Wednesday, March 9, 2011

Daily Program Summary

All rooms in the Baltimore Convention Center unless noted otherwise.

8:00 AM–12:00 PM	**Career Center**	**Room 301–303**
8:00 AM–3:00 PM	**Child Care**	**Hilton Baltimore, Poe A/B**
8:00 AM–3:00 PM	**Poster Viewing**	**Hall C**
8:00 AM–3:30 PM	**Family Room**	**Room 313**
8:15 AM–10:15 AM	**Symposium 18** **Ballroom I** **The Alternating Access Mechanism in the Era of Transporter Structures** *Christopher Miller,* Brandity, Howard Hughes Medical Institute, Chair ALTERNATIVES IN ALTERNATING ACCESS. *Christopher Miller.* THE OLD MAN AND THE MEMBRANE. *H. Ronald Kaback.* STRUCTURE OF MULTIDRUG RESISTANCE TRANSPORTERS. *Geoffrey Chang.* MOLECULAR MECHANISM OF BETAINE TRANSPORT AND STRESS REGULATION BY THE NA+ -COUPLED SYMPORTER BETP. *Christine Ziegler.*	
8:15 AM–10:15 AM	**Symposium 19** **Ballroom II** **Molecular Motors and the Cytoskeleton: Moving to the Boundaries** *David Warshaw, University of Vermont College of Medicine, Chair* TO CUT OR NOT TO CUT?: PHYSICALLY REGULATING MICROTUBULE SEVERING ENZYMES. *Jennifer Ross.* FAT, FLIES, AND VIDEOTAPE: USING DROSOPHILA LIPID DROPLETS TO DISSECT MOTOR REGULATION IN VIVO. *Michael Welte.* ACTIVE PATTERNING AND CONTRACTILE DYNAMICS IN ACTIN NETWORKS DRIVEN BY MYOSIN MOTORS. *Gijsje H. Koenderink.* MYOSIN MOLECULAR MOTORS: TRANSPORTING CARGO IN ALL DIRECTIONS. *David Warshaw.*	
8:15 AM–10:15 AM	**Platform AW** **Ballroom III** **Cell and Bacterial Mechanics & Motility II**	
8:15 AM–10:15 AM	**Platform AX** **Ballroom IV** **Protein Folding & Stability II**	
8:15 AM–10:15 AM	**Platform AY** **Room 307** **Calcium Signaling Pathways**	
8:15 AM–10:15 AM	**Platform AZ** **Room 308** **Member-organized Session: Disordered and Self-aggregated Peptides and Proteins**	
8:15 AM–10:15 AM	**Platform BA** **Room 309** **TRP Channels**	
8:15 AM–10:15 AM	**Platform BB** **Room 310** **Micro and Nanotechnology; Nanopores**	
10:30 AM–12:30 PM	**Poster Presentations & Late Posters**	**Hall C**
10:30 AM–11:15 AM	**Coffee Break**	**Hall C**
1:00 PM–3:00 PM	**Symposium 20** **Ballroom I** **Single Molecule Biophysics of the Central Dogma** *Joseph Puglisi, Stanford University School of Medicine, Chair* SINGLE MOLECULE PROBING OF HELICASE DYNAMICS. *Sua Myong.* FORWARD AND BACKWARD MOTION OF REPLICATIVE POLYMERASES AND THEIR COUPLING WITH THE HELICASE. *Vincent Croquette.* THE PRICE OF BEING RIGHT: TRANSCRIPT ELONGATION, BACKTRACKING, AND POST-INCORPORATION PROOFREADING. *Stephan W. Grill.* REAL-TIME DYNAMICS OF TRANSLATION. *Joseph Puglisi.*	
1:00 PM–3:00 PM	**Symposium 21** **Ballroom II** **Mechanotransduction at the Cellular Level: Detection and Response** *Michael Sheetz, Columbia University, Chair* TRP CHANNELS AND CELL MECHANOSENSITIVITY. *Ching Kung.* SENSORY MECHANISMS IN MAMMALIAN TOUCH RECEPTOR CELLS. *Ellen A. Lumpkin.* MECHANOTRANSDUCTION AND DEVELOPMENTAL CONTROL. *Donald Ingber.* CELL MECHANOSENSING BY PROTEIN STRETCHING AGAIN AND AGAIN. *Michael Sheetz.*	

(Continued from previous page.)

