Wednesday, February 29, 2012

Daily Program Summary

All rooms are located in the SAN DIEGO CONVENTION CENTER unless noted otherwise.

8:00 AM–12:00 PM	**Career Center**	**Room 26B**
8:00 AM–3:00 PM	**Child Care**	**Marriott, Rancho Santa Fe**
8:00 AM–3:00 PM	**Poster Viewing**	**Hall FGH**
8:00 AM–3:30 PM	**Family Room**	**Room 29D**
8:15 AM–10:15 AM	**Symposium: Myosin Binding Protein-C: A Modulator of Cardiac Contractility** *Roger Craig, University of Massachusetts Medical School, Chair* MODULATING CONTRACTION BY BINDING OF MYBP-C TO ACTIN. *Roger Craig* DYNAMIC REGULATION OF CONTRACTION BY CARDIAC MYOSIN BINDING PROTEIN-C *Samantha Harris* CARDIAC MYOSIN BINDING PROTEIN-C PHOSPHORYLATION, CONTRACTILE FUNCTION AND CARDIOPROTECTION. *Sakthivel Sadayappan* CARDIAC MYOSIN BINDING PROTEIN C PHOSPHORYLATION IN HUMAN CARDIAC DISEASE. *Jolanda van der Velden*	**Ballroom 20A**
8:15 AM–10:15 AM	**Symposium: Materials Science Meets Biology** *Sangeeta Bhatia, Massachusettts Institute of Technology, Chair* ENGINEERING COOPERATIVE NANOSYTEMS. *Sangeeta Bhatia* CO-OPTING MOORE'S LAW: VACCINES AND MEDICINES MADE FROM A WAFER. *Joseph M. DeSimone* STUDIES IN THE THREE-DIMENSIONAL WORLD OF A CANCER COMMUNITY OF CELLS. *Robert Austin* ENGINEERING OF POLYMERIC NANOPARTICLES FROM MEDICAL APPLICATIONS. *Omid C. Farokhzad*	**Ballroom 20D**
8:15 AM–10:15 AM	**Platform: Emerging Single Molecule Techniques**	**Ballroom 20BC**
8:15 AM–10:15 AM	**Platform: Protein-Nucleic Acid Interactions**	**Room 24ABC**
8:15 AM–10:15 AM	**Platform: Voltage-gated Na Channels**	**Room 25ABC**
8:15 AM–10:15 AM	**Platform: Membrane Fusion**	**Room 29ABC**
8:15 AM–10:15 AM	**Platform: Membrane Transporters & Exchangers II**	**Room 30ABC**
8:15 AM–10:15 AM	**Platform: Protein Structure**	**Room 31ABC**
10:30 AM–11:15 AM	**Coffee Break**	**Hall FGH**
10:30 AM–12:30 PM	**Poster Presentations and Late Posters**	**Hall FGH**
1:00 PM–3:00 PM	**Symposium: Dynamics of G-Protein Coupled Receptors** *David Farrens, Oregon Health & Science University, Chair* ACTIVATING MUTATIONS AND ALLOSTERIC MODULATORS: EFFECTS ON GPCR STRUCTURE AND CONFORMATIONAL DYNAMICS. *David L. Farrens* FROM HIGH-RESOLUTION RHODOPSIN MEMBRANE STRUCTURES TO FUNCTION. *Ulrike Alexiev* PROBING GPCR SIGNALING WITH GENETICALLY-ENCODED NON-NATURAL AMINO ACIDS. *Thomas P. Sakmar* STRUCTURAL INSIGHTS INTO THE DYNAMIC PROCESS OF G PROTEIN COUPLED RECEPTOR ACTIVATION. *Brian Kobilka*	**Ballroom 20A**

1:00 PM–3:00 PM	**Symposium: Dynamics and Localization of RNAs** *Robert Singer, Albert Einstein College of Medicine, Chair* FOLLOWING SINGLE MRNAS FROM BIRTH TO DEATH IN LIVING CELLS. *Robert H. Singer* INTO THE COSMOS: SINGLE MOLECULE ANALYSIS OF SPLICEOSOME ASSEMBLY AND ACTIVATION. *Melissa J. Moore* CHROMATIN DYNAMICS: AT THE SOURCE OF RNA PRODUCTION. *Christophe Lavelle* BIOPHYSICS OF THE INTERACTION OF HIV WITH MUCUS BARRIERS DURING SEXUAL TRANSMISSION. *Thomas Hope*	**Ballroom 20D**
1:00 PM–3:00 PM	**Minisymposium: Molecular Motors: Stopped or Slowed by Their Tracks**	**Room 29ABC**
1:00 PM–3:00 PM	**Platform: Ligand-gated Channels**	**Ballroom 20BC**
1:00 PM–3:00 PM	**Platform: Cardiac Muscle**	**Room 24ABC**
1:00 PM–3:00 PM	**Platform: Membrane Active Peptides**	**Room 25ABC**
1:00 PM–3:00 PM	**Platform: Imaging & Optical Microscopy: Cell & Tissue Imaging**	**Room 30ABC**

Wednesday, February 29

8:00 AM–12:00 PM, ROOM 26B

Career Center

8:00 AM–3:00 PM, MARRIOTT, RANCHO SANTA FE

Child Care

8:00 AM–3:00 PM, HALL FGH

Poster Viewing

8:00 AM–3:30 PM, ROOM 29D

Family Room

8:15 AM–10:15 AM, BALLROOM 20A

Symposium
Myosin Binding Protein-C: A Modulator of Cardiac Contractility

Chair
Roger Craig, University of Massachusetts Medical School

3038-SYMP 8:15 AM
MODULATING CONTRACTION BY BINDING OF MYBP-C TO ACTIN. **Roger Craig**

3039-SYMP 8:45 AM
DYNAMIC REGULATION OF CONTRACTION BY CARDIAC MYOSIN BINDING PROTEIN-C. **Samantha Harris**

3040-SYMP 9:15 AM
CARDIAC MYOSIN BINDING PROTEIN-C PHOSPHORYLATION, CONTRACTILE FUNCTION AND CARDIOPROTECTION. **Sakthivel Sadayappan**

3041-SYMP 9:45 AM
CARDIAC MYOSIN BINDING PROTEIN C PHOSPHORYLATION IN HUMAN CARDIAC DISEASE. **Jolanda van der Velden**, Diederik W.D. Kuster

8:15 AM–10:15 AM, BALLROOM 20D

Symposium
Materials Science Meets Biology

Chair
Sangeeta Bhatia, Massachusettts Institute of Technology

3042-SYMP 8:15 AM
ENGINEERING COOPERATIVE NANOSYTEMS. **Sangeeta Bhatia**

3043-SYMP 8:45 AM
CO-OPTING MOORE'S LAW:
VACCINES AND MEDICINES MADE FROM A WAFER.
Joseph M. DeSimone

3044-SYMP 9:15 AM
STUDIES IN THE THREE-DIMENSIONAL WORLD OF A CANCER COMMUNITY OF CELLS. **Robert Austin**, Liyu Liu, Bo Sun, Howard Stone

3045-SYMP 9:45 AM
ENGINEERING OF POLYMERIC NANOPARTICLES FROM MEDICAL APPLICATIONS. **Omid C. Farokhzad**

8:15 AM–10:15 AM, BALLROOM 20BC

Platform
Emerging Single Molecule Techniques

Co-Chairs
Tae-Young Yoon, KAIST, Republic of Korea
Ryota Iino, University of Tokyo, Japan

3046-PLAT 8:15 AM
FAST THREE-DIMENSIONAL IMAGING AND TRACKING OF SINGLE MOLECULES IN THE NUCLEUS OF LIVE CELLS USING A MULTIFOCAL MICROSCOPE. **Jiji Chen**, Bassam Hajj, Sara Abrahamsson, David Grunwald, Mats Gustaffson, Maxime Dahan

3047-PLAT 8:30 AM
FLUORESCENCE TRIPLE CORRELATION SPECTROSCOPY RESOLVES TEN INTERMEDIATES ALONG DIFFERENT PARALLEL RIBOSOME ASSEMBLY PATHWAYS.
William K. Ridgeway, David P. Millar, James R. Williamson

3048-PLAT 8:45 AM
DIRECT OBSERVATION OF ROTARY CATALYSIS OF ROTORLESS F1-ATPASE BY HIGH-SPEED ATOMIC FORCE MICROSCOPY. **Ryota Iino**, Takayuki Uchihashi, Toshio Ando, Hiroyuki Noji

3049-PLAT 9:00 AM
A TRANSGENIC MOUSE MODEL FOR IMAGING SINGLE RNA DYNAMICS IN VIVO. **Hye Yoon Park**, Young Yoon, Chiso Nwokafor, Melissa Lopez-Jones, Xiuhua Meng, Antonia Follenzi, Hyungsik Lim, Robert H. Singer

3050-PLAT 9:15 AM
HIGH-THROUGHPUT SINGLE-MOLECULE TRANSCRIPTION ASSAY. **Soohong Kim**, Aaron M. Streets, Ron R. Lin, Stephen R. Quake, Shimon Weiss, Devdoot S. Majumdar

3051-PLAT 9:30 AM
IN SITU QUANTITATIVE IMAGING OF SINGLE-MOLECULE CO-IMMUNOPRECIPITATION. Hong-Won Lee, Janghyun Yoo, Taeyoon Kyung, Tackhoon Kim, Changbong Hyeon, Dae-Sik Lim, Won Do Heo, **Tae-Young Yoon**

3052-PLAT 9:45 AM
SOFT MATTER BASED NANOFLUIDIC PLATFORM FOR HIGHLY PARALLEL MIXING OF SUB-ATTOLITER TOTAL VOLUMES. **Sune Christensen**, Pierre-Yves Bolinger, Nikos S. Hatzakis, Michael W. Mortensen, Dimitrios Stamou

3053-PLAT 10:00 AM
SINGLE MOLECULE FLUORESCENCE IMAGING AT MICROMOLAR CONCENTRATIONS. **Kyu Young Han**, Taekjip Ha

8:15 AM–10:15 AM, ROOM 24ABC

Platform
Protein-Nucleic Acid Interactions

Co-Chairs
Wlodek Bujalowski, University of Texas Medical Branch
Mark Williams, Northeastern University

3054-PLAT 8:15 AM EDUCATION TRAVEL AWARDEE
STRUCTURAL BASIS OF RNA RECOGNITION AND ACTIVATION BY INNATE IMMUNE RECEPTOR RIG-I.
Anand Ramanathan, Fuguo Jiang, Matthew T. Miller, Guo-Qing Tang, Michael Gale Jr, Smita S. Patel, Joseph Marcotrigiano

3055-PLAT 8:30 AM
OLIGOMERIZATION OF HIV-1 RESTRICTION FACTOR APOBEC3G TRANSFORMS IT FROM A FAST ENZYME TO A SLOW NUCLEIC ACID BINDING PROTEIN. **Kathy R. Chaurasiya**, Hylkje Geertsema, Dominic F. Qualley, Tiyun Wu, Yasumasa Iwatani, Denise Chan, Amber Hertz, Judith G. Levin, Karin Musier-Forsyth, Ioulia Rouzina, Mark C. Williams

3056-PLAT 8:45 AM
TRBP SLIDING PROMOTES DICER'S CLEAVAGE ACTIVITY.
Hye Ran Koh, Mary Anne Kidwell, Kaushik Ragunathan, Jennifer A. Doudna, Sua Myong

3057-PLAT 9:00 AM
AUTOMATED DNA TRACING ON AFM IMAGES HELPS THE STUDY OF 186 REPRESSOR-DNA INTERACTIONS.
Haowei Wang, Ian B. Dodd, Shearwin Keith, David Dunlap, Laura Finzi

3058-PLAT 9:15 AM
THE PRIMARY DNA-BINDING SUBSITE OF THE RAT POL BETA. ENERGETICS OF INTERACTIONS OF THE 8-KDA DOMAIN OF THE ENZYME WITH THE SSDNA. **Wlodek M. Bujalowski**, Maria J. Jezewska, Michal R. Szymanski, Paul J. Bujalowski

3059-PLAT 9:30 AM
TURNING ON THE SPLICEOSOME. **Aaron Hoskins**, Larry Friedman, Ivan Correa, Ming-Qun Xu, Virginia W. Cornish, Jeff Gelles, Melissa J. Moore

3060-PLAT 9:45 AM
DELETION OF RIBOSOMAL COFACTOR RIMP DISRUPTS LATE STAGE 30S SUBUNIT ASSEMBLY. **Candacia A. Greeman**, James R. Williamson

3061-PLAT 10:00 AM
REAL TIME MONITORING OF DNA BENDING AND UNBENDING BY E. COLI INTEGRATION HOST FACTOR.
Shimin Le, Hu Chen, Jie Lin, Jie Yan

8:15 AM–10:15 AM, ROOM 25ABC

Platform
Voltage-gated Na Channels

Co-Chairs
Vladimir Yarov-Yarovoy, University of California Davis
Baron Chanda, University of Wisconsin–Madison

3062-PLAT 8:15 AM
CALCIUM DYSREGULATION OF VOLTAGE-GATED SODIUM CHANNELS HARBORING LQT3 MUTATIONS. **Maen Sarhan**, Filip Van Petegem, Christopher A. Ahern

3063-PLAT 8:30 AM
SINGLE CHANNEL STUDIES AND KINETIC MODELING OF AN INACTIVATION DEFICIENT VOLTAGE-GATED SODIUM CHANNEL. **Marcel P. Goldschen-Ohm**, Deborah Capes, Baron Chanda

3064-PLAT 8:45 AM
USE OF GENETICALLY ENCODED PHOTOACTIVABLE CROSS-LINKING MOLECULES TO PROBE NAV CHANNEL FAST INACTIVATION. **Samuel Goodchild**, David Fedida, Chris Ahern

3065-PLAT 9:00 AM
CRYSTAL STRUCTURE OF A SIMPLIFIED "PORE" SODIUM CHANNEL. **Emily C. McCusker**, Claire E. Naylor, B. A. Wallace

3066-PLAT 9:15 AM
STRUCTURAL MODELING OF A HUMAN VOLTAGE-GATED SODIUM CHANNEL. **Vladimir Yarov-Yarovoy**

3067-PLAT 9:30 AM
ION BINDING SITES AND HYDRATION IN THE SELECTIVITY FILTER OF THE BACTERIAL SODIUM CHANNEL NAVAB.
Vincenzo Carnevale, Werner Treptow, Michael L. Klein

3068-PLAT 9:45 AM
MONOVALENT ION SELECTIVITY OF THE HOMOTETRAMERIC BACTERIAL NA CHANNEL, NACHBAC.
Rocio K. Finol-Urdaneta, Ahmed Al-Sabi, Sergei Noskov, Robert J. French

3069-PLAT 10:00 AM
VOLTAGE GATED SODIUM CHANNELS–NAV ASSAY FORMATS USING BOTH GIGA-SEAL SINGLE CELL AND ENSEMBLE RECORDING MODALITIES. **Cristian Ionescu-Zanetti**

8:15 AM–10:15 AM, ROOM 29ABC

Platform
Membrane Fusion

Co-Chairs
Felix Goñi, Unidad de Biofisica, Spain
Peter Kasson, University of Virginia

3070-PLAT 8:15 AM
INFLUENCE OF SALT BRIDGES IN THE AVIAN INFLUENZA VIRUS HA ON ACID-INDUCED MEMBRANE FUSION AND PATHOGENICITY. **Caroline Mair**, P. Sivaramakrishna Rachakonda, Thomas Korte, Andreas Herrmann

3071-PLAT 8:30 AM
INHIBITION OF HUMAN IMMUNODEFICIENCY VIRUS ENDOCYTOSIS DOES NOT ALLOW ITS FUSION WITH THE CELL PLASMA MEMBRANE. Michelle de la Vega, Mariana Marin, Naoyuki Kondo, Kosuke Miyauchi, **Gregory Melikian**

3072-PLAT 8:45 AM
SNARE MEDIATED VESICLE FUSION IN SUPPORTED MEMBRANES: COMPARING SYNAPTIC VESICLES WITH RECONSTITUTED VESICLES. **Volker Kiessling**, Saheeb Ahmed, Marta K. Domanska, Matthew G. Holt, Reinhard Jahn, Lukas K. Tamm

3073-PLAT 9:00 AM
HOW LIPID AND WATER PHYSICAL CHEMISTRY MAY CONTROL FUSION: BEHAVIOR OF MEMBRANE INTERFACES AND FUSION PEPTIDES. **Peter M. Kasson**

3074-Plat 9:15 AM
THERMALLY NDUCED FUSION OF PROTEIN FREE LIPID VESICLES. Maitane Ibarguren, Paul HH Bomans, Peter M. Frederik, Boris Tenchov, Alicia Alonso, **Felix M Goni**

3075-Plat 9:30 AM
DNA-MEDIATED FUSION BETWEEN SMALL VESICLES AND A PLANAR, TETHERED BILAYER PATCH. **Robert J. Rawle**, Bettina van Lengerich, Poul Martin Bendix, Minsub Chung, Steven G. Boxer

3076-Plat 9:45 AM
WATCHING INFLUENZA GET HOGTIED. **Jason Otterstrom**, Jaroslaw Juraszek, Chan Tang, Martin Koldijk, Ronald Vogels, Robert Friesen, Boerries Brandenburg, Antoine M. van Oijen

3077-Plat 10:00 AM
A MICROFLUIDIC DEVICE FOR SINGLE CELL-LIPOSOME FUSION. **Phillip Kuhn**, Klaus Eyer, Petra S. Dittrich

8:15 AM–10:15 AM, Room 30ABC

Platform
Membrane Transporters & Exchangers II

Co-Chairs
Hassane Mchaourab, Vanderbilt University
Chunfeng Zhao, University of Calgary, Canada

3078-Plat 8:15 AM
TOWARDS A STRUCTURAL UNDERSTANDING OF ALTERNATING ACCESS WITHIN THE PROTON DEPENDENT OLIGOPEPTIDE TRANSPORTER (POT) FAMILY. **Simon Newstead**

3079-Plat 8:30 AM
CONFORMATIONAL TRANSITION PATHWAY OF GLPT TRANSPORTER, CHARACTERIZED BY NONEQUILIBRIUM MOLECULAR DYNAMICS SIMULATIONS. **Mahmoud Moradi**, Giray Enkavi, Emad Tajkhorshid

3080-Plat 8:45 AM
MECHANISM OF THE ALTERNATING ACCESS IN LEUT-FOLD NA+-COUPLED SECONDARY TRANSPORTERS: A COMPUTATIONAL TRANSITION PATH STUDY. **Chunfeng Zhao**, Sergei Yu. Noskov

3081-Plat 9:00 AM
STRUCTURE, DYNAMICS, AND MECHANISM OF THE LEUCINE TRANSPORTER STUDIED BY DOUBLE ELECTRON ELECTRON RESONANCE SPECTROSCOPY. **Kelli Kazmier**, Matthias Quick, Lei Shi, Harel Weinstein, Jonathan A. Javitch, Hassane S. Mchaourab

3082-Plat 9:15 AM
CONFORMATIONAL DYNAMICS IN THE TRANSPORT CYCLE OF LEUCINE TRANSPORTER ON THE EXTRACELLULAR-SIDE. **Shruti Sharma**, Richard A. Stein, Matthias Quick, Sebastian Stolzenberg, Lei Shi, Harel Weinstein, Jonathan A. Javitch, Hassane S. Mchaourab

3083-Plat 9:30 AM
MAPPING CONFORMATIONAL CHANGES ASSOCIATED WITH THE CATALYTIC CYCLE OF HUMAN P-GLYCOPROTEIN (ABCB1). Jaya Bhatnagar, Hong-May Sim, Elka Georgieva, Khyati Kapoor, Eduardo Chufan, Shinobu Ohnuma, Peter P. Borbat, Jack H. Freed, Zuben E. Sauna, **Suresh V. Ambudkar**

3084-Plat 9:45 AM
OUABAIN BINDING SITE IN A FUNCTIONING NA+/K+-ATPASE. **Walter Sandtner**, Bernhard Egwolf, Fatemeh Khalili-Araghi, Jorge E. Sanchez-Rodríguez, Benoit Roux, Francisco Bezanilla, Miguel Holmgren

3085-Plat 10:00 AM
STUDY OF NUCLEOTIDE BINDING TO THE UNCOUPLING PROTEIN 1 USING ATOMIC FORCE MICROSCOPY. Rong Zhu, Anne Rupprecht, Andreas Ebner, Thomas Haselgrübler, Hermann J. Gruber, Peter Hinterdorfer, **Elena E. Pohl**

8:15 AM–10:15 AM, Room 31ABC

Platform
Protein Structure

Co-Chairs
Matthias Buck, Case Western Reserve University
Mu Gao, Georgia Institute of Technology

3086-Plat 8:15 AM
NMR STRUCTURE OF VARI, A NOVEL BIOACTIVE PEPTIDE TOXIN FROM TEREBRID MARINE SNAILS. **Mohammed Bhuiyan**, Prachi Anand, Alexandre Grigoryan, Jianqin Zhuang, Mandë Holford, Sébastien F. Poget

3087-Plat 8:30 AM
COORDINATION OF HYDROGEN PEROXIDE BY A COPPER CENTER IN PEPTIDYLGLYCINE ALPHA-HYDROXYLATING MONOOXYGENASE (PHM). STRUCTURAL AND COMPUTATIONAL STUDY. **Katarzyna M. Rudzka**, Betty A. Eipper, Richard E. Mains, Darío A. Estrin, L. Mario Amzel

3088-Plat 8:45 AM
STRUCTURAL RELATIONSHIPS BETWEEN RETAINING AND INVERTING GT-B GLYCOSYLTRANSFERASES AS REVEALED BY STRUCTURE ANALYSIS OF SUCROSE SYNTHASE-1 FROM *ARABIDOPSIS THALIANA*. **Yi Zheng**, R Michael Garavito

3089-Plat 9:00 AM
MAPPING PROTEIN STRUCTURE CHANGES WITH CYSTEINE LABELING KINETICS BY MASS SPECTROMETRY. **Brian C. Chase**, J. David Pajerowski, Diego Pantano, Hsin-Yao Tang, David Speicher, Dennis Discher

3090-Plat 9:15 AM
STRUCTURE AND FUNCTION OF THE PERIPHERAL MEMBRANE PROTEIN P2 FROM HUMAN NERVOUS SYSTEM MYELIN. Mari Lehtimäki, Salla Ruskamo, Ravi P. Yadav, Inari Kursula, **Petri Kursula**

3091-Plat 9:30 AM
MEMBRANE TARGETING OF THE N-TERMINAL UBIQUTIN-LIKE DOMAIN OF KINDLIN-2 IS CRUCIAL FOR ITS REGULATION OF INTEGRIN ACTIVATION. H. Dhanuja Perera, Yan-Qing Ma, **Jun Yang**, Jamila Hirbawi, Edward F. Plow, Jun Qin

3092-Plat 9:45 AM
ON THE STRUCTURAL SPACE OF PROTEIN-PROTEIN INTERFACES. **Mu Gao**, Jeffrey Skolnick

3093-Plat 10:00 AM
DYNAMIC PROTEIN-PROTEIN COMPLEXES: HOW ALTERNATIVE INTERACTIONS CREATE ENSEMBLES AND HOW SOLUTION NMR AND MD SIMULATIONS CAN CHARACTERIZE THEM. **Matthias Buck**, Liqun Zhang, Hyeong J. Lee, Prasanta K. Hota

10:30 AM–11:15 AM, HALL FGH

Coffee Break

10:30 AM–12:30 PM, HALL FGH

Poster Presentations and Late Posters

(For a complete listing of Wednesday Poster Presentations, see page 179.) Posters will be on display from 8:00 AM–3:00 PM. Authors with odd-numbered boards will present from 10:30 AM–11:30 AM,and those with even-numbered boards will present from 11:30 AM–12:30 PM. Additional hours during the day may be posted by the authors as desired. Paper may also be left on the board so that visitors may request an appointment.

