Non-Bilayer Structures
B165 - B181	Membrane Structure II
B182 - B203	Membrane Receptors and Signal Transduction
B204 - B221	Cardiac, Smooth, and Skeletal Muscle Electrophysiology
B222 - B231	TRP Channels
B232 - B245	Ligand-gated Channels II
B246 - B260	Cardiac Muscle Regulation
B261 - B268	Myosins
B269 - B280	Cytoskeletal Assemblies and Dynamics
B281 - B294	Mitochondria in Cell Life and Death
B295 - B303	Molecular and Cellular Neuroscience
B304 - B307	Neuroscience
B308 - B342	Optical Microscopy and Superresolution Imaging II
B343 - B349	Force Spectroscopy and Scanning Probe Microscopy
B350 - B370	Biosensors

Protein Structure and Conformation III (Boards B1 - B34)

1399-Pos **Board B1**
STRUCTURAL AND FUNCTIONAL ANALYSIS OF APOLIPOPROTEIN E MODIFICATION BY A LIPID PEROXIDATION PRODUCT, 4-HYDROXYNONENAL. **Abbas Abdulhasan**, Muhammad I. Abeer, Vasanthy Narayanaswami

1400-Pos **Board B2**
DEVELOPMENT OF APOLIPOPROTEIN AI CHIMERA FOR TARGETED DRUG DELIVERY TO BREAST CANCER CELLS. **Robert Mejia**, Daanish Kulkarni, Vasanthy Narayanaswami

1401-Pos **Board B3**
LIPID-PROTEIN FORCES PREDICT CONFORMATIONAL TRANSITION IN A MECHANOSENSITIVE CHANNEL. **Csaba Daday**, Bert L. de Groot

1402-Pos **Board B4**
MEMBRANE INTERACTION OF HUMAN CLIC5 IS FACILITATED BY DIOXIDATION OF A CONSERVED CYSTEINE AND DRIVES MEMBRANE FUSION. **Alisa Ferofontov**, Pavla Vankova, Petr Man, Moshe Giladi, Yoni Haitin

1403-Pos **Board B5**
STRUCTURAL DYNAMICS OF ANTIMICROBIAL PEPTIDES BASED ON HUMAN DEFENSIN 5 AMONG O-ANTIGENS OF BACTERIAL MEMBRANE. **Phoom Chumponanomakun**, Prapasiri Pongprayoon

1404-Pos **Board B6**
BRAVE NEW SURFACTANT WORLD REVISITED BY LIPASES: ACTIVATION AND UNFOLDING IN SDS. **Mohamed Shehata**, Aise Unlu, Emel Timucin

1405-Pos **Board B7**
SINGLE PARTICLE ANALYSIS REVEALS THE ORGANIZATION OF THE MEMBRANE REMODELING PROTEIN CAVEOLIN-1 WITHIN DISC-SHAPED COMPLEXES. **Bing Han**, Jason C. Porta, Jessica L. Hanks, Yelena Peskova, Elad Binshtein, Kelly A. Dryden, Derek P. Claxton, Hassane S. Mchaourab, Erkan Karakas, Melanie D. Ohi, Anne K. Kenworthy

1406-Pos **Board B8**
MECHANISM OF CHOLESTEROL TRANSLOCATION IN MYCOBACTERIA. **Tian Chen**, Fei Peng, Xiyao Cheng, Yongqi Huang, Zhengding Su

1407-Pos **Board B9**
INVESTIGATION OF CYCLIC AMP BINDING INTERACTIONS WITH ISOLATED CYCLIC NUCLEOTIDE BINDING DOMAIN OF HCN1 CHANNEL USING ATOMISTIC MOLECULAR DYNAMICS SIMULATIONS AT MICROSECOND TIMESCALE. **Matthew G. Brownd**, Adithya Polasa, Mahmoud Moradi

1408-Pos **Board B10**
EPR STUDIES OF KCNE3 IN PROTEOLIPOSOMES USING ELECTRON PARAMAGNETIC RESONANCE (EPR) SPECTROSCOPY. **Indra D. Sahu**, Alberto Perez, Samuel Haralu, Matthew Scheyer, Gary A. Lorigan

1409-Pos **Board B11**
INVESTIGATION OF STRUCTURAL DYNAMICS OF THE KCNE3 IN A LIPID BILAYER MEMBRANE USING SITE-DIRECTED SPIN LABELING EPR SPECTROSCOPY. **William D. Carbo**, Matthew Scheyer, Alberto Perez, Samuel Haralu, Gary A. Lorigan, Indra D. Sahu

1410-Pos **Board B12**
THEORETICAL STUDY OF THE INTRINSIC CONFORMATIONAL PREFERENCES AND MICROSOLVATION EFFECT ON THE SELF-ASSEMBLY OF HYDROPHOBIC L-DIPEPTIDES. **Francisco Adasme Carreno**, Julio Caballero, Joel Ireta

1411-Pos **Board B13**
MAPPING AMINO ACIDS AT PROTEIN-MEMBRANE INTERFACES TO UPDATE THE CURRENT MEMBRANE BINDING MODEL. **Thibault Tubiana**, Nathalie Reuter

1412-Pos **Board B14**
ROLE OF GLYCOSYLATION IN LIPID-INTERACTING PROPERTIES OF PULMOSAPOSIN A, FROM THE PULMONARY SURFACTANT PROTEIN B PRECURSOR. **Miriam Isasi**, Jesús Pérez Gil, Lucía García

1413-Pos **Board B15**
EXPLORING THE STRUCTURAL STABILITY AND ASSEMBLY MECHANISM OF HYDROPHOBIN PROTEINS. **Kathleen L. Vergunst**

1414-Pos **Board B16**
UNDERSTANDING THE PACKING OF AMYLOIDOGENIC PEPTIDE SEGMENTS USING ELECTRONIC STRUCTURE CALCULATIONS. **Camila Munoz Gutierrez**, Jans Alzate Morales, Joel Ireta

1415-Pos **Board B17**
EFFECT OF RESIDUE SUBSTITUTIONS ON THE HYDROPHOBIC CORE OF THE C-TERMINUS OF THE PRION PROTEIN. **Steffany Nguyen**, Garrett M. Gloeb, Dan Irwin, Patricia Soto

1416-Pos **Board B18**
INVESTIGATING ATOMIC LEVEL STRUCTURE IN PYRIFORM SILK PROTEINS. **Jeffrey R. Simmons**, Genevieve Gasmi-Seabrook, Jan K. Rainey

1417-Pos **Board B19**
DECIPHERING THE CONFORMATIONAL DYNAMICS OF *ESCHERICHIA COLI* TYPE IV PILUS. **Yasaman Karami**, Olivera Francetic, Nadia Izadi Pruneyre, Michael Nilges

1418-Pos **Board B20**
FILAMENTS UNDER FORCE: A COMPUTATIONAL MOLECULAR-SCALE INVESTIGATION OF TYPE IV PILI FROM MULTIPLE ORGANISMS. Bryan Bogin, Maria Fairfield, Rebecca B. Goncalves, Kimberly Jarquin, Stephen Jones, Christopher A. Lovenduski, Kevin Marin, Emma Webb, Horacio Vargas-Guzman, Adolfo Poma, Nicolas Biais, **Joseph L. Baker**

1419-Pos **Board B21**
SEQUENCE-DEPENDENT ANALYSIS OF COLLAGEN MECHANICS. **Alaa Al-Shaer**, Aaron Lyons, Yoshihiro Ishikawa, Billy G. Hudson, Sergei P. Boudko, Nancy R. Forde

1420-Pos **Board B22**
CALCIUM-INDUCED CONFORMATIONAL DYNAMICS OF THE C-DOMAIN OF *TETRAHYMENA* CYTOSKELETAL PROTEIN TCB2. **Armaan Kumar**, Adina M. Kilpatrick, Patricia Soto

1421-Pos **Board B23**
A PARALLEL RATCHET-STROKE MECHANISM LEADS TO AN OPTIMUM FORCE FOR MOLECULAR MOTOR FUNCTION. **Upasana L. Mallimadugula**, Eric A. Galburt

1422-Pos **Board B24**
DYNEIN ADAPTORS SUCH AS*DROSOPHILA*BICAUDAL (*DM*BICD) RECOGNIZE CARGO AND ARE REQUIRED TO ACTIVATE DYNEIN FOR PROCESSIVE TRANSPORT. **Heying Cui**, M. Yusuf Ali, Puja Goyal, Kaiqi Zhang, Jia Ying Loh, Kathleen M. Trybus, Sozanne R. Solmaz

1423-Pos **Board B25**
STRUCTURAL ANALYSIS OF SMALL G-PROTEIN RAS MULTIMER INDUCED BY CHEMICAL MODIFICATION OF HVR DOMAIN WITH CAGED COMPOUND. **Rufiat Nahar**

1424-Pos **Board B26**
ROLE OF THE TRP169 RESIDUE IN NEURONAL CALCIUM SENSOR DREAM. **Maria D Santiago**, Jaroslava Miksovska

1425-Pos **Board B27**
THE INVISIBLE PROTEIN STATES OF MDMX AND MDM2 DETERMINE LIGAND-BINDING AFFINITY REVEALED BY CRYSTALLOGRAPHIC STRUCTURES AND NMR DYNAMICS. Xiyao Cheng, Huili Liu, Yongqi Huang, **Zhengding Su**

1426-Pos **Board B28**
CONFORMATIONAL STRUCTURAL ALTERATION OF NCS1 PROTEIN THROUGH PB^{2+}AND MN^{2+} ASSOCIATION. **Md. Shofiul Alam**, Samiol Azam, Jaroslava Miksovska

1427-Pos **Board B29**
HIGH-RESOLUTION INSIGHTS INTO NASCENT-CHAIN CONFORMATION BY SINGLE-PARTICLE CRYO-ELECTRON MICROSCOPY. Meranda Masse, Christopher Morgan, **Wanting Wei**, Edward W. Yu, Silvia Cavagnero

1428-Pos **Board B30**
PROBING THE VISCOSITY OF AQUEOUS SOLUTIONS CONTAINING RIBOSOME-BOUND NASCENT PROTEINS. **Xi Chen**, Rachel Hutchinson, Ningkun Zhou, Silvia Cavagnero

1429-Pos **Board B31**
MISFOLDING-ASSOCIATED EXPOSURE OF BURIED RESIDUES IN MUTANT SOD1 FACILITATES BINDING TO TRAF6. **Pranav Garg**, Sabrina Semmler, Charlotte Baudouin, Christine Vande Velde, Steven S. Plotkin

1430-Pos **Board B32**
RARE EVENT PREDICTION OF VON WILLEBRAND FACTOR MULTIMER UNFOLDING IN EXTENSIONAL FLOW. **Sagar Kania**, Edmund B. Webb, Alparslan Oztekin, Xuanhong Cheng, Xiaohui Zhang

1431-Pos **Board B33**
COVALENT DOCKING AND MOLECULAR DYNAMICS SIMULATIONS REVEAL THE RESISTANCE-GRANTING MUTATIONS A237R/K IN TEM BETA-LACTAMASE. **Gabriel Monteiro da Silva**, Jordan Yang, Bunlong Leang, Jessie Huang, Daniel M. Weinreich, Michael Stiffler, Brenda M. Rubenstein

1432-Pos **Board B34**
RATIONAL DESIGN OF MULTIVALENT ANTICANCER PEPTIDES INHIBITING PD-1/PD-L1 INTERACTION. **Bailing Zhang**, Xiyao Cheng, Meng Gao, Yongqi Huang, Zhengding Su

Protein Dynamics and Allostery II (Boards B35 - B56)

1433-Pos **Board B35**
MECHANICAL RESPONSE OF THE A6 TCR IN COMPLEX WITH PMHC WITH AND WITHOUT LOAD. **Ana C. Chang-Gonzalez**, Wonmuk Hwang, Robert J. Mallis, Matthew J. Lang, Ellis L. Reinherz

1434-Pos **Board B36**
UNRAVELLING ALLOSTERIC CROSS-TALK BETWEEN CO-ACTIVATOR PEPTIDE AND LIGAND BINDING SITE IN GLUCOCORTICOID RECEPTOR. **Giuseppina La Sala**, Anders Gunnarsson, Karl Edman, Christian Tyrchan, Anders Hogner, Andrey Frolov

1435-Pos **Board B37**
THE SARS-COV-2 SPIKE VARIANT D614G FAVORS AN OPEN CONFORMATIONAL STATE. **Rachael A. Mansbach**, Srirupa Chakraborty, Kien Nguyen, David C. Montefiori, Bette Korber, Gnana Gnanakaran

1436-Pos **Board B38**
MOLECULAR DYNAMICS SIMULATIONS UNRAVEL THE MYSTERIES OF HEMOGLOBIN DISEASES. **Premila P. Samuel**, David A. Case

1437-Pos **Board B39**
DYNAMICAL BASIS OF ALLOSTERIC ACTIVATION FOR THE *PLASMODIUM FALCIPARUM* PROTEIN KINASE G. **Jinfeng Huang**, Jung Ah Byun, Bryan VanSchouwen, Philipp Henning, Laura-Li Sarmiento Murga, Friedrich W. Herberg, Giuseppe Melacini

1438-Pos **Board B40**
MULTI-SCALE SIMULATIONS AND NEUTRON SCATTERING EXPERIMENTS REVEAL DYNAMICAL PROPERTIES OF THE BACTERIAL CYTOPLASM NEAR CELL-DEATH TEMPERATURE. **Stepan Timr**, Daniele Di Bari, Judith Peters, Alessandro Paciaroni, Fabio Sterpone

1439-Pos **Board B41**
GATING MECHANISM OF AN ANCIENT TRP CHANNEL IN YEAST REVEALED BY MOLECULAR DYNAMICS SIMULATIONS. Tofayel Ahmed, **Collin Nisler**, Vera Moiseenkova-Bell, Marcos M. Sotomayor

1440-Pos **Board B42**
SARS-COV-2 SIMULATIONS GO EXASCALE TO CAPTURE SPIKE OPENING AND REVEAL CRYPTIC POCKETS ACROSS THE PROTEOME. **Maxwell I. Zimmerman**, Gregory Bowman

1441-Pos **Board B43**
DIFFNETS FOR DEEP LEARNING THE STRUCTURAL DETERMINANTS OF PROTEINS BIOCHEMICAL PROPERTIES BY COMPARING DIFFERENT STRUCTURAL ENSEMBLES. **Michael D. Ward**, Maxwell Zimmerman, S. Joshua Swamidass, Gregory Bowman

1442-Pos **Board B44**
DISTINCT DIFFERENCES IN THE INTERACTIONS OF RECEPTOR BINDING DOMAINS OF SARS-COV-2 AND SARS-COV WITH HUMAN ACE2. **Atanu Acharya**, Anna Pavlova, Christophe J. Chipot, James C. Gumbart

1443-Pos **Board B45**
IN SILICO INSIGHTS ON THE ALLOSTERIC MODULATION OF THE MU-OPIOID RECEPTOR AND G PROTEIN COMPLEX IN THE PRESENCE OF AGONIST LIGAND BU72 AND POTENTIAL POSITIVE ALLOSTERIC MODULATOR BMS-986121. **Mac Kevin E. Braza**, Christian Seitz, J. Andrew McCammon, Rommie E. Amaro, Ricky B. Nellas

1444-Pos **Board B46**
TRANSFER ENTROPY CALCULATIONS PROVIDE NOVEL INSIGHTS INTO INFORMATION FLOW PATHWAYS IN ERK2. Luisa Garcia Michel, Clara Keirns, **Daniel A. Barr**

1445-Pos **Board B47**
KINETIC ENERGY FLOWS IN ACTIVATED DYNAMICS OF BIOMOLECULES. **Huiyu Li**, Ao Ma

1446-Pos **Board B48**
ALLOSTERY AND EPISTASIS AS INHERENT PROPERTIES OF ANISOTROPIC NETWORKS. **Paul Campitelli**, S. Banu Ozkan

1447-Pos **Board B49**
A NOVEL MECHANISM OF BIOMOLECULAR CONFORMATIONAL DYNAMICS: ENERGY FLOW IN PHASE SPACE. **Shanshan Wu**

1448-Pos **Board B50**
INFORMATION PROPAGATION IN TIME THROUGH ALLOSTERIC SIGNALING. **Tushar Modi**, S. Banu Ozkan, Steve Pressé

1449-Pos **Board B51**
ADAPTIVE EVOLUTION OF SARS-COV-2: A PERSPECTIVE FROM DYNAMICS. **Ismail C. Kazan**, S. Banu Ozkan

1450-Pos **Board B52**
NETWORK ANALYSIS AND KINETIC CLUSTERING METHODS APPLIED TO MOLECULAR DYNAMICS SIMULATIONS OF PROTEINS IN COMPLEX ENVIRONMENTS. **Jose C. Flores-Canales**, Nils A. Berglund, Birgit Schiøtt

1451-Pos **Board B53**
INVESTIGATION OF ALLOSTERIC INHIBITION MECHANISMS BY THE PEPTIDE P5 ON THE ALZHEIMER'S DISEASE (AD) PATHOLOGICAL COMPLEX CDK5-P25 THROUGH MOLECULAR DYNAMICS SIMULATIONS. **Tejaswi Tammareddy**, Antonio Cardone, Sergio Hassan, Harish C. Pant, Mary Brady, Walid Keyrouz, Ram Sriram, Jeffery B. Klauda

1452-Pos **Board B54**
COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS OF CA^{2+}-CALMODULIN. **Jules Berlin Nde Kengne**, Pengzhi Zhang, Jacob Ezerski, Peter G. Wolynes, Margaret S. Cheung

1453-Pos **Board B55**
DRUDE POLARIZABLE SIMULATIONS OF THE P53 TRANSACTIVATION DOMAIN WITH DIFFERENT BINDING PARTNERS. **Alexsandra Corrigan**, Justin A. Lemkul

1454-Pos **Board B56**
A MACHINE LEARNING ALGORITHM FOR THE DETECTION OF FUNCTION-RELATED RARE EVENTS IN MD TRAJECTORIES OF BIOMOLECULAR SYSTEMS. **Ambrose Plante**, Harel Weinstein

Membrane Protein Dynamics II (Boards B57 - B71)

1455-Pos **Board B57**
PRECISE ANALYSIS OF KYMOGRAPH DATA FOR BIOLOGICAL ATOMIC FORCE MICROSCOPY USING THE LINE DETECTION ALGORITHM. **Dylan R. Weaver**, Lucas S. Chandler, Gavin King

1456-Pos **Board B58**
MOLECULAR INSIGHTS INTO THE TRANSPORT OF LPS BY THE LPT MACHINERY IN GRAM-NEGATIVE BACTERIA. **Yupeng Li**, Jinchan Liu, Atanu Acharya, James C. Gumbart

1457-Pos **Board B59**
COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS OF THE P75 NEUROTROPHIN RECEPTOR TRANSMEMBRANE DOMAIN. **Alexandros Tsengenes**, Rebecca C. Wade

1458-Pos **Board B60**
NON EXCITABLE CELLS SENSE EFS THROUGH ELECTROPHORESIS AND ELECTROOSMOSIS. **Anyesha Sarkar**, Mark Messerli

1459-Pos **Board B61**
MARKOV STATE MODEL ANALYSIS OF DYNAMIC DIMERIZATION INTERFACES BETWEEN TRANSMEMBRANE DOMAINS OF METABOTROPIC GLUTAMATE RECEPTORS. **Joao Marcelo Lamim Ribeiro**, Leslie A. Salas-Estrada, Davide Provasi, Jordana K. Thibado, Josh T. Levitz, Marta Filizola

1460-Pos **Board B62**
UNDERSTANDING THE TRANSMEMBRANE DIMERIZATION INTERFACE OF TRKA AND TRKB RECEPTORS. **Christina Athanasiou**, Rebecca C. Wade

1461-Pos **Board B63**
INVESTIGATION OF THE PROTEIN-MEMBRANE INTERACTIONS OF CERT AND ER LIKE MEMBRANE. **Mahmoud Moqadam**, Nathalie Reuter

1462-Pos **Board B64**
PERIPHERAL MEMBRANE BINDING CHARACTERISTICS OF OSH A_6-A_7 HELICES AND THE EFFECT OF THE PRESENCE OF PIP2 LIPIDS AND FORCE FIELD PARAMETERS. **Robert J. Allsopp**, Jeffery B. Klauda

1463-Pos **Board B65**
PRECISION ANALYSIS OF DRUG-INDUCED CONFORMATIONAL CHANGES OF P-GLYCOPROTEIN OBSERVED IN AFM. **Katherine G. Schaefer**, Brendan P. Marsh, Gershon A.K. Mensah, Arthur G. Roberts, Gavin M. King

1464-Pos **Board B66**
EFFECTS OF G198R MUTATION IN THE EBOLA VP40 MATRIX PROTEIN: A MOLECULAR DYNAMICS STUDY. **Nisha Bhattarai**, Bernard Gerstman, Prem P. Chapagain

1465-Pos **Board B67**
MECHANISM OF SUBSTRATE BINDING AND LIPID MODULATION IN BILE ACID TRANSPORTERS. **Azaan Wilbon**, Jiemin Shen, Pei Qiao, Zachary J. Knepp, Wonpil Im, Arthur Laganowsky, Ming Zhou

1466-Pos **Board B68**
MEMBRANE PASSPORT CONTROL FOR SUBSTRATE SPECIFIC TRANSPORT. **Devika Vikraman**

1467-Pos **Board B69**
QUANTUM MECHANICAL/MOLECULAR MECHANICAL SIMULATIONS MODEL RETINAL DYNAMICS DURING MEMBRANE ACTIVATION OF RHODOPSIN. **Nhi Van**, Fathima T. Doole, Dmitrii Nikolaev, Mikhail N. Ryazantsev, Andrey Struts, Michael F. Brown

1468-Pos **Board B70**
MECHANISMS OF TETHERED-LIGAND MEDIATED POLYCYSTIN-1 GPCR SIGNALING. **Shristi Pawnikar**, Brenda Magenheimer, Robin Maser, Yinglong Miao

1469-Pos **Board B71**
CONFORMATIONAL TRANSITION PATHWAY OF GKPOT. **Dylan Ogden**, Kalyan Immadisetty, Curtis Goolsby, Mahmoud Moradi

Enzyme Function, Cofactors, and Post-translational Modifications (Boards B72 - B83)

1470-Pos **Board B72**
MECHANISM OF ELECTRON TRANSPORT IN MAMMALIAN STEAROYL-COA DESATURASE 1. **Jiemin Shen**, Gang Wu, Ah-Lim Tsai, Ming Zhou

1471-Pos **Board B73**
QUORUM QUENCHING ENZYMES - UNDERSTANDING MOLECULAR DETERMINANTS RESPONSIBLE FOR ACTIVITY OF N-TERMINAL SERINE HYDROLASES TO INCREASE THEIR STRONG ANTIBACTERIAL POTENCY. **Bartlomiej Surpeta**, Michal Grulich, Jan Brezovsky

1472-Pos **Board B74**
ENZYMES, MOONLIGHTING ENZYMES, PSEUDOENZYMES: SIMILAR IN SEQUENCE BUT DIFFERENT IN FUNCTION. **Constance Jeffery**

1473-Pos **Board B75**
CONSERVED REGIONS MEDIATE CANONICAL NOX DOMAINS. **Akua A. Acheampong**, Quinesha A. Williams, Sarah Thomas, Nicholas Wilson, Susan M.E. Smith

1474-Pos **Board B76**
A MICHAELIS-MENTEN EQUATION FOR INTRA-COMPLEX KINASE REACTIONS. Mateusz Dyla, **Magnus Kjaergaard**

1475-Pos **Board B77**
BDELLOVIBRIO BACTERIOVORUS HYDROLYSES ITS PREY DNA USING THE DCTPASE ACTIVITY OF BD2220. **Lakshmi Srinivasan**, Mario A. Pizarro Dupuy, P. Aitana Azurmendi, Allister Allister Suarez, Krisna C. Duong-Ly, Jesse B. Yoder, Akunna M. Iheanacho, Andrew J. Schoeffield, Mario Amzel, Silvia A. Pineiro, Sandra B. Gabelli

1476-Pos **Board B78**
THE CHARGE-SENSITIVE AEROLYSIN NANOPORE FOR DIRECT MEASURING PHOSPHORYLATION/DEPHOSPHORYLATION. **Kai-Li Xin**, Meng-Yin Li, Yi-Lun Ying, Yi-Tao Long

1477-Pos **Board B79**
BINDING AFFINITY OF FLAVINS TO THE DEHYDROGENASE DOMAIN OF SPNOX. **Quinesha A. Williams**, Sarah Waldron, Annelise Vermot, Isabelle Petit-Härtlein, Victoria Gonzalez, Brittany Notice, Franck Fieschi, Thomas Leeper, Susan M.E. Smith

1478-Pos **Board B80**
THE TWO DEUBIQUITINATING ENZYMES FROM *CHLAMYDIA TRACHOMATIS* HAVE DISTINCT UBIQUITIN RECOGNITION PROPERTIES. John Hausman, **Sebastian Kenny**, Chittaranjan Das

1479-Pos **Board B81**
HEPATITIS C VIRUS PROTEASE INHIBITORS SUPPRESS VIRUS REPLICATION AND ACT SYNERGISTICALLY WITH THE SARS-COV2 POLYMERASE INHIBITOR REMDESIVIR. **Khushboo Bafna**, Kris White, Balasubramanian Harish, Catherine A. Royer, Adolfo Garcia-Sastre, Robert M. Krug, Gaetano T. Montelione

1480-Pos **Board B82**
THE CLOCK INNER WORKINGS. MOLECULAR BASIS OF THE INTERACTION BETWEEN CASEIN KINASE 1 DELTA AND THE FASP REGION OF PERIOD. **Clarisse Gravina Ricci**, Jonathan M. Philpott, James A. McCammon, Carrie L. Partch

1481-Pos **Board B83**
TESTING FOR LIPASE ACTIVITY IN ENZYMES OF UNKNOWN FUNCTION. **Julia R. Koeppe**, Theodore Cup, Veronica Singh, Alpha Bah, Ryan Bailine, Tanashia Burrell, Derek Kuhn, Santiago Soto, Paul A. Craig

Intrinsically Disordered Proteins (IDP) and Aggregates III (Boards B84 - B105)

1482-Pos **Board B84**
PHYTOCHROME PHOTOBODIES IN MAMMALIAN CELLS. **Alexander V. Fonin**, Iuliia A. Antifeeva, Olesya G. Shpironok, Olesya Stepanenko, Sergey A. Silonov, Irina M. Kuznetsova, Konstantin K. Turoverov

1483-Pos **Board B85**
SINGLE-MOLECULE CHARACTERIZATION OF HETEROGENEOUS SOLUBLE PROTEIN OLIGOMERS. **Greg Gomes**, Zachary Levine

1484-Pos **Board B86**
DIFFERENTIAL DEPENDENCE OF INTRINSICALLY DISORDERED TRANSACTIVATION DOMAINS ON ELECTROSTATIC INTERACTIONS IN BINDING WITH TAZ1. Meng Gao, Yue Han, Yifan Zeng, **Xingyu Chen**, Yongqi Huang

1485-Pos **Board B87**
CELL MEMBRANE PROPERTIES CAN MEDIATE THE TOXICITY OF PROTEIN MISFOLDED OLIGOMERS AND FOLDED TOXINS. **Ryan P. Kreiser**, Aidan K. Wright, Lam T. Nguyen, Jared E. Hollows, Ryan Limbocker

1486-Pos **Board B88**
SINGLE-CHAIN DIMENSIONS OF AN ARCHETYPAL PHASE-SEPARATING INTRINSICALLY DISORDERED PROTEIN REGION. **Madeleine B. Borgia**, Anne Bremer, Tanja Mittag

1487-Pos **Board B89**
UNCOVERING THE MECHANISM OF DYSTROPHIN THROUGH SPECTROSCOPIC CHARACTERIZATION. **Althea Amaris**, Adeesha Jayathilaka, Kari S. Olson, Jonathan Tigner, Jack Shortreed, Michael Fealey, Anne Hinderliter