1:00 PM–3:00 PM, BALLROOM 20A

Symposium
Dynamics of G-Protein Coupled Receptors

Chair
David Farrens, Oregon Health & Science University

3094-SYMP 1:00 PM
ACTIVATING MUTATIONS AND ALLOSTERIC MODULATORS: EFFECTS ON GPCR STRUCTURE AND CONFORMATIONAL DYNAMICS. **David L. Farrens**

3095-SYMP 1:30 PM
FROM HIGH-RESOLUTION RHODOPSIN MEMBRANE STRUCTURES TO FUNCTION. **Ulrike Alexiev**

3096-SYMP 2:00 PM
PROBING GPCR SIGNALING WITH GENETICALLY-ENCODED NON-NATURAL AMINO ACIDS. **Thomas P. Sakmar**

3097-SYMP 2:30 PM
STRUCTURAL INSIGHTS INTO THE DYNAMIC PROCESS OF G PROTEIN COUPLED RECEPTOR ACTIVATION. **Brian Kobilka**

1:00 PM–3:00 PM, BALLROOM 20D

Symposium
Dynamics and Localization of RNAs

Chair
Robert Singer, Albert Einstein College of Medicine

3098-SYMP 1:00 PM
FOLLOWING SINGLE MRNAS FROM BIRTH TO DEATH IN LIVING CELLS. **Robert H. Singer**, Timothee Lionnet, Hye Yoon Park, Bin Wu, Tatjana Trcek, Sami Hocine, Daniel Larson

3099-SYMP 1:30 PM
INTO THE COSMOS: SINGLE MOLECULE ANALYSIS OF SPLICEOSOME ASSEMBLY AND ACTIVATION. Aaron A. Hoskins, Larry J. Friedman, Daniel J. Crawford, Eric J. Anderson, Inna Shcherbakova, Virginia W. Cornish, Jeff Gelles, **Melissa J. Moore**

3100-SYMP 2:00 PM
CHROMATIN DYNAMICS: AT THE SOURCE OF RNA PRODUCTION. **Christophe Lavelle**

3101-SYMP 2:30 PM
BIOPHYSICS OF THE INTERACTION OF HIV WITH MUCUS BARRIERS DURING SEXUAL TRANSMISSION. **Thomas Hope**

1:00 PM–3:00 PM, ROOM 29ABC

Minisymposium
Molecular Motors: Stopped or Slowed by Their Tracks

Co-Chairs
David Warshaw, University of Vermont
Ronald Rock, University of Chicago

3102-MINISYMP 1:00 PM
SINGLE-MOLECULE PROTEIN UNFOLDING AND TRANSLOCATION BY THE AAA+ PROTEASE, CLPXP. **Marie-Eve Aubin-Tam**, Adrian O. Olivares, Juan Carlos Cordova, Stephane Calmat, Robert T. Sauer, Tania A. Baker, Matthew J. Lang

3103-MINISYMP 1:20 PM
SINGLE-MOLECULE IMAGING REVEALS MECHANISMS OF ROADBLOCK CLEARANCE BY DNA MOTOR ENZYMES. **Ilya J. Finkelstein**, Ja Yil Lee, Estelle Crozat, David J. Sherratt, Eric C. Greene

3104-MINISYMP 1:40 PM
VISUALIZING TRANSCRIPTION IN VIVO AT NUCLEOTIDE RESOLUTION USING NASCENT TRANSCRIPT SEQUENCING. **L. Stirling Churchman**, Jonathan S. Weissman

3105-MINISYMP 2:00 PM
MODULATION OF THE TRANSLOCATION PROPERTIES OF A MODEL HELICASE BY DNA DAMAGE AND SEQUENCE CONTENT WITHIN THE TRACK. **Carolina Carrasco**, Joseph T. P. Yeeles, Mark S. Dillingham, Fernando Moreno-Herrero

3106-MINISYMP 2:20 PM
THE NUCLEOTIDE-BINDING STATE OF MICROTUBULES MODULATES KINESIN PROCESSIVITY AND TAU'S ABILITY TO INHIBIT KINESIN MEDIATED TRANSPORT. Derrick P. McVicker, Lynn Chrin, **Christopher L. Berger**

3107-MINISYMP 2:40 PM
BIOPHYSICAL STUDIES REVEALS THE SPECIFIC ACTIVITIES OF FIDGETIN, A MICROTUBULE SEVERING AAA ENZYME. **Juan D. Diaz**, Megan Bailey, Margaret M. Morelli, Suranjana Mukherjee, David J. Sharp, Jennifer L. Ross

1:00 PM–3:00 PM, BALLROOM 20BC

Platform
Ligand-gated Channels

Co-Chairs
Albert Lau, Johns Hopkins University
Candice Askwith, The Ohio State University

3108-PLAT 1:00 PM
APO AND INSP3-BOUND CRYSTAL STRUCTURES OF THE LIGAND-BINDING DOMAIN OF AN INSP3 RECEPTOR. **Chun-Chi Lin**, Kyuwon Baek, Zhe Lu

3109-PLAT 1:15 PM
USING CROSSLINKING AND MASS SPECTROMETRY TO STUDY GLYCINE RECEPTOR ALLOSTERY. **Chelsee A. Donelan**, Rathna Veeramachaneni, David J. Lapinsky, Michael Cascio

3110-PLAT 1:30 PM
AGONIST-INDUCED CONFORMATIONAL CHANGES IN THE LIGAND BINDING DOMAIN OF CYCLIC NUCLEOTIDE-REGULATED CHANNELS. **Michael C. Puljung**, William N. Zagotta

3111-Plat 1:45 pm
NEUROPEPTIDE INTERACTION WITH THE EXTRACELLULAR DOMAIN OF THE ACID SENSING ION CHANNEL 1A.
Thomas Sherwood, Michael Ratti, Erin Frey, **Candice Askwith**

3112-Plat 2:00 pm
INTERDIMER CONTACTS PAINT A NEW PICTURE OF GLUTAMATE RECEPTOR ACTIVATION. **Hector P. Salazar Garcia**, Albert Y. Lau, Lydia Blachowicz, Andrew J. Plested, Benoît Roux

3113-Plat 2:15 pm
COMPUTATIONAL STUDIES OF THE MOLECULAR MECHANISMS RESPONSIBLE FOR CA^{2+} PERMEATION AND MG^{2+} BLOCK OF NMDA RECEPTORS. **Lea Veras**, Igor Kurnikov, Jon W. Johnson, Maria Kurnikova

3114-Plat 2:30 pm
AN IONIC SWITCH IN THE LIGAND-BINDING DOMAIN OF NON-NMDA RECEPTORS. Ranjit Vijayan, **Philip C. Biggin**

3115-Plat 2:45 pm
GATING AND STOICHIOMETRY OF HETEROMERIC KAINATE RECEPTORS. **Patricia Brown**, Mark Aurousseau, Hugo McGuire, Rikard Blunck, Derek Bowie

1:00 pm–3:00 pm, Room 24ABC

Platform
Cardiac Muscle

Co-Chairs
Michael Regnier, University of Washington
Paul Janssen, The Ohio State University

3116-Plat 1:00 pm
MYH7-MUTATION ASSOCIATED ALLELIC IMBALANCE IN FAMILIAL HYPERTROPHIC CARDIOMYOPATHY: MOLECULAR MECHANISMS AND CORRELATION WITH DISEASE PROGNOSIS. **Judith Montag**, Snigdha Tripathi, Anna-Lena Weber, Imke Schulte, Edgar Becker, Bianka Borchert, Francisco Navarro-Lopez, Antonio Francino, Andreas Perrot, Özcelik Cemil, William McKenna, Karl-Josef Osterziel, Bernhard Brenner, Theresia Kraft

3117-Plat 1:15 pm
SINGLE MOLECULE STUDIES OF RECOMBINANT HUMAN α- AND β-CARDIAC MYOSIN TO ELUCIDATE MOLECULAR MECHANISM OF FAMILIAL HYPERTROPHIC AND DILATED CARDIOMYOPATHIES. **Jongmin Sung**, Elizabeth Choe, Mary Elting, Suman Nag, Shirley Sutton, John Deacon, Leslie Leinwand, Kathy Ruppel, James Spudich

3118-Plat 1:30 pm CPOW TRAVEL AWARDEE
CROSS-BRIDGE KINETICS IN PAPILLARY MUSCLE FIBERS FROM TRANSGENIC MICE EXPRESSING THE ASPARGINE-47 TO LYSINE (N47K) MUTATION IN MYOSIN REGULATORY LIGHT CHAIN. **Li Wang**, Priya Muthu, Danuta Szczesna-Cordary, Masataka Kawai

3119-Plat 1:45 pm
MYOSIN CROSS-BRIDGES DO NOT FORM PRECISE RIGOR BONDS IN HYPERTROPHIC HEART MUSCLE CARRYING TROPONIN T MUTATIONS. **Krishna Midde**, V Dumka, JR Pinto, P Muthu, P Marandos, I Gryczynski, Z Gryczynski, J Borejdo

3120-Plat 2:00 pm
MUTATIONS IN THIN FILAMENT PROTEINS THAT CAUSE FAMILIAL DILATED CARDIOMYOPATHY UNCOUPLE TROPONIN I PHOSPHORYLATION FROM CHANGES IN MYOFIBRILLAR CA^{2+}-SENSITIVITY. **Massimiliano Memo**, Andrew E. Messer, Man Ching Leung, Steven B. Marston

3121-Plat 2:15 pm
POST-TRANSLATIONAL MODIFICATIONS OF MYOFILAMENT PROTEINS INVOLVED IN LENGTH-DEPENDENT PROLONGATION OF RELAXATION IN RABBIT RIGHT VENTRICULAR MYOCARDIUM. Michelle M. Monasky, Domenico M. Taglieri, Alice K. Jacobson, Kaylan M. Haizlip, R John Solaro, **Paul Janssen**

3122-Plat 2:30 pm
TRANSMURAL DISTRIBUTION OF MYOCYTE CONTRACTILE PROPERTIES IN AGING F344 RATS. **William K. Snapp**, Stuart G. Campbell, Kenneth S. Campbell

3123-Plat 2:45 pm
BROAD TRANSGENIC, AND CARDIAC-SPECIFIC VIRAL MEDIATED, OVER-EXPRESSION OF RIBONUCLEOTIDE REDUCTASE INCREASES IN VIVO CARDIAC CONTRACTILITY. F. Steven Korte, Guy L. Odom, Jin Dai, Stephen C. Kolwicz, Jacqueline N. Robinson-Hamm, Rong Tian, Stephen D. Hauschka, Jeffrey S. Chamberlain, Robert S. Weiss, Charles E. Murry, **Michael Regnier**

1:00 pm–3:00 pm, Room 25ABC

Platform
Membrane Active Peptides

Co-Chairs
Anne Ulrich, Karlsruhe Institute of Technology, Germany
Bill Wimley, Tulane University

3124-Plat 1:00 pm
DIRECT QUANTITATION OF PEPTIDE-MEDIATED PROTEIN TRANSPORT ACROSS A DROPLET INTERFACE BILAYER. **Matthew A. Holden**

3125-Plat 1:15 pm
THE ISOLATED S4 VOLTAGE SENSOR HELIX TRANSLOCATES SPONTANEOUSLY ACROSS MEMBRANES. **William C. Wimley**, Kalina Hristova

3126-Plat 1:30 pm
THE DIFFERENCE BETWEEN TRANSLOCON-ASSISTED MEMBRANE INSERTION AND FREE SURFACE-TO-BILAYER PEPTIDE INSERTION. **Jakob P. Ulmschneider**, Stephen H. White, Jeremy Smith, Martin B. Ulmschneider

3127-Plat 1:45 pm
A COMPARATIVE STUDY OF MELITTIN AND MAGAININ 2 PEPTIDES INSERTED INTO PORES IN LIPID BILAYERS: COMPUTER SIMULATIONS. **Sheeba J. Irudayam**, Max L. Berkowitz

3128-Plat 2:00 pm
"MULTI-HIT" ACTION OF MEMBRANE ACTIVE PEPTIDES: TOWARDS UNDERSTANDING BACTERIAL CELL KILLING. **Gemma Moiset**, Anna D. Cirac, Jacek T. Mika, Armağan Koçer, Marc C.A. Stuart, Durba Sengupta, Siewert-Jan Marrink, Bert Poolman

3129-Plat 2:15 pm
SHORT STORIES–ON ANTIMICROBIAL PEPTIDES THAT ARE TOO SHORT TO SPAN THE MEMBRANE. **Anne S. Ulrich**, Nico Heidenreich, Parvesh Wadhwani, Johannes Reichert, Erik Strandberg, Julia Misievicz, Sergii Afonin, Marina Berditsch, Jochen Bürck, Deniz Tiltak, Jakob Ulmschneider, Roland Benz, Maria-Luisa Mangoni, Miguel Castanho

3130-Plat 2:30 pm
HOW ISLET AMYLOID POLYPEPTIDE DAMAGES LIPID BILAYERS. Chang-Chun Lee, Yen Sun, **Huey W. Huang**

3131-Plat 2:45 pm
ALL D-AMINO ACIDS AMYLOID β FORMS ION CHANNELS IN LIPID BILAYERS AND IS TOXIC TO CELLS. **Ricardo Capone**, Hyunbum Jang, Samuel A. Kotler, Laura Connelly, Michael Williams, Srinivasan Ramachandra Reddy, Bruce L. Kagan, Ruth Nussinov, Ratnesh Lal

1:00 pm–3:00 pm, Room 30ABC

Platform
Imaging & Optical Microscopy: Cell & Tissue Imaging

Co-Chairs
Mario Feingold, Ben Gurion University of the Negev, Israel
Aurelie Dupont, Ludwig-Maximilians-Universität, Germany

3132-Plat 1:00 pm
TOWARDS SINGLE CELL OPTICAL TOMOGRAPHY. **Mario Feingold**, Gideon Carmon, Itzhak Fishov

3133-Plat 1:15 pm
SPATIOTEMPORAL IMAGE CORRELATION SPECTROSCOPY REVEALS ARP2/3-COMPLEX-DRIVEN CYTOPLASMIC STREAMING IN MOUSE OOCYTES, MAINTAINING MEIOTIC CORTICAL SPINDLE POSITIONING. **Jay R. Unruh**, Brian D. Slaughter, Kexi Yi, Rong Li

3134-Plat 1:30 pm
MOLECULAR ARCHITECTURE AND ASSEMBLY PRINCIPLES OF VIBRIO CHOLERAE BIOFILMS. **Veysel Berk**, Jiunn C. N. Fong, Graham T. Dempsey, Omer N. Develioglu, Xiaowei Zhuang, Jan Liphardt, Fitnat H. Yildiz, Steven Chu

3135-Plat 1:45 pm
COHERENT RAMAN SCATTERING MICROSCOPY: NEW QUANTITATIVE AND NON-INVASIVE TOOLS FOR BIOMEDICAL RESEARCH. Gregor Hehl, Stefan Gomes da Costa, Paola Piredda, Ramanathan Venkatnarayan, **Andreas Volkmer**

3136-Plat 2:00 pm
TWO-PHOTON SCANNED LIGHT SHEET MICROSCOPY REVEALS SPATIO-TEMPORAL ORGANIZATION OF CELLS AND PROTEINS IN DEVELOPING EMBRYOS. **Thai V. Truong**, Scott E. Fraser

3137-Plat 2:15 pm
FLUORESCENCE CORRELATION SPECTROSCOPY IMAGING OF CHROMATIN DYNAMICS. **Malte Wachsmuth**, Jérémie Capoulade, Michael Knop

3138-Plat 2:30 pm
IN VIVO METABOLIC MAPPING OF STEM CELLS AND DIFFERENTIATED PROGENY IN SMALL INTESTINE AND COLON CRYPTS BY PHASOR FLUORESCENCE LIFETIME MICROSCOPY. **Chiara Stringari**, Robert Edwards, Marian Watermen, Kira Pate, Peter J. Donovan, Enrico Gratton

3139-Plat 2:45 pm
TRACKING IMAGE CROSS-CORRELATION FOR ELUCIDATING THE FUSION PROCESS OF VIRUSES. **Aurélie Dupont**, Kristin Stirnnagel, Dorothee Schupp, Florian Perrotton, Erik Müllers, Dirk Lindemann, Don C. Lamb

10:30 AM–12:30 PM, HALL FGH

WEDNESDAY POSTER SESSIONS

Posters should be mounted between 7:00 AM and 8:00 AM on Wednesday and removed by 3:00 PM. Poster numbers shown refer to the program order of abstracts as they appear in the online Abstracts Issue. Board numbers indicate where they are located in the Exhibit Hall.

ODD-NUMBERED BOARDS 10:30 AM–11:30 AM	**EVEN-NUMBERED BOARDS 11:30 AM–12:30 PM**
BOARD NUMBERS	**CATEGORY**
Board #B1-#B17	Protein Structure Prediction & Drug Design
Board #B18-#B46	Membrane Protein Function II
Board #B47-#B54	Apoptosis
Board #B55-#B82	Intrinsically Disordered Proteins
Board #B83-#B106	DNA, RNA Structure & Conformation II
Board #B107-#B127	Virus Structure & Assembly
Board #B128-#B143	RNA Folding
Board #B144-#B163	Membrane Structure III
Board #B164-#B170	Epithelial Channels & Physiology
Board #B171-#B181	Motions of the Cell Surface Molecules
Board #B182-#B189	Auditory Systems
Board #B190-#B204	Peptide & Toxin Ion Channels
Board #B205-#B234	Membrane Transporters & Exchangers II
Board #B235-#B261	Membrane Receptors & Signal Transduction II
Board #B262-#B268	Synaptic Transmission
Board #B269-#B293	Cardiac Electrophysiology III
Board #B294-#B302	Voltage-gated K Channels: Permeation
Board #B303-#B326	Ion Channels, Other
Board #B327-#B345	Voltage-gated K Channels: Gating III
Board #B346-#B370	Ca-activated Channels
Board #B371-#B395	Cytoskeletal Protein Dynamics
Board #B396-#B425	Microtubles & Microtubule-associated Proteins
Board #B426-#B449	Cell & Bacterial Mechanics & Motility IV
Board #B450-#B470	Ion Motive ATPases
Board #B471-#B487	Membrane Transport
Board #B488-#B514	Biotechnology & Bioengineering II
Board #B515-#B544	Imaging & Optical Microscopy: Superresolution Imaging & Single Molecules
Board #B545-#B564	Micro & Nanotechnology: Nanopores III
Board #B565-#B569	Regulatory Networks & Systems Biology
Board #B570-#B599	Molecular Dynamics II

Late abstract posters are located on #L boards. To view the late abstracts, visit the itinerary planner at www.biophysics.org. It is the responsibility of the poster presenters to remove their print materials from the board after their presentations. Please do not leave materials or belongings under poster boards or in the poster area. Posters will not be collected or stored for pick-up at a later time. The Biophysical Society is not responsible for any articles left in the poster area.

Protein Structure Prediction & Drug Design (Boards #B1-#B17)

3140-Pos Board #B1
INTEGRATIVE STRUCTURE DETERMINATION OF THE COMPONENTS OF THE NUCLEAR PORE COMPLEX BY X-RAY CRYSTALLOGRAPHY, SMALL ANGLE X-RAY SCATTERING, ELECTRON MICROSCOPY, NMR, AND COMPARATIVE MODELING. **Seung Joong Kim**, Parthasarathy Sampathkumar, Javier Fernandez-Martinez, Jeremy Phillips, Dina Schneidman, Tsutomu Matsui, Hiro Tsuruta, Michael Sauder, Stephen K. Burley, Michael Rout, Andrej Sali

3141-Pos Board #B2
A NEXT STEP IN PROTEIN SECONDARY STRUCTURE PREDICTION. Hui Liu, Yaohang Li, Ionel Rata, **Eric Jakobsson**

3142-Pos Board #B3
AWSEM-MD: COARSE-GRAINED PROTEIN STRUCTURE PREDICTION USING PHYSICAL POTENTIALS AND BIOINFORMATICALLY BASED LOCAL STRUCTURE BIASING. Aram Davtyan, Weihua Zheng, **Nicholas Schafer**, Peter Wolynes, Garegin Papoian

3143-Pos Board #B4
INSIGHTS ON THE EVOLUTIONARY CONSERVATION OF MATING-TYPE HMG DOMAINS ARE REVEALED USING MULTIPLE HOMOLOGY MODELS. **Doba D. Jackson**

3144-Pos Board #B5
REFINEMENT AND QUALITY ASSESSMENT OF PREDICTED PROTEIN STRUCTURES. **Jiong Zhang**, Jingfen Zhang, Dong Xu, Yi Shang, Ioan Kosztin

3145-Pos Board #B6
PHYSICS BASED PROTEIN STRUCTURE REFINEMENT. **Justin L. MacCallum**, Alberto Perez, Ken A. Dill

3146-Pos Board #B7
NEW DEVELOPMENTS ON GENERALIZED SIMULATED ANNEALING APPLIED TO AB-INITIO PROTEIN STRUCTURE PREDICTION. **Marcelo C. Melo**, Tácio V. Fernandes, Rafael C. Bernardi, Pedro G. Pascutti

3147-Pos Board #B8
STRUCTURE-ENERGY RELATIONSHIP OF BIOLOGICAL HALOGEN BONDS: DEVELOPMENT OF ANISOTROPIC FORCE FIELDS. **Megan Carter**, Andrea Voth, Shing Ho

3148-Pos Board #B9
ABSOLUTE BINDING FREE ENERGY CALCULATIONS TO IMPROVE THE ACCURACY OF NEAR-NATIVE LIGAND POSE PREDICTIONS. **Hui Sun Lee**, Sunhwan Jo, Wonpil Im

3149-Pos Board #B10
STRUCTURE BASED DRUG DESIGN IN NOVEL DRUGGABLE POCKETS ON RHO FAMILY GTPASES. **Juan Manuel Ortiz-Sanchez**, Barry J. Grant, J. Andrew McCammon

3150-Pos Board #B11
INVESTIGATING THE MECHANISM OF ACTIVATION AND INHIBITION OF THE PHOSPHATE DEPENDENT MITOCHONDRIAL GLUTAMINASE. **Yunxing Li**, Sekar Ramachandran, Richard A. Cerione

3151-Pos Board #B12
A SYSTEMATIC COMPUTATIONAL METHOD TO PREDICT AND ENHANCE ANTIBODY-ANTIGEN BINDING IN THE ABSENCE OF ANTIBODY CRYSTAL STRUCTURES. **Jianqing Xu**, Aleksandr E. Miklos, Randy Hughes, Brian Kuhlman, George Georgiou, Andrew D. Ellington, Jeffrey J. Gray

3152-Pos Board #B13
A MOLECULAR DYNAMICS SIMULATION OF PEPTIDE-TRIAZOLE HIV ENTRY INHIBITOR BINDING TO GP120 HYDROPHOBIC CORE. **Ali Emileh**, Ferit Tuzer, Diogo R. Moreira, Judith M. LaLonde, Carole A. Bewley, Irwin M. Chaiken, Cameron F. Abrams

3153-Pos Board #B14
EVALUATING THE POTENCY OF SMALL MOLECULES TO COMBAT RESISTANCE BASED ON DOCKING STRUCTURES: AN APPLICATION TO THE HIV PROTEASE. **Bo Ding**, Nan Li, Wei Wang

3154-Pos Board #B15
RECONSTITUTED HIGH DENSITY LIPOPROTEIN BEARING APOLIPOPROTEIN E3 SERVES AS A NANOVEHICLE TO TRANSPORT AND TARGET BIOFLAVONOIDS SUCH AS RESVERATROL. **Sea H. Kim**, Vasanthy Narayanaswami

3155-Pos Board #B16
DESIGN OF AN ULTRA-FAST ACTING INSULIN ANALOG USING UNNATURAL AMINO ACIDS–REPLACEMENT OF PHEB24 WITH CYCLOHEXANYLALANINE. **Vijay Pandyarajan**, Zhuli Wan, Nalinda Wickramasinghe, Jonathan Whittaker, Nelson B. Phillips, Michael A. Weiss

3156-Pos Board #B17
OPTIMAL NANOCARRIER DESIGN FOR CANCER CELL TARGETING. **Konstantinos Tsekouras**, Igor Gonacharenko, M.E Colvin, K.C Huang, Ajay Gopinathan

Membrane Protein Function II (Boards #B18-#B46)

3157-Pos Board #B18
ELUCIDATING ELASTIC NETWORK MODEL ROBUSTNESS BY PARAMETRIZATION WITH MOLECULAR DYNAMICS. **Nicholas Leioatts**, Tod D. Romo, Alan Grossfield

3158-Pos Board #B19
EXPLORING THE ENERGETICS OF MEMBRANE PROTEIN STABILITY USING A DEFORMABLE MODEL OF THE MEMBRANE. **Naomi R. Latorraca**, Keith M. Callenberg, Michael Grabe

3159-Pos Board #B20
MICROSECOND DYNAMICS OF THE G-PROTEIN COUPLED RECEPTOR SQUID RHODOPSIN IN ATOMISTIC DETAIL. **Matthias Heyden**, Eduardo Jardón-Valadez, Ana-Nicoleta Bondar, Douglas J. Tobias

3160-Pos Board #B21
LOCKED ON ONE SIDE ONLY: COMPUTER SIMULATIONS OF THE OUTER MEMBRANE EFFLUX DUCT TOLC IN ABSENCE AND PRESENCE OF THE ACRB-DOCKING-DOMAIN. **Martin Raunest**, Christian Kandt

3161-Pos **Board #B22**
ATOMIC-LEVEL SIMULATIONS TO PROBE CONFORMATIONAL CHANGES OF SECONDARY ACTIVE TRANSPORT PROTEINS. Pushkar Y. Pendse, Kunal R. Pandit, **Jeffery B. Klauda**

3162-Pos **Board #B23**
FROM STATIC STRUCTURE TO LIVING PROTEIN: COMPUTATIONAL ANALYSIS OF CYTOCHROME *C* OXIDASE MAIN-CHAIN FLEXIBILITY. **Leann Buhrow**, Shelagh Ferguson-Miller, Leslie A. Kuhn

3163-Pos **Board #B24**
MEMBRANE PROTEIN FUNCTION AND TRANSMEMBRANE HELIX BACKBONE DYNAMICS. **Dieter Langosch**, Oxana Pester, Christina Scharnagl, Jan Kirrbach, Christian Ried, Rashmi Sah, Marcella Langer, Lisa Muenter, Gerd Multhaup

3164-Pos **Board #B25**
PROTECTING BACTERIAL CELLS FROM RUPTURE: A MULTISCALE SIMULATION STUDY OF BRAUN'S LIPOPROTEIN. **Syma Khalid**, Thomas J. Piggot

3165-Pos **Board #B26**
HOW BACKBONE FLEXIBILITY OF TRANSMEMBRANE HELICES CAN DETERMINE PEPTIDE/LIPID INTERACTIONS IN A MIXED BILAYER: A MOLECULAR DYNAMICS STUDY. **Christina Scharnagl**, Matthias Moerch, Dieter Langosch

3166-Pos **Board #B27**
THE AUTOTRANSPORTER β DOMAIN: INSIGHTS INTO STRUCTURE AND FUNCTION THROUGH MOLECULAR DYNAMICS SIMULATIONS. **Daniel A. Holdbrook**, Thomas J. Piggot, Syma Khalid

3167-Pos **Board #B28**
LANGEVIN DYNAMICS SIMULATIONS OF PROTEIN FENCING OF PIP_2. **Kyu Il Lee**, Stuart G. McLaughlin, Wonpil Im, Richard W. Pastor

3168-Pos **Board #B29**
COMPUTATIONAL APPROACH TO STUDY MEMBRANE PROTEIN TOPOLOGY. **Anna Rychkova**, Arieh Warshel

3169-Pos **Board #B30**
RATIONALE MEMBRANE PROTEIN DESIGN OF A BETA-BARREL. **Mohammad M. Mohammad**, Khalil R. Howard, Liviu Movileanu

3170-Pos **Board #B31**
RHODOPSIN SIMULATIONS IN DETERGENT MICELLES CHARACTERIZE META I AND META II PHOTOINTERMEDIATES. Blake Mertz, Michael F. Brown, **Edward R. Lyman**

3171-Pos **Board #B32**
LATERAL DIFFUSION AND ASSOCIATION OF TRANSMEMBRANE PROTEINS INSIDE A BIOMIMETIC BILAYER MESOPHASE. **Gamal Rayan**, Myriam Reffay, Martin Picard, Nicolas Taulier, Arnaud Ducruix, Wladimir Urbach

3172-Pos **Board #B33**
AUTO-INHIBITION EFFECTS IN REGULATING MEMBRANE CURVATURE SENSING AND GENERATION OF BAR DOMAIN CONTAINING PROTEIN. **Chen Zhu**, Tobias Baumgart

3173-Pos **Board #B34**
EFFECTS OF THE PERIPLASMIC DOMAIN OF BAMA, THE ESSENTIAL TRANSMEMBRANE PROTEIN OF THE BETA-BARREL ASSEMBLY MACHINERY (BAM), IN FOLDING AND INSERTION OF THE OUTER MEMBRANE PROTEIN A. Esther Talmon, Bettina A. Hagemann, **Jörg H. Kleinschmidt**

3174-Pos **Board #B35**
TBID CONFORMATIONAL CHANGES AT THE MEMBRANE FOR THE REGULATION OF APOPTOSIS. **Aisha Shamas-Din**, Scott Bindner, Brian Leber, David W. Andrews, Cecile Fradin

3175-Pos **Board #B36**
STRUCTURAL AND FUNCTIONAL CHARACTERIZATION OF NATIVE COMPLEXES OF PULMONARY SURFACTANT PROTEINS PURIFIED WITH DETERGENTS. Barbara Olmeda, **Begoña Garcia-Alvarez**, Antonio Cruz, Jesús Perez-Gil

3176-Pos **Board #B37**
STRUCTURAL FLEXIBILITY OF THE CYTOPLASMIC DOMAIN OF FLAGELLAR TYPE III SECRETION PROTEIN FLHB IS IMPORTANT FOR THE FUNCTION OF THE PROTEIN. **Vladimir A. Meshcheryakov**, Clive S. Barker, Irina V. Meshcheryakova, Alla S. Kostyukova, Fadel A. Samatey

3177-Pos **Board #B38** **EDUCATION TRAVEL AWARDEE**
EXPLORING THE BIOPHYSICAL PROPERTIES OF HUMAN UNCOUPLING PROTEINS: A SEARCH FOR THEIR PHYSIOLOGICAL ROLES IN THE CENTRAL NERVOUS SYSTEM. **Tuan Hoang**, Matthew D. Smith, Masoud Jelokhani-Niaraki

3178-Pos **Board #B39**
ON THE ROLE OF CBS DOMAINS IN OSMOREGULATORY ABC TRANSPORTERS. **Bert Poolman**

3179-Pos **Board #B40**
ENERGY TRANSDUCTION BETWEEN MEMBRANES: CHARACTERIZATION OF THE INTERACTION BETWEEN TONB AND ITS COGNATE TRANSPORTERS. **Daniel M. Freed**, Stephen M. Lukasik, Audrey Mokdad, David S. Cafiso

3180-Pos **Board #B41**
CREATING A PROTEOLIPOSOME ASSAY FOR SINGLE PHOTOSYSTEM I ACTIVITY ASSESSMENT. **Sune K. Jørgensen**, Lærke M.M. Lassen, Gerdi Kemmer, Thomas Gunther-Pomorski, Dimitrios Stamou, Thomas Bjørnholm, Poul E. Jensen, Nikos S. Hatzakis