1488-Pos **Board B90**
DECIPHERING MULTIPHASIC STRUCTURE OF PROTEIN-RNA CONDENSATES. **Taranpreet Kaur**, Muralikrishna Raju, Ibraheem Alshareedah, Richoo B. Davis, Davit A. Potoyan, Priya R. Banerjee

1489-Pos **Board B91**
ROLE OF DISORDER IN THE REGULATION OF DYNEIN'S INTERMEDIATE CHAIN. **Kayla A. Jara**, Nikolaus M. Loening, Elisar J. Barbar

1490-Pos **Board B92**
EXPLORING THE EFFECTS OF INCREASED CHARGE CONTENT ON THE PHASE BEHAVIOR OF A PROTEIN LOW COMPLEXITY DOMAIN. **Wade M. Borcherds**, Anne Bremer, Mina Farag, Ivan Peran, Erik W. Martin, Rohit V. Pappu, Tanja Mittag

1491-Pos **Board B93**
MEMBRANE INSERTION OF INTRINSICALLY DISORDERED PROTEINS PROBED BY ROTATIONAL AND TRIPLET STATE DYNAMICS. **Vicky Vishvakarma**, Sudipta Maiti

1492-Pos **Board B94**
DIFFUSION NMR AND RHEOLOGY STUDY OF A MODEL POLYMER AND A DISORDERED PROTEIN IN THE PRESENCE OF BACTERIAL CELL LYSATE CROWDERS. **Yanitza Trosel**, Valerie Booth, Anand Yethiraj

1493-Pos **Board B95**
CONFORMATIONAL CHANGES WITHIN THE HIV-VIF COMPLEX. **Acadia Connor**

1494-Pos **Board B96**
CONSEQUENCES OF INTRODUCING INTRINSIC DISORDER IN THE ELECTROSTATIC STEERING BINDING PROCESS BETWEEN COLICIN E3 AND IM3. Meng Gao, **Yifan Zeng**, Yue Han, Zhengding Su, Yongqi Huang

1495-Pos **Board B97**
PROLINE ISOMERIZATION IN ARKA12 *IN SILICO*. **Juan Alcantara**

1496-Pos **Board B98**
ASYMMETRIES IN FREE ENERGIES OF SOLVATION OF CHARGED RESIDUES INFLUENCE THE CONFORMATIONAL PREFERENCES OF WELL-MIXED POLYAMPHOLYTIC DISORDERED PROTEINS. **Xiangze Zeng**, Martin J. Fossat, Rohit V. Pappu

1497-Pos **Board B99**
FUZZY INTERACTIONS BETWEEN 14-3-3Z AND TAU REGULATE TAU AGGREGATION. Fan Huang, **Junwen Xiong**, Yongqi Huang

1498-Pos **Board B100**
BENCHMARKING MD MODELS OF DISORDERED PROTEINS USING NMR DATA ON TRANSLATIONAL DIFFUSION. **Olga O. Lebedenko**, Sergei A. Izmailov, Vladislav A. Salikov, Nikolai R. Skrynnikov

1499-Pos **Board B101**
MECHANISTIC STUDIES OF CREB-DNA BINDING. **Emily P. Bentley**, Peter E. Wright, Ashok A. Deniz

1500-Pos **Board B102**
GENOME WIDE SCREENS POINT TO DISORDERED PROTEINS AS SENSORS OF OSMOTIC STRESS. **Karina Guadalupe**, Broder Schmidt, Rajat Rohatgi, Shahar Sukenik

1501-Pos **Board B103**
PML-BODIES AS OPEN DYNAMIC SYSTEM. Sergey A. Silonov, Alexander V. Fonin, Olesya G. Shpironok, **Iuliia A. Antifeeva**, Irina M. Kuznetsova, Konstantin K. Turoverov

1502-Pos **Board B104**
DIFFUSION NMR MEASUREMENTS: WHAT CAN WE LEARN ABOUT THE COMPACTNESS OF DISORDERED PROTEINS? **Vladislav A. Salikov**, Ivan S. Podkorytov, Boris B. Kharkov, Dmitrii A. Luzik, Anton B. Matiiv, Stanislav A. Bondarev, Nikolai R. Skrynnikov

1503-Pos **Board B105**
GALLIC ACID: A NATURALLY OCCURING BIFUNCTIONAL INHIBITOR OF AMYLOID AND METAL INDUCED AGGREGATION WITH POSSIBLE IMPLICATION IN METAL BASED THERAPY. **Asra N. Khan**, Rizwan Hasan Khan

RNA Structure and Dynamics (Boards B106 - B131)

1504-Pos **Board B106**
CHARACTERIZATION OF ENSEMBLE EPISTASIS IN THE ADENINE RIBOSWITCH. **Daria R. Wonderlick**, Michael J. Harms

1505-Pos **Board B107**
SINGLE-MOLECULE INVESTIGATION OF COOPERATIVITY WITHIN THE GLYCINE TANDEM RIBOSWITCH. **Rosa A. Romero**, Adrien Chauvier, Nils G. Walter

1506-Pos **Board B108**
MONITORING SINGLE SAM/SAH RIBOSWITCH LIGAND-INDUCED FOLDING AND MIMICKING CO-TRANSCRIPTIONAL FOLDING. **Ting-Wei Liao**, Lin Huang, David Lilley, Taekjip Ha

1507-Pos **Board B109**
IMPACTS OF FLUORESCENT BASE ANALOGUE SUBSTITUTION ON THE FOLDING OF A RIBOSWITCH. **Julia R. Widom**, Janson Hoeher

1508-Pos **Board B110**
STRUCTURAL INSIGHTS INTO THE RIBOSWITCH-MEDIATED REGULATION OF TRANSCRIPTION TERMINATION. **Emily Ellinger**, Adrien Chauvier, Jason Porta, Indrajit Deb, Aaron T. Frank, Melanie D. Ohi, Nils G. Walter

1509-Pos **Board B111**
CONSERVED ELEMENTS IN THE 3'-UTR OF SARS-COV-2: INVOLVEMENT IN GENOMIC DIMERIZATION AND INTERACTIONS WITH CELLULAR MICRORNAS. **Joshua A. Imperatore**, Caylee L. Cunningham, Caleb J. Frye, Kendy A. Pellegrene, Jeffrey D. Evanseck, Mihaela-Rita Mihailescu

1510-Pos **Board B112**
CHARACTERIZATION OF SARS-COV-2 CONSERVED ELEMENTS' STRUCTURES AND THEIR RNA-RNA INTERACTIONS. **Caylee Cunningham**, Joshua Imperatore, Ella Milback, Morgan Shine, Kendy A. Pellegrene, Patrick Lackey, Jeffrey D. Evanseck, Mihaela-Rita Mihailescu

1511-Pos **Board B113**
CONDENSED LIQUID PHASE 3D STRUCTURE OF SARS-COV-2 S2M GUIDED BY NMR SPECTROSCOPY. **Kendy A. Pellegrene**, Joshua A. Imperatore, Caylee L. Cunningham, Adam H. Kensinger, Petru Mihailescu, Matthew N. Srnec, Mihaela-Rita Mihailescu, Jeffrey D. Evanseck

1512-Pos **Board B114**
ENHANCED SAMPLING OF THE SARS-COV-2 S2M ELEMENT. **Adam H. Kensinger**, Kendy A. Pellegrene, Joshua Imperatore, Matthew N. Srnec, Mihaela-Rita Mihailescu, Jeffrey D. Evanseck

1513-Pos **Board B115**
MODELING THE STRUCTURE OF THE FRAMESHIFT-STIMULATORY PSEUDOKNOT IN SARS-COV-2 REVEALS MULTIPLE POSSIBLE CONFORMERS. **Sara Ibrahim Omar**, Meng Zhao, Rohith Vedhthaanth Sekar, Sahar Arbabimoghadam, Jack A. Tuszynski, Michael T. Woodside

1514-Pos **Board B116**
STRUCTURAL DYNAMICS OF SARS-COV-2 FRAMESHIFT SIGNAL STUDIED BY SINGLE-MOLECULE FORCE SPECTROSCOPY REVEAL TOPOLOGICALLY DISTINCT CONFORMERS. **Krishna P. Neupane**, Meng Zhao, Noel Q. Hoffer, Aaron Lyons, Sneha Munshi, Dustin Ritchie, Michael T. Woodside

1515-Pos **Board B117**
RNA STRUCTURAL ENSEMBLES ACT AS A GATE KEEPER OF 3' ALTERNATIVE SPLICING. **Robb S. Welty**

1516-Pos **Board B118**
MICRORNA-122 AND POLY-C BINDING PROTEIN 2 REGULATE HEPATITIS C REPLICATION BY COMPETING FOR OVERLAPPING BINDING SITES. **Seth D. Scott**, You Li, Stanley M. Lemon, Kyung H. Choi

1517-Pos **Board B119**
RAPID AND ACCURATE DETERMINATION OF ATOMISTIC RNA DYNAMIC ENSEMBLE MODELS USING NMR AND STRUCTURE PREDICTION. **Honglue Shi**

1518-Pos **Board B120**
ENSEMBLE SIMULATIONS: FOLDING, UNFOLDING AND MISFOLDING OF HIGH-EFFICIENCY TRANSFER-MESSENGER RNA PSEUDOKNOT. **Nguyet Nguyen**, Vinh Ngo, Jessica Moore, Eric J. Sorin

1519-Pos **Board B121**
UNFOLDING THERMODYNAMICS OF AN RNA PSEUDOKNOT AND ITS DNA ANALOG. Irine Khustsishvili, Calliste Reiling, **Luis A. Marky**

1520-Pos **Board B122**
RARE CONFORMATIONAL TRANSITION IN VIRAL RNA UPON LIGAND BINDING. **Lev Levintov**, Harish Vashisth

1521-Pos **Board B123**
PRESSURE EFFECTS ON THE CONFORMATIONAL TRANSITIONS OF TRNALYS3. **Jinqiu Wang**, Balasubramanian Harish, Kevin Larsen, Joseph D. Puglisi, Richard Gillilan, Catherine A. Royer

1522-Pos **Board B124**
BREAKING THE BOUNDARY BETWEEN SOLUTION X-RAY SCATTERING AND MOLECULAR DYNAMICS SIMULATIONS OF STRUCTURED NUCLEIC ACIDS. **Yen-Lin Chen**, Weiwei He, Lois Pollack, Serdal Kirmizialtin

1523-Pos **Board B125**
STRATEGIES FOR MODELING LIGAND DOCKING TO NATURAL AND ENGINEERED RNA STRUCTURES. **Wojciech K. Kasprzak**, Regan M. LeBlanc, Monalisa Swain, Abeer Ageeli, Nathan J. Baird, Theodore K. Dayie, Stuart F.J. Le Grice, Bruce A. Shapiro

1524-Pos **Board B126**
MIMICKING A CELLULAR ENVIRONMENT FOR RNA FOLDING STUDIES. **Hyejin Yoo**, Caitlin Davis

1525-Pos **Board B127**
SOLVATION IMPACTS OF RNA COLLAPSE. **Clark Templeton**

1526-Pos **Board B128**
EFFECT OF THE CATION SIZE ON THE STABILITY OF RNA STRUCTURES. **Anja Henning-Knechtel**, D. Thirumalai, Serdal Kirmizialtin

1527-Pos **Board B129**
SECONDARY STRUCTURES OF VERY LARGE RNAS VIA HIGH-THROUGHPUT OLIGONUCLEOTIDE-BINDING MICROARRAYS. **Ofer Kimchi**, Rees Garmann, Timothy Chiang, Megan Engel, Michael P. Brenner, Vinothan N. Manoharan

1528-Pos **Board B130**
MAPPING INTERNALLY AND ENVIRONMENTALLY STIMULATED RNA FOCI FORMATION. **Eitan S. Acks**, Caitlin M. Davis

1529-Pos **Board B131**
ILLUMINATING RNA DYNAMICS IN LIVE MAMMALIAN CELLS WITH THE RIBOGLOW PLATFORM. **Esther Braselmann**

Chromatin and the Nucleoid (Boards B132 - B148)

1530-Pos **Board B132**
PROTAMINE LOOPS DNA IN MULTIPLE STEPS. Obinna A. Ukogu, Adam D. Smith, Luka Matej Devenica, Hilary Bediako, Ryan B. McMillan, Yuxing E. Ma, Ashwin Balaji, Robert D. Schwab, Shahzad Anwar, Moumita Dasgupta, **Ashley R. Carter**

1531-Pos **Board B133**
(A)SPECIFIC DNA BINDING OF ARCHAEAL HISTONES, THE FORMATION AND POSITIONING OF HYPERNUCLEOSOMES. **Mandy Erkelens**, Bram Henneman, Thomas B. Brouwer, Gert-Jan A.J.T. Kuijntjes, Clara van Emmerik, Ramon A. van der Valk, Monika Timmer, Nancy C.S. Kirolos, Hugo van Ingen, John Van Noort, Remus T. Dame

1532-Pos **Board B134**
ACIDIC SOLUTIONS TO ARCHAEAL CHROMATIN. **Shawn Laursen**, Samuel Bowerman, Karolin Luger

1533-Pos **Board B135**
CHARACTERIZING PARTIAL HISTONE WRAPPING STATES AND THE HISTONE-TO-PROTAMINE TRANSITION IN SPERM. **Kyle M. Jones**, Yuxing Ma, Lynn Fu, Joanna M. Idrovo, Ashley R. Carter

1534-Pos **Board B136**
REGULATION OF *PROVWX* TRANSCRIPTION BY LOCAL CHROMATIN REMODELLING. **Fatema Zahra M. Rashid**, Kathy R. Chaurasiya, Daan J.W. Brocken, Remus T. Dame

1535-Pos **Board B137**
CHROMATIN REMODELER CHD1 FORMS TERNARY COMPLEXES WITH ADP AND PI ANALOGUE WHICH MIMIC TRANSIENT STATES IN ATPASE CYCLE. **Md Noor A Alam**, Kei Sadakane, Shinsaku Maruta

1536-Pos **Board B138**
MITOCHONDRIAL METABOLIC DYSFUNCTION DRIVES PROTEIN HYPER-ACYLATION THAT WEAKENS NUCLEOSOMES. **Micah J. McCauley**, John A. Smestad, Matthew C. Amato, Ioulia F. Rouzina, Mark C. Williams, L. James Maher

1537-Pos **Board B139**
CHARACTERIZATION OF CENTROMERES AND TELOMERES IN HUMAN CELLS. **Alexis S. Clavijo**, Steven Ionov, Alexandra Zidovska

1538-Pos **Board B140**
CHROMATIN MECHANICS DICTATES SUBDIFFUSION AND COARSENING DYNAMICS OF EMBEDDED CONDENSATES. **Daniel S.W. Lee**, Ned S. Wingreen, Clifford P. Brangwynne

1539-Pos **Board B141**
NONINVASIVE MEASUREMENT OF INTERPHASE CHROMATIN RHEOLOGY *IN VIVO*. **Iraj Eshghi**, Jonah Eaton, Alexandra Zidovska

1540-Pos **Board B142**
MESOSCALE PHASE SEPARATION OF CHROMATIN IN THE NUCLEUS. **Gaurav Bajpai**, Daria A. Pavlov, Dana Lorber, Talila Volk, Samuel Safran

1541-Pos **Board B143**
THEORETICAL STUDY OF CHROMATIN ORGANIZATION AT THE MESOSCALE. **Omar Adame-Arana**, Gaurav Bajpai, Samuel Safran

1542-Pos **Board B144**
DATA-DRIVEN POLYMER MODEL FOR MECHANISTIC EXPLORATION OF DIPLOID GENOME ORGANIZATION. **Bin Zhang**

1543-Pos **Board B145**
BUILDING A 4D NUCLEOME STATE LANDSCAPE IN HUMAN IPSCS: INTEGRATED ANALYSIS OF THE ORGANIZATION AND FUNCTION OF NUCLEAR BODIES. **Christopher L. Frick**, Susanne M. Rafelski

1544-Pos **Board B146**
GLOBAL LANDSCAPE OF 3D ARCHITECTURAL ANCHORS FROM GENOME-WIDE ANALYSIS OF SPECIFIC CHROMATIN INTERACTIONS. **Hammad Farooq**, Lin Du, Alan Perez-Rathke, Jie Liang

1545-Pos **Board B147**
TOWARDS THE UNDERSTANDING OF THE RELATION BETWEEN CHROMATIN ORGANIZATION AND SUB-NUCLEAR PATTERN OF ONCOPROTEIN DEK. **Agnieszka Pierzynska-Mach**, Isotta Cainero, Elisa Ferrando-May, Luca Lanzano', Alberto Diaspro

1546-Pos **Board B148**
SPATIAL ARCHITECTURE OF CHROMATIN AT LOCI OF TUMOR SUPPRESSORS AND ONCOGENE. **Lin Du**, Alan Perez-Rathke, Jie Liang

Membrane Fusion and Non-Bilayer Structures (Boards B149 - B164)

1547-Pos **Board B149**
SINGLE-VIRUS INVESTIGATION OF NON-SIALIC-ACID-MEDIATED SENDAI VIRUS BINDING TO SUPPORTED LIPID BILAYERS IN THE ABSENCE OF GANGLIOSIDE RECEPTOR. **Amy Lam**, Nandini Seetharaman, Eunice Kim, Orville O. Kirkland, Robert J. Rawle

1548-Pos **Board B150**
INVESTIGATION OF WEST NILE VIRUS OFF-PATHWAY MEMBRANE FUSION MECHANISMS USING KINETIC MODELING. **Abraham S. Park**, Olivia I. Graceffa, Robert J. Rawle

1549-Pos **Board B151**
INTERFERON-INDUCED TRANSMEMBRANE PROTEIN 3 BLOCKS FUSION OF DIVERSE ENVELOPED VIRUSES BY LOCALLY ALTERING MECHANICAL PROPERTIES OF CELL MEMBRANES. **Xiangyang Guo**, Jan Steinkühler, Mariana Marin, Xiang Li, Wuyuan Lu, Rumiana Dimova, Gregory B. Melikyan

1550-Pos **Board B152**
BULK FUSION STUDIES OF SENDAI VIRUS AND APPLICATION OF MASS ACTION KINETIC FUSION MODEL. **Papa Freduah A. Anderson**, Robert J. Rawle

1551-Pos **Board B153**
MECHANISTIC STUDIES OF LASSA FEVER VIRUS GLYCOPROTEIN-MEDIATED MEMBRANE FUSION. **Ruben M. Markosyan**, Mariana Marin, Fredric S. Cohen, Gregory B. Melikian

1552-Pos **Board B154**
THE EXTENDED INTERMEDIATE OF THE SARS-COV-2 SPIKE PROTEIN USES EXTREME REACH AND FLEXIBILITY TO CAPTURE HOST CELL MEMBRANES. Rui Su, **Jin Zeng**, Sathish Thiyagarajan, Ben O'Shaughnessy

1553-Pos **Board B155**
UNDERSTANDING ACTIVATION AND INHIBITION OF SARS-COV-2 VIRAL ENTRY WITH SINGLE-VIRUS MICROSCOPY. Anjali Sengar, Giorgio Morbioli, **Peter Kasson**

1554-Pos **Board B156**
SIMULATION OF THE INFLUENZA FUSION PEPTIDE PRE-PORE STRUCTURE. **Amy Rice**, Sourav Haldar, Eric Wang, Paul S. Blank, Sergey A. Akimov, Timur R. Galimzyanov, Richard W. Pastor, Joshua Zimmerberg

1555-Pos **Board B157**
HIV-CELL MEMBRANE FUSION INTERMEDIATES ARE RESTRICTED BY SERINC3 AND SERINC5. Amanda E. Ward, Volker Kiessling, Owen Pornillos, Judith M. White, Barbie K. Ganser-Pornillos, **Lukas K. Tamm**

1556-Pos **Board B158**
DEVELOPING AN INTENSITY-BASED CONFORMATIONAL SENSOR FOR SNARES. **Huan Bao**

1557-Pos **Board B159**
HOW MANY SYNAPTOTAGMIN MOLECULES DOES IT TAKE TO CLAMP A SNARE COMPLEX? **Zachary A. McDargh**, Ben O'Shaughnessy

1558-Pos **Board B160**
THE BACTERIAL MEMBRANE FISSION PROTEIN FISB REQUIRES HOMO-OLIGOMERIZATION AND LIPID-BINDING TO CATALYZE MEMBRANE SCISSION. **Ane Landajuela**, Martha Braun, Christopher D.A. Rodrigues, Thierry Doan, Florian Horenkamp, Anna Andronicos, Vladimir Shteyn, Nathan D. Williams, Chenxiang Lin, David Rudner, Erdem Karatekin

1559-Pos **Board B161**
ELECTROSTATIC EFFECTS ON MODEL MEMBRANE COMPRESSIBILITY AND VESICLE ADHESION. **Oscar Zabala-Ferrera**, Peter J. Beltramo

1560-Pos **Board B162**
UNIQUE PROPERTIES OF TIGHTLY DOCKED MEMBRANES PRIOR TO THEIR FUSION. **Agata Witkowska**, Leonard P. Heinz, Helmut Grubmuller, Reinhard Jahn

1561-Pos **Board B163**
NANOSCALE MEMBRANE PORES FOLLOW TWO TENSION-TRIGGERED PATHWAYS TO MEMBRANE RUPTURE DURING EXOCYTOSIS, DRUG DELIVERY AND TRANSFECTION. **Dong An**, Sathish Thiyagarajan, Egor Antipov, Brett E. Alcott, Ben O'Shaughnessy

1562-Pos **Board B164**
DYNAMICS OF MEMBRANE TENSION AND SYNAPTIC VESICLE RECYCLING. **Carolina Gomis Perez**, Natasha Dudzinski, Mason Rouches, Benjamin B. Machta, David Zenisek, Erdem Karatekin

Membrane Structure II (Boards B165 - B181)

1563-Pos **Board B165**
REFINING SDP MODELING OF THE INVERTED HEXAGONAL PHASE. Plinio R. Lopez, David A. Ruiter, **Paul E. Harper**

1564-Pos **Board B166**
PROBING THE UNIQUE ROLE OF ULTRALONG-CHAIN OMEGA-ACYLCERAMIDE CER[EOS] IN A STRATUM CORNEUM LIPID MODEL MATRIX USING ^{2}H NMR. **Ferdinand Fandrei**, Oskar Engberg, Lukáš Opálka, Kateřina Vávrová, Daniel Huster

1565-Pos **Board B167**
SUPPRESSION OF L_A/L_B PHASE COEXISTENCE IN THE LIPIDS OF PULMONARY SURFACTANT. Jonathan R. Fritz, Ryan W. Loney, Stephen B. Hall, **Stephanie A. Tristram-Nagle**

1566-Pos **Board B168**
CHOLESTEROL PUSHES VITAMIN E AND POLYUNSATURATED PHOSPHOLIPIDS TOGETHER. **Alexander Q. Phillips**, Samuel W. Canner, Scott I. Feller, Stephen R. Wassall

1567-Pos **Board B169**
MOLECULAR LEVEL MEMBRANE MODULATION BY OMEGA-3 FATTY ACIDS. **Manuela A.A. Ayee**, Brendan C. Bunker, Jordan L. De Groot

1568-Pos **Board B170**
LIPID PEROXIDATION ENHANCES LO/LD DOMAIN PHASE SEPARATION IN GIANT PLASMA MEMBRANE VESICLES. **Muthuraj Balakrishnan**, Anne K. Kenworthy

1569-Pos **Board B171**
QUANTITATIVE EXAMINATION OF CHANGES IN FLUIDITY AND CHOLESTEROL CONTENT IN BOVINE AORTIC ENDOTHELIAL CELLS USING PHASOR ANALYSIS OF LAURDAN FLUORESCENCE LIFETIME. **Kelly A. Zaccheo**, Balam Benítez-Mata, Michelle A. Digman, Donald G. Buerk, Dov Jaron, Kenneth A. Barbee

1570-Pos **Board B172**
NANOSCALE DOMAIN STRUCTURE IN A BINARY LIPID MIXTURE: A SMALL ANGLE NEUTRON SCATTERING AND CALORIMETRY STUDY. **Ursula A. Perez-Salas**, Natalie Krzyzanowski, Lionel Porcar

1571-Pos **Board B173**
SUB-DIFFRACTION LIMITED IMAGING OF LIPID DOMAINS USING RATIOMETRIC STED. **Gokul Raghunath**, Gregory Melikian

1572-Pos **Board B174**
LOOKING UNDER THE HOOD OF MEMBRANE FLUCTUATION ANALYSIS. THE SYSTEMATICS OF SEEMINGLY HARMLESS CHOICES. **Muhammed F. Erguder**, Markus Deserno

1573-Pos **Board B175**
LIPID CHAIN UPTURNS AND ORIENTATIONAL POTENTIAL IN MEMBRANE LIQUID CRYSTALS. **Abhinav Ramkumar**, Michael F. Brown, Horia I. Petrache

1574-Pos **Board B176**
RECENT UPDATES TO THE CHARMM LIPID FORCE FIELDS. **Yalun Yu**, Jeffery B. Klauda, Alexander D. MacKerell, Benoit Roux, Richard W. Pastor

1575-Pos **Board B177**
USING MOLECULAR DYNAMICS SIMULATIONS TO ELUCIDATE A ROLE FOR BACTERIAL CERAMIDES. **Anushriya Subedy**, Liam M. Sharp, Eric A. Klein, Grace H. Brannigan

1576-Pos **Board B178**
INTERACTION BETWEEN BIOMIMETIC LIPID MEMBRANES AND TRODUSQUEMINE: AN ATOMIC FORCE MICROSCOPY STUDY. **Davide Odino**, Silvia Errico, Claudio Canale, Riccardo Ferrando, Fabrizio Chiti, Annalisa Relini

1577-Pos **Board B179**
THE SAPONINS AFFECT THE ELECTRICAL PROPERTIES OF THE LIPID BILAYERS. **Svetlana S. Efimova**, Olga S. Ostroumova

1578-Pos **Board B180**
STRUCTURE AND INTERACTION OF LIPID BILAYERS IN THE PRESENCE OF ATP. **Azam Shafieenezhad**, Andres T. Cavazos, Stephen R. Wassall, Horia I. Petrache

1579-Pos **Board B181**
MEASUREMENTS AND SIMULATIONS OF LIPID MEMBRANES CONTAINING INOSITOL HEADGROUPS. **Azam Shafieenezhad**, Andres T. Cavazos, Alexander Q. Phillips, Ann C. Kimble-Hill, Stephen R. Wassall, Horia I. Petrache

Membrane Receptors and Signal Transduction (Boards B182 - B203)

1580-Pos **Board B182**
CAPILLARY PERICYTE K_{ATP} CHANNEL ACTIVATION DRIVES THE DILATION OF UPSTREAM CEREBRAL ARTERIOLES. **Ashwini Hariharan**, Colin Robertson, Christer Betsholtz, Thomas A. Longden

1581-Pos **Board B183**
INVESTIGATING THE STRUCTURE OF EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR) DIMERS AND OLIGOMERS IN CELLS. **Sarah R. Needham**, Sumanth Iyer, Benjamin Davis, Laura Zanetti Domingues, Selene K. Roberts, Daniel R. Rolfe, Marisa Martin-Fernandez

1582-Pos **Board B184**
MODULATION OF INSULIN RECEPTOR ACTIVITY UPON PLASMA MEMBRANE STEROL AND PHOSPHOLIPID SUBSTITUTIONS TO ALTER LIPID DOMAIN FORMATION. **Pavana Suresh**, W. Todd Miller, Erwin London

1583-Pos **Board B185**
SLOW AMPA RECEPTORS IN HIPPOCAMPAL PRINCIPAL CELLS. **Niccolò P. Pampaloni**, Irene Riva, Anna L. Carbone, Andrew J. Plested

1584-Pos **Board B186**
OBSERVING TYROSINE KINASE FUNCTION BY POLARIZATION RESOLVED FLUORESCENCE MICROSCOPY. **Alina Sakhi**, Josef Lazar

1585-Pos **Board B187**
PHOTOAFFINITY LABELED UNNATURAL AMINO ACID CROSSLINKING STABILIZES A TRANS-SIGNALING CONFORMATION BETWEEN THE D_2-$5HT_{2A}$ RECEPTOR HETEROMER. **Brenda T. Winn**, Chungsik Kim, Meng Cui, Roman Manetsch, Diomedes E. Logothetis