3181-Pos **Board #B42**
A REVISED VIEW ON CELLULAR CO2 TRANSPORT MECHANISMS: BIOPHYSICS, PHYSIOLOGY AND GENOMICS OF AQUAPORIN-FACILITATED CO2 TRANSPORT IN PLANTS. **Ralf Kaldenhoff**

3182-Pos **Board #B43**
DETERMINANTS OF LIPID MIXING MEMBRANE FUSION BY HIV GP41. **Kelly Sackett**, David P. Weliky

3183-Pos **Board #B44**
TIME-RESOLVED UV-VISIBLE STUDIES OF RHODOPSIN PROVIDE EXPERIMENTAL TEST OF FLEXIBLE SURFACE MODEL FOR LIPID-PROTEIN INTERACTIONS. James W. Lewis, Istvan Szundi, David S. Kliger, **Michael F. Brown**

3184-Pos **Board #B45**
DYNAMICS AND OLIGOMERIZATION TUNE SEVEN-TRANSMEMBRANE PROTEIN FUNCTION: STUDIES BASED ON PROTEORHODOPSIN. **Sunyia Hussain**, Maia Kinnebrew, Songi Han

3185-Pos **Board #B46**
MOLECULAR MECHANISM OF ACTIVATION OF IRE1α CYTOSOLIC DOMAIN BY PALMITATE. **Hyunju Cho**, Liang Fang, Michael Feig, Christina Chan

Apoptosis (Boards #B47-#B54)

3186-Pos **Board #B47**
STUDYING THE APOPTOSIS-REGULATING FUNCTIONS OF BAX AND BCL-2 AT THE MEMBRANE LEVEL. Marcus Wallgren, Anders Pedersen, Martin Lidman, Dat Quoc, Göran B. Karlsson, **Gerhard Gröbner**

3187-Pos **Board #B48**
MEMBRANE BINDING AND DIMERIZATION OF BAX PROTEIN ARE COUPLED TO A SERIES OF CONFORMATIONAL CHANGES. **Feng He**, Zhi Zhang, Jingzhen Ding, Jialing Lin

3188-Pos **Board #B49**
CHARACTERIZING BAX AND BID BINDING TO LIPOSOMES AND PLANAR MEMBRANES WITH SINGLE MOLECULE RESOLUTION. **Sanjee Shivakumar**, Ouided Friaa, Cecile Fradin

3189-Pos **Board #B50**
CA2+ DYNAMICS IN APOPTOSIS: REAL-TIME DATA AND MATHEMATICAL MODELING. **Siyuan Lu**, Jae Kyoo Lee, Anupam Madhukar

3190-Pos **Board #B51**
ROLE OF MEMBRANE OXIDATION IN CONTROLLING THE ACTIVITY OF SECRETORY PHOSPHOLIPASE A_2 TOWARD APOPTOTIC LYMPHOMA CELLS. **Elizabeth Gibbons**, Lynn Anderson, Kelly Damm, Stephanie Melchor, Jennifer Nelson, Allan M. Judd, John D. Bell

3191-Pos **Board #B52**
EFFECT OF ZWITTERIONIC BUFFERS ON CELL VIABILITY. **Heather D. Stout**, Torri C. Roark, Kelly S. Schweitzer, Bruce D. Ray, Horia I. Petrache

3192-Pos **Board #B53** **INTERNATIONAL TRAVEL AWARDEE**
INSIGHTS INTO THE NOVEL ADAPTOR-INDEPENDENT APOPTOSIS MEDIATED BY HUMAN PAPILLOMAVIRUS E2 PROTEIN. **Nitu Singh**, Kakoli Bose

3193-Pos **Board #B54**
THE DIFFERENCE OF APOPTOTIC RESPONSES IN DENERVATED MUSCLE ATROPHY OF AGING RAT SKELETAL MUSCLES. **Jae-Young Lim**, Sang Yoon Lee

Intrinsically Disordered Proteins (Boards #B55-#B82)

3194-Pos **Board #B55**
POLYPEPTIDE CHAIN COLLAPSE OF AMYLOIDOGENIC INTRINSICALLY DISORDERED PROTEINS. **Samrat Mukhopadhyay**, Neha Jain, Mily Bhattacharya

3195-Pos **Board #B56**
FORCE SPECTROSCOPY OF α-SYNUCLEIN OLIGOMERS REVEALS RAPID FORMATION OF STABLE STRUCTURES. **Krishna P. Neupane**, Allison Solanki, Iveta Sosova, Miro Belov, Michael Woodside

3196-Pos **Board #B57**
α-SYNUCLEIN MONOMER CONFORMATIONS STUDIED BY IN SILICO AND IN VITRO FRET. **Reinhard Klement**, Helmut Grubmüller, Elisha Haas

3197-Pos **Board #B58**
CRITICAL ASSESSMENT OF PARAMAGNETIC RELAXATION ENHANCEMENT FOR ENSEMBLE CALCULATION OF DISORDERED STATES. **Jordi Silvestre-Ryan**, Santi Esteban-Martín, Xavier Salvatella

3198-Pos **Board #B59**
CONFORMATIONAL ENSEMBLES OF INTRINSICALLY DISORDERED PROTEINS ARE DETERMINED BY CHARGE PATTERNING. **Rahul K. Das**, Rohit V. Pappu

3199-Pos **Board #B60**
SIMULATIONS OF DENATURED PROTEIN ENSEMBLES REPRODUCE AND RATIONALIZE EXPERIMENTAL OBSERVATIONS OF PERSISTENT CONTACTS BETWEEN RESIDUES DISTAL IN PROTEIN SEQUENCE. **Nicholas J. Lyle**, Wenli Meng, Daniel P. Raleigh, Rohit V. Pappu

3200-Pos **Board #B61**
ASSESSING THE STRUCTURAL ENSEMBLE AND FOLDING PROPENSITY OF INTRINSICALLY DISORDERED PROTEINS. **Christopher B. Stanley**, Amanda Debuhr, Laura Grese, Erica Rowe, Hugh O'Neill, Valerie Berthelier

3201-Pos **Board #B62**
SOLVENT EFFECTS ON THE CONFORMATIONAL EQUILIBRIUM OF ELASTIN-LIKE AND AMYLOIDOGENIC PEPTIDES. **Zhuyi Xue**, Sarah Rauscher, Régis Pomès

3202-Pos **Board #B63**
CHARACTERIZING STRUCTURAL ENSEMBLES OF INTRINSICALLY DISORDERED PROTEINS DETERMINED VIA A BROAD ENSEMBLE GENERATOR WITH REWEIGHTING. **Stepan Kashtanov**, F. Marty Ytreberg

3203-Pos **Board #B64**
AMYLOID-BETA HETEROGENEOUS CONFORMATIONAL ENSEMBLES: DIFFERENCES BETWEEN THE 40- AND 42-RESIDUE PEPTIDES AND IMPLICATIONS FOR DIMER POLYAMORPHISM. **K. Aurelia Ball**, Aaron H. Phillips, Nicolas L. Fawzi, David E. Wemmer, Teresa Head-Gordon

3204-Pos **Board #B65**
THE RELATIONSHIP BETWEEN THE NUMBER OF RESIDUES IN THE DYNAMICS AND STABILITY OF THE A-BETA AMYLOID, A MOLECULAR DYNAMICS STUDY. **Esmael J. Haddadian**, Wang Zongan, Karl Freed

3205-Pos **Board #B66**
CHARACTERIZATION OF THE STRUCTURAL ENSEMBLES OF Aβ MONOMERS USING A COMBINED MD/NMR APPROACH. **David J. Rosenman**, Christopher Connors, Wen Chen, Chunyu Wang, Angel E. García

3206-Pos **Board #B67**
EFFECT OF A SINGLE-POINT MUTATION ON THE CONFORMATION AND DYNAMICS OF ISLET AMYLOID POLYPEPTIDE FROM NANOSECOND-RESOLVED INTRAMOLECULAR CONTACT FORMATION. **Stephanie M. Cope**, Sandip Shinde, Giovanna Ghirlanda, Sara M. Vaiana

3207-Pos **Board #B68**
INTRINSICALLY DISORDERED REGIONS AS AFFINITY TUNERS IN PROTEIN-DNA INTERACTIONS. **Yaakov (Koby) Levy**

3208-Pos **Board #B69**
ATOMISTIC MD SIMULATIONS REVEAL THE PROTECTIVE ROLE OF CHOLESTEROL IN THE MEMBRANE DISRUPTIVE EFFECTS OF DIMERIC BETA-AMYLOID IN NEURONAL MEMBRANE MIMICS. **Liming Qiu**, Creighton Buie, Sara Y. Cheng, George Chou, Mark Vaughn, Kwan Cheng

3209-Pos **Board #B70**
CONFORMATIONAL SAMPLING OF FG-NUCLEOPORINS USING EXTENDED MOLECULAR DYNAMICS SIMULATIONS. **Amanda V. Miguel**, Joshua L. Phillips, David Ando, Ajay Gopinathan, Edmond Y. Lau, Michael F. Rexach, Michael E. Colvin

3210-Pos **Board #B71**
DIFFERENT BEHAVIORS OF THE STRUCTURED AND UNSTRUCTURED REGIONS OF TITIN UNDER PRESSURE. **Judit Somkuti**, Zsolt Mártonfalvi, Miklós S.Z. Kellermayer, László Smeller

3211-Pos **Board #B72**
KINETIC ENHANCEMENT OF NF-KB/DNA DISSOCIATION BY IKBALPHA. **Vera Alverdi**, Byron Hetrick, Joseph Simpson, Elizabeth A. Komives

3212-Pos **Board #B73**
FUNCTIONAL REGULATION OF THE ANTI-APOPTOTIC PROTEIN BCL-XL THROUGH POST-TRANSLATIONAL MODIFICATION OF ITS INTRINSICALLY DISORDERED LOOP. **Ariele Viacava Follis**, Richard W. Kriwacki

3213-Pos **Board #B74**
ULTRABITHORAX, AN INTRINSICALLY DISORDERED PROTEIN, SELECTS PROTEIN INTERACTIONS BY TOPOLOGY. **Sarah E. Bondos**, Hao-Ching Hsiao, Daniel J. Catanese Jr., Kristopher Jordy, Kathleen S. Matthews

3214-Pos **Board #B75**
THE NANOMECHANICS OF NEUROTOXIC PROTEINS REVEALS COMMON FEATURES AT THE START OF THE NEURODEGENERATION CASCADE. **Rubén Hervás**, Javier Oroz, Albert Galera, Oscar Goñi, Alejandro Valbuena, Andrés M. Vera, Angel Gómez-Sicilia, Vladimir N. Uversky, Margarita Menéndez, Douglas V. Laurents, Marta Bruix, Mariano Carrión-Vázquez

3215-Pos **Board #B76**
HIGH RESOLUTION CHARACTERIZATION OF TERTIARY CONTACTS IN INTRINSICALLY DISORDERED AMYLOIDOGENIC STATES OF α-SYNUCLEIN PROVIDES NEW SCAFFOLDS FOR STRUCTURE-AIDED DRUG DISCOVERY. **Carlos W. Bertoncini**, Santiago Esteban-Martín, Xavier Salvatella

3216-Pos **Board #B77**
INSIGHTS INTO THE DYNAMICS AND ACTIN INTERACTION OF THE INTRINSICALLY DISORDERED TARP PROTEIN FROM CHLAMYDIA. **James L. Tolchard**, Lawrence A. Eaglen, Leah Morris, Ted Hackstadt, Tharin M. Blumenschein

3217-Pos **Board #B78**
TARGETED KILLING OF *ESCHERICHIA COLI* BY AN UNFOLDED PROTEIN. **Christopher L. Johnson**, Robert J. Pengelly, Helen Ridley, Jeremy H. Lakey

3218-Pos **Board #B79**
THE INTERPLAY OF CATALYTIC ACTIVITY AND SUBSTRATE PROMISCUITY FOR AN INTRINSICALLY DISORDERED STAPHYLOCOCCAL NUCLEASE. Amanda Stouffer, **Linda H. Bengtsson**, MIchael Sheremet, Donald Hilvert

3219-Pos **Board #B80**
SEQUENTIAL TYROSINE PHOSPHORYLATION OF $P27^{KIP1}$ WHEN BOUND TO THE CDK4/CYCLIN D1 COMPLEX PROMOTES KINASE ACTIVITY. **Li Ou**, Richard Kriwacki

3220-Pos **Board #B81**
FOLDING AND CHARACTERIZATION OF INTRINSICALLY DISORDERED PROTEIN HUMAN CYCLIN I (CCNI). Hsueh-Liang Chu, Tsai-Mu Cheng, Hsing-Yuan Li, **Chia-Ching Chang**

3221-Pos **Board #B82**
A QUEST FOR SMALL MOLECULE INHIBITORS OF THE CELL CYCLE REGULATOR, P27. **Luigi I. Iconaru**, Anang Shelat, Jian Zuo, Richard W. Kriwacki

DNA, RNA Structure & Conformation II (Boards #B83-#B106)

3222-Pos **Board #B83**
A NEW LOOK AT DNA INTERCALATION IS DNA INTERCALATION SOMETHING ARTIFICIAL OR HIGHLY BIOLOGICALLY RELEVANT? **Anna Reymer**, Per Lincoln, Bengt Norden

3223-Pos **Board #B84**
THE SEQUENCE CONTEXT AND METHYLATION DEPENDENCE OF DNA DRUG BINDING. **Alexandra Pincus**, Mary E. Hatcher-Skeers

3224-Pos **Board #B85** **INTERNATIONAL TRAVEL AWARDEE**
INTERACTION OF PORPHYRINS WITH TRNA. THE INFLUENCE OF IONIC STRENGTH. **Ishkhan V. Vardanyan**, Yeva B. Dalyan, Dmitri Y. Lando

3225-Pos **Board #B86**
DNA BOUND RUTHENIUM COMPLEX STRUCTURE DETERMINATION BY NMR AND OPTICAL SPECTROSCOPY. **Lisha Wu**

3226-Pos **Board #B87**
SEQUENCE AND STRUCTURE DEPENDENT DNA-DNA INTERACTIONS. **Qi Xia**, Xiangyun Qiu

3227-Pos **Board #B88**
ELUCIDATING MECHANISMS OF NUCLEOSOME AGGREGATION: LOW RESOLUTION STRUCTURE STUDIES OF A VARIETY OF NUCLEOSOME CORE PARTICLE CONSTRUCTS AS A FUNCTION OF CHANGING ION CONDITIONS. **Kurt Andresen**, Xiangyun Qiu, Chongli Yuan

3228-Pos **Board #B89**
QUANTIFY CATION-DEPENDENT FORCES BETWEEN NUCLEOSOMES. **Steven C. Howell**, Kurt Andresen, Chongli Yuan, Xiangyun Qiu

3229-Pos **Board #B90**
CONDENSATION OF A DOUBLE STRAND DNA BY PT AND PD CONTAINING COMPOUNDS: STRETCHING INFLUENCE. **Shushanik A. Sargsyan**, Yevgeni Sh. Mamasakhlisov

3230-Pos Board #B91
ELUCIDATING THE ROLE OF IONS IN DNA CONDENSATION: MEASUREMENTS OF THE ION ATMOSPHERE SURROUNDING CONDENSED DNA PELLETS USING INDUCTIVELY-COUPLE PLASMA ATOMIC EMISSION SPECTROSCOPY. **John Giannini**, Qi Xia, Xiangyun Qiu, Kurt Andresen

3231-Pos Board #B92
AGGREGATE FORMATION FROM THE INTERACTION BETWEEN OLIGONUCLEOTIDES AND A QUATERNARY AMMONIUM SALT. **Lucia S. Milla**, Julien A. Gago-Viel, Pamela M. St. John

3232-Pos Board #B93
MOLECULAR DYNAMICS INVESTIGATIONS ON BASE SEQUENCE SPECIFICITY OF COUNTERION BINDING TO DNA. Alessio Atzori, Sonia Liggi, Aatto Laaksonen, Alexander Lyubartsev, Giuseppe Saba, Massimiliano Porcu, **Francesca Mocci**

3233-Pos Board #B94
IMPROVED PARAMETRIZATION OF ION-DNA INTERACTIONS FOR MD SIMULATIONS OF DENSE DNA SYSTEMS. **Jejoong Yoo**, Aleksei Aksimentiev

3234-Pos Board #B95
A GENERAL MODEL FOR SOLUTE EFFECTS: HOW TO PREDICT THE EFFECT OF ANY SOLUTE ON ANY PROCESS. **Ben Knowles**, CM Phan, Z Haq, E Lingeman, NF Deines, AS Lacroix, IA Shkel, MT Record

3235-Pos Board #B96
THE EFFECT OF FORMATION PATHWAY ON THE STRUCTURE AND STABILITY OF PEGYLATED LIPOPLEXES AT PHYSIOLOGICAL CONDITIONS: IMPLICATIONS FOR GENE DELIVERY. **Bruno F.B. Silva**, Ramsey N. Majzoub, Chia-Ling Chan, Youli Li, Ulf Olsson, Cyrus R. Safinya

3236-Pos Board #B97
ENVIRONMENTALLY RESPONSIVE CATIONIC LIPOSOME-DNA COMPLEXES FOR CELL DELIVERY. **Rahau S. Shirazi**, Kai K. Ewert, Cecilia Leal, Cyrus R. Safinya

3237-Pos Board #B98
IN SILICO AND IN EX-VIVO EXPERIMENTS INDICATE THE POTENTIAL OF NANOPARTICLES COMPOSED OF RNA-BOLAAMPHIPHILE COMPLEXES AS A THERAPEUTIC SIRNA DELIVERY VEHICLE. **Taejin Kim**, Kirill Afonin, Eliahu Heldman, Robert Blumenthal, Bruce Shapiro

3238-Pos Board #B99
SMALL INTERFERING RNA TRANSFECTION BARRIERS ACROSS A LIPID MEMBRANE. **Van A. Ngo**, Amit Choubey, Rajiv Kalia, Aiichiro Nakano, Priya Vashishta

3239-Pos Board #B100
INTERACTIONS OF GOLD NANOPARTICLES WITH DNA: INTERPLAY OF SEQUENCE, LIGANDS CHARGE AND POLARITY. **Abhishek Singh**, Nan Li, Yaroslava G. Yingling

3240-Pos Board #B101
DESIGN AND ASSEMBLY OF AN ARTIFICIAL OXYGEN-EVOLVING COMPLEX IN DNA NANOSTRUCTURES. **Kimberly N. Rendek**, Chad Simmons, Jesse Bergkamp, Justin Flory, Chenxiang Lin, Ingo Grotjohann, Raimund Fromme, Devens Gust, Hao Yan, Yan Liu, Petra Fromme

3241-Pos Board #B102
FORMATION AND CHARACTERIZATION OF DNA-CONCATEMERS. **Lu Sun**, Hans-Christian Becker, Anna Kim, Björn Åkerman

3242-Pos Board #B103
DNA-LINKED MAGNETIC PARTICLES: A MODEL MACROMOLECULE. Julie Byrom, **Sibani L. Biswal**

3243-Pos Board #B104
A MULTISCALE APPROACH TO RNA 3D STRUCTURE PREDICTION. **Liang Liu**, Shi-Jie Chen

3244-Pos Board #B105
BIOCHEMICAL STUDIES OF A LONG NONCODING RNA INVOLVED IN BREAST CANCER BIOLOGY. **Irina V. Novikova**, Scott P. Hennelly, Karissa Y. Sanbonmatsu

3245-Pos Board #B106
FUNCTIONAL NON-CODING RNA CODING VASCULAR EPIGENETICS: CHANCE AND NECESSITY IN ADAPTATION REACTIONS. **Josef H. Wissler**

Virus Structure & Assembly (Boards #B107-#B127)

3246-Pos Board #B107
THE ROLE OF LIPID RAFTS IN VIRUS ASSEMBLY. IDENTIFICATION AND CHARACTERIZATION OF MICRODOMAIN PARTITIONING FACTORS OF THE HIV-1 GLYCOPROTEIN GP41 USING FLIM-FRET AND FLUORESCENCE ANISOTROPY MICROSCOPY. **Roland Schwarzer**, Silvia Scolari, Katharina Imkeller, David Reismann, Andreas Herrmann

3247-Pos Board #B108
INTRACELLULAR DYNAMICS OF HIV-GAG: THE ROLE OF CALCIUM AND THE ACTIVATION OF PHOSPHOLIPASE C. **Andrea Gramatica**, Roland Schwarzer, Andreas Herrmann

3248-Pos Board #B109
THE HIV-1 PRE-INTEGRATION COMPLEX: STRUCTURAL AND FUNCTIONAL ROLE OF INI1 AND LEDGF, CELLULAR COFACTORS OF VIRAL INTEGRASE. Benoit Maillot, Sylvia Eiler, Corinne Crucifix, Nicolas Levy, Karine Pradeau, Yves Mely, Dino Moras, Patrick Schultz, **Marc Ruff**

3249-Pos Board #B110
TRANSLATING BULK MEASURES OF CAPSID ASSEMBLY PROGRESS INTO INSIGHTS ON FINE-SCALE KINETICS AND PATHWAYS. **Gregory R. Smith**, Lu Xie, Xian Feng, Byoungkoo Lee, Russell Schwartz

3250-Pos Board #B111
UNCOATING OF MATURE HIV CAPSIDS DRIVEN BY REVERSE TRANSCRIPTION. **Ioulia Rouzina**, Robijn Bruinsma

3251-Pos Board #B112
STRUCTURE AND RNA RECOGNITION IN RECOMBINANT STNV CAPSIDS. **Simon Edward Victor Phillips**, Stephen W. Lane, Caitriona A. Dennis, Claire L. Lane, Chi H. Trinh, Pierre J. Rizkallah, David H. Bunka, Eric C. Dykeman, Robert Ford, Amy Barker, Reidun Twarock, Peter G. Stockley

3252-Pos **Board #B113**
MORPHOLOGY AND NANOMECHANICAL PROPERTIES OF THE T7 BACTERIOPHAGE. **Zsuzsanna Vörös**, Ünige Murvai, Tamás Bozó, Gabriella Csík, Miklós S.Z. Kellermayer

3253-Pos **Board #B114**
MOLECULAR DYNAMICS FLEXIBLE FITTING OF POLIOVIRUS STRUCTURAL TRANSITIONS DURING INITIATION OF INFECTION AT ATOMIC RESOLUTION. **Yaroslav D. Bodnar**, Klaus J. Schulten

3254-Pos **Board #B115**
STUDIES ON PREDICTORS OF NON-RESPONSE OF PATIENTS WITH HEPATITIS C VIRUS (HCV) INFECTION FOLLOWING MULTIPLE INTERFERON-BASED TREATMENTS. **Yatian Zhang**

3255-Pos **Board #B116**
SINGLE-MOLECULE STUDIES OF THE BACTERIOPHAGE T4 DNA PACKAGING MOTOR. **Amy Davenport**

3256-Pos **Board #B117**
ASSEMBLY OF THE ADENOVIRAL IVA2 AND L4-22K PROTEINS ON VIRAL DNA PACKAGING SEQUENCES. **Teng-Chieh Yang**, N. Karl Maluf

3257-Pos **Board #B118**
ENERGY INDEPENDENT HELICASE ACTIVITY OF A VIRAL GENOME PACKAGING MOTOR. **Jenny R. Chang**, Benjamin T. Andrews, Carlos E. Catalano

3258-Pos **Board #B119**
SINGLE MOLECULE STUDIES OF BACTERIOPHAGE PHI29 DNA TERMINAL PROTEIN INTERACTIONS AND THEIR ROLE IN DNA PACKAGING. **Zachary Berndsen**, Douglas Smith

3259-Pos **Board #B120**
ASSEMBLY OF A GENOME PACKAGING MOTOR ON VIRAL DNA INFLUENCES PACKAGING MECHANISM.
Benjamin T. Andrews, Carlos E. Catalano

3260-Pos **Board #B121**
PROBING FUNCTIONAL MOTIFS AND REGIONS IN THE PHAGE LAMBDA DNA PACKAGING MOTOR BY MUTAGENESIS AND SINGLE-MOLECULE OPTICAL TWEEZERS MEASUREMENTS. **Douglas E. Smith**

3261-Pos **Board #B122**
ANALYZING DNA PACKAGING INITIATION OF BACTERIOPHAGE T4 BY A REAL-TIME SINGLE MOLECULE FLUORESCENCE ASSAY. **Reza Vafabakhsh**, Kiran Kondabagil, Li Dai, Zhihong Zhang, Venigalla B. Rao, Taekjip Ha

3262-Pos **Board #B123**
THE UNUSUAL COMPACTNESS OF VIRAL RNA. **Ajaykumar Gopal**, Defne E. Egecioglu, Aron M. Yoffe, Avinoam Ben-Shaul, Ayala L. N. Rao, Charles M. Knobler, William M. Gelbart

3263-Pos **Board #B124**
MULTISCALE ENTANGLEMENT IN SPHERICALLY CONFINED DNA RINGS. **Luca Tubiana**, Enzo Orlandini, Cristian Micheletti

3264-Pos **Board #B125**
CHALLENGING PACKAGING LIMITS AND INFECTIVITY OF PHAGE. Elmar Nurmemmedov, Martin Castelnovo, Elizabeth Medina, Carlos E. Catalano, **Alex Evilevitch**

3265-Pos **Board #B126**
HIGH RESOLUTION TIME-RESOLVED SAXS SHOWS THAT RNA-INDUCED SV40 CAPSID PROTEIN SELF-ASSEMBLY IS VERY FAST AND WITHOUT DETECTABLE CONCENTRATIONS OF INTERMEDIATES. **Uri Raviv**, Roi Asor, Stanislav Kler, Chenglei Li, Avi Ginsburg, Daniel Harries, Ariella Oppenheim, Adam Zlotnick

3266-Pos **Board #B127**
MOLECULAR SWITCHING IN HUMAN ADENOVIRUS.
Nasib K. Maluf, Teng-Chieh Yang

RNA Folding (Boards #B128-#B143)

3267-Pos **Board #B128**
NANOMANIPULATION OF SINGLE RNA MOLECULES.
Pan TX Li

3268-Pos **Board #B129**
DETERMINING MOLECULAR STRUCTURE USING NANOPORES. **Xander Janssen**

3269-Pos **Board #B130**
RNA FLEXIBILITY AND FOLDING IN CROWDED SOLUTIONS.
John D. Kilburn, Joon Ho Roh, Liang Guo, Robert M. Briber, Sarah A. Woodson

3270-Pos **Board #B131**
SINGLE MOLECULE ANALYSIS OF HUMAN TELOMERASE RNA PSEUDOKNOT FOLDING AND DYNAMICS. Martin Hengesbach, **Michael D. Stone**

3271-Pos **Board #B132**
MECHANISM OF ENHANCED MECHANICAL STABILITY OF RETROVIRAL KISSING-LOOPS ELUCIDATED BY NON-EQUILIBRIUM MOLECULAR DYNAMICS SIMULATIONS.
Alan A. Chen, Angel E. García

3272-Pos **Board #B133**
SUB-MILLISECOND RNA COLLAPSE OBSERVED IN A MICROFLUIDIC MIXER. Suzette A. Pabit, **Julie L. Sutton**, Huimin Chen, Warren R. Zipfel, Watt W. Webb, Lois Pollack

3273-Pos **Board #B134**
CATION BINDING AND SCREENING EFFECTS ON SINGLE-STRANDED HELIX FORMATION IN POLY(A) RNA.
Bennett S. Kalafut, Koen Visscher

3274-Pos **Board #B135**
RIBOSWITCH FOLDING KINETICS CAN AFFECT GENE EXPRESSION BY A TRANSLATIONALLY ACTING RIBOSWITCH. **Volker Schweikhard**, Kirsten L. Frieda, Cuauhtémoc García-García, Steven M. Block