1586-Pos **Board B188**
QUANTITATIVE INVESTIGATION OF MECHANOSENSING IN B CELL ACTIVATION. **Hannah C.W. Reed**, Anna T. Bajur, Maro Iliopoulou, Katelyn M. Spillane

1587-Pos **Board B189**
POLARIZATION MICROSCOPY IMAGING OF G PROTEINS AT ENDOGENOUS EXPRESSION LEVELS. **Paul S. Miclea**, Josef Lazar

1588-Pos **Board B190**
ALPHA-ADRENERGIC REGULATION OF CAMP IN VENTRICULAR CARDIAC MYOCYTES. **Michael W. Rudokas**, Shailesh R. Agarwal, Robert D. Harvey

1589-Pos **Board B191**
FLUORESCENCE LIFETIME-BASED DNA PROBE FOR MULTIPLEXED QUANTIFICATION OF TENSILE FORCES AT CELL-CELL JUNCTIONS. **Puspam Keshri**, Bin Zhao, Mingxu You

1590-Pos **Board B192**
NON-SELECTIVE CATION CURRENTS MEDIATED BY CX43 HEMICHANNEL-P2X4 RECEPTOR SIGNALING PATHWAY IN RAT ATRIAL MYOCYTES UNDER SHEAR STRESS. Min-Jeong Son, Joon-Chul Kim, Anh T. Vu, Qui A. Le, **Sun-Hee Woo**

1591-Pos **Board B193**
KINETICS OF THE LAT:GRB2:SOS PROTEIN CONDENSATION PHASE TRANSITION ON MEMBRANES RESEMBLE A GLASS TRANSITION. **Simou Sun**, Trevor Grand Pre, L. J. Nugent Lew, Laura M. Nocka, David T. Limmer, Jay T. Groves

1592-Pos **Board B194**
MOLECULAR INTERACTIONS BETWEEN CD21/35 & THE ACTIN CYTOSKELETON IN FOLLICULAR DENDRITIC CELLS ARE REGULATED BY CELL-ECM TRACTION FORCES. **Maro Iliopoulou**, Anna T. Bajur, Hannah Reed, Katelyn M. Spillane

1593-Pos **Board B195**
THE EFFECT OF GLYCANS STERIC POTENTIALS ON VIRUS INFECTIVITY- THE SARS-COV-2 CASE. **Giuseppe Battaglia**

1594-Pos **Board B196**
CONFORMATIONAL COUPLING ACROSS THE MEMBRANE BILAYER OF EPIDERMAL GROWTH FACTOR RECEPTOR. **Shwetha Srinivasan**

1595-Pos **Board B197**
SIMULTANEOUS RECORDING OF MULTIPLE SIGNALING EVENTS BY FREQUENCY- AND SPECTRALLY-TUNED MULTIPLEXING OF FLUORESCENT PROBES. Michelina Kierzek, Parker Deal, Evan W. Miller, Shatanik Mukherjee, Dagmar Wachten, Arnd Baumann, Ulrich B. Kaupp, Timo Strünker, **Christoph Brenker**

1596-Pos **Board B198**
ACETYLCHOLINE RECEPTOR AGONISTS EXERT CYTOPROTECTION AGAINST HYPOXIA/REOXYGENATION INJURY THROUGH INHIBITING APOPTOSIS AND PROMOTING MITOCHONDRIAL DYNAMICS AND BIOGENESIS. **Kannaporn Intachai**, Siriporn Chattipakorn, Nipon Chattipakorn, Krekwit Shinlapawittayatorn

1597-Pos **Board B199**
TIMING TO MEMBRANE-ASSOCIATED PROTEIN CONDENSATION CONTROLS ANTIGEN DISCRIMINATION IN T CELLS. **Mark K. O'Dair**, Darren McAffee, Kiera B. Wilhelm, Jay T. Groves

1598-Pos **Board B200**
THE L920F EPHA4 ONCOGENIC MUTATION ALTERS THE SAM DOMAIN FOLD AND INDUCES EPHA4 OLIGOMERIZATION. **Taylor P. Light**, Zichen Wang, Kelly Karl, Elmer A. Zapata-Mercado, Taras V. Pogorelov, Jeffrey J. Gray, Kalina Hristova

1599-Pos **Board B201**
DIFFERENTIAL ANALYSIS OF T-CELL ACTIVATION BY A LIBRARY OF MEMBRANE-TETHERED, MONOVALENT, FAB'-BASED SYNTHETIC T-CELL RECEPTOR AGONISTS. **Kiera B. Wilhelm**, Shumpei Morita, Darren McAffee, Mark K. O'Dair, Sungi Kim, Jay T. Groves

1600-Pos **Board B202**
DNA ORIGAMI DEMONSTRATE THE UNIQUE STIMULATORY POWER OF SINGLE PMHCS AS T-CELL ANTIGENS. Joschka Hellmeier, Rene Platzer, Alexandra Eklund, Thomas Schlichthaerle, Gerhard J. Schuetz, Ralf Jungmann, Johannes B. Huppa, **Eva Sevcsik**

1601-Pos **Board B203**
ELECTROSTATIC MODULATION OF SIGNALING AT THE MEMBRANE WAVEFORM- AND TIME-DEPENDENT ELECTRIC CONTROL OF ERK DYNAMICS. **Quan Qing**

Cardiac, Smooth, and Skeletal Muscle Electrophysiology (Boards B204 - B221)

1602-Pos **Board B204**
SEX DIFFERENCES IN FUNCTIONAL MORPHOLOGY OF EMBRYONIC MURINE CORONARY ARTERIES. **Shion Nagasawa**, Masami Kodama, Hiroki Kurihara, Koichi Nishiyama, Yuichiro Arima, Kazuho Sakamoto, Junko Kurokawa

1603-Pos **Board B205**
IN SILICO PREDICTION OF DRUG-INDUCED VENTRICULAR ARRHYTHMIA USING HETEROGENEOUS TISSUE MODELS OF THE PURKINJE-VENTRICULAR SYSTEM. **Mengya Yuan**, Pan Li

1604-Pos **Board B206**
OPTIMIZATION AND VALIDATION OF FAST RATIOMETRIC VOLTAGE-SENSITIVE DYE IMAGING IN NEURONAL AND CARDIAC TISSUES AND CULTURES. **Corey D. Acker**, Ping Yan, Anthony Pettinato, Travis Hinson, Leslie M. Loew

1605-Pos **Board B207**
POLYUNSATURATED FATTY ACIDS THERAPEUTIC POTENTIAL FOR LONG QT SYNDROME. **Alicia de la Cruz**, Marta E. Perez, Quinn C. Rainer, H. P. Larsson

1606-Pos **Board B208**
THYROID AND DEXAMETHASONE TREATMENT ENHANCES THE EXPRESSION OF REPOLARIZING POTASSIUM CURRENTS AND IMPROVE ELECTROPHYSIOLOGICAL MATURATION OF HUMAN IPSC-DERIVED CARDIOMYOCYTES. **Lili Wang**, Yuko Wada, Nimer Ballan, Lior Gepstein, Bjorn C. Knollmann

1607-Pos **Board B209**
INVESTIGATIONAL TREATMENTS FOR COVID-19 MAY INCREASE VENTRICULAR ARRHYTHMIA RISK THROUGH DRUG INTERACTIONS. **Meera Varshneya**, Itziar Irurzun-Arana, Chiara Campana, Rafael Dariolli, Amy Gutierrez, Taylor K. Pullinger, Eric A. Sobie

1608-Pos **Board B210**
EFFECTS OF MECHANICAL STIMULUS ON BEAT SEQUENCE OF CARDIOMYOCYTES WITH FEEDBACK CONTROL. **Ryu Kidokoro**, Kazuki Mammoto, Takashi Miyazawa, Shota Nozaki, Ryuta Watanabe, Yuuta Moriyama, Toshiyuki Mitsui

1609-Pos **Board B211**
EFFECTS OF ESTROGENS ON THE ACTIONS OF HERG. **Shintaro Sugimoto**, Fumiya Tamura, Mana Sugimoto, Oka Takayuki, Igor V. Vorobyov, Kazuho Sakamoto, Junko Kurokawa

1610-Pos **Board B212**
CARDIAC L-TYPE CHANNEL MODULATION BY LRRC10 PROTEINS. **Pedro J. del Rivero Morfin**, Manu Ben-Johny

1611-Pos **Board B213**
POST-TRANSLATIONAL MODIFICATIONS IN HUMAN BETA MYOSIN HEAVY CHAIN. **Maicon Landim-Vieira**, Matthew C. Childers, Amanda L. Wacker, Michelle Rodriguez Garcia, Rakesh K. Singh, Elizabeth A. Brundage, Bryan A. Whitson, Paul M. Janssen, Prescott B. Chase, Brandon J. Biesiadecki, Michael Regnier, J. Renato Pinto, Michelle S. Parvatiyar

1612-Pos **Board B214**
PRIOR FREEZING IN LIQUID NITROGEN HAS MINIMAL IMPACT ON THE CONTRACTILE PROPERTIES OF CHEMICALLY PERMEABILIZED HUMAN MYOCARDIUM. **Faruk H. Moonschi**, Ashley M. White, Gregory N. Milburn, Dylan F. Colli, Emma J. Birks, Kenneth S. Campbell

1613-Pos **Board B215**
USING A GENETIC ALGORITHM TO PARAMETERIZE A MATHEMATICAL MODEL OF A PORCINE VENTRICULAR CARDIOMYOCYTE. **Taylor K. Pullinger**, Matthew Amoni, Itziar Irurzun-Arana, Karin R. Sipido, Eric A. Sobie

1614-Pos **Board B216**
AGE-ASSOCIATED ION CHANNEL LOCALIZATION AND EXPRESSION CHANGES REGULATE CARDIAC SODIUM GAIN-OF-FUNCTION. **Madison B. Nowak**, Steven Poelzing, Seth H. Weinberg

1615-Pos **Board B217**
FINITE-ELEMENT MODELING OF PARAMETRICALLY-DEFINED CARDIAC INTERCALATED DISK NANODOMAIN STRUCTURE. **Nicolae Moise**, Heather L. Struckman, Celine Dagher, Rengasayee Veeraraghavan, Seth H. Weinberg

1616-Pos **Board B218**
SPATIAL-TEMPORAL PATTERNS OF EARLY AFTERDEPOLARIZATIONS UNDERLYING T-WAVE ABNORMALITIES IN A TISSUE MODEL OF THE PURKINJE-VENTRICULAR SYSTEM. **Mengya Yuan**, Pan Li

1617-Pos **Board B219**
DIFFERENTIAL ROLES OF CALCIUM-ACTIVATED AND CALCIUM-INHIBITED ADENYLYL CYCLASE ISOFORMS IN THE REGULATION OF SAN AUTOMATICITY. **Lu Ren**, Phung Thai, Raghavender R. Gopireddy, Valeriy Timofeyev, Xiao-Dong Zhang, Alana C. Conti, Manuel F. Navedo, Nipavan Chiamvimonvat

1618-Pos **Board B220**
PKA AND CAMKII SIGNALING SYNERGISTICALLY PROMOTES ATRIAL ARRHYTHMIA IN POPULATIONS OF HUMAN ATRIAL TISSUES. **Haibo Ni**, Xianwei Zhang, Stefano Morotti, Eleonora Grandi

1619-Pos **Board B221**
QUANTIFYING THE ARRHYTHMOGENIC EFFECTS OF SUBCELLULAR STRUCTURAL VARIATIONS IN A THREE-DIMENSIONAL MODEL OF THE HUMAN ATRIAL MYOCYTE. **Xianwei Zhang**, Haibo Ni, Stefano Morotti, Daisuke Sato, William E. Louch, Andrew G. Edwards, Eleonora Grandi

TRP Channels (Boards B222 - B231)

1620-Pos **Board B222**
TEMPERATURE SENSITIVITY IN THE TRPM8 CHANNEL IS HARBORED AT THE C-TERMINAL DOMAIN. **Karen Castillo**, Ignacio Diaz-Franulic, Jonathan Canan, Fernando D. Gonzalez-Nilo, Ramon Latorre

1621-Pos **Board B223**
TRPV1 ENHANCES CCK SIGNALING IN VAGAL AFFERENT NEURONS. **Rachel A. Arnold**, James Peters

1622-Pos **Board B224**
DISEASE-RELATED TRPM3 MUTATIONS RENDER THE CHANNEL OVERACTIVE VIA DIFFERENT MECHANISMS. **Siyuan Zhao**, Yevgen Yudin, Tibor Rohacs

1623-Pos **Board B225**
DUAL EFFECTS OF PHOSPHATIDYLINOSITOL ON TRPV1 REGULATION INVOLVE FUNCTIONALLY DISTINCT BINDING SITES. **Aysenur T. Yazici**, Eleonora Gianti, Marina A. Kasimova, Vincenzo Carnevale, Tibor Rohacs

1624-Pos **Board B226**
ATOMISTIC AND DYNAMIC DETAILS OF THE GATING MECHANISM OF THE TETHERED MECHANOSENSITIVE ION CHANNEL NOMPC. Yang Wang, Yifeng Guo, Guanluan Li, Chunhong Liu, Lei Wang, Aihua Zhang, Zhiqiang Yan, **Chen Song**

1625-Pos **Board B227**
GATING OF TRPV5 CHANNEL ACTIVITY BY PHOSPHORYLATION AND EXOGENOUS LIGANDS. **Edwin C. Fluck**, Taylor Hughes, Ruth Pumroy, Vera Moiseenkova-Bell

1626-Pos **Board B228**
ACTIVATION AND INHIBITION OF ASSAY-READY TRPA1 AND TRPV CELLS: AN AUTOMATED PATCH CLAMP STUDY. **Andrea Bruggemann**, Tom A. Goetze, András Horváth, Ilka Rinke, Nadine Becker, Alison Obergrussberger, Lukas Focke, Oliver Wehmeier, Ralf Schwandner, Niels Fertig

1627-Pos **Board B229**
TRPM7 PERMEANT DIVALENT METAL CYTOTOXICITY DURING MAGNESIUM DEPLETION AND LOADING. Alayna A. Mellott, **Jananie Rockwood**, Charles T. Luu, J. Ashot Kozak

1628-Pos **Board B230**
MECHANISM OF PRAZIQUANTEL ACTION AT A TRANSIENT RECEPTOR POTENTIAL CHANNEL. Sang-Kyu Park, Lukas Friedrich, Nawal Yahya, Claudia Rohr, David Maillard, Friedrich Rippmann, Thomas Spangenberg, **Jonathan S. Marchant**

1629-Pos **Board B231**
STRUCTURE OF THE ANCESTRAL TRPY1 CHANNEL FROM SACCHAROMYCES CEREVISIAE REVEALS MECHANISMS OF LIPID AND CALCIUM MODULATION. **Tofayel Ahmed**, Collin Nisler, Edwin C. Fluck, Marcos M. Sotomayor, Vera Moiseenkova-Bell

Ligand-gated Channels II (Boards B232 - B245)

1630-Pos **Board B232**
MOLECULAR DETERMINANTS OF NEUROPEPTIDE POTENCY AT FMRF-AMIDE GATED SODIUM CHANNELS FROM THE DEG/ENAC FAMILY. **Mowgli Dandamudi**, Timothy Lynagh

1631-Pos **Board B233**
VALIDATION OF AN ASIC1A LIGAND-GATED ASSAY ON AN AUTOMATED PATCH CLAMP PLATFORM AND ITS USE FOR NOVEL LIGAND SCREENING. **Marc Rogers**, John Ridley, Ian Witton, Raymond Tang, Robert W. Kirby

1632-Pos **Board B234**
DETERMINING THE TOPOLOGY OF THE ACID-SENSING ION CHANNEL INTRACELLULAR DOMAINS. **Tyler A. Couch**, Kyle Berger, Dana Kneisley, Matthew L. Rook, Tyler W. McCullock, Paul J. Kammermeier, David M. MacLean

1633-Pos **Board B235**
CHARACTERIZING CONFORMATIONAL CHANGES OF ASIC1A DURING GATING AND PEPTIDE MODULATION. **Stephanie A. Heusser**, Zeshan P. Sheikh, Christian B. Borg, Iacopo Galleano, Stephan A. Pless

1634-Pos **Board B236**
ASIC ACTIVATION MECHANISMS DELINEATED THROUGH GENETIC CODE EXPANSION. **Matthew L. Rook**, Tyler A. Couch, Jackson Hernandez, Alison J. Frontier, David M. MacLean

1635-Pos **Board B237**
DEVELOPMENT AND VALIDATION OF ASIC1A LIGAND-GATED ION CHANNEL DRUG DISCOVERY ASSAYS ON AUTOMATED PATCH CLAMP PLATFORMS. **Marc Rogers**, Sam Manyweathers, Tom Götze, Nadine Becker, Ilka Rinke, Michael George, Alison Obergrussberger

1636-Pos **Board B238**
DETERMINING ARACHIDONIC ACID INTERACTION SITES FOR ACID-SENSING ION CHANNELS USING MD SIMULATIONS. **Anna Ananchenko**, Maria Musgaard

1637-Pos **Board B239**
ROBUST HIDDEN MARKOV MODEL SELECTION BY BAYESIAN NETWORK-BASED ALGORITHMS EMBRACING VARIOUS PROBLEMS OF EXPERIMENTAL DATA. **Jan L. Münch**, Ralf Schmauder, Gabriel Lacroix, Rikard Blunck, Klaus Benndorf

1638-Pos **Board B240**
COMPREHENSIVE DOMAIN INSERTION PROFILING TO STUDY INWARD RECTIFIER K^+ CHANNEL FOLDING ROBUSTNESS. Willow Coyote-Maestas, David Nedrud, Yungui He, **Daniel Schmidt**

1639-Pos **Board B241**
PKC MODULATION BY GIRK CHANNELS IS INVOLVED IN THE PATHOPHYSIOLOGY OF ATRIAL FIBRILLATION. **Kirin Gada**, Aishwarya Chandrashekar, Mengmeng Chang, Takeharu Kawano, Leigh D. Plant, Sami F. Noujaim, Diomedes E. Logothetis

1640-Pos **Board B242**
OLIVE OIL RESTORES FUNCTIONALITY OF INTRACELLULARLY RETAINED MUTANT CNG CHANNEL. **Angeles Avalos Hernandez**, Ataulfo Martinez-Torres, Estela Ruiz-Baca, Pablo Miranda, Angelica Lopez-Rodriguez

1641-Pos **Board B243**
TOWARDS UNDERSTANDING HCN1 INHIBITION BY SMALL MOLECULES. **Elizabeth D. Kim**, Crina M. Nimigean

1642-Pos **Board B244**
INVOLVEMENT OF MITOCHONDRIAL INTERMEDIATE CONDUCTANCE CA^{2+}-ACTIVATED K^+ CHANNELS IN DCEBIO-INDUCED C2C12 SKELETAL MUSCLE CELL HYPERTROPHY. **Kazuho Sakamoto**, Chihiro Hibi, Shunya Takeshita, Junko Kurokawa

1643-Pos **Board B245**
DISSECTION OF P2X4 AND P2X7 RECEPTOR CURRENT COMPONENTS IN BV-2 MICROGLIA. Mira Trang, Guenther Schmalzing, Christa E. Mueller, **Fritz Markwardt**

Cardiac Muscle Regulation (Boards B246 - B260)

1644-Pos **Board B246**
MUTATIONS LINKED TO DILATED CARDIOMYOPATHY PERTURB THE TOPOLOGY AND REGULATORY RESPONSE OF PHOSPHOLAMBAN. **Daniel K. Weber**, Venkateswara Reddy Uddigiri, Tata Gopinath, Gianluigi Veglia

1645-Pos **Board B247**
REGULATION OF THE KINETICS OF HUMAN CARDIAC MYOSIN. **Akhil Gargey**, Yuri E. Nesmelov

1646-Pos **Board B248**
EFFECTS OF CARDIAC MYOSIN HEAVY CHAIN ISOFORM COMPOSITION ON CONTRACTION KINETICS AND CALCIUM TRANSIENTS IN ADULT RAT CARDIOMYOCYTES. Jan Nicolas Riesselmann, Tim Holler, Ante Radocaj, Joachim Meißner, Theresia Kraft, **Natalie Weber**

1647-Pos **Board B249**
MACHINE LEARNING MODEL OF CARDIAC MUSCLE CONTRACTION. **Yasser Aboelkassem**, Erica Pursell

1648-Pos **Board B250**
BIOCHEMICAL ROLE OF PHOSPHORYLATION OF SERINE-283 OF MAMMALIAN TROPOMYOSIN TPM1.1 (ALPHA). **A. Madhushika M. Silva**, David H. Heeley

1649-Pos **Board B251**
C-TERMINAL BASIC RESIDUES OF TROPONIN T FACILITATE TROPONIN I TRANSITIONS DURING ACTIVATION. Li Zhu, Dylan Johnson, **Joseph M. Chalovich**

1650-Pos **Board B252**
EMERGENCE OF THE N-TERMINAL REGULATORY DOMAIN OF CARDIAC TROPONIN I FOR LIVING ON LAND AND THE FUNCTION OF ADULT HEART OF HIGHER VERTEBRATES. **Monica A. Rasmussen**, Hanzhong Feng, J.-P. Jin

1651-Pos **Board B253**
RESTRICTIVE N-TERMINAL TRUNCATION OF CARDIAC TROPONIN T RESTORES A TROPONIN I-LIKE INHIBITORY STRUCTURE TO MODULATE CONTRACTILITY IN PATHOPHYSIOLOGICAL ADAPTATION. **Tianxin Cao**, Han-Zhong Feng, J.-P. Jin

1652-Pos **Board B254**
GENETICALLY ENGINEERED ADDITION OF A CA^{2+} BUFFERING CAPACITY IN MOUSE CARDIAC MUSCLE THIN FILAMENT USING A GLU-RICH SEGMENT OF INSECT TROPONIN T ALTERS CARDIAC PERFORMANCE. **Hanzhong Feng**, Tianxin Cao, J.-P. Jin

1653-Pos **Board B255**
MOLECULAR- AND CELLULAR-LEVEL EFFECTS OF A TROPONIN MUTATION LINKED TO DILATED CARDIOMYOPATHY. **Samantha K. Barrick**, Lina Greenberg, Michael J. Greenberg

1654-Pos **Board B256**
NOVEL CARDIAC TROPONIN I S43/45N SUBSTITUTION DOES NOT CAUSE ABERRANT CARDIAC REMODELING OR DYSFUNCTION IN MICE. **Vani S. Ravichandran**, Margaret V. Westfall, Tabea M. Schatz

1655-Pos **Board B257**
GENETIC VARIANTS AND POST-TRANSLATIONAL MODIFICATIONS OF CARDIAC TROPONIN C: INSIGHTS FROM THE PUBLIC DATABASES. **Tyler R. Reinoso**, Maicon Landim-Vieira, Yun Shi, Jamie R. Johnston, Michelle S. Parvatiyar, J. Renato D. Pinto, Andrew P. Landstrom, Prescott B. Chase, Hanna J. Tadros

1656-Pos **Board B258**
MODULATION OF CARDIAC THIN FILAMENT AZIMUTHAL RIGIDITY BY CALCIUM AND CROSS-BRIDGES. Maicon Landim-Vieira, Weikang Ma, Jamie Johnston, Vitold E. Galkin, Prescott B. Chase, Thomas C. Irving, **J. Renato D. Pinto**

1657-Pos **Board B259**
CONDITIONAL KNOCK-OUT OF CARDIAC MYOSIN LIGHT CHAIN KINASE AMELIORATES HYPERTROPHIC CARDIOMYOPATHY PHENOTYPE IN A MURINE MODEL. **Michelle C. Rodriguez Garcia**, Karissa Dieseldorff Jones, Rosemeire Kanashiro-Takeuchi, Audrey N. Chang, Eunyoung Lee, Michael Osei Assibey, Maicon Landim-Vieira, Isabella Leite Coscarella, Cynthia Vied, Prescott B. Chase, James T. Stull, J. Renato Pinto

1658-Pos **Board B260**
INTRINSIC MODIFIER EFFECT OF CTNT ISOFORM SWITCHING IN SARCOMERIC CARDIOMYOPATHIES. **Melissa L. Lynn**, Catherine Vasquez, Lauren Tal-Grinspan, Matthew M. Klass, Teryn A. Holeman, Jil C. Tardiff

Myosins (Boards B261 - B268)

1659-Pos **Board B261**
ADP-BOUND ACTOMYOSIN STATE EXHIBITS LOWER STIFFNESS THAN THE RIGOR STATE. **Tianbang Wang**, Bernhard Brenner, Arnab Nayak, Mamta Amrute-Nayak

1660-Pos **Board B262**
THE MEASUREMENT OF THE STEPPING FORCE OF PURIFIED ZYMOGEN GRAUNLES USING A SINGLE BEAM OPTICAL TRAP. **Justin J. Raupp**, Yuwen Mei, Takeshi Sakamoto

1661-Pos **Board B263**
DECIPHERING THE FUNCTION AND THE REGULATION OF *PLASMODIUM FALCIPARUM* MYOSIN A. **Julien Robert-Paganin**, Dihia Moussaoui, James P. Robblee, Daniel Auguin, Thomas C.A. Blake, Elena Krementsova, Jake Baum, Kathleen M. Trybus, Anne Houdusse

1662-Pos **Board B264**
CONFORMATIONAL DISTRIBUTIONS OF ISOLATED MYOSIN MOTOR DOMAINS ENCODE THEIR MECHOCHEMICAL PROPERTIES. **Gregory Bowman**

1663-Pos **Board B265**
REGULATORY LIGHT CHAINS FINE-TUNE SKELETAL MUSCLE MYOSIN-II FUNCTION. Arnab Nayak, Tianbang Wang, Peter Franz, Walter Steffen, Igor Chizhov, Georgios Tsiavaliaris, **Mamta Amrute**

1664-Pos **Board B266**
SWITCH I AND SWITCH II MUTANTS DIFFERENTIALLY IMPACT THE RECOVERY STROKE IN MYOSIN V. Laura K. Gunther, Rohini Desetty, **Christopher M. Yengo**

1665-Pos **Board B267**
NEAR-ATOMIC STRUCTURE OF THE 10S FORM OF MYOSIN II: IMPLICATIONS FOR INHIBITION, ACTIVATION AND DISEASE. **Prince Tiwari**, Shixin Yang, Kyounghwan Lee, Osamu Sato, Mitsuo Ikebe, Raul Padron, Roger Craig

1666-Pos **Board B268**
UNDERSTANDING HOW MUTATIONS IN NON-MUSCLE MYOSIN 2A DRIVE HUMAN DISEASE. **David E. Casas-Mao**

Cytoskeletal Assemblies and Dynamics (Boards B269 - B280)

1667-Pos **Board B269**
THE MITOTIC CROSSLINKING PROTEIN PRC1 ACTS LIKE A MECHANICAL DASHPOT TO RESIST MICROTUBULE SLIDING. Ignas R. Gaska, Mason E. Armstrong, April C. Alfieri, **Scott T. Forth**

1668-Pos **Board B270**
COFILIN PROTECTS CONTRACTILE RINGS FROM BRIDGING INSTABILITIES. Zachary A. McDargh, **Hongkang Zhu**, Ben O'Shaughnessy

1669-Pos **Board B271**
WRITHING OF CYTOKINETIC CONTRACTILE RINGS REVEALS THAT THE CONTRACTILE RING IS AN ELASTOPOROUS CABLE. **Sathish Thiyagarajan**, Dong An, Roberto Alonso-Matilla, Shuyuan Wang, Ting Gang Chew, Mohan Balasubramanian, Ben O'Shaughnessy

1670-Pos **Board B272**
FUNCTIONAL OPTIMALITY OF THE HIGHLY CONSERVED ARP2/3MEDIATED 70° BRANCHING ANGLE. **Rikki M. Garner**, Julie A. Theriot

1671-Pos **Board B273**
STRUCTURE AND FUNCTION OFABNORMAL SPINDLE-LIKE, MICROTUBULE ASSOCIATED PROTEIN (ASPM). **Marcus Holt**, David E. Casas-Mao, Jacqueline Bond, Michelle Peckham

1672-Pos **Board B274**
FUNCTIONAL DIFFERENCES BETWEEN B- AND Γ-ACTIN: FROM TRANSLATION DYNAMICS TO AMINO ACID CHANGES. **Pavan Vedula**, Satoshi Kurosaka, Dawei Dong, Brittany MacTaggart, Qin Ni, Yi Jiang, Anna Kashina

1673-Pos **Board B275**
QUANTITATIVE ANALYSIS OF ACTIN CYTOSKELETON'S MORPHOLOGICAL CHANGES DURING EMT IN LUNG CANCER AND PRE-CANCER CELL LINES. **Arkaprabha Basu**, Manash K. Paul, Mitchel Alioscha-Perez, Anna Grosberg, Hichem Sahli, Steven Dubinett, Shimon Weiss

1674-Pos **Board B276**
COLLECTIVE EFFECTS OF XMAP215, EB1, CLASP2, AND MCAK LEAD TO ROBUST MICROTUBULE TREADMILLING. **Goker Arpag**, Elizabeth J. Lawrence, Veronica J. Farmer, Sarah L. Hall, Marija Zanic

1675-Pos **Board B277**
UNDERSTANDING THE MECHANISMS THAT GIVE RISE TO THE MAMMALIAN SPINDLE'S RESPONSE TO FORCE USING THEORY AND MICRONEEDLE MANIPULATION. **Vahe Galstyan**, Pooja Suresh, Sophie Dumont, Rob Phillips

1676-Pos **Board B278**
CYTOPLASM BIOPHYSICAL PROPERTIES LIMIT CYTOSKELETON DYNAMICS IN VIVO. **Arthur T. Molines**, Joel Lemiere, Claire H. Edrington, Chieh-Ting Hsu, Ida E. Steinmark, Klaus Suhling, Gohta Goshima, Liam J. Holt, Gary Brouhard, Fred Chang

1677-Pos **Board B279**
TENSION-DEPENDENT MYOSIN DYNAMICS ON CONTRACTILE ACTOMYOSIN STRUCTURES. **Wen-hung Chou**, David Kovar, Margaret L. Gardel

1678-Pos **Board B280**
OPPOSING MOTORS PROVIDE MECHANICAL AND FUNCTIONAL ROBUSTNESS IN THE MAMMALIAN SPINDLE. **Lila Neahring**, Sophie Dumont

Mitochondria in Cell Life and Death (Boards B281 - B294)

1679-Pos **Board B281**
ON THE NATURE OF THE MITOCHONDRIAL PERMEABILITY TRANSITION. **Carmen A. Mannella**, Liron Boyman, Andrew Coleman, Christopher W. Ward, W. Jonathan Lederer

1680-Pos **Board B282**
CONSEQUENCES OF INNER MEMBRANE FOLDING ON MITOCHONDRIAL ATP OUTPUT. **Carmen A. Mannella**, Nasrin Afzal, W. Jonathan Lederer, Mohsin S. Jafri

1681-Pos **Board B283**
ROLE OF VDAC ISOFORMS IN ALPHA-SYNUCLEIN ENTRY INTO MITOCHONDRIA. **Megha Rajendran**, Marie-Paule Strub, Sergey M. Bezrukov, Tatiana K. Rostovtseva

1682-Pos **Board B284**
NME4 LOSS-OF-FUNCTION ALTERS MITOCHONDRIA, TRIGGERS RETROGRADE SIGNALING AND LEADS TO CELLULAR REPROGRAMMING. **Uwe Schlattner**, Frédéric Lamarche, Olivier De Wever, Cécile Cottet-Rousselle, Isabelle Hininger-Favier, Malgorzata Tokarska-Schlattner, Eric Fontaine, Morgane Le Gall, Gilhem Clary, Cedric Broussard, Philippe Chafey, Marie-Lise Lacombe, Mathieu Boissan

1683-Pos **Board B285**
MITOCHONDRIAL CA^{2+} UPTAKE IN *OPA1*$^{-/-}$CELLS IS UPREGULATED THROUGH FUNCTIONAL ER-MITOCHONDRIA COUPLING. **Benjamín Cartes-Saavedra**, Patrick Yu-Wai-Man, Gyorgy Hajnoczky, Verónica Eisner

1684-Pos **Board B286**
PROHIBITIN OVEREXPRESSION PROMOTES OPA1 CLEAVAGE, REDUCES ROS AND IMPROVES RESPIRATION POST HYPOXIA. **Wenzhuo Ma**, Scarlett M. Huck, Shanna Hamilton, Radmila Terentyeva, Dmitry Terentyev, Richard T. Clements

1685-Pos **Board B287**
THE IMPACT OF MOLECULAR HYDROGEN ON MITOCHONDRIAL ROS AND APOPTOSIS IN COLORECTAL CANCER CELLS. **Yi-Hsuan Tsai**, Megha Jhunjhunwala, Tsan-Yao Chen, Chi-Shuo Chen

1686-Pos **Board B288**
ROLE OF OPA1 ADOA-CAUSING MUTANTS IN MITOCHONDRIAL NUCLEOID DISTRIBUTION. **Josefa Macuada**, Geraldine Aedo, Gonzalo Vidal, Timothy Rudge, Benjamin Cartes-Saavedra, Verónica Eisner

1687-Pos **Board B289**
SEMI-AUTOMATED METHOD FOR IMAGE ANALYSIS OF MTDNA NUCLEOIDS DYNAMICS. **Geraldine Aedo**, Josefa Macuada, Benjamin Cartes-Saavedra, Gonzalo Vidal, Timothy Rudge, Verónica Eisner

1688-Pos **Board B290**
CYTOSOLIC AND MITOCHONDRIAL CA^{2+} TRANSIENTS IN MITOCHONDRIAL FISSION PROTEIN MID49-DEFFICIENT CELLS. **Erik A. Lopez**, Diego Troncoso, Benjamín Cartes-Saavedra, Daniel A. Lagos, Verónica Eisner

1689-Pos **Board B291**
DISEASE CAUSING-MFN2 MUTATIONS ALTER MITOCHONDRIAL FUSION AND FISSION DYNAMICS IN MOUSE EMBRYONIC FIBROBLAST. **Daniel Lagos**, Pamela Rojas, Diego Troncoso, Benjamin Cartes-Saavedra, Rita Horvath, Verónica Eisner

1690-Pos **Board B292**
GLUCOSE MODULATION OF MITOCHONDRIAL MORPHOLOGY IN PANCREATIC CELLS. **Ching-Hsiang Chu**, Wen-Wei Tseng, An-Chi Wei

1691-Pos **Board B293**
ACEYLATED CYCLOPHILIN D REGULATES MITOCHONDRIAL FUNCTION IN THE DEVELOPING MOUSE HEART. **Gisela Beutner**, Jonathan R. Burris, George A. Porter

1692-Pos **Board B294**
CASPASE REGULATION UNDER PHYSIOLOGICAL STRESS. **Rama Ali**

Molecular and Cellular Neuroscience (Boards B295 - B303)

1693-Pos **Board B295**
USING VOLUMETRIC 3D MICROSCOPY TECHNIQUES TO CHARACTERIZE ASTROCYTE MORPHOLOGIES OVER LARGE SPATIAL SCALES. **Kaitlin Szederkenyi**, Martin Oheim, Christopher M. Yip

1694-Pos **Board B296**
REACTION-DIFFUSION MODELING TO ASSESS WHAT LIMITS EFFECTIVE ACETYLCHOLINE FLUCTUATIONS AT HIGH FREQUENCY CHOLINERGIC ELECTROPLAQUES. Elham Alkhammash, Ivan L'Heureux, Catherine E. Morris, **Bela Joos**

1695-Pos **Board B297**
UNDERSTANDING THE ROLE OF DOPAMINE IN ASTROCYTE MEDIATED BRAIN SIGNALING AND FUNCTION. **Surya P. Aryal**, Chris I. Richards

1696-Pos **Board B298**
REGULATING QUANTAL SIZE OF NEUROTRANSMITTER RELEASE THROUGH A GPCR VOLTAGE SENSOR. Quanfeng Zhang, Yinglin Li, Lili Yin, Zhaohan Lin, Bin Liu, Feipeng Zhu, **Zhuan Zhou**

1697-Pos **Board B299**
IN SITU STUDIES OF FIBRILLAR POLYMORPHS IN ALZHEIMER'S DISEASE. Biel Roig Solvas, Bradley T. Hyman, **Lee Makowski**

1698-Pos **Board B300**
ELECTRONIC EXPRESSION OF BACKGROUND AND DELAYED RECTIFIER CURRENTS VIA DYNAMIC CLAMP PRODUCES PHYSIOLOGICAL ACTION POTENTIALS IN STEM CELL DERIVED GLUTAMATERGIC NEURONS. Mark W. Nowak, Brian K. Panama, Leigh Korbel, **Randall L. Rasmusson**, Glenna Bett

1699-Pos **Board B301**
A NOVEL TWO CA^{2+} SENSOR SYSTEM IN C. ELEGANS. **Zhitao Hu**

1700-Pos **Board B302**
ALZHEIMER'S DISEASE, HYPERGLYCEMIA, AND AN ANTIOXIDANT: AN INVESTIGATION INTO NEURONAL CELL DEATH. **Marie L. Kelly-Worden**, Emma Cieslik

1701-Pos **Board B303**
COULOMBIC FRICTION BETWEEN TWO SLIDING BIO-FILAMENTS : A COMPUTATIONAL MODEL. **Touhid Feghhi**, Wolfgang Tichy, AWC Lau

Neuroscience (Boards B304 - B307)

1702-Pos **Board B304**
FORMATION OF A MORPHOGEN GRADIENT - ACCELERATION BY QUANTUM WALKS. Carl Trindle, **Irfan Lone**

1703-Pos **Board B305**
COMPUTATIONAL MODEL OF EPHAPTIC COUPLING AND POTASSIUM MODULATION AT THE VESTIBULAR HAIR CELL CALYX SYNAPSE. **Aravind Chenrayan Govindaraju**, Anna Lysakowski, Ruth Anne Eatock, Robert M. Raphael

1704-Pos **Board B306**
EXPOSURE SYSTEM DEPENDENT CALCIUM INFLUX IN CHROMAFFIN CELLS BY NANOSECOND ELECTRIC PULSE- FIELD REFLECTIONS AT DIELECTRIC INTERFACE. **Anithakrithi Balaji**, Jihwan Yoon

1705-Pos **Board B307**
MECHANOCHEMICAL MODELING OF AMPAR TRAFFICKING IN DENDRITIC SPINES. **Miriam Bell**, Padmini Rangamani

Optical Microscopy and Superresolution Imaging II (Boards B308 - B342)

1706-Pos **Board B308**
MACHINE LEARNING ENABLED PHASE UNWRAPPING FOR DIGITALHOLOGRAPHIC MICROSCOPY. **Ziyang Yu**, Jin Lei, Christopher M. Yip

1707-Pos **Board B309**
APOLLO-$NADP^+$ TARGETTING TO MEASURE ORGANELLE REDOX RESPONSES IN PANCREATIC BETA-CELLS. **Jonathan V. Rocheleau**, Alex Bennett, Huntley Chang

1708-Pos **Board B310**
A QUANTITATIVE OPTOGENETIC TOOL TO CONTROL GENE EXPRESSION DURING EMBRYONIC DEVELOPMENT. **Anand P. Singh**, Ping Wu, Eric F. Wieschaus, Jared E. Toettcher, Thomas Gregor

1709-Pos **Board B311**
MAPPING PROTEIN CONCENTRATIONS IN LIVE HIPSCS ACROSS MICROSCOPE PLATFORMS. Derek Thirstrup, Jie Yao, Jamie Sherman, Nathalie Gaudreault, **Winfried Wiegraebe**

1710-Pos **Board B312**
SAMPLE PREPARATION AND LASER INTENSITIES AFFECT MEOS3.2 PHOTOPHYSICS IN LIVE AND FIXED FISSION YEAST CELLS. **Mengyuan Sun**, Kevin Hu, Joerg Bewersdorf, Thomas D. Pollard

1711-Pos **Board B313**
UNIFORM, UNIVERSAL, SHADOWLESS TIRF MICROSCOPY VIA ANNULAR FIBER BUNDLE. **Benjamin Croop**

1712-Pos **Board B314**
TWO-PHOTON ABSORPTION CHARACTERISTICS OF MELANOPSIN IN BIOLOGICAL SYSTEMS. **Carlos Renteria**, Honggu Choi, Brian Tibble, Rishyashring R. Iyer, Eric J. Chaney, Mantas Zurauskas, Yuan-Zhi Liu, Stephen A. Boppart

1713-Pos **Board B315**
MULTISPECTRAL STOKES/MUELLER DETECTION MODULE FOR MULTI-PHOTON/FLUORESCENCE CONFOCAL SCANNING IMAGING MICROSCOPY. **Aymeric Le Gratiet**, Riccardo Marongiu, Muhammad Waseem W. Ashraf, Ali Mohebi, Fabio Callegari, Paolo Bianchini, Alberto Diaspro

1714-Pos **Board B316**
A NEW BIOSENSOR DESIGN REVEALS CONFORMATIONAL CHANGES OF SINGLE MOLECULES IN LIVING CELLS. **Bei Liu**

1715-Pos **Board B317**
2.5D MICROSCOPY: FAST, HIGH-THROUGHPUT SUBCELLULAR IMAGING VIA VOLUMETRIC PROJECTION. **Jinhan Ren**, Kyu Young Han

1716-Pos **Board B318**
DEVELOPMENT OF DIFFUSION CONTRAST PHOTO-ACTIVATED LOCALIZATION MICROSCOPY TO DETECT SPARSE PROTEIN INTERACTIONS AT HIGH BACKGROUND. Angel Mancebo, **Jacob M. Ritz**, Elias M. Puchner

1717-Pos **Board B319**
SYNCHRONOUS 3D TRACKING AND IMAGING AT MULTIPLE SCALES TO OVERCOME SPATIOTEMPORAL DISPARITY. **Courtney C. Johnson**, Jack C. Exell, Kevin D. Welsher

1718-Pos **Board B320**
GLOBALLY DENSITY-CORRECTED CORRELATION ANALYSIS FOR SINGLE-MOLECULE LOCALIZATION MICROSCOPY. **Thomas R. Shaw**, Sarah L. Veatch

1719-Pos **Board B321**
SPECTRAL DETECTION ENABLES MULTI-COLOR FLUORESCENCE FLUCTUATION SPECTROSCOPY STUDIES IN LIVING CELLS. **Valentin Dunsing**, Annett Petrich, Salvatore Chiantia

1720-Pos **Board B322**
UNIVERSAL QUENCHING OF STANDARD ORGANIC FLUOROPHORES BY WATER AND ALCOHOLS THROUGH RESONANCE ENERGY TRANSFER. Jimmy Maillard, Kathrin Klehs, Christopher Rumble, Eric Vauthey, Mike Heilemann, **Alexandre Fuerstenberg**

1721-Pos **Board B323**
HIGHLY MULTIPLEXED DETERMINATION OF THE CELL STATE BY PHASOR SPECTRAL FLIM. **Lorenzo Scipioni**, Alessandro Rossetta, Giulia Tedeschi, Enrico Gratton

1722-Pos **Board B324**
OFF-AXIS DIGITAL HOLOGRAPHIC MICROSCOPE WITH A ROTATING DIFFRACTION PLATE FOR SPECKLE SUPPRESSION. **Jin Lei**, Christopher M. Yip

1723-Pos **Board B325**
UNBIASED FLUORESCENCE CORRELATION SPECTROSCOPY OF DIFFUSIVE PROCESSES IN LIVING CELLS. **Kwang Ho Hur**, John Kohler, Joachim D. Mueller

1724-Pos **Board B326**
DIFFRACTION-LIMITED MAPPING OF INTEGRIN FORCE VECTOR FIELDS WITH VALID-MFM. **Aaron T. Blanchard**, Dale Combs, Sk Aysha Rashid, Joshua Brockman, Yuxin Duan, Alexa L. Mattheyses, Khalid Salaita

1725-Pos **Board B327**
QUANTIFICATION OF CHRONIC RENAL PARENCHYMAL INJURY USING PHASOR APPROACH TO AUTOFLUORESCENCE LIFETIME IMAGING. **Suman Ranjit**, Kammi Henriksen, Alexander Dvornikov, Marco Delsante, Avi Rosenberg, Moshe Levi, Enrico Gratton

1726-Pos **Board B328**
DETERMINATION OF THE PARTITION COEFFICIENT OF PROTEIN-MEMBRANE REVERSIBLE ASSOCIATION BY FCS AND PCH. **Arturo G. Vesga**, Cintia de Vequi, Lupe Villegas, Johana Torralba, Miguel García-Porras, Pablo Carravilla, Jose L. Nieva, Jose Requejo-Isidro

1727-Pos **Board B329**
HYPERSPECTRAL IMAGING IN A SINGLE PLANE ILLUMINATION MICROSCOPE BY SPECTRAL PHASOR ANALYSIS WITH SINE-COSINE TRANSMISSION FILTERS. **Leonel S. Malacrida**, Andres Kamaid, Enrico Gratton, Per Niklas Hedde

1728-Pos **Board B330**
QUANTIFYING SUBCELLULAR GROWTH DYNAMICS USING QUANTITATIVE PHASE IMAGING. **Soorya Pradeep**, Thomas A. Zangle

1729-Pos **Board B331**
NON-INVASIVE SINGLE-CELL MORPHOMETRY IN LIVING BACTERIAL BIOFILMS. **Ji Zhang**, Yibo Wang, Mingxing Zhang, Jie Wang, Alecia Achimovich, Scott T. Acton, Andreas Gahlmann

1730-Pos **Board B332**
FLUORESCENCE LIFETIME IMAGING MICROSCOPY MAPS FLUOROPHORE CONCENTRATIONS, A GAUSSIAN PROCESS APPROACH. **Mohamadreza Fazel**, Sina Jazani, Steve Pressé

1731-Pos **Board B333**
MOLECULAR ASSESSMENT OF HER2 IN BREAST CANCER. **Adam L. Maddox**, Matthew S. Brehove, Steven J. Tobin, Devin L. Wakefield, Kiarash R. Eliato, Jackelyn Alva-Ornelas, Veronica Jones, Daniel Schmolze, Joanne Mortimer, Victoria L. Seewaldt, Tijana Jovanovic-Talisman

1732-Pos **Board B334**
A WORKFLOW FOR DETERMINING AND SIZING OLIGOMERIC BIOMOLECULAR STRUCTURES WITH CRYO SINGLE MOLECULE LOCALIZATION MICROSCOPY. **Magdalena C. Schneider**, Roger Telschow, Gwenael Mercier, Montserrat López-Martinez, Otmar Scherzer, Gerhard J. Schütz

1733-Pos **Board B335**
NADH AUTOFLUORESCENCE PHASOR FLIM FOR THE METABOLIC CHARACTERIZATION OF T CELL AND LEUKEMIA CELL IN A DROPLET. **Francesco Palomba**, Michelle A. Digman, Xuhao Luo, Abraham Lee

1734-Pos **Board B336**
WAVELET-BASED BACKGROUND AND NOISE REMOVAL FOR FLUORESCENCE MICROSCOPY IMAGES. Manuel Hüpfel, Andrei Y. Kobitski, Weichun Zhang, **G. Ulrich Nienhaus**

1735-Pos **Board B337**
SINGLE-PARTICLE TRACKING OF DNA-BINDING BIOMOLECULES IN CELLS: POWER-LAW DISTRIBUTIONS OF DWELL TIMES. **Michael J. Saxton**

1736-Pos **Board B338**
QUANTITATIVE FLUORESCENCE MICROSCOPY ON SARS-COV-2. **Rayna M. Addabbo**, John Kohler, Isaac Angert, Yan Chen, Heather Hanson, Louis M. Mansky, Joachim D. Mueller

1737-Pos **Board B339**
USING ENZYME-LINKED MARKERS WITH CHROMOGENIC SUBSTRATES IN EXPANSION MICROSCOPY. **Julia R. Migliore**, Douglas D. Root

1738-Pos **Board B340**
NUMBER AND BRIGHTNESS ANALYSIS WITH SPATIAL FILTERS. **Daniel Foust**, David W. Piston

1739-Pos **Board B341**
AUTOMATIC IMAGE SEGMENTATION BASED ON PHASOR SPACE CLUSTERING. **Alexander Vallmitjana**, Belén Torrado, Enrico Gratton

1740-Pos **Board B342**
COMPARISON OF DIFFERENT SCANNING ION-CONDUCTANCE MICROSCOPY METHODS TO STUDY LOCAL MECHANICAL PROPERTIES OF LIVING CELLS. **Aleksei Iakovlev**, Pavel Novak, Alexander Erofeev, Petr Gorelkin, Vasilii Kolmogorov, Nikita Savin

Force Spectroscopy and Scanning Probe Microscopy (Boards B343 - B349)

1741-Pos **Board B343**
ANTIMICROBIAL ACTIVITY OF ANTIFUNGAL DRUGS ON CANDIDA PARAPSILOSIS STUDIED BY SCANNING IONCONDUCTANCE MICROSCOPY (SICM). **Nikita Savin**, Vasilii Kolmogorov, Aleksei Iakovlev, Roman Timoshenko, Petr Gorelkin, Alexander Erofeev, Yuri E. Korchev

1742-Pos **Board B344**
MORPHOLOGICAL AND NANOMECHANICAL PROPERTIES OF MODEL OF ANIMAL AND HUMAN EYE LENS LIPID MEMBRANES. **Nawal Khadka**, Raju Timsina, Laxman Mainali

1743-Pos **Board B345**
ELUCIDATING THE NANOSCALE EFFECT OF CELL GEOMETRY AND CYTOSKELETON ORGANIZATION ON *CANDIDA*-HOST CELL INTERACTIONS. **Easter Ndlovu**, Tanya E. Dahms, Etienne Dague

1744-Pos **Board B346**
ROLE OF LIGAND BINDING SITE IN MODULATING MECHANICAL PROPERTIES OF UBIQUITIN FAMILY PROTEINS. Mona Gupta, Ravindra Venkatramani, **Sri Rama Koti Ainavarapu**

1745-Pos **Board B347**
MAPPING MECHANOSTABLE PULLING GEOMETRIES OF PROTEIN-LIGAND COMPLEXES. **Zhaowei Liu**, Rodrigo A. Moreira, Ana Dujmović, Haipei Liu, Byeongseon Yang, Adolfo B. Poma, Michael A. Nash

1746-Pos **Board B348**
EXPLORING THE DOXORUBICIN-DNA INTERACTION BY DNA STRETCHING USING OPTICAL TWEEZERS. **Zachary Ells**, Brian Dolle, Ioulia F. Rouzina, Mark C. Williams, Thayaparan Paramanathan

1747-Pos **Board B349**
DOES ATP MODULATE PROTEIN NANOMECHANICS. **Agata Bak**, Jorge Alegre-Cebollada

Biosensors (Boards B350 - B370)

1748-Pos **Board B350**
NUCLEIC ACID SEQUENCE DETECTION BY A MULTI-TECHNIQUE APPROACH. **Giulia Pinto**, Silvia Dante, Pietro Parisse, Paolo Canepa, Loredana Casalis, Maurizio Canepa, Ornella Cavalleri

1749-Pos **Board B351**
CHEMICALLY-TUNED SOLID-STATE NANOPORES FOR SINGLE-MOLECULE BIOPHYICS. **Jugal Saharia**, Matthew ODonohue, Y.M. Nuwan D.Y. Bandara, Buddini I. Karawdeniya, Min Jun Kim

1750-Pos **Board B352**
SMOOTH VOLTAGE-DRIVEN TRANSLOCATION OF FULL-LENGTH PROTEINS THROUGH NANOPORES. **Luning Yu**, Xinqi Kang, Mohammad Amin Alibakhshi, Fanjun Li, Bezhad Mehrafrooz, Aleksei Aksimentiev, Min Chen, Meni Wanunu

1751-Pos **Board B353**
DEVELPOMENT AND CHARACTERIZATION OF NOVEL PROBES FOR PHOTOACOUSTIC MICROSCOPY. **Francesco Garzella**, Barbara Storti, Ranieri Bizzarri, Aba Losi, Wolfgang Gärtner, Stefania Abbruzzetti, Paolo Bianchini, Cristiano Viappiani, Alberto Diaspro

1752-Pos **Board B354**
BENT DNA BOWS AS SENSING AMPLIFIERS FOR DETECTING DNA-INTERACTING SALTS AND MOLECULES. **Yong Wang**, Jack Freeland, Lihua Zhang, Shih-Ting Wang, Mazon Ruiz

1753-Pos **Board B355**
IGLOW: REAL-TIME FLUORESCENCE REPORTING, INTRA-VESICULAR ACTIVITY, AND HELIX-8 INDEPENDENCE IN A CPGFP-TAGGED MECHANOSENSITIVE GPCR. **Alper D. Ozkan**, Tina Gettas, Audrey Sogata, Wynn Phaychanpheng, Jerome J. Lacroix

1754-Pos **Board B356**
BLACK DOTS: MICROCONTACT PRINTED REFERENCE-FREE TRACTION FORCE MICROSCOPY. **Kevin M. Beussman**, Molly Y. Mollica, Sangyoon J. Han, Ashley Emery, Wendy E. Thomas, Nathan J. Sniadecki

1755-Pos **Board B357**
ORIENTATION IDENTIFICATION OF PEPTIDE TRANSLOCATION THROUGH AN AEROLYSIN NANOPORE. **Yilun Ying**, Hongyan Niu, Xue-yuan Wu, Yi-Tao Long

1756-Pos **Board B358**
THE REACTIVITY OF CYSTEINE IN NANOPORE CONFINED ENVIRONMENT. **Wei Liu**, Yi-Lun Ying, Meng-Yin Li, Xue-yuan Wu, Yi-Tao Long

1757-Pos **Board B359**
INTRACELLULAR IMAGING OF OXYGEN AND REACTIVE OXYGEN SPECIES USING FLUORESCENCE LIFETIME IMAGING OF EYFP-MYO-MCHERRY. **Rozhin Penjweini**, Branden Roarke, Alessio Andreoni, Gregory R. Alspaugh, Katie A. Link, Dan L. Sackett, Jay R. Knutson

1758-Pos **Board B360**
ULTRASENSITIVE OPTICAL LABEL-FREE BIOSENSING AND FLUORESCENT MEASUREMENTS USING UV SURFACE PLASMONS IN GOLD NANOLAYERS LAUNCHED WITH THE SUPPORT OF A SPECIALLY DESIGNED PHOTONIC CRYSTAL. Kirill Prusakov, Dmitry Basmanov, Dmitry Klinov, **Sergey K. Sekatskii**

1759-Pos **Board B361**
TUNING THE REDOX PROPERTIES OF HEME-BASED BIOSENSORS. Martin J. Iwanicki, Christopher C. Moser, **Bohdana M. Discher**

1760-Pos **Board B362**
OPEN-ENDED COAXIAL PROBE FOR DIELECTRIC THICKNESS MEASUREMENTS. **Christopher E. Bassey**

1761-Pos **Board B363**
ELECTROCHEMICAL METHOD FOR REAL-TIME ROS MEASUREMENTS IN SINGLE CELLS. **Alexander Vaneev**, Roman Timoshenko, Vasilii Kolmogorov, Elena Lopatukhina, Nelly Chmelyuk, Emil Yamansarov, Rostislav Petrov, Alexander Majouga, Yuri Korchev, Pavel Novak, Natalia Klyachko, Alexander Erofeev, Peter Gorelkin

1762-Pos **Board B364**
REVERSIBLE MICHAEL ADDITION OF AN ENGINEERED CYSTEINE RESIDUE TO A LIGHT ACTIVATED LIGAND, A NEW DESIGN STRATEGY FOR A SYNTHETIC PHOTOSWITCHABLE FLUORESCENT PROTEIN. **Soham Maity**, Wei Sheng, Nona Ehyaei, Thomas E. Kimmel, James H. Geiger, Babak Borhan

1763-Pos **Board B365**
FLUORESCENCE SENSORS FOR DETECTION, DISCRIMINATION AND QUANTIFICATION OF SIDEROPHORES. **Ashish Kumar**, Salete M. Newton, Phillip E. Klebba

1764-Pos **Board B366**
DEVELOPMENT AND OPTIMIZATION OF RED-SHIFTED FLUORESCENT PHI BIOSENSORS. **Jacob E. Wagner**, Katharine White

1765-Pos **Board B367**
DESIGN AND CHARACTERIZATION OF GOLD-PALLADIUM ELECTRODE PLATFORMS FOR CANCER DETECTION. **Manuel J. La Torre Poueymirou**, Ramonita Diaz Ayala, Carlos R. Cabrera

1766-Pos **Board B368**
SCREENING GEVIS WITH VOLTAGE SENSING DOMAINS FROM DIFFERENT SPECIES OF THE VOLTAGE SENSING PHOSPHATASE GENE FAMILY REVEALS DIFFERENCES IN MEMBRANE EXPRESSION AND VOLTAGE RANGES. Lee Min Leong, **Laura Bilbao-Broch**, Youna Kim, Shacarol Sims, Iryna Martsishevska, Md Sofequl Islam Mukim, Ju-young Lee, Jiwon Kim, Yeon ha Ju, Minjoo Song, Jihyun Song, Maria Godlevska, Bradley J. Baker

1767-Pos **Board B369**
COMPUTATIONAL MODELING OF DNA-NANOTUBE HYBRID CONJUGATES FOR BIOSENSOR APPLICATIONS. **Lela Vukovic**

1768-Pos **Board B370**
COMPUTATIONAL STUDY OF SINGLE-PROTEIN SENSING USING NANOPORES. **Sebastian Cardoch**, Ralph H. Scheicher

TUESDAY LATE POSTERS

12:00 PM–1:30 PM

Below is the list of late poster presentation for Tuesday.