3275-Pos **Board #B136**
SINGLE MOLECULE VIEWS OF THE RIBOSOME ASSEMBLY. **Hajin Kim**, Sanjaya Abeysirigunawardena, Megan Mayerle, Kaushik Ragunathan, Ke Chen, John Eargle, Zaida Luthey-Schulten, Sarah Woodson, Taekjip Ha

3276-Pos **Board #B137**
NATIVE ARCHITECTURE ENCODES COOPERATIVITY AND SPECIFICITY IN RNA FOLDING INTERMEDIATES.
Reza Behrouzi, Sarah A. Woodson

3277-Pos Board #B138
TRACKING BACTERIAL RIBOREGULATION BY DSRA NONCODING RNA. Bastien Cayrol, Wonseok Hwang, Florent Busi, Sungchul Hohng, **Veronique Arluison**

3278-Pos Board #B139
RNA PSEUDOKNOTS OBTAINED BY MEANS OF KNOWLEDGE-BASED INTERACTION POTENTIALS.
Mauricio D. Carbajal-Tinoco

3279-Pos Board #B140
FRAMESHIFTING EFFICIENCY IS NOT DETERMINED BY THE MECHANICAL STABILITY OF RNA PSEUDOKNOTS.
Dustin B. Ritchie, Daniel A.N. Foster, Michael T. Woodside

3280-Pos Board #B141
KINETIC MECHANISM FOR THE CONFORMATIONAL SWITCH BETWEEN BISTABLE RNA HAIRPINS. **Xiaojun Xu**, Shi-Jie Chen

3281-Pos Board #B142
SOLUTION STRUCTURES OF FLEXIBLE RNA MOLECULES IN MONO- AND DIVALENT SALT. **Steve Meisburger**, Huimin Chen, Suzette A. Pabit, Julie L. Sutton, Watt W. Webb, Lois Pollack

3282-Pos Board #B143
GLASS-LIKE BEHAVIOR OF MAGNESIUM IONS INSIDE RNA APTAMERS. **Ryan L. Hayes**, Jose Onuchic, Jeff Noel, Karissa Sanbonmatsu, Udayan Mohanty

Membrane Structure III (Boards #B144-#B163)

3283-Pos Board #B144
STRUCTURAL CHARACTERIZATION OF PH RESPONSIVE POLYMER CUSHIONS FOR SOLID SUPPORTED MEMBRANES.
Simon Castorph, Erik B. Watkins, Caroline Y. Kim, Tonya L. Kuhl

3284-Pos Board #B145
A SUPPORTED BILAYER MODEL TO STUDY THE EFFECT OF MEMBRANE COMPOSITION ON BCL-2 FAMILY PROTEINS.
Amit Patel, Aisha Shamas-Din, Maikel Rheinstadter, Brian Leber, David Andrews, Cecile Fradin

3285-Pos Board #B146
TUNING MEMBRANE MECHANICS WITH GLYCEROL ADLAYERS. Luka Pocivavsek, **Kathleen D. Cao**, Kseniya Gavrilov, Eva Y. Chi, Dongxu Lin, Binhua Lin, Mati Meron, Jaroslaw Majewski, Ka Yee C. Lee

3286-Pos Board #B147
ADSORPTION MECHANISM OF PULMONARY SURFACTANT LAMELLAR BODIES AT THE AIR-LIQUID INTERFACE.
Nina Hobi, Monika Bachhuber, Jesus Pérez-Gil, Thomas Haller

3287-Pos Board #B148
FLUORESCENCE AND INFRARED SPECTROSCOPY FOR THE STUDY OF STRUCTURE AND LIPID PACKING/HYDRATION IN PULMONARY SURFACTANT MEMBRANES AND LAMELLAR BODY -LIKE PARTICLES. **Alejandro Cerrada**, Elena López-Rodríguez, Thomas Haller, Jesús Pérez-Gil

3288-Pos Board #B149
PHASE BEHAVIOR OF LIPID MIXTURES THAT EMULATE THE HIV-1 MEMBRANE: A MONOLAYER APPROACH. **Nerea Huarte**, Antonio Cruz, Jesus Perez-Gil, Jose L. Nieva

3289-Pos Board #B150
THE EFFECTS OF NACL ON OXIDIZED LIPID BILAYERS.
Jirasak Wong-Ekkabut, Viwan Jarerattanachat, Tunyarat Phasiri, Mikko Karttunen

3290-Pos Board #B151
IMPACT OF OXIDIZED LIPIDS ON MEMBRANE STRUCTURE AND DYNAMICS AND ITS INTERACTIONS WITH PROTEINS.
Marcus Wallgren, Lenka Beranova, Quoc Dat Pham, Konrad Cyprych, Martin Hof, **Gerhard Gröbner**

3291-Pos Board #B152
ULTRASOUND-INDUCED NANOFRAGMENTATION OF BUBBLES WITH SATURATED AND UNSATURATED LIPID COATS. **Debra J. Cox**, James L. Thomas

3292-Pos Board #B153
EFFECT OF CHARGE ON DMPC/CHAPSO BICELLAR MIXTURES AS CHARACTERIZED BY NMR AND SANS.
Hannah Hazel Morales, Ming Li, John Katsaras, Mu-Ping Nieh, Peter M. Macdonald

3293-Pos Board #B154
THE INTERACTION OF THE POLYENE ANTIBIOTIC AMPHOTERICIN B WITH DODAB AGGREGATES: A STRUCTURAL CHARACTERIZATION. **M. Teresa Lamy**, Tiago Oliveira

3294-Pos Board #B155
AGGREGATION BEHAVIOR OF INDOMETHACIN, CHOLIC ACID & POPC. **Priyanka P. Srivastava**, Lenard M. Lichtenberger, Alemayehu A. Gorfe

3295-Pos Board #B156
THE THINNING EFFECT INDUCED BY GINSENOSIDE IN LIPID BILAYERS. **Wei-Chin Hung**, Ming-Tao Lee

3296-Pos Board #B157
MOLECULAR ORGANIZATION OF VITAMIN E IN A POLYUNSATURATED MEMBRANE. Xiaoling Leng, Justin A. Williams, James M. Gorman, Scott E. Feller, Jeffrey Atkinson, **Stephen R. Wassall**

3297-Pos Board #B158
GENERAL ANESTHETICS LOWER CRITICAL TEMPERATURES IN PLASMA MEMBRANE VESICLES AND DISRUPT ANTIGEN INDUCED SIGNALING IN RBL-2H3 CELLS. **Ellyn Gray**, Benjamin Matcha, Sarah Veatch

3298-Pos Board #B159
THE ROLE OF TWO SMXXXSM MOTIFS IN THE DIMERIZATION OF THE FGFR3 TRANSMEMBRANE DOMAIN. **Krishna C. Mudumbi**, Edwin Li

3299-Pos Board #B160
THREE-DIMENSIONAL STRUCTURAL ANALYSIS OF LIPID AND DNA COMPLEX USING ZERNIKE PHASE CONTRAST TRANSMISSION ELECTRON MICROSCOPE TOMOGRAPHY. **Goshu Tamura**, Naoki Hosogi, Yuya Shinohara, Kazuo Sakurai, Kuniaki Nagayama, Yoshiyuki Amemiya

3300-Pos Board #B161
OLIGOMERIC STATE OF MEMBRANE-ASSEMBLED TYPE III SECRETION TRANSLOCATORS POPB AND POPD DETERMINED BY SINGLE-MOLECULE PHOTOBLEACHING. **Fabian B. Romano**, Leslie C. Conway, Jennifer L. Ross, Alejandro P. Heuck

3301-Pos **Board #B162**
THE ECOLOGY OF A SYNTHETIC BIOFILM: SYNCHRONIZATION WITHOUT A CLOCK. **Edward M. Nelson**, Utkur Mirsaidov, Winston Timp, Volker Kurz, Nicholas Perry, Gregory Timp

3302-Pos **Board #B163** **MINORITY TRAVEL AWARDEE**
TRANSITIONS IN CELL NUCLEUS MORPHOLOGY DETERMINED BY EXPRESSION LEVELS OF NUCLEAR ENVELOPE PROTEINS. **Craig A. Fogle**, Joseph A. Rudnick, Alex J. Levine, Amy C. Rowat

Epithelial Channels & Physiology (Boards #B164-#B170)

3303-Pos **Board #B164**
APICAL CA^{2+}-ACTIVATED K^{+}-CHANNELS IN MOUSE PAROTID ACINAR CELLS. **Janos Almassy**, Ted Begenisich, David Yule

3304-Pos **Board #B165**
EGF DEFICIENCY IN THE RENAL CORTEX CONTRIBUTES TO SALT-SENSITIVE HYPERTENSION VIA UPREGULATION OF ENAC ACTIVITY. Tengis S. Pavlov, Vladislav Levchenko, Paul M. O'Connor, Andrey Sorokin, David L. Mattson, Julian H. Lombard, Allen W. Cowley, Jr, **Alexander Staruschenko**

3305-Pos **Board #B166**
IN SEARCH OF ENAC SODIUM SENSORS. **Ossama B. Kashlan**, Michael Tolino, Thomas R. Kleyman

3306-Pos **Board #B167**
STIMULATION OF ENAC BY THIASOLIDINEDIONES. Stéphane Renauld, Karine Tremblay, **Ahmed Chraibi**

3307-Pos **Board #B168**
BILE SALTS ACTIVATE BLINAC - AN EPITHELIAL NA^{+} CHANNEL IN THE LIVER. **Dominik Wiemuth**, Stefan Gruender

3308-Pos **Board #B169**
RECONCILING AQUAPORIN KNOCKOUT STUDIES WITH EPITHELIAL PERMEABILITY: INSIGHTS FROM MODELLING THE SALIVARY GLAND. **Oliver J. Maclaren**, James Sneyd, Edmund J. Crampin

3309-Pos **Board #B170**
FUSION DEPENDENT ACTIVATION OF VESICULAR P2X4 RECEPTORS LEADS TO A VOLUME INCREASE IN ALVEOLAR TYPE II EPITHELIAL CELLS - COUPLING SECRETION AND LUNG FLUID HOMEOSTASIS? Kristin Thompson, Elena Hecht, Oliver H. Wittekindt, Pika Miklavc, Christine Kranz, Paul Dietl, **Manfred Frick**

Motions of the Cell Surface Molecules (Boards #B171-#B181)

3310-Pos **Board #B171**
DIFFUSION OF DII, FAST DIO, AND TOPFLUOR-PC IN THE OUTER MEMBRANE OF LIVE E. COLI. **Alyssa Garrelts**, Yi-Ju Hsieh, Barry Wanner, Kenneth P. Ritchie

3311-Pos **Board #B172**
EXTRACELLULAR, MEMBRANE AND INTRACELLULAR PROTEINS THAT ALTER INTEGRIN CELL MEMBRANE DIFFUSION AND CLUSTERING. **Emily A. Smith**, Suzanne Sander, Neha Arora, Dipak Mainali, Deepak Dibya

3312-Pos **Board #B173**
ALTERNATING TWO DIFFERENT DIFFUSION STATES OF MIN PROTEINS ON THE LIPID BILAYER REVEALED BY SINGLE MOLECULE TRACKING. **Vassili Ivanov**, Kiyoshi Mizuuchi

3313-Pos **Board #B174**
CLATHRIN-MEDIATED ENDOCYTOSIS INTRODUCES A NONERGODIC DIFFUSION PROCESS IN THE PLASMA MEMBRANE. Aubrey V. Weigel, Michael M. Tamkun, **Diego Krapf**

3314-Pos **Board #B175**
WANTED: A POSITIVE CONTROL FOR ANOMALOUS SUBDIFFUSION. **Michael J. Saxton**

3315-Pos **Board #B176**
ROTATIONAL DIFFUSION IN MODEL MEMBRANES USING TIME-RESOLVED FLUORESCENCE ANISOTROPY. **Christopher R. Rhodes**, Niña Hartman, Eulanca Liu, Jay T. Groves

3316-Pos **Board #B177**
THE DIFFUSION AND ENERGY LANDSCAPES OF POST-SYNAPTIC TRANSMEMBRANE PROTEINS. Jean-Baptiste Masson, Patrice Dionne, Marianne Renner, Christian Specht, Antoine Triller, **Maxime Dahan**

3317-Pos **Board #B178** **EDUCATION TRAVEL AWARDEE**
ANALYZING DIFFERENTIAL DYNAMICS OF CD9 AND CD81 WITH SINGLE MOLECULE TRACKING. **Patrice Rassam**, Emmanuel Margeat, Patrice Dosset, Eric Rubinstein, Pierre-Emmanuel Milhiet

3318-Pos **Board #B179**
ROTATION OF SINGLE CELL-SURFACE FC RECEPTORS EXAMINED BY QUANTUM DOT PROBES. **Peter W. Winter**, Dongmei Zhang, Arieh Licht, Deborah A. Roess, Israel Pecht, B. George Barisas

3319-Pos **Board #B180**
OPTIMAL DIFFUSION COEFFICIENT ESTIMATION IN SINGLE-PARTICLE TRACKING. **Andrew J. Berglund**, Xavier Michalet

3320-Pos **Board #B181**
THE NATURE OF CONSTITUTIVE ACTIVATION OF HER2 AT THE SINGLE MOLECULE LEVEL. **Inhee Chung**, Robert Akita, Lily Shao, Gabriele Schaefer, Mark Sliwkowski, Ira Mellman

Auditory Systems (Boards #B182-#B189)

3321-Pos **Board #B182**
AN ACTIVE MECHANISM FOR SIGNAL DETECTION IN THE MAMMALIAN EAR. **Daibhid O Maoileidigh**, A. J. Hudspeth

3322-Pos **Board #B183**
OTOACOUSTIC EMISSION THROUGH WAVES ON REISSNER'S MEMBRANE. **Tobias Reichenbach**, Aleksandra Stefanovic, A. J. Hudspeth

3323-Pos **Board #B184**
MAGNETIC NANOPARTICLES AS MECHANICAL ACTUATORS OF INNER EAR HAIR CELLS. **Dolores Bozovic**, David Rowland, Yuttana Roongthomskol

3324-Pos **Board #B185**
EFFECT OF NON-STEROIDAL ANTI-INFLAMMATORY DRUGS ON THE OUTER HAIR CELL PROTEIN PRESTIN. Guillame Duret, **Robert Raphael**

3325-Pos **Board #B186**
THERMAL SENSITIVITY OF VESTIBULAR NEUROEPITHELIUM IN THE TOADFISH. **Suhrud M. Rajguru**, Rhiannon Johnson, Micah Frerck, Holly A. Holman, Stephen M. Highstein, Richard D. Rabbitt

3326-Pos **Board #B187**
IMAGING STEREOCILIA LINKS IN LIVE AUDITORY HAIR CELLS. **A Catalina Velez-Ortega**, Artur A. Indzhykulian, Ghanshyam P. Sinha, Gregory I. Frolenkov

3327-Pos **Board #B188**
NONLINEARITIES IN THRESHOLD-LEVEL DETECTION BY INNER EAR HAIR CELLS. **Yuttana Roongthumskul**, Albert Kao, Sebastiaan W.F. Meenderink, Dolores Bozovic

3328-Pos **Board #B189**
SELF-TUNING OF HAIR CELLS IN THE BULLFROG SACCULUS. **Albert Kao**, Dolores Bozovic

Peptide & Toxin Ion Channels (Boards #B190-#B204)

3329-Pos **Board #B190**
INCREASE IN CYTOTOXIC EFFECT OF TOLAASIN BY PHOSPHOLIPIDS COMPOSED OF MEDIUM-CHAIN FATTY ACIDS. **Young-Kee Kim**, Seong-Wan Park, Young-Bae Yoon

3330-Pos **Board #B191**
COMPETITION EFFECT OF DDPE AND ZN^{2+} ON THE HEMOLYSIS INDUCED BY TOLAASIN, A PORE-FORMING PEPTIDE TOXIN. **Young-Bae Yoon**, Young-Kee Kim

3331-Pos **Board #B192**
PROTEIN TRANSLOCATION THROUGH MITOCHONDRIA CHANNEL: PEPTIDE INTERACTIONS WITH TOM40 CHANNEL. Kozhinjampara R. Mahendran, Mercedes Romero Ruiz, Stephan Nussberger, **Mathias Winterhalter**

3332-Pos **Board #B193**
ELECTRICAL ASPECTS OF MEMBRANE PERMEABILIZATION BY NEW POLYCATIONIC PEPTIDES DERIVED FROM THE CRY11BB PROTOXIN. **Victor V. Lemeshko**, Jose A. Alvarez

3333-Pos **Board #B194**
HELIX N-CAP ASP ARE THE PH TRIGGER FOR COLICIN A MEMBRANE INSERTION. Yan Huang, Anton Le Brun, Andrei Soliakov, Colin MacDonald, Geoffrey Moore, **Jeremy H. Lakey**

3334-Pos **Board #B195** **EDUCATION TRAVEL AWARDEE**
ON CHANNEL ACTIVITY OF SYNTHETIC PEPTIDES DERIVED FROM SEVERE AND ACUTE RESPIRATORY SYNDROME CORONAVIRUS (SARS-COV) E PROTEIN.
Carmina Verdiá Báguena, Jose L. Nieto-Torres, Antonio Alcaraz, Marta L. DeDiego, Luis Enjuanes, Vicente M. Aguilella

3335-Pos **Board #B196**
PHOSPHATIDYL-SERINE-POSITIVE CELLS WITH HIGH SENSITIVITY TO THE ALZHEIMER'S DISEASE Aβ PEPTIDES DISPLAY DISTINCTIVE MITOCHONDRIAL CHARACTERISTICS. Olga Simakova, **Nelson J. Arispe**

3336-Pos **Board #B197**
SUBLYTIC CONCENTRATIONS OF STAPHYLOCOCCUS AUREUS α-TOXIN TRIGGER NA+/K+ ATPASE MEDIATED CELL SHRINKAGE. **Martin P. Stewart**, Daniel J. Mueller

3337-Pos **Board #B198**
EVIDENCE FOR A TH6-TH7 TRANSMEMBRANE HAIRPIN IN THE DIPHTHERIA TOXIN T-DOMAIN OPEN CHANNEL STATE. **Paul Kienker**, Zhengyan Wu, Alan Finkelstein

3338-Pos **Board #B199**
DEVELOPMENT OF THE PERISS METHOD TO GENERATE GPCR LIGANDS/BINDERS FROM A RANDOM PEPTIDE LIBRARY WITH A SPIDER NEUROTOXIN SCAFFOLD. **Tai Kubo**, Seigo Ono, Tadashi Kimura, Suzuko Kobayashi, Tetsuro Kondo, Eriko Fukuda, Tatsuya Haga, Kimihiko Kameyama

3339-Pos **Board #B200**
PEPTIDE-GATED DEG/ENAC CHANNELS FROM HYDRA MAGNIPAPILLATA ARE HIGHLY PERMEABLE FOR CALCIUM. **Stefan Dürrnagel**, Björn Falkenburger, Stefan Gründer

3340-Pos **Board #B201**
A NATURAL POINT MUTATION REVEALS TARGET PROMISCUITY OF TOXINS ISOLATED FROM THE SEA ANEMONE *ANTHOPLEURA ELEGANTISSIMA*. **Steve Peigneur**, Evelien Lescrinier, Carolina Möller, Frank Marí, László Béress, Jan Tytgat

3341-Pos **Board #B202**
POSITIVE CHARGES OF DISCREPIN ARE RESPONSIBLE FOR THE BLOCK OF K+ CHANNELS OF CEREBELLUM GRANULAR CELLS. **Cristiana Picco**, Gerardo Corzo, Lourival D. Possani, Honoo Satake, Gianfranco Prestipino

3342-Pos **Board #B203**
CROTAMINE TOXICITY REVISITED: NOVEL INSIGHTS BASED ON K_V CHANNEL INHIBITION. **Jan Tytgat**, Steve Peigneur, Diego Jose Belato y Orts, Alvaro Prieto da Silva, Nancy Oguiura, Malvina Boni-Mitake, André Junqueira Zaharenko

3343-Pos **Board #B204**
ANTI-OBESITY EFFECT OF SHK-186, A K^+ CHANNEL BLOCKER. **Sanjeev K. Upadhyay**, Kristin Eckel-Mahan, Mohammed Reza Mirbolooki, Indra W. Tjong, Jogeshwar Mukharjee, Shawn P. Iadonato, Paolo Sassoni-Corsi, Ping H. Wang, K George Chandy

Membrane Transporters & Exchangers II (Boards #B205-#B234)

3344-Pos **Board #B205**
QUATERNARY STRUCTURE OF THE NBD SUBUNIT WZT OF A BACTERIAL ABC TRANSPORTER IN THE ABSENCE AND PRESENCE OF TMD SUBUNIT WZM USING PIXEL-LEVEL FRET. **Deo R. Singh**, Mohammad M. Mohammad, Khalil R. Howard, Julie A. Oliver, Liviu Movileanu, Valerica Raicu

3345-Pos **Board #B206**
MICROFLUIDIC ANALYSIS OF ATP-BINDING CASSETTE TRANSPORTERS AT SINGLE-VESICLE LEVEL. **Hirotaka Sasaki**, Ryuji Kawano, Toshihisa Osaki, Koki Kamiya, Shoji Takeuchi

3346-Pos **Board #B207**
MOLECULAR MECHANICS INVESTIGATION ON THE MECHANISM OF MULTIDRUG RESISTANCE. **Yanyan Xu**, Anna Seelig, Simon Bernèche

3347-Pos **Board #B208**
ATOMIC DETAIL STUDIES OF P-GLYCOPROTEIN AND DRUG PERMEATION IN MODEL MEMBRANES. **Jerome Ma**, Phil Biggin, Jason Schnell

3348-Pos **Board #B209**
THE AMPHIPHILICITY OF ALLORCITS AND THE RATE OF ATP HYDROLYSIS AND FLOPPING BY P-GLYCOPROTEIN. **Anna Seelig**, Xiaochun Li-Blatter, Andreas Beck

3349-Pos **Board #B210**
FUNDAMENTAL DIFFERENCE OF TRANSPORT MECHANISMS BETWEEN ABC IMPORTERS AND EXPORTERS. **Po-Chao Wen**, Emad Tajkhorshid

3350-Pos **Board #B211**
STUDYING THE CONFORMATIONAL CYCLE OF THE SECONDARY MULTIDRUG TRANSPORTER LMRP BY EPR SPECTROSCOPY. **Matthieu Masureel**, Smriti Smriti, Chloé Martens, Ping Zou, Jean-Marie Ruysschaert, Hassane S. Mchaourab, Cédric Govaerts

3351-Pos **Board #B212**
STRUCTURE AND DYNAMICS OF THE MFS MULTIDRUG TRANSPORTER EMRD. **Ping Zou**, Hassane Mchaourab

3352-Pos **Board #B213**
MODULATION OF SUBSTRATE EFFLUX IN BACTERIAL SMALL MULTIDRUG RESISTANCE PROTEINS BY MUTATIONS AT THE DIMER INTERFACE. **Bradley E. Poulsen**, Fiona Cunningham, Kate K.Y. Lee, Charles M. Deber

3353-Pos **Board #B214**
ALL-ATOM MOLECULAR DYNAMICS SIMULATION OF MULTIDRUG EFFLUX TRANSPORTER ACRB. **Tsutomu Yamane**, Mitsunori Ikeguchi

3354-Pos **Board #B215**
DYNAMICS OF THE DOPAMINE TRANSPORTER IN VARIOUS STATES IN THE PRESENCE OF AN EXPLICIT SODIUM GRADIENT. **Bonnie A. Merchant**, Jeffry D. Madura

3355-Pos **Board #B216**
COMPUTER SIMULATIONS OF THE MULTI-DRUG EFFLUX PUMP ACRAB-TOLC. Nadine Fischer, Martin Raunest, Thomas H. Schmidt, **Christian Kandt**

3356-Pos **Board #B217**
COARSE GRAINING PROTEIN-PHOSPHOLIPID INTERACTIONS AND DIFFUSION WITH MSBA FLIPPASE. Andrew Ward, Olgun Guvench, **Ronald D. Hills, Jr.**

3357-Pos **Board #B218**
THE TRANSPORTER ASSOCIATED WITH ANTIGEN PROCESSING: MOLECULAR MODELS TO DESCRIBE THE TRANSPORT CYCLE. **Valentina Corradi**, Gurpreet Singh, D. Peter Tieleman

3358-Pos **Board #B219**
TRANSPORT PROPERTIES OF THE HUMAN AQUAPORIN HSAQP5. **Lorant Janosi**, Matteo Ceccarelli

3359-Pos **Board #B220**
TRANSPORT CYCLE OF MITOCHONDRIAL CARRIERS FROM INTERNAL SYMMETRIES. **Giray Enkavi**, Emad Tajkhorshid

3360-Pos **Board #B221**
UNDERSTANDING SUBSTRATE UNBINDING FROM THE SODIUM-GALACTOSE CO-TRANSPORTER VSGLT BASED ON 16 MICROSECONDS OF MOLECULAR SIMULATION. **Seungho Choe**, Joshua L. Adelman, John M. Rosenberg, Ernest M. Wright, Jeff Abramson, Michael Grabe

3361-Pos **Board #B222**
INSIGHT INTO THE ALTERNATING ACCESS MECHANISM OF THE SODIUM SYMPORTER MHP1 USING PATH SAMPLING SIMULATIONS. **Joshua L. Adelman**, Amy L. Dale, Matthew C. Zwier, Divesh Bhatt, Lillian T. Chong, Daniel M. Zuckerman, Michael Grabe

3362-Pos **Board #B223**
MECHANISM OF ION COUPLED STATE TRANSITION IN LEUT-FOLD TRANSPORTERS. **Jing Li**, Emad Tajkhorshid

3363-Pos **Board #B224**
THE AFFINITY OF THE CARDIAC NA^+-CA^{2+} EXCHANGER TO REGULATORY CA^{2+} IS DECREASED BY CYTOPLASMIC MG^{2+}. Noelle Boctor, Scott John, Kenneth D. Philipson, **Michela Ottolia**

3364-Pos **Board #B225**
ROLE OF MITOCHONDRIAL NA CA EXCHANGE ON BCR MEDIATED CA2+ SIGNALLING IN B LYMPHOCYTES. **Bongju Kim**, Ayako Takeuchi, Orie Koga, Masaki Hikida, Satoshi Matsuoka

3365-Pos **Board #B226**
PHARMACOLOGICAL PROPERTIES OF YM-244769, A SPECIFIC NA^+/CA^{2+} EXCHANGE INHIBITOR, IN CARDIAC MYOCYTES. Satomi Kita, Yasuhide Watanabe, Kanna Yamashita, Toshiaki Yamada, Tomomi Yamakawa, Shintaro Yamamoto, Junko Kimura, **Takahiro Iwamoto**

3366-Pos **Board #B227**
YM-244769, A NOVEL NA^+/CA^{2+} EXCHANGE INHIBITOR, EFFICIENTLY IMPROVES ISCHEMIA/REPERFUSION-INDUCED RENAL INJURY. **Yusuke Goto**, Masaya Ogata, Satomi Kita, Takahiro Iwamoto

3367-Pos **Board #B228**
VASCULAR NA^+/CA^{2+} EXCHANGER TYPE-1 CONTRIBUTES TO HYPERTENSION IN PSEUDOHYPOALDOSTERONISM TYPE II AND CUSHING'S SYNDROME MODELS. **Satomi Kita**, Shinichi Uchida, Issei Komuro, Takahiro Iwamoto

3368-Pos **Board #B229**
REVERSE MODE OF THE SODIUM CALCIUM EXCHANGER IS ENHANCED IN MALIGNANT HYPERTHERMIA SUSCEPTIBLE SKELETAL MUSCLE. Jose M. Eltit, Nancy Linares, Isaac N. Pessah, P. D. Allen, **Jose R. Lopez**