ODD-NUMBERED BOARDS 12:00 PM–12:45 PM | EVEN-NUMBERED BOARDS 12:45 PM–1:30 PM

Numbers	Category
LB1 - LB7	Protein Structure and Conformation I
LB8 - LB13	Protein Structure, Prediction, and Design
LB14 - LB16	Protein Assemblies
LB17 - LB18	Membrane Protein Structures
LB19 - LB24	Intrinsically Disordered Proteins (IDP) and Aggregates I
LB25 - LB28	Membrane Physical Chemistry
LB29 - LB29	Membrane Dynamics
LB30 - LB36	Exocytosis and Endocytosis
LB37 - LB42	Calcium Signaling
LB43 - LB43	Other Channels
LB44 - LB45	Skeletal and Smooth Muscle Mechanics, Structure, and Regulation
LB46 - LB46	Bacterial Mechanics, Cytoskeleton, and Motility
LB47 - LB50	Membrane Pumps, Transporters, and Exchangers
LB51 - LB51	EPR and NMR: Spectroscopy and Imaging
LB52 - LB56	Computational Methods and Bioinformatics
LB57 - LB60	Bioengineering

Tuesday, February 23

Tuesday Late Posters (Boards LB1 - LB60)

Protein Structure and Conformation I (Boards LB1 - LB7)

L1769-Pos **Board LB1**
PROBING THE MECHANISM OF PEPTIDE REGISTER SHIFTS IN T CELL RECEPTOR RECOGNITION. **Tatiana Rosales**

L1770-Pos **Board LB2**
USING THE GEOMETRY BETWEEN AMINO ACID SIDE CHAINS TO CHARACTERIZE PROTEIN PACKING. **Michael L. Kalin**, Pranav M. Khade, Ambuj Kumar, Robert L. Jernigan

L1771-Pos **Board LB3**
THE N-TERMINAL DOMAIN OF RFAH PLAYS AN ACTIVE ROLE IN PROTEIN FOLD-SWITCHING. **Pablo Galaz-Davison**, Ernesto Roman, Cesar A. Ramirez-Sarmiento

L1772-Pos **Board LB4**
VCCI-CHEMOKINE INTERACTIONS: EXPERIMENTAL STUDY MEETS COMPUTATIONAL INSIGHTS. **Wenyan Guan**, Lauren E. Stark, Laura Showalter, Michael E. Colvin, Patricia LiWang

L1773-Pos **Board LB5**
BIOPHYSICAL CHARACTERIZATION OF METAL BINDING TO ZNF750, A ZNF IMPLICATED IN TUMORIGENESIS. **Britney R. Privett**, Elizabeth DeGaetano

L1774-Pos **Board LB6**
DETECTION OF UBIQUITINATION ACTIVITIES IN CANCER CELLS USING ARTIFICIAL RING FINGERS. **Kazuhide Miyamoto**

L1775-Pos **Board LB7**
EXPRESSION AND PURIFICATION OF YEAST-DERIVED GPCR, GA AND GBG SUBUNITS FOR STRUCTURAL AND DYNAMIC STUDIES. **Wenjie Zhao**

Protein Structure, Prediction, and Design (Boards LB8 - LB13)

L1776-Pos **Board LB8**
TOPOLOGICAL DATA ANALYTIC FRAMEWORK FOR BIOLOGICAL STRUCTURES AND SHORT-TERM EVOLVING MOLECULAR MODELS. **Wai Shing Tang**, Lorin Crawford

L1777-Pos **Board LB9**
STRUCTURE-BASED DESIGN OF MUTATIONS IN LEIOMODIN/TROPOMYOSIN BINDING INTERFACE. **Nickolas C. Starks**, Garry E. Smith, Alla S. Kostyukova, Dmitri Tolkatchev

L1778-Pos **Board LB10**
RESIDUAL FORCE ENHANCEMENT IS REDUCED IN PERMEABILIZED FIBER BUNDLES FROM *MDM* MUSCLES. **Dhruv Mishra**, Kiisa C. Nishikawa

L1779-Pos **Board LB11**
COMPUTATIONAL MODELING OF VIROPORIN PROTEINS FROM RNA VIRUSES. Lori D. Banks, **Jeremy Bennett**

L1780-Pos **Board LB12**
BIRESCRYSTAL AND SERESCRYSTAL, TWO SEQUENCE-BASED CRYSTALLIZATION PREDICTORS USING NOVEL SQUEEZE EXCITATION RESIDUAL NETWORKS. **Mohammad Madani**, Anna Tarakanova

L1781-Pos **Board LB13**
MODELING CORONAVIRUS SPIKE PROTEIN DYNAMICS-IMPLICATIONS FOR IMMUNOGENICITY AND IMMUNE ESCAPE. **Genevieve Kunkel**, Mohammad Madani, Simon J. White, Paulo H. Verardi, Anna Tarakanova

Protein Assemblies (Boards LB14 - LB16)

L1782-Pos **Board LB14**
MECHANISTIC EVALUATION OF *IN VITRO* AGGREGATION OF FULL-LENGTH, HUMAN TDP-43 PROTEIN. **Josephine C. Esposto**, Sanela Maric

L1783-Pos **Board LB15**
SNARE COMPLEX ASSEMBLY AND ITS REGULATION BY COMPLEXIN-1 - A NATIVE MASS SPECTROMETRY STUDY. **Julia Hesselbarth**, Carla Schmidt

L1784-Pos **Board LB16**
DESIGNING SMART PROTEIN MICROPARTICLES FOR DRUG DELIVERY. **Dirk Fennema Galparsoro**, Valeria Vetri, Vito Foderà

Membrane Protein Structures (Boards LB17 - LB18)

L1785-Pos **Board LB17**
STRUCTURE OF THE LIPID MODIFIED WNT IN COMPLEX WITH ITS RECEPTOR WLS. **Rie Nygaard**, Jia Yu, Jonathan Kim, Daniel Ross, Giacomo Parisi, Oliver B. Clarke, David M. Virshup, Filippo Mancia

L1786-Pos **Board LB18**
STRUCTURE AND FUNCTION OF THE *ARABIDOPSIS THALIANA* GLUTAMATE RECEPTOR-LIKE (GLR) CHANNEL. **Marriah N. Green**, Shanti Pal Gangwar, erwan michard, Alex A. Simon, Jose A. Feijo, Alexander I. Sobolevsky

Intrinsically Disordered Proteins (IDP) and Aggregates I (Boards LB19 - LB24)

L1787-Pos **Board LB19**
TUNABLE MULTIPHASE DYNAMICS OF ARGININE AND LYSINE LIQUID CONDENSATES. **Rachel S. Fisher**, Shana Elbaum-Garfinkle

L1788-Pos **Board LB20**
SMALL-MOLECULE SEQUESTRATION OF AMYLOID-BETA AS A DRUG DISCOVERY STRATEGY FOR ALZHEIMER'S DISEASE. **Gabriella T. Heller**, Francesco A. Aprile, Thomas C.T. Michaels, Ryan Limbocker, Michele Perni, Francesco Simone Ruggeri, Benedetta Mannini, Thomas Löhr, Massimiliano Bonomi, Carlo Camilloni, Alfonso De Simone, Isabella C. Felli, Roberta Pierattelli, Tuomas P. Knowles, Michele Vendruscolo

L1789-Pos **Board LB21**
FUS LOW COMPLEXITY DOMAIN FIBRIL STRUCTURE BY CRYO ELECTRON MICROSCOPY AND SOLID-STATE NMR. **Myungwoon Lee**, Ujjayini Ghosh, Kent R. Thurber, Masato Kato, Robert Tycko

L1790-Pos **Board LB22**
MILLISECOND TIME-RESOLVED SOLID-STATE NMR REVEALS A TWO-STAGE MOLECULAR MECHANISM FOR COMPLEX FORMATION OF CALMODULIN AND MYOSIN LIGHT CHAIN KINASE. **Jaekyun Jeon**, Robert Tycko, Wai-Ming Yau

L1791-Pos **Board LB23**
THE ROLE OF PHASE SEPARATION BY NUP98 FUSION ONCOPROTEINS IN LEUKEMIA. **Bappaditya Chandra**, Nicole L. Michmerhuizen, Hazheen Shirnekhi, Michael White, Diana M. Mitrea, Ilaria Iacobucci, Jeffery M. Klco, Charles G. Mullighan, Richard Kriwacki

L1792-Pos **Board LB24**
IDENTIFYING RULES GOVERNING PHASE SEPARATION OF DISORDERED PROTEINS. **Gregory L. Dignon**

Membrane Physical Chemistry (Boards LB25 - LB28)

L1793-Pos **Board LB25**
UNDERSTANDING THE EFFECTS OF IONIZABLE LIPIDS ON A LIPID NANOPARTICLE SURFACE BY COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS. **Sreyoshi Sur**, Yan Xia, Michael Smith

L1794-Pos **Board LB26**
DIVALENT METALS CD AND NI AFFECT THE MEMBRANE PHASE PROPERTIES OF ISOLATED BIOLOGICAL MEMBRANES FROM HUMAN RENAL PROXIMAL TUBULE CELLS. **Kevin Sule**, Wing-Kee Lee, Elmar J. Prenner

L1795-Pos **Board LB27**
AUTOMATED IMAGE ANALYSIS OF MOLECULAR ORGANIZATION ON THE GIANT UNILAMELLAR VESICLES BY FLUORESCENCE INTENSITY TRACE AND DEEP LEARNING. **Il-Hyung Lee**, Selin Ozturk, Sam Passaro, Weitian Wang

L1796-Pos **Board LB28**
THE EFFECTS OF THE COMMON IMAGING AGENT GADOLINIUM ON THE PHYSICAL CHARACTERISTICS OF MODEL MEMBRANES. **Colin H.E. Unruh**, Elmar J. Prenner

Membrane Dynamics (Boards LB29 - LB29)

L1797-Pos **Board LB29**
TITANIUM DIOXIDE AND ZINC OXIDE NANO-MATERIALS CHANGE THE LIPID ORDER OF MODEL MEMBRANES. **Matthew J. Sydor**, Donald S. Anderson, Harmen B.B. Steele, Sandy Ross, Andrij Holian

Exocytosis and Endocytosis (Boards LB30 - LB36)

L1798-Pos **Board LB30**
DETERMINATION OF GEOMETRIC FEATURES THAT DISTINGUISH THE CONSTANT AREA MODEL FROM THE CONSTANT CURVATURE MODEL FOR CLATHRIN-MEDIATED ENDOCYTOSIS. **Rui Ma**, Julien Berro

L1799-Pos **Board LB31**
EXTRACELLULAR VIMENTIN ASSISTS IN SARS-COV-2 HOST CELL INVASION. **Sarthak Gupta**, Maxx Swoger, Alison Patteson, J.M. Schwarz

L1800-Pos **Board LB32**
STAR MICROSCOPY REVEALS DYNAMICS OF CURVATURE FORMATION DURING CLATHRIN-MEDIATED ENDOCYTOSIS IN LIVING CELLS WITH NANOMETER AXIAL RESOLUTION. **Tomasz J. Nawara**, Tejeshwar C. Rao, Alexa L. Mattheyses

L1801-Pos **Board LB33**
CONFORMATIONAL DYNAMICS OF SNARE PROTEINS DURING NSF-MEDIATED DISASSEMBLY. **Katie M. Dunleavy**, Holland Matlock, Richard A. Pfuetzner, Luis A. Esquivies, Giovanni Howells, Bishal Misra, Claire Gething, Axel T. Brunger, Ucheor B. Choi

L1802-Pos **Board LB34**
SINGLE-VESICLE RESOLUTION MEASUREMENT OF NEUROTRANSMITTER SECRETION EVENTS USING HIGH-DENSITY MEA FOR THE RAPID STUDY OF MOLECULAR MANIPULATIONS. **Kevin A. White**, Brian N. Kim

L1803-Pos **Board LB35**
CELL PATTERNING BY SECRETION-INDUCED PLASMA MEMBRANE FLOWS. Veneta Gerganova, Iker Lamas, David M. Rutkowski, Alexander Vještica, Daniela Gallo Castro, Vincent Vincenzetti, **Dimitrios Vavylonis**, Sophie G. Martin

L1804-Pos **Board LB36**
THE EFFECT OF ASSEMBLY AND LOADING METHODS ON THE SIZE DISTRIBUTION AND UPTAKE OF POLY-N-VINYL-2-PYRROLIDONE THIOOCTADECYL POLYMERIC NANOCARRIER. Levi Collin Nelemans, Cristian Pablo Pennisi, Gunna Christiansen, Anna L. Luss, Pavel P. Kulikov, Andrey N. Kuskov, Mikhail I. Shtilman, **Leonid Gurevich**

Calcium Signaling (Boards LB37 - LB42)

L1805-Pos **Board LB37**
FERIC-BASED MAGNETOGENETICS, EVALUATION OF METHODS AND PROTOCOLS IN *IN VITRO* MODELS. **Miriam Hernandez Morales**, Victor Han, Richard Kramer, Chunlei Liu

L1806-Pos **Board LB38**
TRPC6 AND STIM2 REGULATE RETICULAR AND CYTOSOLIC CALCIUM CONTENT IN ESTROGEN RECEPTOR-POSITIVE BREAST CANCER CELLS. **José Sánchez Collado**, Carlos Cantonero, José Javier López, Lucía González Gutiérrez, Ginés María Salido, Juan Antonio Rosado

L1807-Pos **Board LB39**
THE PATHOPHYSIOLOGICAL ROLE OF VASCULAR SMOOTH MUSCLE NCX1 FOR PULMONARY ARTERIAL HYPERTENSION. **Hideaki Tagashira**, Asahi Nagata, Tomo Kita, Satomi Kita, Takahiro Iwamoto

L1808-Pos **Board LB40**
PHOSPHOLAMBAN PENTAMERS AS MOLECULAR NOISE-FILTERS. **Daniel Koch**, Mathias Gautel

L1809-Pos **Board LB41**
ARRHYTHMOGENIC CALMODULIN MUTANT D96V DYSREGULATES NA+-CA2+ NANODOMAINS IN CARDIOMYOCYTE TRANSVERSE TUBULES. **Mikhail Tarasov**, Yusuf Olgar, Alec Miller, Heather Struckman, Jonathan Davis, Sándor Györke, Rengasayee Veeraraghavan, Przemyslaw Radwanski

L1810-Pos **Board LB42**
MICROWAVE ELECTRIC FIELD AT 2.45 GHZ MODULATES THE ß-ADRENERGIC RESPONSE OF HUMAN EMBRYONIC STEM CELL-DERIVED CARDIOMYOCYTES. **Catrin F. Williams**, Catherine Hather, Heungjae Choi, Adrian Porch, Christopher George

Other Channels (Boards LB43 - LB43)

L1811-Pos **Board LB43**
THE ROLE OF PROTEIN FLEXIBILITY AND AN EYRING BARRIER IN THE SELECTIVITY FILTER GATING OF A K^+ CHANNEL. Oliver Rauh, Jennifer Opper, Maximilian Sturm, Nils Drexler, Deborah-Désirée Scheub, Ulf-Peter Hansen, Gerhard Thiel, **Indra Schroeder**

Skeletal and Smooth Muscle Mechanics, Structure, and Regulation (Boards LB44 - LB45)

L1812-Pos **Board LB44**
IN SITU REPLACEMENT OF SLOW SKELETAL MYBP-C. **Rachel Sadler**, Joshua Strom, Samantha P. Harris

L1813-Pos **Board LB45**
REAL-TIME VISUALIZATION OF DUAL COLOR QUANTUM-DOTS LABELED ON MYOSIN HEADS AND RODS REVEALS S2 DOMAIN FLEXIBILITY IN SMOOTH MUSCLE MYOSIN FILAMENTS MOVING ON ACTIN IN VITRO. **Murali Anuganti**, Richard Brizendine, Christine R. Cremo

Bacterial Mechanics, Cytoskeleton, and Motility (Boards LB46 - LB46)

L1814-Pos **Board LB46**
THREE-DIMENSIONAL RECONSTRUCTIONS OF *E. COLI* CELLS REVEAL GEOMETRIC ENRICHMENT OF THE CYTOSKELETAL PROTEIN MREB. **Benjamin P. Bratton**, Zemer Gitai, Joshua W. Shaevitz

Membrane Pumps, Transporters, and Exchangers (Boards LB47 - LB50)

L1815-Pos **Board LB47**
ALLOSTERIC REGULATION OF AN ABC CHOLESTEROL TRANSPORTER VIA THE POLAR RELAY AND THE TRIPLE-HELIX BUNDLE. Bala M. Xavier, Aiman A. Zein, Angelica Venes, Junmei Wang, **Jyh-Yeuan Lee**

L1816-Pos **Board LB48**
TWO AHC MUTATIONS ESTABLISH NA^+-SITE III OF THE NA^+/K^+-ATPASE AS THE SOURCE OF THE SLOW COMPONENT OF THE NA^+-MEDIATED TRANSIENT CURRENTS. **Cristina Moreno Vadillo**, Miguel Holmgren

L1817-Pos **Board LB49**
THE ADENINE NUCLEOTIDE TRANSLOCASE IN THE INTERPLAY BETWEEN ELECTROCHEMICAL COUPLING AND UNCOUPLING IN MITOCHONDRIA. **Juergen Kreiter**, Anne Rupprecht, Sanja Skulj, Zlatko Brkljaca, Kristina Zuna, Mario Vazdar, Elena E. Pohl

L1818-Pos **Board LB50**
ARGININE-SELECTIVE MODULATION OF THE LYSOSOMAL TRANSPORTER PQLC2 THROUGH A GATE-TUNING MECHANISM. Xavier Leray, Rossella Conti, Yan Li, Cécile Debacker, Florence Castelli, François Fenaille, Anselm Zdebik, Michael Pusch, **Bruno Gasnier**

EPR and NMR: Spectroscopy and Imaging (Boards LB51 - LB51)

L1819-Pos **Board LB51**
PROTEOMIC SIGNATURE OF IN VIVO MITOCHONDRIAL FUNCTION. **Fatemeh Adelnia**, Ceereena Ubaida-Mohien, Ruin Moaddel, Michelle Shardell, Alexey Lyashkov, Kenneth W. Fishbein, Miguel A. Aon, Richard G. Spencer, Rafael De Cabo, Luigi Ferrucci

Computational Methods and Bioinformatics (Boards LB52 - LB56)

L1820-Pos **Board LB52**
STRUCTURE-BASED FUNCTIONAL ANALYSIS OF BRCA1 RING DOMAIN VARIANTS: CONCORDANCE OF COMPUTATIONAL MUTAGENESIS, EXPERIMENTAL ASSAY, AND CLINICAL DATA. Majid Masso, **Anirudh Bansal**, Arnav Bansal, Andrea Henderson

L1821-Pos **Board LB53**
STATISTICAL ANALYSIS OF PROTEIN SECONDARY STRUCTURES WITH AN EMPHASIS ON THEIR STATIC AND DYNAMIC CHARACTERISTICS. **Soon Woo Park**, Moon Ki Kim

L1822-Pos **Board LB54**
RECOGNITION OF PROTEINS BY RANDOM FOREST BASED ON NANOPORE SENSING DATA. **Stephane P. Hess**, Jared Houghtaling, Cuifeng Ying, Brandon Bruhn, Olivia Eggenberger, Lars Malmström, Michael Mayer

L1823-Pos **Board LB55**
EPISTASIS AND THE ROLE OF CORRELATED MUTATIONS IN DETERMINING THE FITNESS LANDSCAPE AND ENTRENCHMENT OF DRUG RESISTANCE IN HIV. **Avik Biswas**, Allan Haldane, Ronald M. Levy

L1824-Pos **Board LB56**
ENHANCED GENE FUNCTION ASSIGNMENTS FROM IMPROVED PROTEIN SEQUENCE MATCHING. **Benjamin R. Litterer**

Bioengineering (Boards LB57 - LB60)

L1825-Pos **Board LB57**
CAFFEINE-OPERATED SYNTHETIC MODULES FOR CHEMOGENETIC CONTROL OF PROTEIN ACTIVITIES BY LIFE STYLE. **Tianlu Wang**

L1826-Pos **Board LB58**
ENGINEERING OF A *BONA FIDE* LIGHT-OPERATED CALCIUM CHANNEL. **Lian He**

L1827-Pos **Board LB59**
VERY FAST CAS9 DEACTIVATION. **Roger S. Zou**, Yang Liu, Bin Wu, Taekjip Ha

L1828-Pos **Board LB60**
RAPID ISOLATION OF RARE TARGETS FROM LARGE FLUID VOLUMES USING PARTICLE COUNTING AND SORTING DEVICES. **Tam M. Vu**, Per Niklas Hedde, Margaux Bouzin, Enrico Gratton, Weian Zhao

WEDNESDAY LATE POSTERS

2:00 PM–3:30 PM

Below is the list of late poster presentation for Wednesday.

ODD-NUMBERED BOARDS 2:00 PM–2:45 PM | EVEN-NUMBERED BOARDS 2:45 PM–3:30 PM

Numbers	Category
LB1 - LB6	Protein Structure and Conformation II
LB7 - LB10	Protein-Small Molecule Interactions
LB11 - LB16	Protein Dynamics and Allostery I
LB17 - LB19	Membrane Protein Dynamics
LB20 - LB21	Membrane Protein Folding
LB22 - LB23	Transcription
LB24 - LB27	Protein-Nucleic Acid Interactions
LB28 - LB29	Membrane Active Peptides and Toxins
LB30 - LB34	Membrane Structure
LB35 - LB37	Voltage-gated Na Channels
LB38 - LB42	Ion Channel Regulatory Mechanisms
LB43 - LB44	Actin Structure, Dynamics, and Associated Proteins
LB45 - LB45	Kinesins, Dyneins, and Other Microtubule-based Motors
LB46 - LB48	Cell Mechanics, Mechanosensing, and Motility
LB49 - LB49	Electron Microscopy
LB50 - LB54	Molecular Dynamics
LB55 - LB59	Optical Microscopy and Superresolution Imaging I
LB60 - LB63	Single-Molecule Spectroscopy

Wednesday, February 24

Wednesday Late Posters (Boards LB1 - LB63)

Protein Structure and Conformation II (Boards LB1 - LB6)

L1829-Pos Board LB1
STRUCTURAL CHARACTERIZATION OF THE INTERACTION BETWEEN A_MI-DOMAIN OF THE INTEGRIN MAC-1 (A_MB_2) AND THE CYTOKINE PLEIOTROPHIN. **Hoa Nguyen**, Nataly Podolnikova, Tatiana Ugarova, Xu Wang

L1830-Pos Board LB2
A COMPUTATIONAL STUDY ON THE HYDRATION-SHELL PROPERTIES OF ANTIFREEZE AND NON-ANTIFREEZE. **Akash Deep Biswas**, Vincenzo Barone, Andrea Amadei, Isabella Daidone

L1831-Pos Board LB3
ASSESSING THE EVOLUTIONARY CONSERVATION OF PROTEIN CONFORMATIONAL DIVERSITY USING A NOVEL METRIC BASED ON DIFFERENCE DISTANCE MAPS. **Mallika Iyer**, Lukasz Jaroszewski, Zhanwen Li, Mayya Sedova, Adam Godzik

L1832-Pos Board LB4
INTRINSIC CONFORMATIONAL PREFERENCES OF THE CHARGED AMINO ACIDS IN DISORDERED PROTEINS. **Pete Camacho**, Lance R. English, Steven T. Whitten

L1833-Pos Board LB5
HIGH-PRESSURE NMR REVEALS VOLUME AND COMPRESSIBILITY DIFFERENCES BETWEEN TWO STABLY-FOLDED ARNT PAS-B CONFORMATIONS. **Xingjian Xu**, Donald Gagné, James M. Aramini, Kevin H. Gardner

L1834-Pos Board LB6
THE USE OF STOPPED-FLOW TECHNOLOGY IN BIOPHYSICAL CHARACTERIZATION. **Tom Constable**

Protein-Small Molecule Interactions (Boards LB7 - LB10)

L1835-Pos Board LB7
ELECTROSTATICS REGULATE EPIGALLOCATECHIN-GALLATE EFFECTS ON BOVINE SERUM ALBUMIN AGGREGATION. **Daniele Gulli**, Giuseppe Sancataldo, Caterina Alfano, Bruno Giuseppe Pignataro, Valeria Vetri

L1836-Pos Board LB8
BIOMOLECULAR CONDENSATES OF P53: HOMOTYPIC AND FUNCTIONAL HETEROTYPIC LIQUID-LIQUID PHASE SEPARATION WITH THE HPV E2 MASTER REGULATOR. Silvia Borkosky, Ramón Peralta Martínez, Karen Campos-León, Kevin Gaston, **Gonzalo de Prat-Gay**

L1837-Pos Board LB9
PROBING THE INTER-PROTEIN INTERACTIONS BETWEEN TWO LEADING PROTEIN VACCINE CANDIDATES FROM NONTYPEABLE *HAEMOPHILUS INFLUENZAE*. **Niaya Jackson**, Anna Kasper, Kara Farquharson, Seth Jones, Michael Gleghorn, Ravinder Kaur, Lea Michel

L1838-Pos Board LB10
A FLUORESCENCE POLARIZATION BASED HIGH THROUGHPUT SCREENING METHOD IDENTIFIES MODULATORS OF HUMAN CARDIAC TROPONIN C - TROPONIN I INTERACTION. **Priyanka Parijat**, Laszlo Kondacs, Alexander Alexandrovich, Mathias Gautel, Alexander J.A. Cobb, Thomas Kampourakis

Protein Dynamics and Allostery I (Boards LB11 - LB16)

L1839-Pos Board LB11
UNDERSTANDING THE HIGHER-ORDER DEPENDENCES IN PROTEIN SEQUENCES AND STRUCTURES. **Kejue Jia**, Wen Zhou, Zhao Ren, Pranav Khade, Robert L. Jernigan

L1840-Pos Board LB12
THE GENOTYPE-PHENOTYPE LANDSCAPE OF AN ALLOSTERIC PROTEIN. **David Ross**, Drew S. Tack, Peter D. Tonner, Abe Pressman, Nathanael D. Olson, Sasha F. Levy, Eugenia F. Romantseva, Nina Alperovich, Olga Vasilyeva

L1841-Pos Board LB13
CONFORMATIONAL FOOTPRINT OF ALLOSTERIC MODULATION IN METABOTROPIC GLUTAMATE RECEPTORS. **Arash Foroutan**, Brandon W. Liauw, Hamid Samareh Afsari, Reza Vafabakhsh

L1842-Pos Board LB14
A KINETIC MAP OF SPLICEOSOME ACTIVATION. **Xingyang Fu**, Aaron A. Hoskins

L1843-Pos Board LB15
STRUCTURAL ORIGINS OF PROTEIN CONFORMATIONAL ENTROPY. **Jose Alfredo Caro**, Kathleen G. Valentine, Josh Wand

L1844-Pos Board LB16
A GPU-BASED FORCE-FIELD FITTING PROGRAM AND APPLICATION TO NEW PARAMETERS FOR MODIFIEDAMINO ACIDS. **Kellon A.A. Belfon**, Chuan Tian, Lauren E. Raguette, Lakshan Manathunga, Daniel P. Raleigh, Carlos Simmerling

Membrane Protein Dynamics (Boards LB17 - LB19)

L1845-Pos Board LB17
LINKING FUNCTION TO GLOBAL AND LOCAL DYNAMICS IN AN ELEVATOR TYPE TRANSPORTER BY SINGLE MOLECULE FLUORESCENCE IMAGING OF DYNAMICS AND TRANSPORT. **Didar Ciftci**, Chloe Martens, Vishnu G. Ghani, Scott C. Blanchard, Argyris Politis, Gerard H.M. Huysmans, Olga Boudker

L1846-Pos Board LB18
MULTISCALE SIMULATIONS OF DENGUE VIRUS MORPHOLOGICAL CHANGES AND ANTIBODY INTERACTIONS. **Jan K. Marzinek**, Peter J. Bond

L1847-Pos Board LB19
DYNAMIC ARCHITECTURAL CHANGES IN DESMOSOMES DURING ASSEMBLY AND MATURATION. **Reena R. Beggs**, Tejeshwar C. Rao, William F. Dean, Andrew Kowalczyk, Alexa L. Mattheyses

Membrane Protein Folding (Boards LB20 - LB21)

L1848-Pos Board LB20
INVESTIGATION OF SUBSTANCE PERMEABILITY OF MUTANT BETA-BARREL NANOPORE-FORMING PROTEIN. **Toshiyuki Tosaka**, Koki Kamiya

L1849-Pos Board LB21
SUPR-CM FOR IMPROVED MEASUREMENTS OF ANTIBODY STABILITY. **Alastair Davy**

Transcription (Boards LB22 - LB23)

L1850-Pos **Board LB22**
REAL-TIME, SINGLE-MOLECULE OBSERVATIONS OF CO-TRANSCRIPTIONAL RIBOSWITCH FOLDING. **Catherine E. Scull**, Javier Cabello-Villegas, Adrien Chauvier, Irina Artsimovitch, Nils G. Walter

L1851-Pos **Board LB23**
DEFINING THE DIVERGENT BIOPHYSICAL PROPERTIES OF RNA POLYMERASES I AND II. **Ruth Q. Jacobs**, Zachariah M. Ingram, Aaron L. Lucius, David A. Schneider

Protein-Nucleic Acid Interactions (Boards LB24 - LB27)

L1852-Pos **Board LB24**
MOLECULAR DETERMINANTS OF TRANSLOCATION ON DNA BY THE TRANSCRIPTION-REPAIR COUPLING AND EVOLVABILITY FACTOR MFD. Christiane Brugger, Cheng Zhang, Margaret Suhanovsky, David Kim, Amy Sinclair, Dmitry Lyumkis, **Alexandra M. Deaconescu**

L1853-Pos **Board LB25**
ELUCIDATING THE ROLES OF HISTONE TAILS IN NUCLEOSOME RECOGNITION. **Yunhui Peng**, Shuxiang Li, Alexey V. Onufriev, David Landsman, Anna Panchenko

L1854-Pos **Board LB26**
INTERACTIONS BETWEEN INTRINSICALLY DISORDERED DOMAINS OF NUCLEAR RECEPTORS AND DNA STUDIED WITH SINGLE-MOLECULE OPTICAL TWEEZERS, COMPUTATIONAL SIMULATIONS, AND CELL ASSAYS. **David P. Lohry**, Taylor A. Stevens, Tongye Shen, Elias Fernandez

L1855-Pos **Board LB27**
MEASURING DNA TARGET SEARCH AT THE SINGLE MOLECULE LEVEL. **Kayla J. Oliveira**, Emma E. Stevens, Van Nguyen, Allen C. Price

Membrane Active Peptides and Toxins (Boards LB28 - LB29)

L1856-Pos **Board LB28**
ROLE OF LYS CLUSTERING IN MEMBRANE INTERACTIONS OF CATIONIC ANTIMICROBIAL PEPTIDES. **Shelley He**, Charles M. Deber

L1857-Pos **Board LB29**
BICELLE-INDUCED STRUCTURE OF THE FUSION PEPTIDE OF SARS-COV-2 SPIKE. Rama K. Koppisetti, Yan G. Fulcher, **Steven R. Van Doren**

Membrane Structure (Boards LB30 - LB34)

L1858-Pos **Board LB30**
BINDING EFFECTS OF CALCIUM IONS ON DIFFERENT CELL MEMBRANE MODELS. **Katja Balantic**, Victor Weiss, Günter Allmaier, Peter Kramar

L1859-Pos **Board LB31**
CHOLESTEROL OXIDATION MODULATES THE FORMATION OF LIQUID-ORDERED DOMAINS IN MODEL MEMBRANES. **Paul Smith**, Chris D. Lorenz

L1860-Pos **Board LB32**
OBSERVATION OF GM1 FLIP-FLOP ON CELL-SIZED ASYMMETRIC GM1 LIPOSOMES PREPARED BY NANO-SIZED LIPOSOME FUSION METHOD. **Masato Suzuki**, Koki Kamiya

L1861-Pos **Board LB33**
THE ROLE OF THIXOTROPY IN TREK-1 FORCE TRANSDUCTION. **Scott B. Hansen**, Hao Wang, Nick Petersen

L1862-Pos **Board LB34**
SARS-COV-2 INFECTION THROUGH CHOLESTEROL UPTAKE. **Hao Wang**, Zixuan Yuan, Arif Pavel, Robert Hobson, Scott B. Hansen

Voltage-gated Na Channels (Boards LB35 - LB37)

L1863-Pos **Board LB35**
DETERMINANTS OF CONDUCTANCE OF VOLTAGE GATED SODIUM CHANNEL NA_VMS. **Ada Y. Chen**, Bernard R. Brooks, Ana Damjanovic

L1864-Pos **Board LB36**
QUANTUM MECHANICS, UNIVERSAL SCALING AND FERROELECTRIC HYSTERESIS REGIMES IN THE GIANT SQUID AXON PROPAGATING ACTION POTENTIAL: A PHASE SPACE APPROACH. **Nikola Jurisic**, Fred Cooper

L1865-Pos **Board LB37**
FLECAINIDE BLOCK OF VOLTAGE-GATED SODIUM CHANNELS - STATE-DEPENDENT DRUG-PORE INTERACTIONS. **Akihiko Sunami**, Tatsuo Munakata

Ion Channel Regulatory Mechanisms (Boards LB38 - LB42)

L1866-Pos **Board LB38**
INHIBITION OF FURIN ALTERS CA^{2+} HOMEOSTASIS AND INDUCES MALIGNANT PHENOTYPE REPRESSION IN TRIPLE NEGATIVE BREAST CANCER CELLS. **Carlos Cantonero**, Jose Sanchez Collado, José Javier López, Geraldine Siegfried, Jean Descarpentrie, Tarik Smani, Iker Badiola, Simon Pernot, Serge Evrard, Abdel Majid Khatib, Juan Antonio Rosado

L1867-Pos **Board LB39**
HYDROPHOBIC GATING IN CRAC CHANNEL: A MOLECULAR DYNAMICS SIMULATION STUDY. **Carlo Guardiani**, Alberto Giacomello

L1868-Pos **Board LB40**
LSM12 IS AN NAADP RECEPTOR MEDIATING INTRACELLULAR CALCIUM MOBILIZATION. **Xin Guan**

L1869-Pos **Board LB41**
THE IMPACT OF A TACHYCARDIA-ASSOCIATED MUTATION ON THE REGULATION OF PACEMAKER CHANNEL BY CYCLIC NUCLEOTIDES. **Joanna Xia**, Anson Chan, Michael Murphy, Filip Van Petegem, Eric Accili

L1870-Pos **Board LB42**
EXPANDING WITHOUT EXPLODING: MEASURING AND MODELING THE BIOMECHANICS OF POLLEN HYDRATION. Kari Miller, **Anders E. Carlsson**, Elizabeth Haswell

Actin Structure, Dynamics, and Associated Proteins (Boards LB43 - LB44)

L1871-Pos **Board LB43**
SUBSTITUTIONS Q93H AND E97K IN TROPOMYOSIN TPM2.2 DIFFERENTLY AFFECT REGULATION OF ACTO-MYOSIN INTERACTIONS AND INHIBITION OF ACTIN POLYMERIZATION BY TROPOMODULIN 1. **Joanna Moraczewska**, Malgorzata Sliwinska, Katarzyna Robaszkiewicz, Piotr Wasag

L1872-Pos **Board LB44**
CHIACTS: GENETICALLY ENCODED TOOLS FOR CHEMOGENETIC CONTROL OF F-ACTIN DISASSEMBLY. **Tienhung Lan**, Lian He, Tianlu WANG, Yubin Zhou

Kinesins, Dyneins, and Other Microtubule-based Motors (Boards LB45 - LB45)

L1873-Pos **Board LB45**
COLLECTIVE MOTILITY OF DYNEIN LINEAR ARRAYS BUILT ON DNA NANOTUBES. **Ibusuki Ryota**, Misaki Shiraga, Akane Furuta, Maki Yoshio, Hiroaki Kojima, Kazuhiro Oiwa, Kenya Furuta

Cell Mechanics, Mechanosensing, and Motility (Boards LB46 - LB48)

L1874-Pos **Board LB46**
CELLULAR MEMORY IN EUKARYOTIC CHEMOTAXIS DEPENDS ON THE BACKGROUND CHEMOATTRACTANT CONCENTRATION. **Man Ho Tang**, Richa Karmakar, Aravind Karanam, Haicen Yue, Daniel Lombardo, Brian A. Camley, Alex Groisman, Wouter-Jan Rappel

L1875-Pos **Board LB47**
SPATIOTEMPORAL DYNAMICS OF PIEZO1 LOCALIZATION CONTROLS KERATINOCYTE MIGRATION DURING WOUND HEALING. **Jesse R. Holt**, Wei-Zheng Zeng, Elizabeth L. Evans, Seung-Hyun Woo, Shang Ma, Hamid Abuwarda, Meaghan Loud, Ardem Patapoutian, Medha M. Pathak

L1876-Pos **Board LB48**
CELLS DIFFERENTIALLY ALTER THEIR LOCAL STIFFNESS LANDSCAPE AS ASSESSED USING OPTICAL TWEEZERS ACTIVE MICRORHEOLOGY. **Alicja Jagiello**, Micah Lim, Elliot Botvinick

Electron Microscopy (Boards LB49 - LB49)

L1877-Pos **Board LB49**
NUCLEOTIDE-DEPENDENT POLYMERIZATION INTERFACES IN DRP1. **Paul V. Thomas**, Adam Frost

Molecular Dynamics (Boards LB50 - LB54)

L1878-Pos **Board LB50**
QUANTUM EFFECTS IN PHOTOSYNTHESIS. Preet Sharma, **Maxwell Portman**

L1879-Pos **Board LB51**
DIFFERENTIATING SURFACTANT INTERACTIONS WITH BACTERIAL CELL MEMBRANES: A COMBINED MOLECULAR DYNAMICS AND EXPERIMENTAL STUDY. **Pradyumn Sharma**, Rakesh Vaiwala, Srividhya Parthasarathi, Nivedita Patil, Morris Waskar, Janhavi Raut, Jaydeep Kumar Basu, Ganapathy Ayappa

L1880-Pos **Board LB52**
EXPLORATORY ANALYSIS AND COMPARISON OF BIOMOLECULAR STRUCTURAL ENSEMBLES WITH PENSA. **Martin Vögele**, Ron O. Dror

L1881-Pos **Board LB53**
THERMODYNAMICS AND FREE ENERGY LANDSCAPE OF BAR DOMAIN DIMERIZATION FROM MD SIMULATIONS. **Adip Jhaveri**

L1882-Pos **Board LB54**
MOLECULAR DYNAMICS SIMULATIONS OF F_1-ATPASE WITH GPU SUPERCOMPUTER. **Matthew A. Anderson**, Ricardo A. Matute, Sandor Volkan-Kacso

Optical Microscopy and Superresolution Imaging I (Boards LB55 - LB59)

L1883-Pos **Board LB55**
SPATIAL AND METABOLIC RELATIONSHIPS BETWEEN GUT MICROBES DURING RESISTANT STARCH DEGRADATION. **Aathmaja Anandhi Rangarajan**, Hannah E. Chia, Monica H. Olszewski, Nicole M. Koropatkin, Julie Biteen

L1884-Pos **Board LB56**
DETERMINATION OF ANGULAR FLUCTUATIONS OF THE LOCAL CELL MEMBRANE SLOPE AT HIGH RESOLUTION USING OPTICAL TWEEZERS AND SINGLE PROBE PARTICLE. **Basudev Roy**, Rahul Vaippully, Manoj Gopalakrishnan, Snigdhadev Chakraborty, Vandana Yadav, Saumendra Bajpai

L1885-Pos **Board LB57**
PHASOR-BASED APPROACH ENHANCED BY SUPERVISED MACHINE LEARNING TECHNIQUES FOR COLLAGEN MICRO-ARCHITECTURE CHARACTERIZATION AND AUTOMATIC IMAGE SEGMENTATION. **Riccardo Scodellaro**, Margaux Bouzin, Davide Panzeri, Veronica Remori, Enrico Giampieri, Laura Marongiu, Francesca Mingozzi, Laura D'Alfonso, Maddalena Collini, Francesca Granucci, Giuseppe Chirico, Laura Sironi

L1886-Pos **Board LB58**
LABEL-FREE SUPER-RESOLUTION PHOTO-THERMAL IMAGING ON MELANOMA BIOPSIES. **Mario Marini**, Margaux Bouzin, Amirbahador Zeynali, Laura Sironi, Laura D'Alfonso, Francesca Mingozzi, Francesca Granucci, Giuseppe Chirico, Maddalena Collini

L1887-Pos **Board LB59**
METHODS FOR ESTIMATING AND EVALUATING THE DRIFT OF SINGLE MOLECULE LOCALIZATION MICROSCOPY DATASETS. **Frank J. Fazekas**, Thomas R. Shaw, Sarah L. Veatch

Single-Molecule Spectroscopy (Boards LB60 - LB63)

L1888-Pos **Board LB60**
MECHANICAL STUDIES OF HIGHLY-LUMINESCENT NANOLUC PROTEIN. **Dimitra Apostolidou**, Yue Ding, Piotr E. Marszalek

L1889-Pos **Board LB61**
EXPLORING PHOTOPHYSICAL HETEROGENEITY OF LIGHT HARVESTING COMPLEXES IN MODEL MEMBRANES BY SINGLE MOLECULE SPECTROSCOPY. **Premashis Manna**, Thomas Davies, Madeline Hoffmann, Matthew Johnson, Gabriela Schlau-Cohen

L1890-Pos **Board LB62**
NANOMECHANICS OF DNA SELF-ASSEMBLIES STUDIED BY MASSIVE PARALLEL FORCE SPECTROSCOPY. Michael Penth, Kordula Schellnhuber, Roland Bennewitz, **Johanna Blass**

L1891-Pos **Board LB63**
RESTORING THE DYNAMICS OF SINGLE MOLECULES IN LIVE CELLS FROM NOISY IMAGES WITH DEEP LEARNING. **Fadil Iqbal**, Jing Liu

THURSDAY LATE POSTERS

2:00 PM–3:30 PM

Below is the list of late poster presentation for Thursday.

ODD-NUMBERED BOARDS 2:00 PM–2:45 PM | EVEN-NUMBERED BOARDS 2:45 PM–3:30 PM

Numbers	Category
LB1 - LB5	Protein Stability, Folding, and Chaperones
LB6 - LB11	Intrinsically Disordered Proteins (IDP) and Aggregates II
LB12 - LB12	Ribosomes and Translation
LB13 - LB19	DNA Structure and Dynamics
LB20 - LB21	Protein-Lipid Interactions: Channels
LB22 - LB30	General Protein-Lipid Interactions
LB31 - LB33	Mechanosensation
LB34 - LB41	Voltage-gated K Channels
LB42 - LB43	Ion Channels, Pharmacology, and Disease
LB44 - LB45	Cardiac Muscle Mechanics and Structure
LB46 - LB46	Microtubules, Structure, Dynamics, and Associated Proteins
LB47 - LB50	Cellular, Metabolic and Genetic Networks
LB51 - LB51	Systems and Synthetic Biology
LB52 - LB58	Optical Spectroscopy and Diffraction Techniques
LB59 - LB62	Micro- and Nanotechnology
LB63 - LB65	Biomaterials

Thursday, February 25

Thursday Late Posters (Boards LB1 - LB65)

Protein Stability, Folding, and Chaperones (Boards LB1 - LB5)

L1892-Pos **Board LB1**
THERMAL STABILITY AND HIGHER ORDER STRUCTURE ANALYSIS OF ANTI-CORONAVIRUS VHH ANTIBODY BY CIRCULAR DICHROISM SPECTROSCOPY. **Ai Yamane**, Taiji Oyama, Yasuo Horiguchi, Akikazu Murakami, Satoko Suzuki

L1893-Pos **Board LB2**
FUNCTIONAL COOPERATIVITY BETWEEN THE TRIGGER FACTOR CHAPERONE AND THE CLPXP PROTEOLYTIC COMPLEX. **Walid A. Houry**

L1894-Pos **Board LB3**
REGULATION OF NOCTURNIN PHOSPHATASE ACTIVITY THROUGH THE AMINO TERMINUS. **Anushka Wickramaratne**

L1895-Pos **Board LB4**
TOPOLOGICAL DATA ANALYSIS OF HIGH TEMPERATURE ENZYME ACTIVITY. **Samin Tajik**, Thad Harroun

L1896-Pos **Board LB5**
THE CLPX TRANSLOCASE AND ITS APPLICATION TO THE STUDY OF PROTEIN FOLDING *IN VITRO*. **Iker F. Soto Santarriaga**, Micayla Bowman, Patricia L. Clark

Intrinsically Disordered Proteins (IDP) and Aggregates II (Boards LB6 - LB11)

L1897-Pos **Board LB6**
EARLY EVENTS DURING FUNCTIONAL AMYLOID FORMATION OF THE PARATHYROID HORMONE. **Bruno Voigt**, Jochen Balbach

L1898-Pos **Board LB7**
PHASE SEPARATION OF INTRINSICALLY DISORDERED PROTEIN POLYMERS MECHANICALLY STIFFENS FIBRIN CLOTS. **Ivan Urosev**

L1899-Pos **Board LB8**
A TELL-TALE SIGN OF INTERACTION BETWEEN AMYLOID-B AND APOE IN IPSC-DERIVED NEURONAL STEM CELLS FROM ALZHEIMER'S PATIENTS. Arpan Dey, Uchit Bhaskar, Vicky Vishvakarma, Madhuri Kallianpur, Sreelakshmi C, Kanchan Garai, Odity Mukherjee, **Sudipta Maiti**

L1900-Pos **Board LB9**
HUMANIN INACTIVATES PRO-APOPTOTIC BCL-2 PROTEINS THROUGH A COMMON FIBRIL-FORMING MECHANISM. **Daniel Morris**, Sabrina Johnson, David Kastner, Marie-Paule Strub, Yi He, Christopher K.E. Bleck, Duck-Yeon Lee, Nico Tjandra

L1901-Pos **Board LB10**
CROWDED SOLUTIONS OF IDPS PROBED BY SAXS ALONG WITH ATOMISTIC AND COARSE-GRAINED COMPUTER SIMULATIONS. **Eric Fagerberg**, Linda K. Månsson, Sam Lenton, Marie Skepö

L1902-Pos **Board LB11**
HIGH RESOLUTION STRUCTURAL ANALYSIS OF ALS-ASSOCIATED MUTANT SOD1 INCLUSION BODIES. **Dalia Naser**, Michael Tarasca, Gyana G. Mishra, Tyler G.B. Soule, Harmeen Deol, Elizabeth M. Meiering

Ribosomes and Translation (Boards LB12 - LB12)

L1903-Pos **Board LB12**
THE HIBERNATING RIBOSOME STRUCTURE FROM THE LYME DISEASE PATHOGEN BORRELIA *BURGDORFERI*. **Manjuli R. Sharma**, Swati R. Manjari, Ekansh K. Agrawal, Pooja Keshavan, Ravi K. Koripella, Ashley L. Marcinkiewicz, Yi-Pin Lin, Rajendra K. Agrawal, Nilesh K. Banavali

DNA Structure and Dynamics (Boards LB13 - LB19)

L1904-Pos **Board LB13**
PHYSICO-CHEMICAL PROPERTIES OF THE STRONG TOBACCO SMOKE CARCINOGEN NNK DIAZONIUM ION. **Christos Deligkaris**, David Wahl, Evan Millam

L1905-Pos **Board LB14**
BIOPHYSICAL CHARACTERIZATION AND X-RAY CRYSTALLOGRAPHY OF TELOMERIC G-QUADRUPLEX STRUCTURES FROM*TETRAHYMENA THERMOPHILA*. **Dana Beseiso**, Sawyer McCarthy, Erin Chen, Elizabeth Gallagher, Joanne Miao, Liliya Yatsunyk

L1906-Pos **Board LB15**
SELF-ASSEMBLED GUANOSINE AS SWELLING FISHNETS: DRUG UPTAKE AND RELEASE ASSESSMENT BY FLUORESCENT PROBES. **Alessia Pepe**, Paolo Moretti, Paolo Mariani

L1907-Pos **Board LB16**
WHY CROWDED DNA IS CONDENSED MORE READILY BY NA^+THAN BY K^+. **Yegor S. Kolesnikov**, Ivan Y. Gushchin, Peter A. Zhilyaev, Alexey V. Onufriev

L1908-Pos **Board LB17**
STRUCTURAL AND FUNCTIONAL CHARACTERIZATION OF TELOMERIC REPEAT-CONTAINING RNA (TERRA). **Bok-Eum Choi**, Hui-Ting Lee

L1909-Pos **Board LB18**
GENOME PACKAGING IN BACTERIOPHAGES: THE EFFECT OF DNA - CAPSID INTERACTIONS. **Cecilia Bores Quijano**, Oliver Henrich, B. Montgomery Pettitt, Chuanying Chen

L1910-Pos **Board LB19**
MAKING THE MOST OF DNA MELT CURVES, DATA COLLAPSE WITH AFFINE TRANSFORMATIONS AND CONSEQUENCES OF EXPERIMENTAL DESIGN. **Jacob M. Majikes**, Paul N. Patrone, Robert F. DeJaco, Anthony J. Keasrsley, J. Alexander Liddle

Protein-Lipid Interactions: Channels (Boards LB20 - LB21)

L1911-Pos **Board LB20**
LOCALLY DISTRIBUTED TENSION MD: A RAPID AND SYSTEMATIC APPROACH TO STUDY MECHANICAL ACTIVATION OF MEMBRANE PROTEINS. Rajitha Rajeshwar Tatikonda, Andriy Anishkin, Sergei I. Sukharev, **Juan M. Vanegas**

L1912-Pos **Board LB21**
STRUCTURAL AND FUNCTIONAL CHARACTERIZATION OF A HUMAN POTASSIUM CHANNEL, KIR2.1. **Dania Zuniga**, Said Bendahhou, Françoise Bonneté, Tahar Bouceba, Alexandre Pozza, Renaud Wagner, Catherine Venien-Bryan

General Protein-Lipid Interactions (Boards LB22 - LB30)

L1913-Pos **Board LB22**
ROLE OF CHOLESTEROL IN THE FUNCTION OF CYSTIC FIBROSIS CORRECTORS AND POTENTIATORS. **Dorna Ravamehr-Lake**, Charles M. Deber

L1914-Pos **Board LB23**
DIFFERENT A-CASEIN ASSOCIATION STATES AND THEM INTERACTION WITH LIPID VESICLES TO STUDY ANTIBACTERIAL ACTIVITY. **Sara Anselmo**, Giuseppe Sancataldo, Valeria Vetri

L1915-Pos **Board LB24**
ROLE OF CHOLESTEROL ON ALPHA-CRYSTALLIN BINDING TO PHOSPHATIDYLSERINE MEMBRANE. **Geraline Trossi-Torres**, Raju Timsina, Nawal Khadka, Laxman Mainali

L1916-Pos **Board LB25**
PIEZO1-INDUCED MEMBRANE CURVATURE CAUSES RAFT ASSOCIATION AND ALTERATION OF THE CHOLESTEROL DISTRIBUTION BETWEEN LEAFLETS. **Amanda Buyan**, David Allender, Siewert J. Marrink, Michael Schick, Ben Corry

L1917-Pos **Board LB26**
EFFECTS OF DIFFERENT MEMBRANE LIPIDS ON THE FUNCTIONS OF THE LC3/GABARAP AUTOPHAGY PROTEIN FAMILY MEMBERS. Marina N. Iriondo, Asier Etxaniz, Yaiza R. Varela, Uxue Ballesteros, Javier H. Hervas, L. Ruth Montes, **Félix M. Goñi**, Alicia Alonso

L1918-Pos **Board LB27**
EFFECTS OF MEMBRANE OXIDATION ON THE ACTIVITY OF THE 1A HUMAN SEROTONIN RECEPTOR. **Ahmed ElBaradei**, Zikai Wang, Noah Malmstadt

L1919-Pos **Board LB28**
THE MITOCHONDRIA-TARGETED PEPTIDE SS-31 MODULATES THE THERMOTROPIC PROPERTIES OF CARDIOLIPIN-CONTAINING MODEL MEMBRANES. **Emily Ng**, Jeffrey D. Tamucci, Heidi Erlandsen, Hazel H. Szeto, Nathan N. Alder

L1920-Pos **Board LB29**
THE INFLUENCE OF CHOLESTEROL IN A MYELIN-LIKE BILAYER ON MYELIN BASIC PROTEIN. **Jennica Träger**, Annette Meister, Gerd Hause, George Harauz, Dariush Hinderberger

L1921-Pos **Board LB30**
STEPWISE AND COOPERATIVE MEMBRANE BINDING AND TETHERING BY TANDEM C2 DOMAINS OF EXTENDED SYNAPTOTAGMINS REVEALED BY OPTICAL TWEEZERS. **Jinghua Ge**, Xin Bian, Lu Ma, Yiying Cai, Yanghui Li, Yasunori Saheki, Erdem Karatekin, Pietro De Camilli, Yongli Zhang

Mechanosensation (Boards LB31 - LB33)

L1922-Pos **Board LB31**
SOFT POLYDIMETHYLSILOXANE-SUPPORTED LIPID-BILAYERS FOR STUDYING T-CELL INTERACTIONS. **Anna H. Lippert**, Ivan Dimov, Alex Winkel, Jane Humphrey, James T. McColl, Kevin Chen, Ana M. Santos, Edward Jenkins, Kristian Franze, Simon Davis, David Klenerman

L1923-Pos **Board LB32**
RESPONSE OF FIBRIN NETWORK TO APPLIED OSCILLATION DETECTED BY PIXEL INTENSITY FLUCTUATIONS. **Qingda Hu**, Tessa A. Morris, Anna Grosberg, Alex J. Levine, Elliot Botvinick

L1924-Pos **Board LB33**
SUBSTRATE STIFFNESS MODULATES INTEGRIN BETA-1 RECRUITMENT AT CELL-MATRIX ADHESIONS IN AGED VASCULAR SMOOTH MUSCLE CELLS. Krishna Raj Ojha, Samuel Padgham, Song Yi Shin, Frida Leon Olmedo, Christopher R. Woodman, **Andreea Trache**

Voltage-gated K Channels (Boards LB34 - LB41)

L1925-Pos **Board LB34**
RILUZOLE INHIBITS K_V4.2 CHANNELS ACTING ON THE CLOSED AND CLOSED INACTIVATED STATES. David O. Pacheco Rojas, Mayra Delgado Ramírez, Kathya Villatoro, Eloy G. Moreno Galindo, Aldo Rodríguez-Menchaca, José A. Sánchez Chapula, **Tania Ferrer Villada**