3369-Pos **Board #B230** **CPOW TRAVEL AWARDEE**
ATRIAL-SPECIFIC NCX KO MICE REVEAL DEPENDENCE OF SINOATRIAL NODE PACEMAKER ACTIVITY ON SODIUM-CALCIUM EXCHANGE. **Sabine Groenke**, Eric D. Larson, Haruko Nakano, Atsushi Nakano, Catherine Proenza, Kenneth D. Philipson, Joshua I. Goldhaber

3370-Pos **Board #B231**
A NEW VIEW OF INSULIN ACTION. **Richard D. Moore**

3371-Pos **Board #B232**
PLATELET ACTIVATING FACTOR STIMULATES SODIUM-PROTON EXCHANGE. **Yoichi Ajiro**, Noriko Saegusa, Kazunori Iwade, Wayne R. Giles, Diana Stafforini, Kenneth W. Spitzer

3372-Pos **Board #B233**
PHYSIOLOGICAL MAGNESIUM INFLUX PATHWAYS IN CARDIAC MYOCYTES. **Michiko Tashiro**, Hana Inoue, Masato Konishi

3373-Pos **Board #B234**
MECHANISTIC INSIGHTS INTO THE TWIN-ARGININE TRANSLOCATION CYCLE OF ESCHERICHIA COLI BY AN IN VIVO SINGLE-MOLECULE APPROACH. **Felix Oswald**, Siet M.J.L. van den Wildenberg, Kah Wai Yau, Peter van Ulsen, Gijs J.L. Wuite, Yves J.M. Bollen, Erwin J.G. Peterman

Membrane Receptors & Signal Transduction II (Boards #B235-#B261)

3374-Pos **Board #B235**
MODEL LIQUID DROPLETS TO EXPLORE T-CELL SURFACE DYNAMICS UPON ACTIVATION. Nadia Bourouina, Claire Hivroz, **Nelly Henry**

3375-Pos **Board #B236**
THE MOLECULAR BASIS FOR LIPID RECOGNITION AND SIGNALING IN THE TOLL-LIKE RECEPTOR COMPLEX AND A FAMILY OF LIPID-BINDING PROTEINS. Teresa Paramo, Sally Higson, Thomas J. Piggot, **Peter J. Bond**

3376-Pos **Board #B237**
A COMMON MODEL FOR CYTOKINE RECEPTOR ACTIVATION: COMBINED SCISSOR-LIKE ROTATION AND SELF-ROTATION OF RECEPTOR DIMER INDUCED BY CLASS I CYTOKINE. **Xiaodong Pang**, Huan-Xiang Zhou

3377-Pos **Board #B238**
DIFFUSION OF SINGLE B CELL RECEPTORS IN RESTING AND STIMULATED B LYMPHOCYTES USING SUPER-RESOLUTION MICROSCOPY. **Matthew B. Stone**, Marko Martinovski, Veatch L. Veatch

3378-Pos **Board #B239**
RHO FAMILY PROTEINS IN HIGH- AND LOW-AFFINITY FMLF RECEPTORS SIGNALING IN NEUTROPHILS. **Julia Filina**, Valentina Safronova, Aida Gabdoulkhakova

3379-Pos **Board #B240**
ACTIVATION OF THE INNATE IMMUNE RECEPTOR DECTIN-1 BY CLUSTERING. Amira Fitieh, Andrew Locke, Tomek Lipinski, Sandra Ungarian, David Bundle, Khuloud Jaqaman, **Nicolas Touret**

3380-Pos **Board #B241**
SIGNAL PROCESSING BY THE CONTROL CYCLE OF THE IKK KINASE IN THE NFKB SIGNALING AXIS. **Marcelo Behar**, Alexander Hoffmann

3381-Pos **Board #B242**
INTEGRATING SINGLE MOLECULE TECHNIQUES TO INVESTIGATE ANTIGEN-INDEPENDENT EFFECTS OF IGE BINDING TO FCεRI. **Samantha L. Schwartz**, Qi Yan, Patrick J. Cutler, Marcel P. Bruchez, Keith A. Lidke, Diane S. Lidke

3382-Pos **Board #B243**
SUPER-RESOLUTION TRACKING AND IMAGING OF IGE RECEPTORS DURING STIMULATION BY ANTIGEN. **Sarah A. Shelby**, David A. Holowka, Barbara A. Baird, Sarah L. Veatch

3383-Pos **Board #B244**
SOMATOSTATIN AND NEUROPEPTIDE-Y DIFFERENTIALLY INHIBIT INSULIN SECRETION. **Tara A. Schwetz**, David W. Piston

3384-Pos **Board #B245**
REVEALING FIBROBLAST GROWTH FACTOR RECEPTOR-1 AND KLOTHO-BETA PLASMA MEMBRANE DYNAMICS WITH FRAP AND NUMBER AND BRIGHTNESS ANALYSIS. **Aaron Y. Ming**, Eunjong Yoo, Eugene Vorontsov, Svetlana Altamenova, Jonathan V. Rocheleau

3385-Pos **Board #B246**
ANALYSIS OF EGFR SIGNALING IN SINGLE CELLS USING CAPILLARY ELECTROPHORESIS. **Ryan M. Phillips**, David S. Lawrence, Nancy L. Allbritton

3386-Pos **Board #B247**
UNDERSTANDING EGFR ACTIVATION IN BREAST CANCER BY SUPER-RESOLUTION IMAGING. **Ruobing Zhang**, Gilbert Fruhwirth, Tony Ng, Paul R. Selvin

3387-Pos **Board #B248**
DESIGNER CLUSTERS TO PROBE THE FUNCTION OF MEMBRANE RECEPTOR OLIGOMERIZATION. **Michael P. Coyle**, Samantha Chiang, Qian Xu, Matthew B. Francis, Jay T. Groves

3388-Pos **Board #B249**
DETERMINING IF SPATIO-MECHANOSENSITIVITY OF EPHA2 SIGNALING STEMS FROM PHYSICAL IMPEDANCE OF ENDOCYTOSIS. **Adrienne C. Greene**, Samuel J. Lord, I. Jeena Lee, Jay T. Groves

3389-Pos **Board #B250**
SPATIAL ORGANIZATION OF EPHA2 AND ITS EFFECTS ON INTERNALIZATION AND SIGNALING IN LIVING CELLS. **Samuel J. Lord**, Adrienne C. Greene, Irene J. Lee, Dawn Spelke, David V. Schaffer, Jay T. Groves

3390-Pos **Board #B251**
NERVE GROWTH FACTOR RECEPTOR TRKA EXISTS AS A PREFORMED, YET INACTIVE, DIMER IN LIVING CELLS. Jianying Shen, **Ichiro Maruyama**

3391-Pos **Board #B252**
TURNING ON THE HUMAN GROWTH HORMONE RECEPTOR: A COMPUTATIONAL STUDY ON ITS STRUCTURE AND ACTIVATION MECHANISM. **Huan Rui**, Wonpil Im

3392-Pos **Board #B253**
SIGNAL TRANSDUCTION THROUGH THE MET RECEPTOR STUDIED AT THE SINGLE-MOLECULE LEVEL. **Marina Dietz**, Meike Heidbreder, Ulrike Endesfelder, Sebastian Malkusch, Mike Heilemann

3393-Pos **Board #B254**
SPATIOTEMPORAL REGULATION OF CAMP-DEPENDENT PROTEIN KINASE (PKA) IN CARDIAC MYOCYTES. **Zeineb Haj Slimane**, Jin Zhang, Wito Richter, Rodolphe Fischmeister, Grégoire Vandecasteele

3394-Pos **Board #B255**
SPATIAL SENSITIVITY OF THE MAP KINASE SIGNALING PATHWAY IN THE CELLULAR CYTOPLASM. **Yongyun Hwang**, Praveen Kumar, Abdul I. Barakat

3395-Pos **Board #B256**
HUMAN EPIDERMIS AS A MODEL SYSTEM FOR THE INVESTIGATION OF INTRACELLULAR SIGNALING PATHWAYS, IN SITU. **Joseph Cursons**, Edmund J. Crampin, Marc D. Jacobs

3396-Pos **Board #B257**
MAPPING CEACAM1 DYNAMICS AND INTERACTIONS IN LIVE CELLS BY QUANTITATIVE FLUORESCENCE TECHNIQUES. **Peter CY Lau**, Scott D. Gray-Owen, Christopher M. Yip

3397-Pos **Board #B258**
MULTIMERIZATION STUDIES OF MEMBRANE RECEPTORS VIA μ-PATTERNED SURFACES. **Peter Lanzerstorfer**

3398-Pos **Board #B259**
MOBILITY OF MENC AND PHOU IN LIVE E. COLI: A SINGLE MOLECULE TRACKING STUDY. **Shunyuan Zhang**, Hochan Lee, Yi-Ju Hsieh, Kirill Datsenko, Barry Wanner, Ken Ritchie

3399-Pos **Board #B260**
CROSS REGULATION IN SIGNALING NETWORKS: A FRET STUDY OF THE PHOB-PHOR TWO-COMPONENT SYSTEM IN E-COLI. **Hochan Lee**, Shunyuan Zhang, Yi-Ju Hsieh, Kirill A. Datsenko, Barry L. Wanner, Ken P. Ritchie

3400-Pos **Board #B261**
A RECEPTOR GUANYLYL CYCLASE REVEALS AUTO-PHOSPHATASE ACTIVITY. **Magdalena Sznapka**, Timo Strünker, Reinhard Seifert, Normann Goodwin, Nachiket D. Kashikar, U. Benjamin Kaupp

Synaptic Transmission (Boards #B262-#B268)

3401-Pos **Board #B262**
CONICAL TOMOGRAPHY OF RIBBON SYNAPSES OF LIGHT AND DARK-ADAPTED ROD AND CONES PHOTORECEPTORS. **Guido A. Zampighi**, Cataldo Schietroma, Lorezo M. Zampighi, Nicholas C. Brecha

3402-Pos **Board #B263**
ACUTE DAMAGE TO SYNAPTIC RIBBONS DIFFERENTIALLY AFFECTS EVOKED AND SPONTANEOUS NEUROTRANSMITTER RELEASE FROM ROD BIPOLAR CELLS. **Bhupesh Mehta**, Josefin Snellman, David Zenisek

3403-Pos **Board #B264**
A CATALYTIC SLOT MODEL FOR EXOCYTOSIS WITH A SINGLE RELEASE SENSOR. **Alexander M. Walter**, Jakob B. Sorensen

3404-Pos **Board #B265**
OBSERVATION OF TWO-STEP UNZIPPING OF A SINGLE SNARE COMPLEX BY USING NANO-MECHANICAL MEASUREMENT. **Duyoung Min**, Kipom Kim, Mal-Gi Choi, Suk-Bin Kang, Yeon-Kyun Shin, Tae-Young Yoon

3405-Pos **Board #B266**
EFFECTS OF PRESYNAPTIC CALCIUM STORES ON SHORT-TERM SYNAPTIC PLASTICITY. **Suhita Nadkarni**, Terence Sejnowski, Thomas Bartol, Charles Stevens, Herbert Levine, kristen harris, Edward Ennedy

3406-Pos **Board #B267**
THREE DISTINCT MECHANISMS OF NEURO-MUSCULAR JUNCTION EXCITATION BY INFRARED PULSES. Qiang Liu, Erik M. Jorgensen, Holly A. Holman, Randi Rawson, **Richard D. Rabbitt**

3407-Pos **Board #B268**
OPTICAL ACTIVATION OR SILENCING OF NEURAL ACTIVATY IN NEURONS THAT REGULATE ENERGY BALANCE IN THE HYPOTHALAMUS. **Chianping Ye**, Dong Kong, Shuichi Koda, Mike Krashes, Bradford B. Lowell

Cardiac Electrophysiology III (Boards #B269-#B293)

3408-Pos **Board #B269**
THE RELATIONSHIP BETWEEN CONDUCTION VELOCITY AND ATRIAL ARRHYTHMOGENICITY UNDER CONDITIONS OF ALTERED CA^{2+} HOMEOSTASIS IN RYR2-P2328S MURINE HEARTS. **James Harmsworth King**, Yanmin Zhang, Chris Huang, James Fraser

3409-Pos **Board #B270**
FLASH PHOTOLYSIS OF CAGED COMPOUNDS DURING SIMULTANEOUS IMAGING OF CALCIUM AND VOLTAGE IN THE WHOLE HEART USING LIGHT-EMITTING-DIODES. Peter Lee, Leslie M. Loew, Derek A. Terrar, Paul Ewart, Peter Kohl, **Christian Bollensdorff**

3410-Pos **Board #B271**
CA^{2+}/CALMODULIN-DEPENDENT PROTEIN KINASE II (CAMKII) ACTIVITY MODULATES SINOATRIAL NODAL PACEMAKER CELL ENERGETICS. **Yael Yaniv**, Harold A. Spurgeon, Bruce D. Ziman, Edward G. Lakatta

3411-Pos **Board #B272**
AN INHERENT ABILITY OF VENTRICULAR MYOCYTES TO SELF-ORGANIZE SPONTANEOUS RYRS ACTIVATION THAT GENERATE SYNCHRONIZED LOCAL CA^{2+} RELEASES IS PHYSIOLOGICALLY SUPPRESSED BY CONSTITUTIVE PHOSPHODIESTERASE AND PROTEIN PHOSPHATASE ACTIVITY. **Syevda Sirenko**, Tatiana M. Vinogradova, Victor Maltsev, Edward G. Lakatta

3412-Pos **Board #B273**
ACCELERATED RECOVERY OF L-TYPE CA CURRENT CONTRIBUTES TO THE LOSS OF SR CA RELEASE RESTITUTION IN MICE LACKING CASQ2. **Dmytro Kryshtal**, Oleksiy Gryshchenko, Björn C. Knollmann

3413-Pos **Board #B274**
CALCIUM MEDIATED TRIGGERED ACTIVITY IN CARDIAC TISSUE. **Yohannes Shiferaw**, Wei Chen, Mesfin Asfaw

3414-Pos **Board #B275**
A VALIDATED COMPUTATIONAL MODEL OF CARDIAC PACEMAKING: MECHANISMS OF PHYSIOLOGICAL AND PHARMACOLOGICAL RATE MODULATION. **Stefano Severi**, Matteo Fantini, Enrico Ravagli, Lara Charawi, Dario DiFrancesco

3415-Pos **Board #B276**
CONTRIBUTION OF STORE-OPERATED CA^{2+} ENTRY TO BEAT-TO-BEAT CA^{2+} TRANSIENT IN EARLY FETAL MOUSE HEART. **Takayuki Kurokawa**, Takahiro Ishiwata, Takashi Kanai, Hideyuki Ishida, Kaori Sekine, Naoko Ishibashi, Yu Asano, Shigeaki Nonoyama

3416-Pos **Board #B277**
NUMERICAL MODELING OF FLASH-INDUCED CA^{2+} RELEASE IN SA NODE CELLS (SANC) SUPPORTS THE "COUPLED-CLOCK" HYPOTHESIS OF CARDIAC PACEMAKER CELL FUNCTION. **Victor A. Maltsev**, Yael Yaniv, Edward G. Lakatta

3417-Pos Board #B278
CONTRIBUTION OF CALCIUM WAVES TO THE REGULATION OF BEATING RHYTHM IN SINOATRIAL NODE CELLS. **Hiroyuki Hamada**, Daisuke Sato, Jose Luis Puglisi, Yuanfang Xie, Eleonora Grandi, Masahiro Okamoto, Michael A. Savageau, Donald M. Bers

3418-Pos Board #B279
INDUCED PACEMAKER CELLS CREATED BY IN VIVO SOMATIC REPROGRAMMING:PHENOTYPIC COMPARISON WITH NATIVE SINOATRIAL NODE CELLS. **Wenbin Liang**, Nidhi Kapoor, Eduardo Marbán, Hee Cheol Cho

3419-Pos Board #B280
LINEAGE REPROGRAMMING FROM CARDIOMYOCYTES TO PACEMAKER CELLS VIA A SINGLE TRANSCRIPTION FACTOR. **Nidhi Kapoor**, Eduardo Marbán, Hee Cheol Cho

3420-Pos Board #B281
ENHANCED EMBRYONIC STEM CELL DIFFERENTIATION TO CARDIAC PACEMAKER CELLS BY TRANSDUCTION WITH A SINGLE TRANSCRIPTION FACTOR. **Vittoria Ionta**, Alessandro Giacomello, Eduardo Marbán, Hee Cheol Cho

3421-Pos Board #B282
COMPONENT CURRENTS OF CARDIAC HUMAN CARDIOMYOCYTES DERIVED FROM INDUCED PLURIPOTENT STEM CELLS. Agniezka Lis, Thomas J. Cimato, **Glenna C L Bett**, Randall L. Rasmusson, Michael J. Morales

3422-Pos Board #B283
ABERRANT FUNCTIONAL DIFFERENTIATION OF CARDIAC PRECURSORS FROM A DYSTROPHIC MOUSE. **Claudia Altomare**, Lucio Barile, Luca Sala, Alice Villa, Maurilio Sampaolesi, Marcella Rocchetti, Antonio Zaza

3423-Pos Board #B284
ATRIAL FIBRILLATION SUBSTRATE IN HEART FAILURE: EXPRESSION LEVELS OF CARDIAC SODIUM CHANNEL, CONNEXIN 43 AND CONNEXIN 40 IN THE LEFT ATRIUM. **Divya Arasu**, Cody A. Rutledge, Suzanne Browne, Harvey Lardin, Lianzhi Gu, Ali A. Sovari, Rishi Arora, Samuel C. Dudley

3424-Pos Board #B285
ACTION POTENTIAL (AP) CYCLE LENGTH IN CONNEXIN-43-NEGATIVE AND POSITIVE SINGLE ISOLATED SINOATRIAL NODE CELLS (SANC) DOES NOT DIFFER IN THE BASAL STATE OR DURING HIGH-LEVEL BETA-AR STIMULATION. **Dongmei Yang**, Ihor Zahanich, Alexey E. Lyashkov, Edward G. Lakatta

3425-Pos Board #B286
SUPPRESSION OF ATRIAL FIBRILLATION BY OVER-EXPRESSION OF CONNEXIN 43 IN A PORCINE MODEL. Olympia Bikou, Patrick Lugenbiel, Kamilla Kelemen, Alexander Bauer, Patrick A. Schweizer, Ruediger Becker, Hugo A. Katus, **Dierk Thomas**

3426- Pos Board #B287
ALTERED HCN4 CHANNEL C-LINKER INTERACTION IS ASSOCIATED WITH FAMILIAL TACHYCARDIA-BRADYCARDIA SYNDROME AND ATRIAL FIBRILLATION. **Patrick Schweizer**, Nana Duhme, Ruediger Becker, Ilme Schlichting, Andreas Draguhn, Claus Bruehl, Hugo A. Katus, Michael Koenen, Dierk Thomas

3427-Pos Board #B288
DIRECT CAMP BINDING AND PKA PHOSPHORYLATION SHARE A COMMON GATING MECHANISM IN HCN4 CHANNELS. **Zhandi Liao**, Joshua St. Clair, Eric D. Larson, Catherine Proenza

3428-Pos Board #B289
ELECTRICAL INHOMOGENEITIES OF GUINEA PIG ATRIAL TISSUE IN HIGH RESOLUTION OPTICAL POTENTIAL MAPPING. **Dieter Platzer**, Martin Humel, Brigitte Pelzmann, Klaus Zorn-Pauly

3429-Pos Board #B290
ATRIAL FIBRILLATION INITIATION IN A PATIENT-SPECIFIC CUBIC HERMITE MESH. **Matthew J. Gonzales**, Andrew D. McCulloch, Sanjiv M. Narayan

3430-Pos Board #B291
CONSTRUCTION OF TOPOLOGICALLY COMPLEX PATIENT-SPECIFIC CUBIC HERMITE MESHES FOR THE CARDIAC ELECTROPHYSIOLOGY PROBLEM. Matt Gonzales, **Kevin Vincent**, Gregory Sturgeon, Paul Segars, Sanjiv M. Narayan, Andrew D. McCulloch

3431-Pos Board #B292
FEASIBILITY OF LONG-DISTANCE TRANSFER FOR HIGH RESOLUTION OPTICAL MAPPING OF CARDIAC TISSUE CONSTRUCTS. Nina Tandon, Luther M. Swift, Matthew W. Kay, Gordana Vunjak-Novakovic, **Narine Sarvazyan**

3432-Pos Board #B293
NICOTINE DELAYS THE DEVELOPMENT OF CARDIAC CONDUCTION SYSTEM: LEADING TO SUDDEN INFANT DEATH SYNDROME. **Anh-Tuan Ton**, Michael Biet, Jean-Francois Delabre, Nathalie Morin, Robert Dumaine

Voltage-gated K Channels: Permeation (Boards #B294-#B302)

3433-Pos Board #B294
A THREE-ION SELECTIVITY FILTER POTENTIAL ENERGY LANDSCAPE OF A PUTATIVE OPEN-CONDUCTIVE KCSA. **David Medovoy**, Luis Cuello G. Cuello, Eduardo Perozo, Benoit Roux

3434-Pos Board #B295
ION PERMEATION IN THE MTHK POTASSIUM CHANNEL. **Florian Heer**, Simon Bernèche

3435-Pos Board #B296
MG2+ BLOCKADE IN A KV POTASSIUM CHANNEL MUTANT HAVING AN UNUSUALLY HIGH CONDUCTANCE. **David Naranjo**, Cristian Moscoso, Ariela Vergara, Valeria Marquez, Romina Sepulveda, Ignacio Valencia, Ignacio Diaz-Franulic, Fernando Gonzalez-Nilo

3436-Pos Board #B297
HERG QUALITY CONTROL AT THE PLASMA MEMBRANE. Pirjo M. Apaja, Tsukasa Okiyondea, Herve Barriere, Hung Lam, Roxana Atanasiu, Brian Foo, Eckhard Ficker, Gergely L. Lukacs, **Alvin Shrier**

3437-Pos Board #B298
EFFECT OF THE R1047L AF/LQT MUTATION ON THE DISTAL C-TERMINAL DOMAIN OF THE HERG POTASSIUM CHANNEL. **Min-Kyu Cho**, Sabina Kupershmidt, Charles R. Sanders

3438-Pos Board #B299
LQT2 NONSENSE MUTATION ESCAPES NMD BY THE REINITIATION OF TRANSLATION TO GENERATE N-TERMINALLY TRUNCATED HERG CHANNELS. **Matthew R. Stump**, Qiuming Gong, Jonathan D. Packer, Zhengfeng Zhou

3439-Pos **Board #B300**
REGULATION OF AIRWAY SMOOTH MUSCLE CONTRACTION BY K_V7 (M-TYPE) K^+ CHANNELS. **Alexey I. Evseev**, Iurii Semenov, Robert Brenner, Mark S. Shapiro

3440-Pos **Board #B301**
PORE HELIX-S6 INTERACTIONS ARE CRITICAL IN GOVERNING KCNQ3 AMPLITUDES. **Frank S. Choveau**, Sonya M. Bierbower, Mark S. Shapiro

3441-Pos **Board #B302**
SELECTIVE FORMATION OF OLIGOMERIC KV7.5 (KCNQ5)/KCNE1 AND KV7.5 (KCNQ5)/KCNE3 CHANNELS. DIFFERENTIAL TARGETING TO MEMBRANE SURFACE MICRODOMAINS. **Laura Sole**, Meritxell Roura-Ferrer, Anna Oliveras, Albert Vallejo, Sara Roig, Alvaro Villarroel, Nuria Comes, Antonio Felipe

Ion Channels, Other (Boards #B303-#B326)

3442-Pos **Board #B303** **INTERNATIONAL TRAVEL AWARDEE**
THE POSSIBLE ROLE OF PSD-95 IN THE REARRANGEMENT OF KV1.3 CHANNELS TO THE IMMUNOLOGICAL SYNAPSE. **Orsolya Szilágyi**, Anita Boratkó, György Panyi, Péter Hajdu

3443-Pos **Board #B304**
MICROGLIAL KV1.3 CHANNELS AS A POTENTIAL TARGET FOR ALZHEIMER'S DISEASE. **David P. Jenkins**, Izumi Maezawa, Heike Wulff, Lee-Way Jin

3444-Pos **Board #B305**
MODELING BLOCK OF THE KV1.5 CHANNEL BY CATIONOPHILIC AND CATIONIC LIGANDS: IMPLICATIONS FOR GENERAL MECHANISMS OF THE INNER PORE BLOCK IN P-LOOP CHANNELS. Denis B. Tikhonov, **Boris S. Zhorov**

3445-Pos **Board #B306**
DEVELOPMENT OF ATOMISTIC MODELS FOR CLOSED, OPEN AND OPEN-INACTIVATED STATES OF HERG1 CHANNEL USING ROSETTA PROTEIN MODELING SUITE AND MOLECULAR DYNAMICS SIMULATIONS. **Serdar Durdagi**, Sumukh Deshpande, Henry Duff, Sergei Noskov

3446-Pos **Board #B307**
MOLECULAR DETERMINANTS OF PENTAMIDINE-INDUCED HERG TRAFFICKING INHIBITION. Adrienne T. Dennis, Lu Wang, Hanlin Wan, Drew Nassal, Isabelle Deschenes, **Eckhard Ficker**

3447-Pos **Board #B308**
ASSOCIATION OF KV10.1 TO DIFFERENT PLASMA MEMBRANE DOMAINS AND ITS INTERACTION WITH OTHER MEMBRANE ASSOCIATED PROTEINS IN ENDOGENOUS EXPRESSION SYSTEMS. **Aura M. Jiménez**, Alicia Ortega, Luis A. Pardo, Walter Stühmer

3448-Pos **Board #B309**
SLACK CHANNELS ARE SENSITIVE TO EXTERNAL SODIUM. **Youshan Yang**, Yangyang Yan, Fred J. Sigworth

3449-Pos **Board #B310**
MUTANT ANALYSIS OF THE DETERMINANTS OF SPERM MEMBRANE RESTING POTENTIAL. **Julio César Chavez**, Claudia L. Treviño, Alberto Darszon, José Luis de la Vega, Lawrence Salkoff, Celia M. Santi

3450-Pos **Board #B311**
DIRECT INHIBITORY EFFECT OF FLUOXETINE ON TREK-2 CHANNEL. **Dawon Kang**, Eun-Jin Kim, Jaehee Han

3451-Pos **Board #B312**
OUTWARDLY RECTIFYING CURRENTS IN HEPATOCYTES ARE INHIBITED BY 2-APB. **Ricard Masia**, Gary Yellen

3452-Pos **Board #B313** **EDUCATION TRAVEL AWARDEE**
STIM1 MUTANTS MODIFY CRAC BY ALTERING ORAI1 PROTEIN CONCENTRATION. **Tatiana Kilch**, Dalia Al-Ansary, Grigori Rychkov, Christine Peinelt, Barbara A. Niemeyer

3453-Pos **Board #B314.**
GATING AND ASSEMBLING MECHANISMS OF CRAC CHANNELS. **Hongying Zheng**, Changlong Hu, Junjie Hu, Lih Kuo, Shenyuan L. Zhang

3454-Pos **Board #B315**
SUPER-RESOLUTION IMAGING REVEALS A MULTI-ARRAY ARRANGEMENT OF CATSPER CHANNEL ON THE SPERM TAIL. **Jean-Ju Chung**, SANG-HEE SHIM, Xiaowei Zhuang, David E. Clapham

3455-Pos **Board #B316**
CONTRIBUTION OF THE EPITHELIAL SODIUM CHANNEL TO CHONDROCYTE REGULATORY VOLUME INCREASE. **Rebecca Lewis**, Lucy Gentles, Richard Barrett-Jolley

3456-Pos **Board #B317** **EDUCATION TRAVEL AWARDEE**
ELECTROSTATICS IN THE NMDA RECEPTOR TRANSDUCTION PATHWAY ALTER GATING. **Rashek Kazi**, Iehab Talukder, Lonnie P. Wollmuth