L1926-Pos **Board LB35**
ENDOCANNABINOID-LIKE COMPOUNDS AS MODULATORS OF THE CARDIAC KV7.1/KCNE1 CHANNEL. **Irene Hiniesto Iñigo**, Siri Lundholm, Johan E. Larsson, Sara I. Liin

L1927-Pos **Board LB36**
EXPLORING HERG GATING THROUGH MD SIMULATIONS AND NETWORK ANALYSIS. **Flavio Costa**

L1928-Pos **Board LB37**
TWO MEMBERS OF THE KCNQ FAMILY OF VOLTAGE-GATED POTASSIUM CHANNELS SHOW UNIQUE RESPONSES TO MODULATION BY POLYUNSATURATED FATTY ACIDS. **Damon J.A. Frampton**, Johan E. Larsson, Sara I. Liin

L1929-Pos **Board LB38**
FUNCTIONAL UPREGULATION OF HERG1B ION CHANNELS BY DIRECT INTERACTIONS WITH HERG1A N-TERMINAL PAS AND N-LINKER DOMAINS. **Ashley A. Johnson**, Taylor R. Crawford, Matt C. Trudeau

L1930-Pos **Board LB39**
BK CHANNEL MODULATION BY THE GAMMA-SUBUNIT POSITIVELY CHARGED PEPTIDES VIA ELECTROSTATIC INTERACTIONS WITH THE CALCIUM-BOWL SITE. **Guanxing Chen**, Qin Li, Jiusheng Yan

L1931-Pos **Board LB40**
EVALUATION OF AN AUTISM-ASSOCIATED KCNMB2 VARIANT ON BK CHANNEL PROPERTIES. **Hans J. Moldenhauer**, Andrea L. Meredith

L1932-Pos **Board LB41**
OPTIMIZATION OF A HIGH-THROUGHPUT LIPOSOMES FLUORESCENCE ASSAY FOR THE SCREENING OF DRUG LIBRARIES WITH POTENTIAL THERAPEUTIC USE FOR ION CHANNEL DYSFUNCTION RELATED DISEASES. **Emily Marian Ostermaier**, Doris M. Cortes, Luis G. Cuello

Ion Channels, Pharmacology, and Disease (Boards LB42 - LB43)

L1933-Pos **Board LB42**
TOXIN AUTORESISTANCE IN POISON BIRDS AND FROGS IS NOT ROOTED IN TARGET SODIUM CHANNEL MUTATIONS. **Fayal Abderemane-Ali**, Nathan D. Rossen, Megan E. Kobiela, Robert A. Craig II, Catherine E. Garrison, Lauren A. O'Connell, J. Du Bois, John P. Dumbacher, Daniel L. Minor

L1934-Pos **Board LB43**
PATHOLOGICAL STATE OF MALIGNANT HYPERTHERMIA ASSOCIATED R615C MUTATION REVEALED USING CRYO-EM. **Omid Haji-Ghassemi**

Cardiac Muscle Mechanics and Structure (Boards LB44 - LB45)

L1935-Pos Board LB44
IMPROVING MITOCHONDRIAL FUNCTION IN DCM PATIENTS WITH ELAMIPRETIDE INDUCES SARCOMERIC PROTEIN MODIFICATIONS THAT IMPROVE CONTRACTILE FUNCTION. **Tova Ceccato**

L1936-Pos Board LB45
ENHANCED THICK FILAMENT STIFFNESS CONTRIBUTES TO LENGTH DEPENDENT ACTIVATION. **Bradley M. Palmer**, Martin M. LeWinter

Microtubules, Structure, Dynamics, and Associated Proteins (Boards LB46 - LB46)

L1937-Pos Board LB46
THE ASTRIN-SKAP COMPLEX LUBRICATES THE KINETOCHORE-MICROTUBULE INTERFACE. **Miquel Salvans**, Renaldo Sutanto, Sophie Dumont

Cellular, Metabolic and Genetic Networks (Boards LB47 - LB50)

L1938-Pos Board LB47
URN MODELS FOR STOCHASTIC GENE EXPRESSION. **Krishna Choudhary**, Atul Narang

L1939-Pos Board LB48
IN SILICO EVOLUTION OF GENE REGULATORY NETWORKS OF CELL SIZE CONTROL. **Félix Proulx-Giraldeau**, Paul François, Jan Skotheim

L1940-Pos Board LB49
QUANTIFICATION OF AAV CAPSID LOADING FRACTIONS - A COMPARATIVE STUDY. **Akash Bhattacharya**, Shawn Sternisha, Ross VerHeul, Kyle Curry, Jian Zhang, Sean Kelly, Jeffrey Hung

L1941-Pos Board LB50
DOWNSTREAM BIOEFFECTS ON HL-60 LEUKEMIA CELLS AFTER MEMBRANE PERFORATION BY MICROBUBBLE-MEDIATED ULTRASOUND EXPOSURE. **Xinxing Duan**, Jennifer M. Wan, Alfred C. Yu

Systems and Synthetic Biology (Boards LB51 - LB51)

L1942-Pos Board LB51
PROTON GRADIENTS FROM LIGHT-HARVESTING E. COLI TRIGGER DNA CORTEX FORMATION FOR SYNTHETIC CELLS. **Kevin Jahnke**, Noah Ritzmann, Julius Fichtler, Anna Nitschke, Yannik Dreher, Tobias Abele, Götz Hofhaus, Ilia Platzman, Rasmus Schröder, Joachim P. Spatz, Daniel Müller, Kerstin Göpfrich

Optical Spectroscopy and Diffraction Techniques (Boards LB52 - LB58)

L1943-Pos Board LB52
CRYSTALLIZATION OF APOA1 AND APOE4 NANOLIPOPROTEIN PARTICLES AND INITIAL XFEL-BASED STRUCTURAL STUDIES. **Megan L. Shelby**, Deepshika Gilbile, Thomas D. Grant, William J. Bauer, Natalia Crespo, Angela C. Evans, Wei He, Pontus Fischer, Alke Meents, Tonya L. Kuhl, Matthias Frank, Matthew A. Coleman

L1944-Pos Board LB53
CAPABILITIES AT THE GM/CA@APS STRUCTURAL BIOLOGY FACILITY AT THE ADVANCED PHOTON SOURCE. **Nagarajan Venugopalan**, Michael Becker, Stephen Corcoran, Dale Ferguson, Mark Hilgart, David J. Kissick, Oleg Makarov, Craig M. Ogata, Sergey Stepanov, Qingping Xu, Shenglan Xu, Robert F. Fischetti, Janet L. Smith

L1945-Pos Board LB54
DESCRIBING M3, M6, M9 REFLECTIONS WITH FOURIER SERIES REPRESENTATION OF MYOSIN DENSITIES. **Bradley M. Palmer**

L1946-Pos Board LB55
STUDY OF LIPID PHASE TRANSITIONS IN MAMMALIAN OOCYTES USING RAMAN SPECTROSCOPY OF ISOTOPICALLY LABELED LIPIDS. **Konstantin A. Okotrub**, Svetlana V. Ranneva, Valentina I. Mokrousova, Sergei Y. Amstislavsky, Nikolay V. Surovtsev

L1947-Pos Board LB56
MORE FULL WAVELENGTH RANGE CALIBRATIONS FOR CIRCULAR DICHROISM SPECTROSCOPY. **Curtis W. Meuse**

L1948-Pos Board LB57
BEYOND ALPHA-HELIX AND BETA-SHEET: EXPANDING THE ROLE OF CIRCULAR DICHROISM. **Pavel Ryzhov**

L1949-Pos Board LB58
RAPID REACTION MONITORING WITH MID-IR DUAL-COMB SPECTROSCOPY - 440 SPECTRA / SECONDS IN SITU STOPPED-FLOW. **Florian Eigenmann**

Micro- and Nanotechnology (Boards LB59 - LB62)

L1950-Pos Board LB59
ENHANCED ELECTROOSMOSIS IN PROPYLENE CARBONATE SALT SOLUTIONS. **Wilfred S. Russell**

L1951-Pos Board LB60
STUDY OF THE HYDROPHOBIC FORMATION OF LIPID DENDRIMER NANOPARTICLES USED AS A POTENTIAL STRATEGY TO ENCAPSULATE STATINS DRUGS USED FOR ISCHEMIC BRAIN STROKE TREATMENT. **Alondra Lopez Colon**, Luis M. Negron Rios, Dalvin D. Mendez-Hernandez

L1952-Pos Board LB61
CONTROLLING OF NANOPARTICLE DYNAMICS DURING NANOPORE TRANSLOCATION USING THERMAL-RESPONSIVE POLYMER. **Katsuyuki Enomoto**, Hiromu Ishii, Bokusui Nakayama, Keiko Esashika, Toshiharu Saiki

L1953-Pos Board LB62
TWO-COLOR OPTICAL NANOPORE MEASUREMENT TO VISUALIZE OVERALL TRANSLOCATION PROCESS OF DNA. **Hiromu Ishii**, Katsuyuki Enomoto, Toshiharu Saiki

Biomaterials (Boards LB63 - LB65)

L1954-Pos Board LB63
DESIGNING A HOUSEHOLD WATER FILTRATION SYSTEM SUITABLE FOR DEVELOPING COUNTRIES: USE OF LIMITED RESOURCES TO SUPPORT HOUSEHOLD WATER MANAGEMENT. **Aryanna A. Wiggins-Gamble**

L1955-Pos Board LB64
EMERGENCE OF A SMOOTH INTERFACE FROM GROWTH OF A DENDRITIC NETWORK AGAINST A MECHANOSENSITIVE CONTRACTILE MATERIAL. **Medha Sharma**, Jiang Tao, Tony Harris

L1956-Pos Board LB65
THE THICKNESS OF SOFT HYDROGEL SUBSTRATES MODIFIES BONE MARROW STROMAL CELL MORPHOLOGY AND MIGHT AFFECT DIFFERENTIATION. **Maria Luisa Hernandez Miranda**, Nicholas D. Evans, Bram Sengers

FRIDAY LATE POSTERS

2:00 PM–3:30 PM

Below is the list of late poster presentation for Friday.

ODD-NUMBERED BOARDS 2:00 PM–2:45 PM | EVEN-NUMBERED BOARDS 2:45 PM–3:30 PM

Numbers	Category
LB1 - LB6	Protein Structure and Conformation III
LB7 - LB11	Protein Dynamics and Allostery II
LB12 - LB16	Enzyme Function, Cofactors, and Post-translational Modifications
LB17 - LB21	Intrinsically Disordered Proteins (IDP) and Aggregates III
LB22 - LB23	RNA Structure and Dynamics
LB24 - LB24	Membrane Fusion and Non-Bilayer Structures
LB25 - LB26	Membrane Receptors and Signal Transduction
LB27 - LB28	Cardiac, Smooth, and Skeletal Muscle Electrophysiology
LB29 - LB29	TRP Channels
LB30 - LB35	Ligand-gated Channels
LB36 - LB39	Cardiac Muscle Regulation
LB40 - LB41	Myosins
LB42 - LB43	Cytoskeletal Assemblies and Dynamics
LB44 - LB48	Mitochondria in Cell Life and Death
LB49 - LB49	Molecular and Cellular Neuroscience
LB50 - LB52	Neuroscience
LB53 - LB57	Optical Microscopy and Superresolution Imaging II
LB58 - LB59	Force Spectroscopy and Scanning Probe Microscopy
LB60 - LB63	Biosensors

Friday, February 26

Friday Late Posters (Boards LB1 - LB63)

Protein Structure and Conformation III (Boards LB1 - LB6)

L1957-Pos Board LB1
PRELIMINARY STRUCTURAL CHARACTERIZATION OF C. ELEGANS HOX TRANSCRIPTION FACTOR LIN-39 AND ITS MUTANT LIN-39(CCC16). Kristina Lodahl, Rebecca Surma-Heine, Andrea K. Kalis, **Kim N. Ha**

L1958-Pos Board LB2
DIFFERENCES IN LOCAL STRUCTURAL DYNAMICS OF BACTERIAL TRANSCRIPTION ELONGATION COMPLEX UPON BINDING OF NUSG AND RFAH TRANSCRIPTION FACTORS. **Jose Alejandro Molina Ramirez**, Steve Silletti, Irina Artsimovitch, Elizabeth A. Komives, Cesar A. Ramirez-Sarmiento

L1959-Pos Board LB3
STRUCTURAL AND FUNCTIONAL CHARACTERIZATION OF THE BESTROPHIN2 ANION CHANNEL. **Aaron P. Owji**

L1960-Pos Board LB4
THE CONFORMATION AND DYNAMICS OF LRRK2 THAT ARE ASSOCIATED WITH ITS ACTIVATION AND PARKINSON'S DISEASE PATHOGENESIS. **Jui-Hung Weng**, Phillip C. Aoto, Steven Silletti, Susan S. Taylor

L1961-Pos Board LB5
TROPOELASTIN: BIOMECHANICS IN DIFFERENT PHYSIOLOGICAL ENVIRONMENTS AND MECHANISMS OF ELASTICITY. **Chengeng Yang**, Anna Tarakanova

L1962-Pos Board LB6
USING GRAPHS TO ANALYZE SARS-COV2 SPIKE MUTATIONS. **Pedro D. Manrique**, Rory C. Henderson, Srirupa Chakraborty, Kien Nguyen, Rachael A. Mansbach, Kevin J. Wiehe, Bette Korber, Sandrasegaram Gnanakaran

Protein Dynamics and Allostery II (Boards LB7 - LB11)

L1963-Pos Board LB7
A FREE-ENERGY LANDSCAPE APPROACH REVEALS THE GLOBAL CONFORMATIONAL DYNAMICS OF PROTEASOMAL ATPASES. Rui Fang, Jason Hon, Mengying Zhou, **Ying Lu**

L1964-Pos Board LB8
ROLE OF PROTEIN-SUGAR INTERACTIONS IN MAINTENANCE OF PROTEIN DYNAMICS AND FUNCTION IN SMALL LEUCINE-RICH PROTEOGLYCANS. **Rajas M. Rao**, Marc Guéroult, Nicolas Belloy, Jean-Marc Crowet, Stéphane Brézillon, Manuel Dauchez, Stephanie Baud

L1965-Pos Board LB9
EFFECT OF NON-NATIVE INTERACTIONS ON CLP ATPASE-MEDIATED DEGRADATION OF KNOTTED PROTEINS REVEALED USING MOLECULAR DYNAMICS. **Hewafonsekage Yasan Y. Fonseka**, Alex Javidi, Luiz F.L. Oliveira, Cristian Micheletti, George Stan

L1966-Pos Board LB10
ALLOSTERIC MODULATION OF ACE2 CONFORMATION UPON BINDING TO SPIKE PROTEIN OF SARS-COV-2. **Duen-Shian Wang**, Hamed S. Hayatshahi, Jin Liu

L1967-Pos Board LB11
A TALE OF TWO BINDING PATHWAYS: MOLECULAR DYNAMICS STUDY OF THE GID1A-GA-GAI SYSTEM. **John Patterson**, Charles C. David, Marion Wood, Xiaolin Sun, Donald J. Jacobs, Erik H.A. Rikkerink

Enzyme Function, Cofactors, and Post-translational Modifications (Boards LB12 - LB16)

L1968-Pos Board LB12
GENTISATE 1,2-DIOXYGENASE FROM *ASPERGILLUS NIGER*: FUNCTIONAL CHARACTERIZATION AND IDENTIFICATION OF RESIDUES CRITICAL FOR CATALYSIS. **Patrick Semana**, Justin Powlowski

L1969-Pos Board LB13
STRUCTURAL BASIS FOR LONG CHAIN ISOPRENOID SYNTHESIS BY THE HUMAN *CIS*-PRENYLTRANSFERASE COMPLEX. **Michal Lisnyansky Bar-El**

L1970-Pos Board LB14
COMPARISON OF THE PEROXIDASE FUNCTION OF GLOBIN-DEHALOPEROXIDASES-A AND B. **Nikhila Kashyap Dhanvantari Madhuresh**, Stefan Franzen

L1971-Pos Board LB15
A SYNTHETIC MINIMAL PATHWAY FOR THE REGENERATION OF REDOX COFACTORS. Michele Partipilo, **Eleanor J. Ewins**, Bert Poolman, Dirk Jan Slotboom

L1972-Pos Board LB16
A COMPUTATIONAL STUDY OF THE ROLE OF THE E3 LIGASE IN THE UBIQUITINATION REACTION. **Jay-Anne Johnson**

Intrinsically Disordered Proteins (IDP) and Aggregates III (Boards LB17 - LB21)

L1973-Pos Board LB17
MEDIN OLIGOMER MEMBRANE PORE FORMATION: A POTENTIAL MECHANISM OF VASCULAR DYSFUNCTION. **Scott M. Younger**, Hyunbum Jang, Hannah A. Davies, Martin Niemiec, Joe G.N. Garcia, Ruth Nussinov, Raymond Q. Migrino, Jillian Madine, Fernando M. Teran Arce

L1974-Pos Board LB18
HIV-TAT PROTEIN GENERATES ITS OWN HIGHLY TOXIC AMYLOID FIBRILS. **Alina L. Popescu Hategan**, Edward L. Mertz, Joseph Steiner, Elena Karnaukhova, Mario A. Bianchet, Lisa Henderson, Olav Zimmerman, Jeff Kowalak, Emilios K. Dimitriadis, Avindra Nath

L1975-Pos Board LB19
INHIBITION OF TAU PROTEIN AGGREGATION USING SMALL MOLECULE INHIBITORS AND IMMUNOTHERAPIES. **Sanela Martic**

L1976-Pos Board LB20
THE SARS-COV-2 NUCLEOCAPSID PROTEIN IS DYNAMIC, DISORDERED, AND PHASE SEPARATES WITH RNA. **Jasmine Cubuk**, Jhullian J. Alston, Jeremias J. Incicco, Sukrit Singh, Melissa D. Stuchell-Brereton, Michael D. Ward, Maxwell I. Zimmerman, Neha Vithani, Daniel Griffith, Jason A. Wagoner, Gregory Bowman, Kathleen B. Hall, Andrea Soranno, Alex S. Holehouse

L1977-Pos Board LB21
CHARACTERIZING VESICLE BINDING AFFINITY AND CONFORMATION OF POST-TRANSLATIONALLY MODIFIED ALPHA-SYNUCLEIN BY SINGLE MOLECULE FLUORESCENCE SPECTROSCOPY. **Buyan Pan**, E. James Petersson, Elizabeth Rhoades

RNA Structure and Dynamics (Boards LB22 - LB23)

L1978-Pos Board LB22
INVESTIGATING THE DYNAMICS OF POLY(ADP-RIBOSE) BY SINGLE MOLECULE FLUORESCENCE RESONANCE ENERGY TRANSFER (SMFRET). **Mohsen Badiee**

L1979-Pos **Board LB23**
SEQUENCE-INDUCED BENDING IN DOUBLE-STRANDED RNA: SIMILARITIES AND DIFFERENCES FROM DOUBLE-STRANDED DNA. **Alberto Marin-Gonzalez**, Clara Aicart-Ramos, Mikel Marin-Baquero, Alejandro Martin-Gonzalez, J G Vilhena, Ruben Perez, Fernando Moreno-Herrero

Membrane Fusion and Non-Bilayer Structures (Boards LB24 - LB24)

L1980-Pos **Board LB24**
CALCIUM IONS PROMOTE THE MEMBRANE INSERTION OF SARS-COV AND SARS-COV-2 FUSION PEPTIDES AND ORDERING OF LIPIDS IN THE HOST MEMBRANE. **Susan Daniel**

Membrane Receptors and Signal Transduction (Boards LB25 - LB26)

L1981-Pos **Board LB25**
THE EFFECT OF ROD OUTER SEGMENT STRUCTURE ON PHOTON RESPONSE AMPLITUDE AND KINETICS. **Polina Geva**, Giovanni Caruso, Colin J. Klaus, Heidi E. Hammo, Vsevolod V. Gurevich, Emmanuele DiBenedetto, Clint L. Makino

L1982-Pos **Board LB26**
CLATHRIN-COAT ASSEMBLY REGULATES THE HETERODIMERIC ORGANIZATION OF INTEGRINS. **Xiaoting Liu**, Salma Jalal, Cheng-han Yu

Cardiac, Smooth, and Skeletal Muscle Electrophysiology (Boards LB27 - LB28)

L1983-Pos **Board LB27**
THERMO-ELECTRICAL COUPLING IN CARDIAC DYNAMICS. **Alessandro Loppini**, Alessio Gizzi, Alessandro Barone, Christian Cherubini, Flavio Fenton, Simonetta Filippi

L1984-Pos **Board LB28**
SEX-BASED DIFFERENCES IN CARDIAC CONDUCTION AND ACTION POTENTIAL DURATION ARE EXACERBATED BY MAGNESIUM AND MANNITOL. **Madeline Arpin**, Grace Blair, William Adams, Mark Joseph, Steven Poelzing

TRP Channels (Boards LB29 - LB29)

L1985-Pos **Board LB29**
CARDIOVASCULAR CHARACTERIZATION OF TRANSGENIC MICE OVEREXPRESSING DOMINANT NEGATIVE TRPM7 MUTANT. **Takayuki Nemoto**, Hideaki Tagashira, Tomo Kita, Tomohiro Numata, Satomi Kita, Takahiro Iwamoto

Ligand-gated Channels (Boards LB30 - LB35)

L1986-Pos **Board LB30**
Q277 STABILIZES THE CASIC1 DESENSITIZED STATE BY MEDIATING A HYDROGEN BOND NETWORK AND RETARDS RECOVERY FROM DESENSITIZATION. **Megan Miaro**, Matthew L. Rook, Tyler A. Couch, Dana Kneisley, David M. MacLean, Maria Musgaard

L1987-Pos **Board LB31**
THE CARDIAC RYANODINE RECEPTOR IS PERMEABLE TO ZN^{2+}. Jana Gaburjakova, **Marta Gaburjakova**

L1988-Pos **Board LB32**
AMPA RECEPTOR - NON-COMPETITIVE ANTAGONIST BINDING FREE ENERGY COMPUTED WITH AN AUTOMATED THERMODYNAMIC INTEGRATION PROTOCOL. **Evgeny Gutkin**, Chamali Narangoda, Maria G. Kurnikova

L1989-Pos **Board LB33**
A PIKFYVE INHIBITOR, YM201636, DIRECTLY INHIBITS HUMAN TPC2 CHANNEL. **Canwei Du**, Jiusheng Yan

L1990-Pos **Board LB34**
A BACKDOOR STRATEGY FOR THE FUNCTIONAL AND STRUCTURAL CHARACTERIZATION OF THE HERG CHANNEL. **Victoria Alejandra Cuello**, Doris M. Cortes, Luis G. Cuello

L1991-Pos **Board LB35**
ANTIBODY-ASSISTED CRYSTALLOGRAPHY OF MEMBRANE PROTEINS. **Stephanie Lynn Boston**, Doris M. Cortes, Luis G. Cuello

Cardiac Muscle Regulation (Boards LB36 - LB39)

L1992-Pos **Board LB36**
THE STRUCTURE OF THE NATIVE CARDIAC THIN FILAMENT AT SYSTOLIC CA^{2+} LEVELS. Cristina M. Risi, Ian Pepper, Betty Belknap, Howard D. White, J. Renato D. Pinto, Prescott B. Chase, **Vitold E. Galkin**

L1993-Pos **Board LB37**
REDUCED EXPRESSION OF CMYBP-C IN LEFT ATRIA RELATIVE TO LEFT VENTRICLE OF CAT AND MICE HEARTS. **Julie Fan**, Rachel Sadler, Samantha Harris

L1994-Pos **Board LB38**
THE INTERACTION OF THE CARDIAC MYOSIN BINDING PROTEIN C C2 IG DOMAIN WITH F-ACTIN. **Cristina M. Risi**, Malay Patra, Betty Belknap, Howard D. White, Samantha Harris, Vitold E. Galkin

L1995-Pos **Board LB39**
THIN FILAMENT COOPERATIVITY AND ATTACHED CROSS-BRIDGES HAVE SYNERGISTIC EFFECTS ON MYOCARDIAL CONTRACTILE DYNAMICS. **Sarah A. Kosta**, Kenneth S. Campbell

Myosins (Boards LB40 - LB41)

L1996-Pos **Board LB40**
CHARACTERIZATION OF A FILOPODIA MYOSIN MOTOR. **Casey Eddington**, Margaret A. Titus

L1997-Pos **Board LB41**
CONFORMATIONAL DISTRIBUTIONS OF ISOLATED MYOSIN MOTOR DOMAINS ENCODE THEIR MECHANOCHEMICAL PROPERTIES. **Artur Meller**, Justin Porter, Maxwell I. Zimmerman, Michael J. Greenberg, Gregory Bowman

Cytoskeletal Assemblies and Dynamics (Boards LB42 - LB43)

L1998-Pos **Board LB42**
MATRIX STIFFNESS AND BLOOD PRESSURE TOGETHER REGULATE VASCULAR SMOOTH MUSCLE CELL PHENOTYPE SWITCHING AND COFILIN DEPENDENT PODOSOME FORMATION. **Brian Hon Man Sit**, Zhen Feng, Ioannis Xanthis, Emilie Marhuenda, Simona Zingaro, Cathy Shanahan, Gareth E. Jones, Cheng-Han Yu, Thomas Iskratsch

L1999-Pos Board LB43
NANOSCALE ORGANIZATION OF ACTIN FILAMENTS IN THE RED BLOOD CELL MEMBRANE SKELETON. **Velia M. Fowler**, Roberta Nowak, Haleh Alimohamadi, Padmini Rangamani

Mitochondria in Cell Life and Death (Boards LB44 - LB48)

L2000-Pos Board LB44
PERMEABILITY TRANSITION CURRENTS AT THE LEVEL OF THE WHOLE MITOCHONDRION. **Maria A. Neginskaya**, Evgeny V. Pavlov

L2001-Pos Board LB45
BUTYRATE REVERSES CYPD-MEDIATED MPTP OPENING PHENOTYPES IN MOUSE MYOFIBERS. **Ang Li**, Xuejun Li, Jianxun Yi, Jingsong Zhou

L2002-Pos Board LB46
MITOCHONDRIAL OUTER MEMBRANE TRANSPORTER PROTEIN (TSPO) INHIBITOR PK11195 PROTECTS AGAINST CELL DEATH ONLY IF APPLIED AT REPERFUSION: SUCCINATE-MEDIATED MECHANISM OF ACTION. Lea K. Seidlmayer, Benjamin J. Hanson, Phung N. Thai, Saul Schaefer, Donald M. Bers, **Elena N. Dedkova**

L2003-Pos Board LB47
BUTYRATE IMPROVES MITOCHONDRIAL BIOGENESIS OF AN ALS CELLULAR MODEL. **Xuejun Li**, Ang Li, Jianxun Yi, Yanan Vickery, Jingsong Zhou

L2004-Pos Board LB48
MITOCHONDRIAL DEFECT EXACERBATES MUSCLE MEMBRANE FRAGILITY AT NMJ IN ALS SKELETAL MUSCLE. Jianxun Yi, Ang Li, Xuejun Li, **Jingsong Zhou**

Molecular and Cellular Neuroscience (Boards LB49 - LB49)

L2005-Pos Board LB49
ELECTROPHYSIOLOGICAL CHARACTERIZATION OF IPSC-DERIVED CORTICAL NEURONS USING AUTOMATED PATCH CLAMP. **Kadla R. Rosholm**, Pin-Fang Chen, Daniel R. Sauter, Anders Lindqvist, Taylor E. Forman, Sean A. Dwyer, Cindy Yang, Elizabeth D. Buttermore

Neuroscience (Boards LB50 - LB52)

L2006-Pos Board LB50
BIOPHYSICAL MODELING OF *C. ELEGANS* NERVOUS SYSTEM: FROM SINGLE CURRENTS UP WHOLE-NEURONS MODELS. **Martina Nicoletti**, Alessandro Loppini, Letizia Chiodo, Viola Folli, Giancarlo Ruocco, Simonetta Filippi

L2007-Pos Board LB51
COMPUTATIONAL STUDY OF FACTORS AFFECTING THE SPEED AND TIMING OF CONDUCTION IN THE MYELINATED AUDITORY AXON WITH RANVIER NODES. **Jun Xu**

L2008-Pos Board LB52
THE RAPID DIFFERENTIATION AND MATURATION OF NAV 1.7, 1.8, 1.9 AND TRPV1 EXPRESSING, ELECTROPHYSIOLOGICALLY ACTIVE HUMAN INDUCED PLURIPOTENT STEM CELL DERIVED NOCICEPTORS. **Vincent Truong**, Aleyah Goins, Sascha Alles, Patrick Walsh

Optical Microscopy and Superresolution Imaging II (Boards LB53 - LB57)

L2009-Pos Board LB53
SIMULTANEOUS PHASOR FLIM AND SHG IN VIVO IMAGING TO QUANTIFY METABOLIC AND ARCHITECTURAL CHANGES ASSOCIATED WITH UVA-INDUCED SKIN CANCER. **Michael G. Nichols**, Kelsey A. Jackson, Connor J. Kalhorn, Cecilia M. Myers, Thien Q. Tran, George J. Varghese, Daniel H. Wood, Laura A. Hansen

L2010-Pos Board LB54
MOLECULAR RESOLUTION NANOSCOPIC IMAGING OF THE SPATIAL DUAL ROLE OF ODF2 IN THE MAMMALIAN DISTAL AND SUBDISTAL APPENDAGES. **Ting-Jui Chang**, Jung-Chi Liao, Ya-Tien Fang, Tony Yang

L2011-Pos Board LB55
MATRIX - AN ARRAY-BASED DETECTOR FOR BACKGROUND REDUCTION IN STED MICROSCOPY. **Mary Grace M. Velasco**, Frederic Weidling, Gero Schloetel, Joern Heine, Karsten Bahlmann, Matthias Reuss

L2012-Pos Board LB56
SECOND AND THIRD HARMONIC GENERATION MICROSCOPIC IMAGING ON SOME NOVEL BIOLOGICAL TISSUES. **Gregory S. Harms**, Hermann Götz, Jeffrey A. Stratford, Mona K. Roesler, Madhusudhan Thati, Michael J. Schmeisser, Krishnaraj Rajalingam

L2013-Pos Board LB57
DESMOSOMAL CADHERIN ORGANIZATION REVEALED BY FLUORESCENCE POLARIZATION MICROSCOPY. **William F. Dean**, Alexa L. Mattheyses

Force Spectroscopy and Scanning Probe Microscopy (Boards LB58 - LB59)

L2014-Pos Board LB58
SINGLE-MOLECULE MANIPULATION OF MACROMOLECULES ON MEMBRANES USING HIGH-RESOLUTION OPTICAL TWEEZERS. **Yukun Wang**

L2015-Pos Board LB59
ATOMIC FORCE MICROSCOPY REVEALS CHANGES IN CELLULAR STRUCTURE INDUCED BY THE CHEMOTHERAPEUTIC DRUGS. **Lina A. Alhalhooly**, Babak Mamnoon, Jiha Kim, Sanku Mallik, Yongki Choi

Biosensors (Boards LB60 - LB63)

L2016-Pos Board LB60
BIOPHYSICAL PRINCIPLES OF BIOMACROMOLECULES DETECTION USING PIEZOCERAMIC BIOSENSOR. **Assel I. Akhmetova**, Igor V. Yaminsky

L2017-Pos Board LB61
IMAGING AND SENSING USING FLUORESCENT NANOPARTICLES IN THE NIR WINDOW. **Gili Bisker**

L2018-Pos Board LB62
PARALLEL NANOPORE SENSING PLATFORM WITH HIGH-BANDWIDTH. **Jiajun Wang**, Yi-Lun Ying, Yi-Tao Long

L2019-Pos Board LB63
SPATIAL PROFILING OF MRNA TRANSCRIPTS WITH SPECTRAL AND FLUORESCENCE LIFETIME IMAGING MICROSCOPY. **Jesus Flores**, Alexander Vallmitjana, Joshua Gu, Tam M. V

Exhibit Dates and Times

Tuesday, February 23 ..... 10:00 AM – 5:00 PM
Wednesday, February 24 ..... 10:00 AM – 5:00 PM
Thursday, February 25 ..... 10:00 AM – 5:00 PM
Friday, February 26 ..... 10:00 AM – 5:00 PM

Exhibitor Scavenger Hunt

Light up the Leaderboard! Complete as many Scavenger Hunt questions as possible and see your name rise to the top! You will find QR codes within each exhibitor's profile on the event website. Scan the QR code, answer the question, and earn points. The top two-point earners will win a prize. The Scavenger Hunt ends on Friday, February 26, at 5:00 PM. The winners will be announced on BPS' Social Media account shortly after the meeting ends on February 26. Winners will be contacted directly and mailed their prize upon the conclusion of the Virtual Annual Meeting.

Exhibitor Presentations

Exhibitor Presentations will take place throughout the Virtual Annual Meeting, Tuesday – Friday.
View pages 122-127 for detailed descriptions.

Tuesday, February 23

11:30 AM – 12:00 PM	Mad City Labs Inc
1:30 PM – 2:00 PM	Bruker
3:30 PM – 4:00 PM	Nikon Instruments Inc
4:00 PM – 4:30 PM	Horiba Scientific

Wednesday, February 24

11:30 AM – 12:00 PM	Bruker
1:30 PM – 2:00 PM	Leica Microsystems
3:30 PM – 4:00 PM	LUMICKS
4:00 PM – 4:30 PM	Carl Zeiss Microscopy LLC

Thursday, February 25

11:30 AM – 12:00 PM	Nanion Technologies
1:30 PM – 2:00 PM	Andor Technology
3:30 PM – 4:00 PM	Oxford Instruments NanoAnalysis
4:00 PM – 4:30 PM	Molecular Devices

Friday, February 26

1:30 PM – 2:00 PM	Curi Bio

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**As of January 8, 2020*

Tuesday February 23

11:30 AM – 12:00 PM

Mad City Labs Inc

From iSCAT to SCATTIRSTORM: Adventures in Single-Molecule Microscopy

I will describe the design and application of two multi-modal microscopes built around the Mad City Labs RM21® single molecule microscope. The first system combines Interferometric Scattering (iSCAT) microscopy, developed by Philipp Kukura's lab, together with Total Internal Reflection Dark-Field (TIRDM). By labeling kinesin-1 motors on one head with a 30-nm gold nanoparticle, we were able to track motor stepping at 1 kHz temporal resolution and 1-2 nm spatial precision. This allowed us to clarify previously uncovered features of kinesin stepping. In collaboration with Luke Rice, we extended this system to understanding microtubule dynamics by labeling tubulin dimers with 20-nm gold nanoparticles and observing these tubulin reversibly binding at the plus-ends of growing microtubules. These tools have the potential to be applied broadly to single-molecule studies to increase the temporal resolution beyond what is traditionally accessible by fluorescence, while still maintaining the spatial resolution provided by point-spread function fitting. In the second part of the talk, I will describe our progress on a multi-modal microscope that we are using for a DOE-funded project to study the mechanism of cellulose degradation by cellulases for bioenergy applications. In particular, we have optimized the ability to combine Interference Reflection Microscopy (IRM) to image cellulose micro- and nanofibers with TIRF to simultaneously image fluorescently-labeled cellulase enzymes degrading the cellulose.

Speaker
William Hancock, Department of Biomedical Engineering, Pennsylvania State University

1:30 PM – 2:00 PM

Bruker

Introduction to Super-Resolution Multiplexed Imaging Applications Using the Vutara VXL Platform For Single-Molecule and Widefield Imaging

This talk will introduce the next generation of the Vutara imaging platform, the VXL. While the VXL has been designed and optimized for single molecule localization microscopy, most current methods for super resolution microscopy are limited due to the limited number of dyes compatible with single molecule based super resolution techniques. This talk presents methods for imaging a series of consecutive targets within a sample using single molecule localization microscopy integrated with a software-controlled automated microfluidics system for probe multiplexing. Probe multiplexing allows for the imaging of more than four different targets within a cell. During this talk we will show examples using oligoSTORM and DNA-PAINT methods. OligoSTORM allows for the direct tracing of chromosomes within cells. We will show the three-dimensional trajectory of a multiplexed oligoPAINT labeled chromosome in individual human fibroblast cells using the Vutara platform. We will also show DNA-PAINT based single molecule localization data for antibody labeled targets in cell culture. We will also show how the Vutara can be used for ORCA, a widefield imaging technique that has been developed for high throughput sequential labelling of chromosome targets for generating 3D image data and single cell chromosome conformation maps (similar to Hi-C type data). The VXL with integrated fluidics and SRX software provides a powerful suite of tools for simultaneous imaging, localization, visualization and statistical analysis of multiplexed data.

Speaker
Robert Hobson, Applications Scientist, Bruker

3:30 PM – 4:00 PM

Nikon Instruments Inc

Using the Nikon Ti2 Inverted Platform as an Optical Bench

Flexibility and modularity are core principles underlying Nikon's imaging systems and components. In this presentation, we will discuss innovative solutions from Nikon that are designed to maximize flexibility and enable easy customization of both home-built microscopes and fully turn-key commercial systems. Learn how the Eclipse Ti2 with its expandable structure, multiple input and output ports, and easy access to the back-aperture plane can be used as an optical bench. Furthermore, Nikon's wide range of modular illumination devices from TIRF to photo-stimulation can be custom-combined for your unique application. For those requiring full access to the optical path, Nikon also offers the Ti2-Hardware Development Kit for introducing completely custom components. We will also discuss Nikon's latest objectives utilizing new immersion media and featuring industry-leading numerical aperture and working distance.

Speaker
Ian Ross, Senior Biosystems Applications Manager, Nikon Instruments Inc

4:00 PM – 4:30 PM

Horiba Scientific

Rapid, Optical Technique For Sensitive Characterization and Differentiation of OTC Canine Vaccines

The pharmaceutical industry increasingly relies on spectroscopy for quality assurance and has established, and conforms to, USP (United States Pharmacopeia) regulations. While some spectroscopic approaches (NIR, FT-IR and Raman) are common, the adoption of fluorescence spectroscopy has lagged, even though it has high specificity and sensitivity in many analyses in demand, and is conveniently amenable to chemometrics analysis.

We present identification and validation of "unknown" samples with 100% certainty based on A-TEEM fluorescence analysis of Solo-Jec brand canine vaccines from Boehringer Ingelheim VetMedica: Spectra-5, Spectra-6, Spectra-9, and Spectra-10, containing 5, 6, 9 and 10 vaccine combinations, respectively of coronavirus, hepatitis, adenovirus, parainfluenze, leptospirae, parvovirus, etc. A key consideration upon an established vaccine product release is specificity. Analytical techniques need to characterize the final product, and must also differentiate between it and all others made at the facility. The 3-D fluorescence molecular fingerprints of these vaccines were subjected to chemometric analysis through PARAFAC classification as well as XGBOOST discriminant analysis. The "most probable prediction" of unknown samples with 100% certainty was substantiated by the generated confusion matrix supporting the A-TEEM fluorescence claim to be a powerful addition to the arsenal of validation techniques. Two lots for each vaccine were measured on one instrument and were validated with a different lot, instrument and operator. The data analysis approaches used were each able to differentiate between the vaccine products. Even Spectra-9 and Spectra-10, that differ ONLY by a coronavirus component based on publicly available SDS data, were readily distinguished.

Fluorescence EEMs (Excitation-Emission Matrix) solve the longstanding issue of imperfect quantification (a result of the Inner Filter Effect) by directly incorporating a UV spectrophotometer in the fluorometer. This allows the simultaneous acquisition in situ of a UV/VIS/NIR-absorbance spectrum for the real-time Inner Filter Effect (IFE) correction of the fluorescence spectrum, improving quantification accuracy and extending the usable range of concentrations over which quantification can be performed. A-TEEM (Absorbance Transmission Excitation Emission Matrix) is fully validatable using United States Pharmacopeia monograph USP <853>, given that the novel aspect of simultaneous acquisition of the UV/VIS/NIR absorbance spectrum for IFE correction is fully compatible with validation protocols. This spectroscopic approach provides a complete and traceable optical fingerprint for liquid samples that performs a similar role to chromatographic methods, and compared to other spectroscopic methodologies is faster, less expensive and can operate in production environments.

Speaker
Karoly Csatorday, Business Development Manager, Horiba Scientific

Wednesday, February 24

11:30 AM – 12:00 PM

Bruker

Bruker's BioAFM Nano-Toolkit for Investigation of Mechanics, Structures and Dynamic Processes in Life Science

The ability of atomic force microscopy (AFM) to obtain three-dimensional topography images of biomolecules and complexes with nanometer resolution, and optical tweezers (OT) to measure sub-piconewton molecular forces under near-physiological conditions remains unmatched by other single molecule techniques. JPK BioAFM has developed the new NanoWizard® 4 XP and NanoRacer AFM's, and Nanotracker2 (NT2) optical tweezers to set the bar even higher in these areas. The NW4XP is capable of high-speed study of the time-resolved dynamics associated with cellular processes; Nanoracer is designed for studying single molecule dynamics at 50 frames/sec; and NT2 can measure intra/inter molecular forces with multiple laser/trap options (up to 10 mW). With the latest scanner technologies inbuilt into NW4XP, NT2 and their compact design also allows full integration of AFM and OT into advanced commercially available light microscopy techniques. This seminar will focus on how the advances in Bruker's latest BioAFM can be applied to study a wide-range of biological samples, from individual biomolecules to mammalian cells and tissues in real-time, in-situ experiments. We will present examples of how we are able to resolve the nanoscale structure of individual biomolecules at high-speed scan rates (150 - 5000 Hz), follow the dynamic reorganization of the membrane-associated cytoskeleton of living cells at high-temporal and high-spatial resolution, and automatically map the topography of cell cultures across the entire area of the microscope stage. We will also introduce our new scanning electrochemical microscopy (SECM) module and discuss the full suite of BioAFM modes and accessories for studying the nanomechanical properties of cells and tissues, including direct correlation of multiparametric, quantitative AFM and super-resolution (STED) datasets.

Speaker
Samrat Dutta, Sales Applications Scientist, Bruker

1:30 PM – 2:00 PM

Leica Microsystems

High Photon-Count Rate FCS and STED-FCS to Study Diffusion Dynamics in Live Cells

Investigating diffusion dynamics of proteins and small molecules has become a routine measurement all across the life sciences, chemistry and physics. It provides valuable insights into reaction dynamics, oligomerization, molecular interactions or cellular (membrane) heterogeneities [1]. Fluorescence correlation spectroscopy (FCS) is a versatile tool to determine diffusion dynamics in membranes (2D diffusion) and solution or the cytoplasm (3D diffusion). Measuring the intensity fluctuations over time due to the diffusion of molecules through the observation volume is the basis for FCS. Temporal autocorrelation of the signal allows for the calculation of the autocorrelation curve which provides insights into the underlying dynamics as well as the concentration of the observed species [2]. Until now, the concentration regime for reliable measurements has been limited by the detection electronics which could not efficiently and accurately time-tag photons at high photon-count rates. This restricted the range of measurable fluorophore concentrations and data quality of the FCS recordings, especially in combination with super-resolution stimulated emission depletion (STED)-FCS.

In this talk, we will show the applicability and reliability of FCS at high photon-count rates (average intensities of more than 1 MHz and concentrations higher than 1 µM) using novel detection equipment based on hybrid detectors, namely HyD SMDs, and real-time gigahertz sampling of the photon stream using the Leica SP8 STED FALCON FCS implementation [3]. By measuring the diffusion of fluorophores in solution and cytoplasm of live cells, as well as in model and cellular membranes, we show that accurate diffusion and concentration measurements are possible in these previously inaccessible high photon count regimes on a turn-key instrument. This may reduce the bias when performing live cell measurements where varying expression levels occur routinely and increases the experimental flexibility. In STED-FCS data quality suffers from the fluorescence depletion and can be greatly improved by using higher confocal count rates. The presented data show a path towards robust FCS and STED-FCS measurements in living cells.

Speakers
Giulia Ossato, Product Manager, Leica Microsystems
Julia Roberti, Product Manager, Leica Microsystems
Falk Schneider, University of Oxford

[1] E. Sezgin et al., "Measuring nanoscale diffusion dynamics in cellular membranes with super-resolution STED–FCS," Nat. Protoc., vol. 14, no. 4, pp. 1054–1083, Apr. 2019.

[2] J. Lackowicz, Principles of Fluorescence Spectroscopy, Third. Boston, MA: Springer US, 2006.

[3] F.Schneider et al., "High photon count rates improve the quality of super-resolution fluorescence fluctuation spectroscopy," J. Phys D: Appl. Phys., vol. 53, no. 16, 2020

3:30 PM – 4:00 PM

LUMICKS

Correlative Force–Fluorescence Measurements to Reveal the Dynamic Life of Single Biomolecules: Latest Technology Advancements by LUMICKS, and Latest Findings on Protein Disaggregation by Professor Sander Tans

To decipher complex molecular interactions, you need to be able to observe a biological process from multiple points of view. Using LUMICKS' groundbreaking C-Trap® Optical Tweezers – Fluorescence & Label-free Microscopy, you can simultaneously visualize individual molecules in real time and measure dynamic biological processes in great detail.

During our webinar, we will reveal how our latest technology development, the Trap Distance Lock, allows you to measure biomolecular equilibrium dynamics with unprecedented stability over extremely long periods of time. This new feature offers the ultimate system stability that enables you to capture the rarest, fastest, and smallest conformational changes that underlie the energy landscapes of biomolecules.

After a brief introduction by LUMICKS, we are honored to give the floor to our invited speaker Prof. Sander Tans who will present his work on polypeptide loop extrusion using correlative force–fluorescence measurements. Re-dissolving protein aggregates is crucial to cells, but the molecular basis has remained unknown. Using combined optical tweezers and single-molecule fluorescence detection, Prof. Tans and his team showed that the disaggregase ClpB extrudes loops of protein chains through its central pore, and hence forcibly extracts protein chains from aggregates. The data reveal notable processivity, power, step-dynamics, and switching between translocation modes. Protein disaggregation can thus be highly deterministic and energy-driven process, while polypeptide loop extrusion may be exploited by other systems including p97/cdc48.

Speakers
Olivier Heyning, CEO and Founder, LUMICKS
Aida Llauró Portell, Senior Application Scientist, LUMICKS
Sander Tans, AMOLF and Delft University of Technology, The Netherlands

4:00 PM – 4:30 PM

Carl Zeiss Microscopy LLC

Discovering the Subcellular Dynamics of Life with ZEISS Lattice Lightsheet 7

In order to best understand the world around us it is necessary to observe microscopic specimins in as natural a state as possible. This requires a transition from imaging fixed to live specimins and expanding from 2D to 3D model organisms. The drive towards live-cell imaging over long timeframes and at high volume speeds brings new challenges. There is evidence that traditional imaging techniques can influence the behaviour of specimins due to phototoxicity, thus affecting the integrity of the results.

The most influential technological breakthroughs which address these challenges have been modifications to the shape of the excitation light. Classical laser-based imaging approaches utilize a gaussian excitation beam which is focussed to a spot or a sheet and scanned as required to excite the sample. As an alternative approach, bessel beams have been combined to introduce a structured pattern to the beam profile. The resulting 'lattice' of light has many benefits for live imaging. The most notable are a reduction of light exposure due to significant improvement in signal to noise while maintaining high resolution and optical sectioning. With lattice-lightsheet microscopy it is possible to capture dynamics at previously unreachable combinations of acquisition speed and resolution over hours and even days.

This talk will describe how the ZEISS Lattice Lighsheet 7 makes long-term volumetric imaging of living cells with subcellular resolution possible without having to change your standard sample preparation protocols to accomdate the instrument. With automatic alignment and easy acquisition workflows, lattice light-sheet imaging is now as accessible as using a standard inverted microscope.

Join us for this webinar to learn how ZEISS Lattice Lightsheet 7 allows you to discover the subcellular dynamics of life.

Speaker
Renée Dalrymple, Product Marketing Manager – Life Sciences Lattice Line, Carl Zeiss Microscopy LLC

Thursday, February 25

11:30 AM – 12:00 PM

Nanion Technologies

Automated Electrophysiology For Any Kinetics: Ion Channels & Transporters

Ion channels and transporters are important physiological and pharmacological targets. Electrophysiology remains the gold standard for studying these important targets and automation of the technique ensures higher throughput is achieved whilst maintaining high data quality. In this virtual symposium, Nanion Technologies provides two case studies where automated patch clamp (APC) or solid-supported membrane (SSM)-based electrophysiology devices were used in different applications. After a short greeting by Dr. Niels Fertig (CEO), Nanion Technologies will welcome two exceptional speakers, Dr Nina Braun (University of Copenhagen) and Dr. Matthias Quick (Columbia University).

Dr. Nina Braun presents recent work, with focus on establishing a high-throughput protocol to conduct functional and pharmacological investigations of non-canonical amino acids (ncAA)-containing hASIC1a (human acid-sensing ion channel 1a) variants in transiently transfected mammalian cells. Incorporation of ncAAs can endow proteins with novel functionalities, such as crosslinking or fluorescence. Function of these variants in ion channels can be studied with great precision using standard electrophysiology, but this approach is typically labor intensive and low throughput. During the study, three different photocrosslinking ncAAs were introduced into 103 positions and the function of the resulting 309 variants was assessed with SyncroPatch 384i automated patch-clamp platform, demonstrating that the approach is efficient and versatile, as it is amenable to assessing even complex pharmacological modulation by peptides. The data show that the acidic pocket is a major determinant for current decay and live-cell crosslinking provides insight into the hASIC1a-psalmotoxin-1 interaction. Overall, this protocol aims to enable future APC-based studies of ncAA-containing ion channels in mammalian cells.

Next, Dr. Matthias Quick is focusing on the study of ion-dependent transporters with special emphasis on Na+ or H+-coupled symporters. Whereas flux studies with radiolabeled solutes use the target protein reconstituted in proteoliposomes provided a wealth of information, the determination of the thermodynamically-coupled solute transport-associated flux of H+ or Na+ has been challenging. By using the SURFE2R N1 SSM platform, his team was able to quickly collect data of solute transport-associated flux of co-transported ions across the membrane of proteoliposomes containing different target proteins. Additionally, with SURFE2R technology it is possible to collect data for a full kinetic characterization of a target protein such as its dependence on substrate and ion concentrations, pH, and potential essential additives, as well as its substrate recognition profile. The SURFE2R system also enables the use of a wide range of substrates that are readily commercially available, avoiding the use of radiolabeled compounds.

Speakers
Nina Braun, Post-Doctoral Fellow, Department of Drug Design and Pharmacology, University of Copenhagen
Matthias Quick, Associate Professor of Neurobiology (Psychiatry), Columbia University Medical Center (CUMC)

1:30 PM – 2:00 PM

Andor Technology

SRRF-Stream+ - A Flexible and Effective Solution For Real-Time and Live Cell Super-Resolution Microscopy

Much of the inner workings of the cell are hidden from view below the classical diffraction limit of light-based imaging microscopy. Super-resolution techniques such as STORM, PALM, STED and SIM have smashed past this barrier and have helped enable cell biology to be studied in considerably more detail.

However, there are limitations to these techniques especially when considering live cell imaging. Super-resolution techniques may require costly microscopy equipment, high illumination intensities, long acquisition times or specialised fluorophores. SRRF (Super-resolution Radial Fluctuations) offers an alternative software-based approach that counters many of these limitations (Gustafsson et al 2016).

Specifically, it allows for super resolution at low illumination intensities, using standard fluorophores on a conventional microscope. Understandably SRRF has become widely used. One development of SRRF is SRRF-Stream. This version is exclusive to Andor Technology and optimizes GPU processing to unlock real-time live super-resolution from a microscope.

We now present an updated version of SRRF-Stream called "SRRF-Stream+" which allows for improvements in the image quality over the original version of SRRF-Stream. We also show that SRRF-Stream+ can be used on Andor Sona back-illuminated sCMOS cameras having previously been available solely on Andor iXon EMCCD cameras. These new developments add to the previous benefits of SRRF-Stream, making it an even more flexible and useful part of the microscopists imaging toolbox.

Speaker
Alan Mullan, Product Application Specialist – Microscopy Cameras, Andor Technology

3:30 PM – 4:00 PM

Oxford Instruments NanoAnalysis

Multi-Colour Electron Microscopy: Using Energy Dispersive X-ray Spectrometry to Image and Analyse Biological Samples

The visualisation and analysis of life science samples has been a challenge throughout the history of electron microscopy. Biological sample preparation and the absence or addition of contrasting agents often play a key role in the development of imaging methodology. But the signals generated in an electron microscope are mostly underutilised by biologists. While energy dispersive x-ray spectrometry (EDS) has been used in materials science for many decades, sample stability and detector sensitivity have prevented a broader adoption in life sciences until recently [1]. Multi-colour electron microscopy (MCEM) combines elemental information about samples produced using EDS with ultrastructural electron data, providing a powerful and informative imaging technique [2].

MCEM addresses key research topics for the biological electron microscopist. What is it, where is it and how much? Using examples from biomedical research, animal cells and tissues, and plant cell biology, this talk will demonstrate how the addition of elemental maps to electron images contributes key information that could be used for a variety of biological imaging applications, such as region of interest profiling or automated segmentation of volumetric data). EDS is not only a powerful imaging tool, providing accurate identification of stains, labels, and ultrastructural features, but it can also be used to conduct analysis on the relative quantities of a wide range of elements, providing compositional data on native elements and exogenous features.

Speaker
Louise Hughes, Product Manager Life Science, Oxford Instruments

[1] Pirozzi, N.M., Hoogenboom, J.P. and Giepmans, B.N., 2018. ColorEM: analytical electron microscopy for element-guided identification and imaging of the building blocks of life. Histochemistry and cell biology, 150(5), pp.509-520.

[2] Scotuzzi, M., Kuipers, J., Wensveen, D.I., De Boer, P., Hoogenboom, J.P. and Giepmans, B.N., 2017. Multi-color electron microscopy by element-guided identification of cells, organelles and molecules. Scientific reports, 7(1), pp.1-8.

4:00 PM – 4:30 PM

Molecular Devices

Streamlining Electrophysiology Data Acquisition and Analysis in Ion Channel Study with Axon pCLAMP 11 Software

Axon pCLAMP™ 11 software suite provides ion channel researchers with greater capability in electrophysiology data acquisition and analysis. Recent updates to this include an improved Protocol Editor, which allows the user to more easily create complex experimental protocols with many command stimulations, as well as a new Batch Analysis feature which streamlines analysis of multiple data sets. In this webinar, Dr. Jeffrey Tang will highlight these and other new features in pCLAMP 11 to streamline the data acquisition and analysis in your ion channel study, and how this software package allows you to perform more experiments and obtain more data in your electrophysiology research.

Speaker
Jeffrey Tang, Senior Application Scientist, Molecular Devices

Friday, February 26

1:30 PM – 2:00 PM

Curi Bio

Bioengineering the Cell Environment for More Mature and Predictive 2D and 3D Models

Cells in the body use a variety of cues (structural, mechanical, electrochemical, etc.) from the extracellular matrix (ECM) to develop and mature physiologically. These influential cues help regulate a broad spectrum of processes such as cell signaling, division, and differentiation. Many in vitro platforms seek to combine and incorporate these cues into the cell's microenvironment but often fail, suffering from lack of reproducibility and incompatibility with other well-established end-point assays.

Here, we demonstrate biomimetic in vitro platforms capable of reliably reproducing these essential cues. These platforms markedly improve the structural and functional development of a variety of cell types, including stem cells, cardiomyocytes, muscle cells, and more. These cutting-edge strategies can be deployed in both 2D and 3D model systems for high-throughput assessment of metabolism, electrophysiology, and contractility. We describe how the differentiation of stem cells can be enhanced by providing a more biomimetic culture environment, with a particular focus on iPSC-derived cardiomyocytes and skeletal muscle cells. Further, we highlight how an active mechanical environment combined with aligned cell-nanotopography cues improves adhesion, signaling, and polarity across many cell applications. Finally, we demonstrate how to scale these technologies to 3D organoid systems, and how these approaches can improve the development of in vitro disease models to support the discovery of new therapies.

Speaker
Hamed Ghazizadeh, Product Manager, Curi Bio

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