3457-Pos **Board #B318**
YELLOW OPTOGENETICS WITH *VOLVOX* CHANNELRHODOPSIN VARIANTS. **Franziska Schneider**, Matthias Prigge, Satoshi P. Tsunoda, Ofer Yizhar, Karl Deisseroth, Peter Hegemann

3458-Pos **Board #B319**
APBSMEM: A TOOL FOR THE ANALYSIS OF MEMBRANE PROTEIN ELECTROSTATICS. **Keith M. Callenberg**, Om P. Choudhary, Gabriel L. de Forest, David W. Gohara, Nathan A. Baker, Michael Grabe

3459-Pos **Board #B320**
THE PIVOTAL TWIN-HISTIDINE ELEMENT OF THE ESCHERICHIA COLI AMMONIUM CHANNEL AMTB FUNCTIONS AS A SUBSTRATE SELECTIVITY FILTER. **Jason Hall**, Dalai Yan, Sydney Kustu

3460-Pos **Board #B321**
MAPPING WATER DENSITY TO DESIGN NEW BLOCKERS AGAINST A VIRAL PROTON CHANNEL. **Giacomo Fiorin**, Vincenzo Carnevale, Jun Wang, Chunlong Ma, Tuo Wang, Fanghao Hu, Robert Lamb, Lawrence Pinto, Mei Hong, William DeGrado, Michael Klein

3461-Pos **Board #B322**
EFFECTS OF SUBSTANCE P ON EXCITABILITY OF DORSAL ROOT GANGLION NEURONS. **Éder Ricardo Moraes**, Christopher Kushmerick, Lígia Araujo Naves

3462-Pos **Board #B323**
ION CHANNEL PROTEINS THAT SPONTANEOUSLY INSERT INTO LIPID BILAYER MEMBRANES: AN IMPEDANCE SPECTROSCOPY STUDY EMPLOYING TETHERED MEMBRANES. **Bruce A. Cornell**, Heba Alkhamici, Louise Brown, Sonia Carne, Sophia C. Goodchild, Russell Richards, Stella M. Valenzuela

3463-Pos **Board #B324**
SINGLE CHANNEL AND ENSEMBLE MEASUREMENTS OF CLIC1 IN LIPID BILAYERS. Bin Lu, **Abha Jeurkar**, Jacob Schmidt

3464-Pos **Board #B325**
ELECTROKINETICALLY ALTERED NORMAL SALINE MODULATES ION CHANNEL ACTIVITY. **James C. Choi**, Tony L. Mega, Sean German, Anthony B. Wood, Richard L. Watson

3465-Pos **Board #B326**
ANALYSIS OF MULTICHANNEL SIGNALS USING A CHANNEL SIMULATOR. **Luis A. Palacio**, Horia I. Petrache

Voltage-gated K Channels: Gating III (Boards #B327-#B345)

3466-Pos **Board #B327**
BARIUM IONS SELECTIVELY ACTIVATE BK CHANNELS THROUGH THE CA^{2+}-BOWL SITE. **Yu Zhou**, Xuhui Zeng, Christopher J. Lingle

3467-Pos **Board #B328**
THE BK CHANNEL OPENER PHLORETIN INFLUENCES VOLTAGE- AND CALCIUM-DEPENDENT GATING. **Lorie A. Gonzalez**, Zhongming Ma, Frank T. Horrigan

3468-Pos **Board #B329**
THE INTERACTION OF VOLTAGE-SENSOR AND GATE IN BK CHANNELS. **Liang Sun**, Sean Adhikari, Shengwei Zou, Frank T. Horrigan

3469-Pos **Board #B330**
AN EXTRACELLULAR DOMAIN OF BK CHANNEL β1 ACCESSORY SUBUNIT MODULATES THE ACTIVITIES OF VOLTAGE SENSOR AND GATE. Aleksandra Gruslova, Iurii Semenov, **Bin Wang**

3470-Pos **Board #B331**
ACCESSORY BETA SUBUNITS ALTER THE INTERACTION BETWEEN THE MEMBRANE-SPANNING AND CYTOSOLIC DOMAINS IN BK CHANNELS. **Xiaohui Sun**, Jingyi Shi, Xiao Yang, Kelli Delaloye, Huanghe Yang, Jianmin Cui

3471-Pos **Board #B332**
VOLTAGE- AND CA^{2+}-ACTIVATION OF BK CHANNELS STUDIED WITH HIGHLY CONSTRAINED ALLOSTERIC GATING MECHANISMS. Ren-Shiang Chen, Yanyan Geng, **Karl L. Magleby**

3472-Pos **Board #B333**
PURIFICATION OF THE VOLTAGE SENSOR DOMAIN OF KCNQ1 AND ITS INTERACTIONS WITH CHOLESTEROL AND SPHINGOMYELIN. **Dungeng Peng**, Arina Hadziselimovic, Carlos G. Vanoye, Charles R. Sanders

3473-Pos **Board #B334**
PROTEIN- LIPID INTERACTIONS IN LIPID RECONSTITUTED POTASSIUM CHANNEL VOLTAGE-SENSING DOMAINS. **Dmitriy Krepkiy**, Klaus Gawrisch, Kenton J. Swartz

3474-Pos **Board #B335**
CHARACTERIZATION OF A NOVEL VOLTAGE-SENSING PROTEIN. **Jaime J. Smith**

3475-Pos **Board #B336**
STRUCTURAL DYNAMICS IN THE RESTING AND ACTIVATED STATES OF THE VOLTAGE SENSOR OF CI-VSP FROM DIPOLAR DISTANCE MEASUREMENTS. **H. Raghuraman**, Qufei Li, Sherry Wanderling, Carlos A. Villalba-Galea, Eduardo Perozo

3476-Pos **Board #B337**
GATING OF TRIMERIZED OR TETRAMERIZED VOLTAGE-GATED H+ CHANNELS. **Yuichiro Fujiwara**, Marta Perez, Tatsuki Kurokawa, Peter H. Larsson, Yasushi Okamura

3477-Pos **Board #B338**
HV1 INHIBITORS REVEAL GATING PROPERTIES TYPICAL OF PORE DOMAINS IN A VOLTAGE-SENSING DOMAIN. **Liang Hong**, Iris Kim, Medha M. Pathak, Dennis Ta, Francesco Tombola

3478-Pos **Board #B339**
VOLTAGE-GATING IN THE HV1 PROTON CHANNEL: CLUES FROM ATOMISTIC MOLECULAR DYNAMICS SIMULATIONS. **Mona L. Wood**, Eric V. Schow, J. Alfredo Freites, Stephen H. White, Francesco Tombola, Douglas J. Tobias

3479-Pos **Board #B340**
MICROSCOPIC ORIGIN OF GATING CURRENT FLUCTUATIONS IN A POTASSIUM CHANNEL VOLTAGE SENSOR. **J. Alfredo Freites**, Eric V. Schow, Stephen H. White, Douglas J. Tobias

3480-Pos **Board #B341**
PREDICTING ALLOSTERIC PATHWAYS FOR ACTIVATION OF K+ CHANNELS BY PERTURBATION BASED MARKOVIAN TRANSMISSION MODEL. **Gamze Gursoy**, Larisa Adamian, Hsiao-Mei Lu, Jie Liang

3481-Pos **Board #B342**
COARSE GRAINED MODEL FOR EXPLORING VOLTAGE DEPENDENT ION CHANNELS. **Anatoly Dryga**, Arieh Warshel

3482-Pos **Board #B343**
AN OSCILLATING GATE FOR VOLTAGE GATED POTASSIUM CHANNELS: QUANTUM CALCULATIONS FOR A SWITCH. Alisher M. Kariev, **Michael E. Green**

3483-Pos **Board #B344**
AN OSCILLATING GATE HYPOTHESIS FOR THE POTASSIUM CHANNEL: QUANTUM CALCULATIONS ON THE VESTIBULE. Alisher M. Kariev, **Michael E. Green**

3484-Pos **Board #B345**
MODULATION OF KV1 VOLTAGE-GATED POTASSIUM CHANNELS BY SODIUM CHANNEL BETA SUBUNITS. **Hai M. Nguyen**, Jeffrey D. Calhoun, Lori L. Isom, Alan L. Goldin, George K. Chandy

Ca-activated Channels (Boards #B346-#B370)

3485-Pos **Board #B346**
STATE-DEPENDENT FRET REPORTS LARGE GATING-RING MOTIONS IN BK CHANNELS. **Pablo Miranda**, Jorge E. Contreras, Diana Wesch, Fred J. Sigworth, Miguel Holmgren, Teresa Giraldez

3486-Pos **Board #B347**
BK AND CA_V CHANNEL INTERACTIONS IN THE PLASMA MEMBRANE. **Nicoletta Savalli**, Azadeh P. Kohanteb, Bruce Yazejian, Riccardo Olcese, Arthur Peskoff, Alan D. Grinnell

3487-Pos **Board #B348**
CALCIUM AND HEME INDUCE DISTINCT CONFORMATIONAL STATES OF THE HUMAN BK (SLO1) CHANNEL GATING RING. **Taleh Yusifov**, Anoosh D. Javaherian, Stefan H. Heinemann, Toshinori Hoshi, Riccardo Olcese

3488-Pos **Board #B349**
EVIDENCE FOR LIPID-INDUCED STRUCTURAL REARRANGEMENTS IN THE HUMAN BK (SLO1) CHANNEL GATING RING. **Taleh Yusifov**, Anoosh D. Javaherian, Stefan H. Heinemann, Toshinori Hoshi, Riccardo Olcese

3489-Pos **Board #B350**
THE MECHANICS OF VOLTAGE SENSING IN THE HUMAN BK CHANNEL (SLO1). **Antonios Pantazis**, Riccardo Olcese

3490-Pos **Board #B351**
PROBING THE ALLOSTERIC INTERACTIONS THAT MEDIATE VOLTAGE-DEPENDENT BK (SLO1) CHANNEL ACTIVATION WITH A PORE BLOCKER. **Antonios Pantazis**, Lu Xu, Daniel Sigg, Riccardo Olcese

3491-Pos **Board #B352**
NS6180, A NEW KCA3.1 BLOCKER, INHIBITS T-CELL ACTIVATION AND DAMPENS INFLAMMATION IN A RAT MODEL OF INFLAMMATORY BOWEL DISEASE. Dorte Strøbæk, David T. Brown, Paul David Jenkins, Peter Chiu, Susanne Jørgensen, Joachim Demnitz, **Heike Wulff**, Palle Christophersen

3492-Pos **Board #B353**
LOCALIZATION OF THE BINDING SITE FOR BENZOFUROINDOLE, A POTENT BK_{CA} CHANNEL ACTIVATOR. **Byoung-Cheol Lee**, Chul-Seung Park

3493-Pos **Board #B354** **CPOW TRAVEL AWARDEE**
STEREOSPECIFIC BINDING OF AN INTRINSICALLY DISORDERED N-TERMINAL INACTIVATION DOMAIN DISTINGUISHES BK AND *SHAKER* INACTIVATION MECHANISMS. **Vivian Gonzalez-Perez**, Xu-Hui Zeng, Katie Henzler-Wildman, Christopher J. Lingle

3494-Pos **Board #B355**
IBMX RELAXES GUINEA PIG URINARY BLADDER SMOOTH MUSCLE VIA ACTIVATION OF LARGE CONDUCTANCE CA^{2+}-ACTIVATED K^+ CHANNELS. Wenkuan Xin, Qiuping Cheng, Rupal P. Soder, **Georgi V. Petkov**

3495-Pos **Board #B356**
INVESTIGATING THE EFFECT OF REDOX AGENTS ON STRUCTURAL RE-ARRANGEMENT OF THE BK CHANNEL RCK1-RCK2 LINKER USING FLUORESCENCE LIFETIME IMAGING MICROSCOPY. **Iain Rowe**, Edward Rowan, Rory Duncan, Mike Shipston

3496-Pos **Board #B357**
MULTIPLE CA^{2+} BINDING SITES IN THE RCK DOMAIN CONTRIBUTE TO GATING IN THE MTHK K^+ CHANNEL. **Frank J. Smith**, Victor P.T. Pau, Alexander B. Taylor, Liubov V. Parfenova, Elsie Samakai, Matthew M. Callaghan, Karin Abarca-Heidemann, P. John Hart, Brad S. Rothberg

3497-Pos **Board #B358**
HYDROPHOBIC DERIVATIVES OF TBA ENHANCE MTHK CHANNEL BLOCK. **David J. Posson**, Crina Nimigean

3498-Pos **Board #B359** **INTERNATIONAL TRAVEL AWARDEE**
DIFFERENTIAL EFFECTS OF BETA SUBUNITS ON THE VOLTAGE SENSOR OF CA2+ AND VOLTAGE-ACTIVATED K+ CHANNELS. **Gustavo F. Contreras**, Alan Neely, Osvaldo Alvarez, Carlos Gonzalez, Ramon Latorre

3499-Pos **Board #B360**
TARGETING BK_{CA} CHANNEL TO MITOCHONDRIA OF ADULT CARDIOMYOCYTES. **Harpreet Singh**, Rong Lu, Enrico Stefani, Ligia Toro

3500-Pos **Board #B361**
ANALYSIS OF MAXIK CHANNEL ALPHA-SUBUNIT SUBPROTEOME FROM THE MOUSE BRAIN. **Harpreet Singh**, Lyra R. M. Hall, Andrea L. Meredith, Enrico Stefani, Ligia Toro

3501-Pos **Board #B362**
ANGIOTENSIN II TYPE 1 RECEPTOR MEDIATES ANGIOTENSIN II INHIBITION ON BK_{CA} CHANNELS. **Zhu Zhang**, Rong Lu, Enrico Stefani, Ligia Toro

3502-Pos **Board #B363**
KCNMA1 GENE EXPRESSION IMPROVES MITOCHONDRIAL FUNCTION IN NS1619 PRECONDITIONED HEARTS AFTER ISCHEMIA/REPERFUSION INJURY. **Jean C. Bopassa**, Harpreet Singh, Shahab M. Danesh, Andrea L. Meredith, Ligia Toro, Enrico Stefani

3503-Pos **Board #B364**
GENETIC ACTIVATION OF BK CURRENTS USING A GAIN-OF-FUNCTION SUBUNIT ALTERS NEURONAL ACTIVITY. **Andrea L. Meredith**, Jenna R. Montgomery

3504-Pos **Board #B365**
DYSTROBREVIN CONTROLS NEUROTRANSMITTER RELEASE AND MUSCLE CA^{2+} TRANSIENTS BY LOCALIZING BK CHANNELS IN *C. ELEGANS*. Bojun Chen, Ping Liu, Haiying Zhan, **Zhao-Wen Wang**

3505-Pos **Board #B366**
DOMINANT-NEGATIVE, SPLICED VARIANT OF THE INTERMEDIATE-CONDUCTANCE CA^{2+}-ACTIVATED K^+ CHANNEL, $K_{CA}3.1$ IN LYMPHOID CELLS. **Susumu Ohya**, Satomi Niwa, Ayano Yanagi, Yuka Fukuyo, Hisao Yamamura, Yuji Imaizumi

3506-Pos **Board #B367**
PHOSPHOINOSITIDES CONTROL THE ACTIVITY OF SLICK AND SLACK K^+ CHANNELS. **Maria de los Angeles Tejada**, Lars Jørn Jensen, Dan A. Klaerke

3507-Pos **Board #B368**
COUPLING OF P2Y MEDIATED STORE DEPLETION AND CA2+ ENTRY (SOCE) TO KCA3.1 (KCNN4/SK4/IK) CHANNEL ACTIVATION IN MICROGLIA. **Roger E. Ferreira**

3508-Pos **Board #B369**
IDENTIFICATION AND EVALUATION OF INHIBITORS OF ORAI CHANNELS USING A NOVEL METHODOLOGY. **Amir M. Sadaghiani**, Chan Young Park, Ricardo E. Dolmetsch

3509-Pos **Board #B370**
MATHEMATICAL MODELING OF T-CELL ELECTROPHYSIOLOGY. **Christine D. Schmeitz**, Michael E. Meyer-Hermann

Cytoskeletal Protein Dynamics (Boards #B371-#B395)

3510-Pos **Board #B371**
STRUCTURE FORMATION IN ACTIVE ACTIN NETWORKS. **Simone Köhler**, Volker Schaller, Andreas R. Bausch

3511-Pos **Board #B372**
DYNAMICS AND MATERIAL PROPERTIES IN LIVING CELLS. **Ming Guo**, Mikkel Jensen, Jeffrey R. Moore, Fred C. Mackintosh, David A. Weitz

3512-Pos **Board #B373**
MECHANISMS OF CONTRACTILITY AND COARSENING OF ACTIVE CYTOSKELETAL NETWORKS. **Taeyoon Kim**, Ed Munro, Margaret L. Gardel

3513-Pos **Board #B374**
DETERMINANTS OF FLUID-LIKE BEHAVIOR AND EFFECTIVE VISCOSITY IN CROSS-LINKED ACTIN NETWORKS. **Taeyoon Kim**, Margaret L. Gardel, Ed Munro

3514-Pos **Board #B375**
MECHANICS OF DENDRITIC ACTIN NETWORKS. **Thomas Pujol**, Olivia du Roure, Julien Heuvingh

3515-Pos **Board #B376**
STRESS FIBER ORGANIZATION AND DYNAMICS IN CELLS ADHERED TO SUBSTRATES OF VARYING STIFFNESS. **Wei Nie**, Ming-Tzo Wei, Ivan Biaggio, H. Daniel Ou-Yang, Sabrina Jedlicka, Dimitrios Vavylonis

3516-Pos **Board #B377**
ARP2/3 EXHIBITS HIGHER AFFINITY FOR YOUNG THAN FOR MATURE ACTIN FILAMENTS. Renjian Huang, Roberto Dominguez, **Chih-Lueh Albert Wang**

3517-Pos **Board #B378**
BREAKING THE DYNAMIC INSTABILITY OF THE ACTOMYOSIN CORTEX TRIGGERED BY A SINGLE MECHANICAL CUE DRIVES CELL POLARITY IN NON-ADHERENT CELLS. **Philippe Bun**, Vincent Contremoulins, Marc Tramier, Maïté Coppey

3518-Pos **Board #B379**
TENSION IN THE CYTOKINETIC CONTRACTILE RING DEPENDS ON THE MOBILITY OF ACTIN AND MYOSIN-II ANCHORS. **Matthew R. Stachowiak**, Ben O'Shaughnessy

3519-Pos **Board #B380**
MODEL OF CONDENSATION OF AN ACTOMYOSIN NETWORK INTO A CONTRACTILE RING FOR FISSION YEAST CELL DIVISION: THE EFFECT OF ACTIN CROSS-LINKERS ALPHA-ACTININ AND FIMBRIN. **Nikola Ojkic**, Damien Laporte, Jian-Qiu Wu, Dimitrios Vavylonis

3520-Pos **Board #B381**
IMAGING FTSZ RINGS IN VITRO BY NEGATIVE-STAIN EM. **Sara L. Milam**, Masaki Osawa, Harold P. Erickson

3521-Pos **Board #B382**
SUPERRESOLUTION INVESTIGATION OF IN VIVO STRUCTURE AND DYNAMICS OF E. COLI FTSZ STRUCTURES DURING CYTOKINESIS. **Carla Coltharp**, Guo Fu, Tao Huang, Jackson Buss, Zach Hensel, Jie Xiao

3522-Pos **Board #B383**
INTEGRATING HIGH RESOLUTION BIOIMAGING TECHNIQUES TO UNRAVEL SPATIO-TEMPORAL ORGANIZATION OF PODOSOMES. Koen van den Dries, Marjolein Meddens, Samantha Schwartz, Diane S. Lidke, Keith A. Lidke, Carl G. Figdor, **Alessandra Cambi**

3523-Pos **Board #B384**
MOVING TOWARDS SELF-ASSEMBLING MACHINES: HARNESSING SPINDLE COMPONENTS FOR BIOSYNTHETIC DEVICES. Timothy D. Riehlman, Zachary T. Olmsted, Carmen Branca, Ani Levine, Laura Patrick, **Janet L. Paluh**

3524-Pos **Board #B385**
HEAT SHOCK PROTEINS REGULATE STRUCTURE OF INTERMEDIATE FILAMENT NETWORKS. **Jona Kayser**, Martin Haslbeck, Harald Herrmann, Johannes Buchner, Andreas R. Bausch

3525-Pos **Board #B386**
SPERM CELL CRAWLING IN THE NEMATODE CAENORHABDITIS ELEGANS. **Xavier Mezanges**, Julie Plastino

3526-Pos **Board #B387**
ELECTRON TOMOGRAPHY OF MSP FILAMENTS DERIVED FROM THE AMOEBOID SPERM OF ASCARIS SUUM. **Andrew J. Malowney**, Murray Stewart, Thomas M. Roberts

3527-Pos **Board #B388**
CONTROL OF DIRECTIONALITY OF INDIVIDUAL KINESIN-5 MOTORS. Adina Gerson-Gurwitz, Christina Thiede, Natalia Movshovich, Vladimir Fridman, Maria Podolskaya, Stefan Lakämper, Dieter R. Klopfenstein, Christoph F. Schmidt, **Larisa Gheber**

3528-Pos **Board #B389**
MYOSIN-6 MOBILITY AT THE PLASMA MEMBRANE OF CULTURED MAMMALIAN CELLS. **Gregory I. Mashanov**, Tatiana A. Nenasheva, Michelle Peckham, Justin E. Molloy

3529-Pos **Board #B390**
USING A NON-AVERAGED DISPLACEMENT ANALYSIS TO CHARACTERIZE MULTIPLE POPULATIONS OF SINGLE MOLECULE MOTIONS. **Michael S. Carter**, Feng Hong, Christine P. Cremo, Jonathan E. Baker

3530-Pos **Board #B391**
UNIVERSAL OPTIMALITY OF MOLECULAR MOTORS. **Zhisong Wang**

3531-Pos **Board #B392**
WATCHING THE MOTIONS OF THE CELL WALL SYNTHESIS MACHINERY AND UNDERLYING CYTOSKELETON IN *B. SUBTILIS*. Ethan Garner, **Wenqin Wang**, Remi Bernard, David Rudner, Xiaowei Zhuang, Timothy Mitchison

3532-Pos **Board #B393**
QUANTITATIVE STUDY OF TUBULIN DISTRUBUTION AND MITOCHONDRIAL DYNAMICS IN SKELETAL MUSCLE CELLS. **Marie Le Guen**, Marcela Gonzalez-Granillo, Rita Guzun, Alexei Grichine, François Boucher, Hervé Dubouchaud, Yves Usson, Valdur Saks

3533-Pos **Board #B394**
CYTOPLASMIC STREAMING IN DROSOPHILA MELANOGASTER. **Sujoy Ganguly**, Lucy Williams, Isa Palacios, Raymond E. Goldstein

3534-Pos **Board #B395**
STRUCTURAL BASIS FOR ACTIVATION OF THE CYTOSKELETON REGULATORY PROTEIN IRSP53. **David J.E. Kast**, Yadaiah Madasu, Malgorzata Boczkowska, Grzegorz Rebowski, Roberto Dominguez

Microtubles & Microtubule-associated Proteins (Boards #B396-#B425)

3535-Pos **Board #B396**
RANDOM HYDROLYSIS CONTROLS DYNAMIC INSTABILITY OF MICROTUBULES. **Anatoly B. Kolomeisky**, Ranjith Padinhateeri, David Lacoste

3536-Pos **Board #B397**
A THEORETICAL ESTIMATION FOR DIPOLE MOMENT DIRECTION OF TUBULIN DIMER AND ASSESSMENT OF MICROTUBULE FOLDING POSSIBILITY. **Abdorreza Samarbakhsh**, Jack Tuszynski

3537-Pos **Board #B398**
THE WIDTH-LENGTH RELATIONSHIP OF MITOTIC SPINDLE IN CAENORHABDITIS ELEGANS EMBRYONIC CELLS: QUANTIFICATION AND IMPLICATIONS FOR THE REGULATORY MECHANISM. Yuki Hara, **Akatsuki Kimura**

3538-Pos **Board #B399**
INTRACELLULAR SPATIAL LOCALIZATION REGULATED BY THE MICROTUBULE NETWORK. **Jing Chen**, Jennifer Lippicott-Schwartz, Jian Liu

3539-Pos **Board #B400**
SIMULATING SELF-ORGANIZATION OF MICROTUBULES INTERACTING WITH MOTOR PROTEIN-COATED BEADS IN MICROSCOPIC CHAMBERS. **Takahiro Nitta**, Ayumu Miyata, Yoshiyasu Usami, Yuichi Hiratsuka

3540-Pos **Board #B401**
BIOMOLECULAR MOTORS AND SWITCHES: FROM MACHINES TO DRUGS. **Barry J. Grant**

3541-Pos **Board #B402**
ACTIVE BROWNIAN DYNAMICS APPLIED TO A MOLECULAR MOTOR SYSTEM. **Kong-Ju-Bock Lee**, Pyeong Jun Park

3542-Pos **Board #B403**
DYNAMICS OF A-LATTICE MICROTUBULES. **Miho Katsuki**, Douglas R. Drummond, Robert A. Cross

3543-Pos **Board #B404**
CHARACTERIZATION OF TUBULIN DERIVED FROM *GINKGO BILOBA* AND ITS INTERACTION WITH *RICE* PLANT KINESIN. **Seigo Iwata**, Nozomi Umezu, Kazunori Kondo, Shinsaku Maruta

3544-Pos **Board #B405**
ALP7 POTENTIATES MICROTUBULE TIP TRACKING BY THE PROCESSIVE PLUS END POLYMERASE ALP14. **Frauke Hussmann**, Rob Cross

3545-Pos **Board #B406**
MICROTUBULE DYNAMICS OF S. POMBE TUBULIN. **Douglas R. Drummond**, Christina Hoey, Merle Stein, Aynur Kaya-Copur, Susan Kain, Michael Osei, Robert A. Cross

3546-Pos **Board #B407**
SIMULTANEOUS MEASUREMENT OF MICROTUBULE PROTOFILAMENT NUMBER AND BENDING STIFFNESS. Agustus M. Black, Melissa A. Klocke, Lin Zhao, **Douglas S. Martin**

3547-Pos **Board #B408**
A STRUCTURE-FUNCTION STUDY OF MAP TAU: ANALYZING DISTINCT MAP TAU DOMAINS IN MEDIATING MICROTUBULE ASSEMBLY AND BUNDLING USING SYNCHROTRON SAXS. **Peter J. Chung**, Joanna Deek, Harrison E. Feinstein, Herb Miller, Myung Chul Choi, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

3548-Pos **Board #B409**
STU2P, THE BUDDING YEAST HOMOLOGUE OF XMAP215, IS A WEAK MICROTUBULE POLYMERASE THAT PROMOTES RESCUES. **Marija Podolski**, Jonathon Howard

3549-Pos **Board #B410**
COOPERATIVE INTERACTIONS IN THE MICROTUBULE-SEVERING AAA ATPASE SPASTIN. **Guenther Woehlke**, Thomas Eckert, Susanne Link, Doan Tuong-Van Le, Jean-Philippe Sobczak, Klaus Richter

3550-Pos **Board #B411**
ONE-DIMENSIONAL DIFFUSION OF TAU PROTEIN GUIDED BY THE MICROTUBULE LATTICE. Maike H. Hinrichs, Avesta Jalal, Bernhard Brenner, Eckhard Mandelkow, **Tim Scholz**

3551-Pos **Board #B412**
BIOPHYSICAL STUDY OF NATIVE YEAST KINETOCHORES INDICATES DISTINCT ROLES FOR PHOSPHO-REGULATION OF CORE MICROTUBULE-BINDING SUBCOMPLEXES. **Krishna Sarangapani**, Bungo Akiyoshi, Hugo Arellano-Santoyo, Jonathan Driver, Nicole Duggan, Andrew Powers, Sue Biggins, Charles Asbury

3552-Pos **Board #B413**
DETERMINING STRUCTURE-MECHANICS RELATIONSHIPS OF VISCOELASTIC MICROTUBULE NETWORKS THROUGH MICROSCALE MANIPULATION. **Bugra Kaytanli**, Yali Yang, Jun Lin, Omar A. Saleh, Megan T. Valentine

3553-Pos **Board #B414**
ANALYSIS OF THE PROJECTION DOMAIN OF THE MICROTUBULE ASSOCIATED PROTEIN TAU USING FORCE SPECTROSCOPY. **Jared T. Saunders**, Dennis S. D'Urso, Zachary J. Donhauser

3554-Pos **Board #B415**
KATANIN P60 TARGETS MICROTUBULES WITH DEFECTS. **Megan E. Bailey**, Margaret M. Morelli, J. Daniel Diaz, Jennifer L. Ross

3555-Pos **Board #B416**
MECHANICS AND DYNAMICS OF MICROTUBULES IN THE PRESENCE OF THE EBS AND MAP4. **Taviare L. Hawkins**, Karan S. Hingorani, Sarah Y. Dole, Anne Straube, Jennifer L. Ross

3556-Pos **Board #B417**
COVALENT CONJUGATION OF ANTIBODIES TO BIOMOLECULAR-MOTOR DRIVEN SHUTTLES. **Jenna Campbell**, Dibyadeep Paul, Katsuo Kurabayashi, Edgar Meyhofer

3557-Pos **Board #B418**
SUB-DIFFRACTION LIMITED IMAGING OF SLIDING MICROTUBULES BASED ON NANOSCALE LOCALIZATION SAMPLING USING NANOANTENNA ARRAYS. **Donghyun Kim**, Kyujung Kim, Junichiro Yajima, Youngjin Oh, Wonju Lee, Shinsuke Oowada, Takayuki Nishizaka

3558-Pos **Board #B419**
LOOP 8 PLAYS A ROLE IN CONTROLLING *S. CEREVISIAE* KINESIN-5 CIN8 MOTILITY AND FUNCTION. **Adina Gerson Gurwitz**, Christina Thiede, Natalia Movshovich, Vladimir Fridman, Maria Podolskaya, Stefan Lakämper, Dieter R. Klopfenstein, Christoph F. Schmidt, Larisa Gheber

3559-Pos **Board #B420**
MICROTUBULES SEARCH FOR LOST KINETOCHORES BY PIVOTING AROUND THE SPINDLE POLE. **Damien Ramunno-Johnson**, Iana Kalinina, Amitabha Nandi, Alexander Krull, Benjamin Lindner, Nenad Pavin, Iva M. Tolić-Nørrelykke

3560-Pos **Board #B421**
NOVEL ROLES OF KINESIN-8 IN ORGANIZING MITOTIC SPINDLES. **Xiaolei Su**, David Pellman

3561-Pos **Board #B422**
GAMMA TUBULIN PHOSPHO REGULATION: INSIGHTS INTO SPINDLE ASSEMBLY. **Elena Nazarova**, Eileen O'Toole, Daici Chen, Susi Kaitna, Michelle Jones, Jamie Keck, Conrad Hall, Eric Yen, Paul Francois, Mark Winey, Jackie Vogel

3562-Pos **Board #B423**
LIVE CELL IMAGING OF THE HUMAN CELLS DEPLETED WITH KINESIN FAMILY MEMBER C1 (KIFC1) AND STATHMIN/OP18 SHOWS THAT THESE CELLS PROCESS MITOSIS WITH LAGGING CHROMOSOME AND MICRONUCLEI, SUGGESTING A CRITICAL ROLE OF KIFC1 AND STATHMIN/OP18 IN GENOMIC STABILITY DURING MITOSIS. **Kiwon Song**

3563-Pos **Board #B424**
MITOTIC KINESIN CENP-E IS A ROBUST TRACKER OF DYNAMIC MICROTUBULE ENDS. **Nikita Gudimchuk**, Benjamin Vitre, Yumi Kim, Don W. Cleveland, Fazly I. Ataullakhanov, Ekaterina L. Grishchuk

3564-Pos **Board #B425**
DYNEIN FUNCTION IN T CELL MTOC TRANSLOCATION AND VESICLE MOVEMENTS. Laura Christian, Kathryn Chin, Amanda Siglin, John Williamson, **Martin Poenie**

Cell & Bacterial Mechanics & Motility IV (Boards #B426-#B449)

3565-Pos **Board #B426**
ANALYSIS OF E-CADHERIN AS A TENSION SENSOR AT EPITHELIAL CELL-CELL JUNCTIONS. **Mariya N. Sorokina**, Nicolas Borghi, Olga Shcherbakova, James Nelson, Alexander Dunn

3566-Pos **Board #B427**
CELLS SENSE RIGIDITY OF THEIR MICRO-ENVIRONMENT BY A UNIQUE FORCE-SENSING DISPLACEMENT CASSETTE. **Feroz M. Hameed**, Michael P. Sheetz

3567-Pos **Board #B428**
INFLUENCE OF SUBSTRATE STIFFNESS ON CELL SPREAD AREA. **Srikanth Raghavan**, ARAVIND R. RAMMOHAN, MARTIAL HERVY

3568-Pos **Board #B429**
INTERPLAY BETWEEN CYTOSKELETAL FORCES, MEMBRANE TENSION AND HYDROSTATIC PRESSURE IN RAPIDLY MIGRATING CELLS. **Chiara Gabella**, Céline Bottier, Elena Bertseva, Ivo F. Sbalzarini, Alexander B. Verkhovsky

3569-Pos **Board #B430**
THREE DIMENSIONAL TRACTION FORCES EXERTED BY MIGRATING AMOEBOID CELLS. **Begona Alvarez-Gonzalez**, Juan C. del Alamo, Ruedi Meili, Baldomero Alonso-Latorre, Richard Firtel, Juan C. Lasheras

3570-Pos **Board #B431**
COOPERATIVE DYNAMICS OF MDIA1 AND ARP2/3 IN BASAL EPITHELIAL CELL MIGRATION. **Kwonmoo Lee**, Hunter L. Elliott, Gaudenz Danuser

3571-Pos **Board #B432**
DIFFERENTIATION, MIGRATION, PROLIFERATION, AND SURVIVAL OF OLIGODENDROCYTE PRECURSOR CELLS IS MODULATED BY MECHANICAL PROPERTIES OF THEIR ENVIRONMENT. **Anna Jagielska**, Adele Norman, Graeme Whyte, Robin J. M. Franklin, Jochen Guck, Krystyn J. Van Vliet

3572-Pos **Board #B433**
DECIPHERING CELLULAR FORCES DURING MYOBLAST FUSION. **Gus K. Patton**, Aereas Aung, Juan Carlos Del Alamo, Shyni Varghese

3573-Pos **Board #B434**
TISSUE GEOMETRY REGULATES COLLECTIVE CELL MOTILITY. **Sriram Manivannan**, Jason P. Gleghorn, Jacquelyn Nestor, Celeste M. Nelson

3574-Pos **Board #B435** **EDUCATION TRAVEL AWARDEE**
FIBRONECTIN MATRIX ASSEMBLY REGULATES SHEAR STRESS-INDUCED STRUCTURAL REMODELING AND MOTILITY. **Rachel E. Evans**, Brian P. Helmke

3575-Pos **Board #B436**
HUMAN MESENCHYMAL STEM CELLS MIGRATION ON MATRICES WITH DISTINCT ELASTICITY GRADIENT MAGNITUDES. **Ludovic G. Vincent**, Yu Suk Choi, Adam J. Engler

3576-Pos **Board #B437**
DYNAMIC SURFACE TOPOGRAPHY INFLUENCES CELL FUNCTION. **Jennifer Kiang**, Nathan Sniadecki, Adam J. Engler

3577-Pos **Board #B438**
NANOTOPOGRAPHY DRIVEN MESENCHYMAL STEM CELL DIFFERENTIATION AND PROLIFERATION. Dustin R. Berger, Ketul Popat, **Ashok Prasad**

3578-Pos **Board #B439**
MESENCHYMAL STEM CELLS DURO- AND HAPTO- TAXIS ALTERS CELL STATE. **Jessica H. Wen**, Justin R. Tse, Adam J. Engler

3579-Pos **Board #B440**
NATURAL KILLER CELL-MEDIATED TUMOR SURVEILLANCE: CORRELATION BETWEEN KILLING EFFICIENCY, TRANSIENT MIGRATION BEHAVIOR AND MORPHOLOGY.
Mohammad A. Khorshidi, Bruno Vanherberghen, Bjorn Onfelt

3580-Pos **Board #B441**
CANCER MIGRATION IN 3-D ENVIRONMENT. **Aereas Aung**, Young N. Seo, Juan Carlos Del Alamo, Shyni Varghese

3581-Pos **Board #B442**
DIFFERENTIAL EFFECTS OF SERUM HEAT TREATMENT ON CHEMOTAXIS AND PHAGOCYTOSIS BY HUMAN NEUTROPHILS. **Alexander Mankovich**, Cheng-Yuk Lee, Volkmar Heinrich

3582-Pos **Board #B443**
TANGENTIAL TETHER EXTRACTION AND SPONTANEOUS TETHER RETRACTION OF HUMAN NEUTROPHILS.
Jin-Yu Shao, Baoyu Liu

3583-Pos **Board #B444**
CELL DETACHMENT MECHANISMS UNDER CLOSER INVESTIGATION - THE ROLE OF FATE, ELASTICITY AND INTRA-LINEAGE ADHESION HETEROGENEITY.
Alexander Fuhrmann, Adam J. Engler

3584-Pos **Board #B445**
A BIOPHYSICAL ANALYSIS OF CELL AND NUCLEUS RELATION. **Shen-Hsiu Hung**, Stephen Hugo Arce, Pei-Hsun Wu, Yiider Tseng

3585-Pos **Board #B446**
COMPLEX SUBSTRATE STRAIN FIELDS REVEAL ANISOTROPIC DEFORMATION OF C2C12 CELL NUCLEI. **Dominique Tremblay**, Andrew E. Pelling

3586-Pos **Board #B447**
EFFECT OF SUBSTRATE NANOTOPOGRAPHY AND CHEMISTRY ON CELL ATTACHMENT AND POPULATION IN RETINAL CELL CULTURES. **Gaelle Piret**, Maria-Thereza Perez, Christelle Prinz

3587-Pos **Board #B448**
COUPLING MOLECULAR MOTIONS OF PRESTIN TO CELLULAR MOTILITY: EFFECTS OF VOLTAGE, CHLORIDE AND CYTOSKELETON. Lei Song, **Joseph Santos-Sacchi**

3588-Pos **Board #B449**
THE EFFECT OF THROMBIN CONCENTRATION ON RHEOLOGY OF FIBRIN NETWORKS. **Huayin Wu**

Ion Motive ATPases (Boards #B450-#B470)

3589-Pos **Board #B450**
CHANGES OF INTRAMOLECULAR DISTANCES IN THE NA^+/K^+ ATPASE UPON OUABAIN BINDING. **Jorge E. Sanchez-Rodriguez**, Fatemeh Khalili-Araghi, Benoit Roux, Miguel Holmgren, Francisco Bezanilla

3590-Pos **Board #B451**
NA^+ ACCESS KINETICS IN THE NA^+/K^+-ATPASE PUMP. **Miguel Holmgren**, David C. Gadsby, Francisco Bezanilla, Robert F. Rakowski, Paul De Weer

3591-Pos **Board #B452**
ENERGETICS OF THE REACTIONS CONTROLLING THE DEEPLY OCCLUDED STATE OF THE NA^+/K^+ PUMP.
Juan P. Castillo, Daniela De Giorgis, Daniel Basilio, David C. Gadsby, Joshua JC Rosenthal, Ramon Latorre, Miguel Holmgren, Francisco Bezanilla

3592-Pos **Board #B453**
STRUCTURAL DYNAMICS OF CALCIUM TRANSPORT PROTEINS DETECTED BY SATURATION TRANSFER ELECTRON PARAMAGNETIC RESONANCE. **Jesse E. McCaffrey**, Zachary M. James, Kurt D. Torgersen, Christine B. Karim, Edmund C. Howard, David D. Thomas

3593-Pos **Board #B454**
TIME-RESOLVED FLUORESCENCE AND MOLECULAR MODELING OF FITC-LABELED CA-ATPASE. **Joseph M. Autry**, John E. Rubin, Bengt Svensson, Ji Li, David D. Thomas

3594-Pos **Board #B455**
QUANTIFICATION OF CALCIUM PUMP STRUCTURE CHANGES IN LIVE CELSS. **Zhanjia Hou**, Zhihong Hu, Daniel J. Blackwell, Tyler D. Miller, David D. Thomas, Seth L. Robia

3595-Pos **Board #B456**
DYNAMIC CONFORMATIONAL TRANSITIONS OF SARCOENDOPLASMIC RETICULUM CA-ATPASE (SERCA) QUANTIFIED BY SINGLE MOLECULE FRET. **Sandeep Pallikkuth**, Seth L. Robia

3596-Pos **Board #B457**
FLUORESCENCE AND FUNCTIONAL MEASUREMENTS OF PHOSPHOLAMBAN MUTANT COMPETITION. **Simon J. Gruber**, Suzanne Haydon, David D. Thomas

3597-Pos **Board #B458**
PHYSICAL AND FUNCTIONAL INTERACTION OF MEMBRANE PROTEINS MODULATED BY ELECTROSTATIC INTERACTIONS WITH MEMBRANE SURFACE CHARGE. **Ji Li**, Zach James, Christine B. Karim, Daphne Dong, David D. Thomas

3598-Pos **Board #B459**
PHOSPHOLAMBAN DOES NOT INTERACT WITH *E*2 INTERMEDIATES OF THE CARDIAC CALCIUM PUMP STABILIZED BY METAL FLUORIDES. **Zhenhui Chen**, Larry R. Jones

3599-Pos **Board #B460**
INTERACTION OF SERCA WITH THE TRANSMEMBRANE DOMAIN OF PHOSPHOLAMBAN MEASURED BY FRET IN LIVE CELLS. **Philip A. Bidwell**, Seth L. Robia

3600-Pos **Board #B461**
EVIDENCE OF DIRECT BINDING OF G-ACTIN AND CALMODULIN TO PMCA BY SURFACE PLASMON RESONANCE. Marianela G. Dalghi, Marisa M. Fernandez, Emilio L. Malchiodi, Emanuel E. Strehler, **Juan Pablo Rossi**

3601-Pos **Board #B462**
CONFORMATIONAL CHANGES IN THE FIRST TRANSMEMBRANE HELIX OF THE H+-ATPASE, AHA2, DURING H+ TRANSPORT. Bassem Gayed, **Joshua R. Berlin**

3602-Pos **Board #B463**
ELECTROGENICITY OF VACUOLAR H^+-ATPASES AT THE PLASMA MEMBRANE OF OSTEOCLASTS. Hiromu Sakai, Yoshie Moriura, Junko Kawawaki, **Miyuki Kuno**

3603-Pos **Board #B464**
KINETIC EQUIVALENCE OF PH DIFFERENCE (ΔPH) AND ELECTRICAL POTENTIAL (Δψ) ACROSS MEMBRANE IN ATP SYNTHESIS BY BACILLUS PS3 FOF1-ATP SYNTHASE. **Naoki Soga**, Kazuhiko Kinosita Jr., Masasuke Yoshida, Toshiharu Suzuki

3604-Pos **Board #B465**
INTERACTIONS BETWEEN THE γ SUBUNIT AND THE ε SUBUNIT MEDIATE INHIBITION AND COUPLING IN ESCHERICHIA COLI F1-ATPASE. **Natalie C. Negrey**, Robert K. Nakamoto

3605-Pos **Board #B466**
THE PHYTOPOLYPHENOL PICEATANNOL INHIBITS THE RATE LIMITING STEP OF ROTATIONAL CATALYSIS OF THE F1-ATPASE. Mizuki Sekiya, **Robert K. Nakamoto**, Mayumi Nakanishi-Matsui, Masamitsu Futai

3606-Pos **Board #B467**
CHARACTERIZATION OF TFOF1 ATP SYNTHASE C SUBUNIT RING IN MEMBRANES WITH HS-AFM AND SOLID-STATE NMR. **Hideo Akutsu**, Yasuto Todokoro, Su-jin Kang, Ikuko Yumen, Iku Iwasaki, Toshiharu Suzuki, Atsushi Miyagi, Kousuke Morikawa, Masasuke Yoshida, Toshimichi Fujiwara

3607-Pos **Board #B468**
MECHANICAL TRANSMISSION BETWEEN THE γ-SUBUNIT OF F_1 AND THE *C*-RING OF MEMBRANE-BOUND F_O OF ATP SYNTHASE: A MOLECULAR DYNAMICS STUDY. **Jung-Hsin Lin**

3608-Pos **Board #B469**
MECHANISM OF THE CONFORMATIONAL CHANGE OF THE F_1-ATPASE β SUBUNIT REVEALED BY FREE-ENERGY SIMULATIONS. **Yuko Ito**, Tomotaka Oroguchi, Mitsunori Ikeguchi

3609-Pos **Board #B470**
REALISTIC MODELING OF BIOLOGICAL MOTORS ; ELECTROSTATIC ORIGIN OF THE MECHNOCHEMICAL ROTATORY MECHANISM AND THE CATALYTIC DWELL OF F1-ATPASE. **Arieh Warshel**, Shayantani Mukherjee

Membrane Transport (Boards #B471-#B487)

3610-Pos **Board #B471**
STRUCTURAL DETERMINANTS OF SOLUTE DIFFUSION THROUGH MEMBRANES. **Florian Zocher**, Christian Wennberg, David van der Spoel, Peter Pohl, Jochen S. Hub

3611-Pos **Board #B472**
IMAGING TECHNIQUES FOR QUANTIFYING PASSIVE DIFFUSION ACROSS LIPID BILAYER MEMBRANES. **Noah Malmstadt**, Su Li, Peichi C. Hu, Kristina Runas

3612-Pos **Board #B473**
IMAGING MOLECULAR TRANSPORT ACROSS LIPID BILAYERS. **Su Li**, Peichi Hu, Noah Malmstadt

3613-Pos **Board #B474**
MOLECULAR MECHANISMS OF PROTON PERMEATION ACROSS LIPID MEMBRANES- EFFECT OF CHOLESTEROL. **John C. Mathai**, Aaron L. Carrithers, Mark L. Zeidel, John Nagle

3614-Pos **Board #B475**
ANALYSIS OF AQUAPORIN FACILITATED CO2 DIFFUSION ACROSS BIOLOGICAL AND ARTIFICIAL MEMBRANES. **Norbert Uehlein**, Beate Otto, Henrik Sperling, Marlies Heckwolf, Adrian Eilingsfeld, Ralf Kaldenhoff

3615-Pos **Board #B476**
PROBING GAS DIFFUSION PATHWAYS IN CYTOCHROME C OXIDASE WITH EXPLICIT AND IMPLICIT LIGAND SAMPLINGS. **Paween Mahinthichaichan**, James Hemp, Robert B. Gennis, Emad Tajkhorshid

3616-Pos **Board #B477**
UNASSISTED TRANSPORT OF BLOCK TRYPTOPHAN THROUGH DOPC MEMBRANE: EXPERIMENT AND SIMULATION. **Alfredo E. Cardenas**, Kristine Y. DeLeon, Wendy A. Hegefeld, Krzysztof Kuczera, Gouri S. Jas, Ron Elber

3617-Pos **Board #B478**
LONG DISTANCE LIPID:PROTEIN COUPLING IN THE PROTEIN TRANSLOCON. **Ana-Nicoleta Bondar**, Douglas J. Tobias, Stephen H. White

3618-Pos **Board #B479**
SUBSTRATE BINDING AND TRANSPORT BY A BACTERIAL MULTIDRUG MFS TRANSPORTER. **Ryan Steed**, Kristin Trone, Hassane Mchaourab

3619-Pos **Board #B480**
REVEALING THE INTERACTION OF BINDING PROTEIN WITH ABC TRANSPORTER BY FLUORESCENCE CORRELATION SPECTROSCOPY. **Joanna Ziomkowska**, Johanna Heuveling, Erwin Schneider, Andreas Herrmann

3620-Pos **Board #B481**
A UNIFYING CONCEPT OF SEROTONIN TRANSPORTER ASSOCIATED CURRENTS. **Walter Sandtner**, Klaus Schicker, Michael Freissmuth, Gary Rudnick, Harald H. Sitte

3621-Pos **Board #B482**
EFFECTS OF FLAVONOIDS ON DIPOLE POTENTIAL OF STEROL-CONTAINING MEMBRANES. **Svetlana S. Efimova**, Olga S. Ostroumova

3622-Pos **Board #B483**
ESCHERICHIA COLI REGULATES CELL DIVISION BY MODULATING MEMBRANE POTENTIAL. **Catalin Chimerel**, Christopher M. Field, Silvia Piñero-Fernandez, Silvia M. Hernandez-Ainsa, David K. Summers, Ulrich F. Keyser

3623-Pos **Board #B484**
TRIGGERED GENE EXPRESSION IN FED-VESICLE MICROREACTORS WITH A MULTIFUNCTIONAL MEMBRANE. **Christophe Danelon**, Zohreh Nourian, Wouter Roelofsen, Ilja Westerlaken

3624-Pos **Board #B485**
MEMBRANE TRAFFICKING AND MECHANICS OF THE GOLGI APPARATUS: AN IN CELLULO STUDY BY OPTICAL MICROMANIPULATION. **David Guet**, Mathieu Pinot, Jessica H. Hoffmann, Bruno Goud, Jean-Baptiste Manneville

3625-Pos **Board #B486**
INTERFACING NATURAL AND ARTIFICIAL PROTEINS WITH ELECTRONIC DEVICES. Goutham Kodali, Ye Lu, Geetha Goparaju, Christopher C. Moser, P. Leslie Dutton, A. T. Charlie Johnson, **Bohdana M. Discher**

3626-Pos **Board #B487**
POLYSTYRENE BEADS AS A MODEL SYSTEM FOR VIRUS PARTICLES REVEAL PORE SUBSTRUCTURE AS THEY TRANSLOCATE. **Matthew Pevarnik**, Ken Healy, Zuzanna Siwy

Biotechnology & Bioengineering II (Boards #B488-#B514)

3627-Pos **Board #B488**
EFFECTS OF BIOMATERIAL CHEMICAL HETEROGENEITY ON FIBRINOGEN ACTIVITY-PLATELET ADHESION RELATIONSHIPS. **Christopher A. Siedlecki**, Bryan M. Scheetz, Li-Chong Xu

3628-Pos **Board #B489**
HIGH THROUGHPUT SCREENING METHODOLOGY TO PROBE CELL DEFORMABILITY. **Dongping Qi**, Amy Rowat

3629-Pos **Board #B490**
FRUSTRATED DIFFERENTIATION OF MESENCHYMAL STEM CELL CULTURED ON MICROELASTICALLY-PATTERNED PHOTOCURABLE GELATINOUS GELS. **Satoru Kidoaki**, Shuhei Jinnouchi

3630-Pos **Board #B491**
CELL ASPECT RATIO ALTERS STEM CELL TRACTION STRESSES AND LINEAGE. **Ludovic G. Vincent**, TayChor Yong, Juan Carlos del Alamo, Lay Poh Tan, Adam J. Engler

3631-Pos **Board #B492**
ENGINEERED MICROENVIRONMENTS TO STUDY MECHANISMS OF TISSUE TROPISM IN METASTASIS. Erinn Dandley, Nathan Colon, Shireen Rudina, Shannon Alford, **Shelly Peyton**

3632-Pos **Board #B493**
MICROFLUIDIC DEVICE FOR CONTROLLED FLUID SWITCHING TO BE USED WITH CHEMICALLY POWERED MOLECULAR MOTORS ON SURFACE BOUND TRACKS. **Cassandra Niman**, Jason P. Beech, Nancy R. Forde, Paul Curmi, Dek Woolfson, Jonas O. Tegenfeldt, Heiner Linke

3633-Pos **Board #B494**
INEXPENSIVE RAFT ARRAYS FOR CELL PATTERNING AND CLONING. **Christopher Sims**, Yuli Wang, Phil Gach, Pavak Shah, Nancy Allbritton

3634-Pos **Board #B495**
FORMATION AND CHARACTERIZATION OF ULTRATHIN FILMS CONTAINING AMYLOIDOGENIC PROTEINS. **Claus Czeslik**, Juny Koo

3635-Pos **Board #B496**
THE TRANSCRIPTION FACTOR ULTRABITHORAX FORMS EXTENSIBLE, HIERARCHICALLY ORDERED ASSEMBLIES THAT ARE READILY FUNCTIONALIZED BY GENE FUSION. **Sarah E. Bondos**, Zhao Huang, Yang Lu, Jan Patterson, Kathleen S. Matthews, Jun Lou, Kayla Bayless

3636-Pos **Board #B497**
AN OPTICAL DEVICE DRIVEN BY MOTOR PROTEIN. **Susumu Aoyama**, Masahiko Shimoike, Yuichi Hiratsuka

3637-Pos **Board #B498**
OBSERVATIONS OF MHC STRUCTURAL CHANGES ELICITED FROM ANTIGENIC PEPTIDE USING DIFFRACTED X-RAY TRACKING (DXT). **Yuji C. Sasaki**, Kentaro Hoshisashi, Hiroshi Sekiguchi, Kouhei Ichiyanagi, Naoki Ogawa, Haruo Kozono, Osami Kanagawa

3638-Pos **Board #B499**
PHOTO-CONTROL OF THE SMALL G PROTEIN RAS USING PHOTOCHROMIC MOLECULE. **Hisashi Kobayashi**, Shinsaku Maruta, Keiko Tanaka, Shun Sugawara

3639-Pos **Board #B500**
MONITORING METABOLIC RESPONSES IN SACCHAROMYCES CEREVISIAE USING FLUORESCENCE-BASED DETECTION OF NADH CONFORMATION. **Paul Urayama**, Jun Cheng, Michael Zatt

3640-Pos **Board #B501**
LIPOSOMES ENCAPSULATING QUANTUM DOTS AS LUMINESCENT PROBES. **Maria B. Seabra**, Rafael B. Lira, Ana Lívia Linard, Eneida de Paula, Renato Grillo, Vivaldo Moura, Adriana Fontes, Beate S. Santos

3641-Pos **Board #B502**
AN IRREVERSIBLE LOCK TO PROTEINS FOR DYNAMIC FORCE SPECTROSCOPY AT THE MAMMALIAN CELL SURFACE. **Emrah Celik**, Bijan Zakeri, Mark Howarth, Vincent T. Moy

3642-Pos **Board #B503**
SUPRAMOLECULAR ASSEMBLIES OF LIPID-COATED POLYELECTROLYTES. **Guillaume Tresset**, Yves Lansac, Guillaume Romet-Lemonne

3643-Pos **Board #B504**
STRUCTURE, ASSEMBLY AND MECHANICAL PROPERTIES OF DNA NANOPARTICLES CONDENSED WITH PEIM. **Preethi L. Chandran**, Emilios K. Dimitriadis, Ferenc Horkay

3644-Pos **Board #B505**
EXTRACELLULAR MATRIX PROTEINS ARE NECESSARY FOR MOUSE EMBRYONIC STEM CELL DIFFERENTIATION AND MAY GUIDE STEM CELL FATE. **Hermes Taylor-Weiner**, Adam J. Engler

3645-Pos **Board #B506** **MINORITY TRAVEL AWARDEE**
INVESTIGATING THE EFFECTS OF DYNAMIC EXTERNAL STIMULI ON SINGLE CELL FITNESS AND GENE EXPRESSION IN ESCHERICHIA COLI. **Eric M. Johnson-Chavarria**, Utsav Agrawal, Melikhan Tanyeri, Charles M. Schroeder

3646-Pos **Board #B507**
INFRARED LIGHT EXCITES CELLS VIA TRANSIENT CHANGES IN MEMBRANE ELECTRICAL CAPACITANCE. **Mikhail G. Shapiro**, Kazuaki Homma, Sebastian Villarreal, Claus-Peter Richter, Francisco Bezanilla

3647-Pos **Board #B508**
MECHANICAL DERIVATION OF FUNCTIONAL MYOTUBES FROM ADIPOSE-DERIVED STEM CELLS. **Yu Suk Choi**, Ludovic Vincent, Andrew Lee, Marek Dobke, Adam Engler

3648-Pos **Board #B509**
NONINVASIVE DETECTION OF SPONTANEOUS MUSCLE ACTIVITY IN AMYOTROPHIC LATERAL SCLEROSIS IN FREQUENCY DOMAIN. **Faezeh Jahanmiri Nezhad**, xiaoyan Li, William Zev Rymer, Ping Zhou

3649-Pos **Board #B510**
RECOMBINANT MG53 PROTEIN CAN INCREASE MEMBRANE REPAIR CAPACITY AND IMPROVE PATHOLOGY IN DYSTROPHIC MOUSE MUSCLE. **Noah Weisleder**, Norio Takizawa, Tao Tan, Christopher Ferrante, Pin-Jung Chen, Rosalie Yan, Xiaoli Zhao, Chuanxi Cai, Hiroshi Takeshima, Jianjie Ma

3650-Pos **Board #B511**
HIGH-THROUGHPUT OPTICAL ASSAYS FOR ASSESSING DRUG-INDUCED Q-T PROLONGATION IN HUMAN IPS CELL-DERIVED CARDIOMYOCYTES. **Chien-Jung Huang**, Nick Callamaras, Ursula Germann, Sandra Lechner, Jennings Worley

3651-Pos **Board #B512**
IN VIVO APPLICATION OF DYNAMIC HYALURONIC ACID MATERIAL FOR MYOCARDIAL INFARCTION THERAPY. **Jennifer L. Young**, Jacquelyn Schaefer, Jeremy Tuler, Pamela Schup-Magoffin, Rebecca Braden, Karen L. Christman, Adam J. Engler

3652-Pos **Board #B513**
ADJUVANT MITIGATING EFFECT OF MAGNETIC FIELD EXPOSURES UP TO 72 HOURS AFTER UVC OR X-RAYS DAMAGES INDUCTION IN CELL CULTURES. **Patrick M. Mehl**

3653-Pos **Board #B514**
MICROWAVE SENSOR FOR MEASURING THE GROWTH OF BIOMATERIALS. **Christopher E. Bassey**, Sarah A. Mintah, Mary C. Bassey

Imaging & Optical Microscopy: Superresolution Imaging & Single Molecules (Boards #B515-#B544)

3654-Pos **Board #B515**
SIMULTANEOUS OBSERVATION OF THE THREE-DIMENSIONAL ORIENTATION AND POSITION OF A SINGLE FLUORESCENT PROBE. **Masashi Ohmachi**, Yasunori Komori, Atsuko H. Iwane, Fumihiko Fujii, Takashi Jin, Toshio Yanagida

3655-Pos **Board #B516**
ACCURATE QUANTIFICATION METHODS FOR SINGLE MOLECULE LOCALIZATION. **Avtar Singh**, Han Gao, Alexander Song, Rebecca Williams, Warren R. Zipfel

3656-Pos **Board #B517**
FLUORESCENCE EXCITATION AND IMAGING OF SINGLE MOLECULES NEAR COATED SURFACES: A THEORETICAL STUDY. **Daniel Axelrod**

3657-Pos **Board #B518**
SUPER-RESOLUTION IMAGING OF MEMBRANE TOPOLOGY USING SMALL MOLECULE LIPOPHILIC DYE. **Tulip Nuwal**, Wei Zhang, Bo Huang

3658-Pos **Board #B519**
THREE DIMENSIONAL SINGLE MOLECULE LOCALIZATION USING PHASE RETRIEVED PUPIL FUNCTIONS. **Sheng Liu**, Keith A. Lidke

3659-Pos **Board #B520**
IMAGING OF MOLECULAR COMPLEXES ON THE SURFACES OF LIVING CELLS BY UNIFORM TOTAL INTERNAL REFLECTION-BASED FRET MICROSCOPY. **Jia Lin**

3660-Pos **Board #B521**
SUPER RESOLUTION MICROSCOPY OF MEMBRANE RECEPTOR AGGREGATION AND ACTIN RESTRUCTURING DURING STAPHYLOCOCCUS TYPHIMURIUM INFECTION. **Jason J. Han**, Yuliya A. Kunde, Elizabeth Hong-Geller, James H. Werner

3661-Pos **Board #B522**
COLOCALIZATION ANALYSIS OF MUTANT AND WILDTYPE DESMIN USING DUAL COLOR SUPER-RESOLUTION MICROSCOPY. **Per Niklas Hedde**, Susan Gayda, Andreas Brodehl, Jan Gummert, Hendrik Milting, Gerd Ulrich Nienhaus

3662-Pos **Board #B523**
FAST MAXIMUM LIKELIHOOD ALGORITHM FOR LOCALIZATION OF FLUORESCENT MOLECULES. **Rebecca Starr**, Shane P. Stahlheber

3663-Pos **Board #B524**
DEVELOPMENT OF METHODS TO OBSERVE A LIVING CELL AND MACROMOLECULES IN AQUEOUS SOLUTION WITH SCANNING ELECTRON MICROSCOPE AT NANOMETER RESOLUTION. **Tadashi Tojo**, Naoki Ogawa, Akira Ishikawa, Shigeru Chaen

3664-Pos **Board #B525**
BENCHMARKING QUICKPALM AND OTHER MOLECULE LOCALIZATION SOFTWARE FOR SUPER-RESOLUTION MICROSCOPY. **Shane P. Stahlheber**, Rebecca A. Starr, Alex Small

3665-Pos **Board #B526**
REVIVAL OF PRISM-BASED TIR MICROSCOPY - VERSATILE TRACKING OF FLUORESCENT AND SCATTERING PROBES WITH NM-PRECISION. **René Schneider**, Stefan Diez

3666-Pos **Board #B527**
THE NUCLEAR PORE COMPLEX AS SEEN BY DSTORM. **Anna Löschberger**, Sebastian van de Linde, Marie-Christine Dabauvalle, Bernd Rieger, Mike Heilemann, Georg Krohne, Markus Sauer

3667-Pos **Board #B528**
SINGLE MOLECULE FLUORESCENCE MICROSCOPY REVEALS NEURITE-BOUND AMYLOID-BETA OLIGOMERS. **Robin Johnson**, Joseph Schauerte, Christian Althaus, Cynthia Carruthers, Michael Sutton, Ari Gafni, Duncan Steel

3668-Pos **Board #B529**
NOVEL PHOTOCONVERTIBLE FLUORESCENT PROTEINS FOR SUPER-RESOLUTION IMAGING. **Pingyong Xu**, Mingshu Zhang, Hao Chang, Yongdeng Zhang, Wei Ji, Tao Xu

3669-Pos **Board #B530**
QUANTIFICATION OF PHOTOACTIVATABLE FLUORESCENT PROTEINS BY PALM. **Jae Yen Shin**, Sang-Hyuk Lee, Antony Lee, Carlos Bustamante

3670-Pos **Board #B531**
SPARSE STATISTICAL DECONVOLUTION FOR HIGH-DENSITY LOCALIZATION MICROSCOPY. **Eran A. Mukamel**, Hazen Babcock, Xiaowei Zhuang

3671-Pos **Board #B532**
MULTIPHOTON AND STED IMAGING NANOSCOPY. **Paolo Bianchini**, Benjamin Harke, Silvia Galiani, Giuseppe Vicidomini, Alberto Diaspro

3672-Pos **Board #B533** **EDUCATION TRAVEL AWARDEE**
GRASPJ - AN OPEN SOURCE, REAL-TIME ANALYSIS PACKAGE FOR SUPER-RESOLUTION IMAGING. **Norman Brede**, Melike Lakadamyali

3673-Pos **Board #B534**
INVESTIGATING THE IMPACT OF PHOTO-BLINKING ON PHOTO ACTIVATED LOCALIZATION MICROSCOPY: FROM SINGLE MOLECULES TO CELL MEMBRANE RECEPTORS. **Paolo Annibale**, Stefano Vanni, Marco Scarselli, Ursula Rothlisberger, Aleksandra Radenovic

3674-Pos **Board #B535**
PROBES FOR TWO-PHOTON-ACTIVATION FPALM. **Tobias Hartwich**, Vladislav Verkhusha, Joerg Bewersdorf

3675-Pos **Board #B536**
OPTIMIZING PARAMETERS FOR WLL STED IMAGING. **Silvia Galiani**, Benjamin Harke, Giuseppe Vicidomini, Gabriele Lignani, Hanako Tsushima, Evelina Chieregatti, Fabio Benfenati, Paolo Bianchini, Alberto Diaspro

3676-Pos **Board #B537**
QUANTITATIVE CHARACTERIZATION OF DYES EMBEDDED IN NANOPARTICLES BY SINGLE-MOLECULE FLUORESCENCE. **Susanta K. Sarkar**, Ambika Bumb, Xufeng S. Wu, Martin W. Brechbiel, Keir C. Neuman

3677-Pos **Board #B538**
EVALUATION OF FLUOROPHORES FOR OPTIMAL PERFORMANCE IN LOCALIZATION-BASED SUPER-RESOLUTION IMAGING. **Graham T. Dempsey**, Joshua C. Vaughan, Kok H. Chen, Xiaowei Zhuang

3678-Pos **Board #B539**
A CUSTOM-BUILT FAST SCANNING STED MICROSCOPE WITH A LARGE FIELD OF VIEW. **Pedro F. Gardeazábal Rodríguez**, Yong Wu, Hui Zhao, Harpreet Singh, Rong Lu, Min Li, Zhu Zhang, Soojin Lee, Ligia Toro, Enrico Stefani

3679-Pos **Board #B540**
SUPERRESOLUTION STED IMAGING REVEALS A PERIODIC PUNCTATE PATTERN OF ADENYLYL CYCLASE TYPE III ON PRIMARY CILIA. **T. Tony Yang**, Perry Hampilos, Christine H. Miller, Bhavik Nathwani, Nupur D. Sutaria, Jung-Chi Liao

3680-Pos **Board #B541**
SUPER RESOLUTION DRIFT CORRECTION WITH INTERMITTENTLY OBSERVABLE MARKERS. **Stephen M. Anthony**, Andrea Grosso, Raimund J. Ober

3681-Pos **Board #B542**
SUPER-RESOLUTION IMAGING USING RANDOMLY DIFFUSING PROBES. **Anna Labno**, Hu Cang, Christopher Gladden, Xiang Zhang

3682-Pos **Board #B543**
IMAGING SUBRESOLUTION MEMBRANE CURVATURE IN LIVING CELLS BY BACK FOCAL PLANE POSITIONING POLARIZED TOTAL INTERNAL REFLECTION MICROSCOPY (TIRFM). **Adam D. Hoppe**, Jason Kerkvliet, Jia Lin

3683-Pos **Board #B544**
OPTIMIZING SINGLE-WAVELENGTH CONTROL OF SUPERRESOLUTION LOCALIZATION MICROSCOPY. **Alexander R. Small**

Micro & Nanotechnology: Nanopores III (Boards #B545-#B564)

3684-Pos **Board #B545**
USING LABEL-FREE SCREENING TO INVESTIGATE STEM-CELLS FROM THEIR MICROANATOMICAL NICHE. **Karthik Balakrishnan**, Matthew Chapman, Michael Conboy, Swomitra Mohanty, Eric Jabart, Haiyan Huang, James Hack, Irina Conboy, Lydia Sohn

3685-Pos **Board #B546**
OPTICAL LABEL-FREE BIODETECTION BASED ON THE DIFFRACTION OF DNA MOLECULAR GRATINGS FOR IN VITRO DIAGNOSTIC. **Amandine M.c. Egea**, Julie Foncy, Jean-Christophe Cau, Vincent Paveau, Jean-Marie François, Christophe Vieu

3686-Pos **Board #B547**
SINGLE PROTEIN MOLECULE DETECTION WITH A TRANSFER-APTAMER (PISTON) SLIDING IN A PROTEIN PORE. **Insoon Kang**, Li-Qun Gu

3687-Pos **Board #B548**
KINETIC DYNAMCS IN AN αHL-BASED NANOPORE DNA SEQUENCER. **Bryon Drown**, Michael J. Culbertson, Joseph E. Reiner, Joseph W. F. Robertson, Arvind Balijepalli, John J. Kasianowicz, Daniel L. Burden

3688-Pos **Board #B549**
DETECTION OF SINGLE ACTIN FILAMENTS AT FLUORESCENCE INTERFERENCE CONTRAST CHECKPOINTS. **Mercy Lard**, Lasse ten Siethoff, Malin Persson, Alf Månsson, Heiner Linke

3689-Pos **Board #B550**
SUBWAVELENGTH METAL APERTURES FOR LABEL-FREE DETECTION OF SINGLE-MOLECULES. **Romain Wyss**, Tor Sandén, Joachim Piguet, Christian Santschi, Ghérici Hassaïne, Cédric Deluz, Olivier J.F. Martin, Stefan Wennmalm, Horst Vogel

3690-Pos **Board #B551**
DIRECT ELECTRON-BEAM NANOPATTERNING OF TEFLON AF SURFACES FOR SITE-SELECTIVE FORMATION OF MOLECULAR PHOSPHOLIPID FILMS. **Mehrnaz Shaali**, Samuel Lara Avida, Sergey Kubatkin, Aldo Jesorka

3691-Pos **Board #B552**
ELECTRONICS CONFIGURATION TO CO-TRAP SINGLE DNA MOLECULES IN DUAL SOLID-STATE NANOPORES - SOLVING THE DNA TRANSLOCATION RATE PROBLEM. Jungsuk Kim, Shea Ellerson, **William Dunbar**

3692-Pos **Board #B553**
SINGLE-MOLECULE KINETICS AND THERMODYNAMICS ANALYSIS OF DNA-BOUND CROWN ETHER/CATION INTERACTIONS WITHIN THE ALPHA-HEMOLYSIN ION CHANNEL. **Na An**, Aaron M. Fleming, Henry S. White, Cynthia J. Burrows

3693-Pos **Board #B554**
TRANSLOCATING SINGLE-STRANDED DNA THROUGH CRYSTALLINE GRAPHENE NANOPORES. **Gregory F. Schneider**, Qiang Xu, Bo Song, Stephanie Luik, Stefan Kowalczyk, Victor Calado, Meng Yue Wu, Gregory Pandraud, Sairam Maldi, Henny Zandbergen, Cees Dekker

3694-Pos **Board #B555**
SIMULATING NANOPORE SENSOR DYNAMICS OVER LONG TIMES SCALES. **Daniel L. Burden**, Bryon Drown, Michael J. Culbertson, Joseph E. Reiner, Joseph W. F. Robertson, Arvind Balijepalli, John J. Kasianowicz

3695-Pos **Board #B556**
REPEATED NUCLEOTIDE DETECTION WITH DUPLEX INTERRUPTED NANOPORE SEQUENCING IN MSPA. **Ian M. Derrington**, Jens H. Gundlach

3696-Pos **Board #B557**
ELECTROSTATIC TRAPPING OF DNA DURING TRANSLOCATION THROUGH AN ELECTRICALLY TUNABLE NANOPORE IN A P-N SEMICONDUCTOR MEMBRANE. Dmitriy Melnikov, George Nelson, **Maria Gracheva**

3697-Pos **Board #B558** **INTERNATIONAL TRAVEL AWARDEE**
CHARACTERIZATION OF MEMBRANE LIPIDS AND PROTEIN LATERAL DIFFUSION IN PATTERNED SURFACES. **Ma. Florencia Sanchez**, Valeria Levi, Dolores C. Carrer

3698-Pos **Board #B559**
TOWARDS NANOPORE SEQUENCING: COMPARING EXPERIMENTAL RESULTS WITH COMPUTATIONAL MODELING OF DNA INTERACTIONS WITH α-HEMOLYSIN. **Olga Samoylova**, Suren Markosyan, Eric N. Ervin, Prithwish Pal, Pablo De Biase, Michael G. Keehan, Geoffrey A. Barrall, Sergei Noskov

3699-Pos **Board #B560**
PORATION OF LIPID BILAYERS BY SHOCK-INDUCED NANOBUBBLE COLLAPSE. **Ken-ichi Nomura**, Amit Choubey, Mohammad Vedadi, Rajiv K. Kalia, Aiichiro Nakano, Priya Vashishta

3700-Pos **Board #B561**
NONLINEAR RESPONSE OF CANTILEVERED CARBON NANOTUBE IN MASS SENSING. **Ilkwang Kim**, Sooil Lee

3701-Pos **Board #B562**
A STACKED GRAPHENE-AL2O3 NANOPORE ARCHITECTURE FOR DNA DETECTION. **Shouvik Banerjee**, B. Murali Venkatesan, David Estrada, Xiaozhong Jin, Vincent Dorgan, Vita Solovyeva, Myung-Ho Bae, Narayana Aluru, Eric Pop, Rashid Bashir

3702-Pos **Board #B563**
NUCLEOSOME DETECTION USING SOLID STATE NANOPORES. **Gautam Soni**, Laurens Wester, Rifka Vlijm, Cees Dekker

3703-Pos **Board #B564**
IRON IONS RELEASED FROM THE STAINLESS-STEEL ANODE DURING HIGH-VOLTAGE PULSE QUENCH THE FLUORESCENCE OF CALCEIN IN BOTH SOLUTION AND ELECTROPORATED CELLS. **Raminta Rodaitė-Riševičienė**, Gintautas Saulis

Regulatory Networks & Systems Biology (Boards #B565-#B569)

3704-Pos **Board #B565**
NETWORK TOPOLOGIES AND DYNAMICS LEADING TO ENDOTOXIN TOLERANCE AND PRIMING IN INNATE IMMUNE CELLS. Yan Fu, Trevor Glaros, Meng Zhu, Ping Wang, Zhanghan Wu, John Tyson, Liwu Li, **Jianhua Xing**

3705-Pos **Board #B566**
PLASMIN ANTAGONIZES POSITIVE FEEDBACK BETWEEN TGF-β1 AND TSP1 : STEADY STATES AND DYNAMICS. Lakshmi Venkatraman, Ser-Mien Chia, B. C. Narmada, Liang Siang Poh, Jacob K. White, Sourav Saha Bhowmick, C. Forbes Dewey, Peter T. So, Hanry Yu, **Lisa Tucker-Kellogg**

3706-Pos **Board #B567**
MODELING THE BIOMECHANICAL ROLES OF CANCER STEM CELL NICHE IN MYELOMA DEVELOPMENT. **Jing Su**, Dong Song Choi, Wen Zhang, Le Zhang, Chung-Che Chang, Youli Zu, Xiaobo Zhou

3707-Pos **Board #B568**
MAGNETICALLY-INDUCED GENETIC RESPONSE OF MAGNETOTACTIC BACTERIA. **Mary E. Wilson**, Warren C. Ruder, Eli Zenkov, Lina M. Gonzalez, Philip R. LeDuc

3708-Pos **Board #B569**
A WHOLE CELL MODEL OF MYCOPLASMA GENITALIUM ELUCIDATES MECHANISMS OF BACTERIAL REPLICATION. **Jonathan R. Karr**, Jayodita C. Sanghvi, Jared M. Jacobs, Derek N. Macklin, Markus W. Covert

Molecular Dynamics II (Boards #B570-#B599)

3709-Pos **Board #B570** **EDUCATION TRAVEL AWARDEE**
METHYL DYNAMICS IN BIOLOGICAL MACROMOLECULES: EVOLUTION AND IMPLICATIONS. **Jonathan D. Nickels**, Hugh O'Neill, Joseph E. Curtis, Alexei Sokolov

3710-Pos **Board #B571**
MODELING POLYMER INTERACTIONS WITH NANOPORES FOR DNA SEQUENCING AND PROTEOMICS APPLICATIONS. **Arvind Balijepalli**, Kyu Il Lee, Wonpil Im, Richard W. Pastor

3711-Pos **Board #B572**
SIMULATIONS OF DNA BENDING USING ADAPTIVE UMBRELLA SAMPLING ON ROLL ANGLES. **Justin M. Spiriti**, Arjan van der Vaart

3712-Pos **Board #B573**
COMPUTATIONAL MODELING OF TELOMERASE IN ACTION. **Mahmoud Shobair**

3713-Pos **Board #B574**
DERIVING TRANSFERABLE PARAMETERS FOR THE COARSE-GRAINED MARTINI MODEL: APPLICATION TO AMYLOID-LIKE AND ELASTIN-LIKE PEPTIDES. **Mikyung Seo**, Sarah Rauscher, Régis Pomès, D. Peter Tieleman

3714-Pos **Board #B575**
EFFECT OF MUTATIONS ON Aβ MONOMER FLEXIBILITY: IMPLICATIONS FOR PEPTIDE ASSOCIATION. **Maria A. Sanchez Farran**, Janna K. Maranas

3715-Pos **Board #B576**
ADSORPTION OF THE FULL LENGTH AMYLOID BETA PEPTIDE ON THE CARBON NANOTUBE SURFACE AND THE THERMODYNAMIC IMPLICATIONS FOR FIBRILLOGENESIS. **Neelanjana Sengupta**, Asis K. Jana

3716-Pos **Board #B577**
MULTISCALE SIMULATION OF POLYGLUTAMINE AND THE EFFECT OF NEIGHBORING AMINO ACIDS ON OLIGOMERIZATION. **Sebastien Cote**, Said Bouzakraoui, Rozita Laghaei, Guanghong Wei, Normand Mousseau

3717-Pos **Board #B578**
MONITORING THE MECHANISM OF FIBER ASSEMBLY OF AB PEPTIDES IN ALZHEIMER'S DISEASE (AD) BY TWO-DIMENSIONAL ULTRAVIOLET (2DUV) SPECTROSCOPY. **Alfonso R. Lam**, Jun Jiang, Ana Rojas, Harold Scheraga, Shaul Mukamel

3718-Pos **Board #B579**
CONFORMATIONAL TRANSITION PATHWAYS OF ADENYLATE KINASE EXPLORED BY THE STRING METHOD. **Yasuhiro Matsunaga**, Hiroshi Fujisaki, Tohru Terada, Akinori Kidera

3719-Pos **Board #B580**
CONVENTIONAL AND ACCELERATED MOLECULAR DYNAMICS SIMULATIONS OF *STAPHYLOCOCCUS AUREUS* SORTASE A. **Kalli Kappel**, Jeff Wereszczynski, J. Andrew McCammon

3720-Pos **Board #B581**
CLASSICAL FORCE FIELD DEVELOPMENT AND MOLECULAR DYNAMICS OF [NIFE] HYDROGENASE. **Dayle Smith**, Thomas C. Squier, TP Straatsma

3721-Pos **Board #B582**
NANO-SCALE MECHANICS OF NACRE: FORCES AT PROTEIN-CRYSTAL LINKAGES AND FLAWS. **Shijun Xiao**, Scott A. Edwards, Frauke Gräter

3722-Pos **Board #B583**
MD SIMULATIONS REVEAL ULTRAFAST DIELECTRIC COMPENSATION BY WATER OF LARGE STOKES SHIFTS FROM CHARGED GROUPS IN STAPHYLOCOCCAL NUCLEASE. **J. Nathan Scott**, Patrik R. Callis

3723-Pos **Board #B584**
DIFFERENTIAL DEHYDRATION OF HYDROPHOBIC NANOTUBES IN AQUEOUS UREA AND GUANIDINIUM CHLORIDE SOLUTIONS: IMPLICATIONS FOR PROTEIN DENATURATION MECHANISM. **Payel Das**

3724-Pos **Board #B585**
ATP INHIBITION OF INSULIN-DEGRADING ENZYME: A COMPUTATIONAL STUDY. **Carlos Henrique B. Cruz**, Gustavo M. Seabra

3725-Pos **Board #B586**
MOLECULAR DYNAMICS OF THE DENGUE VIRUS NS3/NS2B PROTEASE. **Maria Carolina P. Lima**, Gustavo M. Seabra

3726-Pos **Board #B587**
FATIGUE AT THE MOLECULAR SCALE. **Emmanuel Dumont**, Henry Hess

3727-Pos **Board #B588**
MECHANOCHEMISTRY OF SMALL MOLECULES: INTO WHICH BOND DOES THE FORCE GO? **Wenjin Li**, Gerrit Groenhof, Frauke Graeter

3728-Pos **Board #B589**
QM/MM MOLECULAR DYNAMICS METHODS APPLIED TO INVESTIGATE CELLULOSE FIBERS HYDRATION. **Rafael C. Bernardi**, Marcelo C R Melo, Pedro G. Pascutti

3729-Pos **Board #B590**
STRUCTURAL THERMODYNAMICS OF NMDA RECEPTOR LIGAND-BINDING DOMAINS. **John Belcher**, Albert Lau

3730-Pos **Board #B591**
LIGAND-PROTEIN INTERACTION STUDIED BY COMPUTER SIMULATION AND TIME-RESOLVED X-RAY CRYSTALLOGRAPHY. **Takayuki Tsuduki**, Ayana Tomita, Shin-ya Koshihara, Shin-ichi Adachi, Takahisa Yamato

3731-Pos **Board #B592**
MOLECULAR DYNAMICS STUDIES OF PROTEIN TARGETS FOR CANCER. **Keiko Shinoda**, Hideaki Fujitani

3732-Pos **Board #B593**
ACCELERATED MOLECULAR DYNAMICS SIMULATIONS OF THROMBIN-THROMBOMODULIN REVEAL POTENTIAL FOR ENTROPIC ALLOSTERY. **Paul M. Gasper**, Phineus R. Markwick, J. Andrew McCammon

3733-Pos **Board #B594**
COMPUTATIONAL STUDIES OF A PH RESPONSIVE HISTIDINE-MODIFIED CARDIAC TROPONIN I. **Evelyne M. Houang**, Nathan J. Palpant, Yuk Y. Sham, Joseph M. Metzger

3734-Pos **Board #B595**
PRESSURE-INDUCED DENATURATION OF PROTEINS STUDIED BY GENERALIZED-ENSEMBLE MOLECULAR SIMULATIONS. **Yoshiharu Mori**, Yuko Okamoto

3735-Pos **Board #B596**
AN ELASTIC NETWORK COARSE GRAINED MD MODEL TESTED ON PROTEIN WITH HINGE MOVEMENT UPON LIGAND BINDING. **Iwona Siuda**, Lea Thøgersen

3736-Pos **Board #B597**
SLOW DYNAMICS IN PROTEIN FLUCTUATIONS REVEALED BY TIME-STRUCTURE BASED INDEPENDENT COMPONENT ANALYSIS. Yusuke Naritomi, **Sotaro Fuchigami**

3737-Pos **Board #B598**
MODULATION MECHANISM ON THE CONFORMATIONAL DIVERSITIES OF BIANTENNARY COMPLEX-TYPE N-GLYCANS IN WATER. **Wataru Nishima**, Naoyuki Miyashita, Yoshiyuki Yamaguchi, Yiji Sugita, Suyong Re

3738-Pos **Board #B599**
MOLECULAR MODELING OF FOLDING IN LACTAM-MODIFIED (GLUTAMATE+LYSINE ANALOG) CONOTOXINS. Christopher R. DeLaney, Brittany A. Kovacs, **Pedro L. Muíño**