1:00 PM–3:00 PM	**Minisymposium 4** **Non-Equilibrium Statistical Mechanics: Theory & Experiment**	**Room 310**
1:00 PM–3:00 PM	**Platform BC** **Interfacial Protein-Lipid Interactions**	**Ballroom III**
1:00 PM–3:00 PM	**Platform BD** **Protein-Ligand Interactions**	**Ballroom IV**
1:00 PM–3:00 PM	**Platform BE** **Voltage-gated Ca Channels**	**Room 307**
1:00 PM–3:00 PM	**Platform BF** **Microtubular Motors**	**Room 308**
1:00 PM–3:00 PM	**Platform BG** **Protein Aggregates**	**Room 309**

Wednesday, March 9

8:00 AM–12:00 PM, Room 301–303
CAREER CENTER

8:00 AM–3:00 PM, Hilton Baltimore, Poe A/B
CHILD CARE

8:00 AM–3:00 PM, Hall C
POSTER VIEWING

8:00 AM–3:30 PM, Room 313
FAMILY ROOM

8:15 AM–10:15 AM, Ballroom I
SYMPOSIUM 18
The Alternating Access Mechanism in the Era of Transporter Structures

Chair
Christopher Miller, Brandeis University, Howard Hughes Medical Institute

2786-SYMP 8:15 AM
ALTERNATIVES IN ALTERNATING ACCESS. **Christopher Miller.**

2787-**SYMP 8:45 AM**
THE OLD MAN AND THE MEMBRANE. **H. Ronald Kaback**.

2788-SYMP 9:15 AM
STRUCTURE OF MULTIDRUG RESISTANCE TRANSPORTERS. **Geoffrey Chang**, Andrew Ward, Rupali Aggarwal, Alexandra Caya.

2789-SYMP 9:45 AM
MOLECULAR MECHANISM OF BETAINE TRANSPORT AND STRESS REGULATION BY THE NA+ -COUPLED SYMPORTER BETP. **Christine Ziegler**.

8:15 AM–10:15 AM, Ballroom II
SYMPOSIUM 19
Molecular Motors and the Cytoskeleton: Moving to the Boundaries

Chair
David Warshaw, University of Vermont College of Medicine

2790-SYMP 8:15 AM
TO CUT OR NOT TO CUT?: PHYSICALLY REGULATING MICROTUBULE SEVERING ENZYMES. **Jennifer Ross**.

2791-SYMP 8:45 AM
INVITED SPEAKER. **Michael Welte**.

2792-SYMP 9:15 AM
ACTIVE PATTERNING AND CONTRACTILE DYNAMICS IN ACTIN NETWORKS DRIVEN BY MYOSIN MOTORS. **Gijsje H. Koenderink**, Marina Soares e Silva, Martin Depken, Bjorn Stuhrmann, Fred C. MacKintosh.

2793-SYMP 9:45 AM
MYOSIN MOLECULAR MOTORS: TRANSPORTING CARGO IN ALL DIRECTIONS. **David Warshaw**.

8:15 AM–10:15 AM, Ballroom III
PLATFORM AW
Cell and Bacterial Mechanics & Motility II

Co-Chairs
Alexander Dunn, Stanford University
Wolfgang Losert, University of Maryland

2794-PLAT 8:15 AM
MECHANICAL LOAD INDUCES A 100-FOLD INCREASE IN THE RATE OF COLLAGEN PROTEOLYSIS BY MMP-1. Arjun S. Adhikari, Jack Chai, **Alexander R. Dunn**.

2795-PLAT 8:30 AM
CELL SHAPE DYNAMICS: FROM WAVES TO MOTION. **Wolfgang Losert**, Meghan Driscoll, Colin McCann, John Fourkas, Carole Parent.

2796-PLAT 8:45 AM
SEPARATE LOCATIONS OF THE ACTIVE AND PASSIVE MICROTUBULE INTERFACES IN KINETOCHORES INFERRED FROM DIRECTION-DEPENDENT STRUCTURAL CHANGES. **Sophie Dumont**, Edward D. Salmon, Timothy J. Mitchison.

2797-PLAT 9:00 AM
IMPOSING LOCAL MAGNETIC FIELDS TO CONTROL MAGNETOTACTIC BACTERIA THROUGH COMBINING MICROFABRICATION AND MAGNETISM. **Lina M. Gonzalez**, Warren C. Ruder, SiYen Chou, Eli Zenkov, William Messner, Philip R. LeDuc.

2798-PLAT 9:15 AM
MECHANISMS FOR MAINTAINING CELL-SHAPE IN ROD-SHAPED GRAM-NEGATIVE BACTERIA. **Leon Furchtgott**, Ned S. Wingreen, Kerwyn Casey Huang.

2799-PLAT 9:30 AM
NON INVASIVE INFERENCE OF CHEMOTAXIS RESPONSES FROM BACTERIAL TRAJECTORIES. **Jean-Baptiste Masson**, Guillaume Voisinne, Jerome Wong-NG, Antonio Celani, Massimo Vergassola.

2800-PLAT 9:45 AM
MEASURING PEPTIDOGLYCAN ELASTICITY AND STRESS-STIFFENING OF LIVE BACTERIAL CELLS. **Yi Deng**, Mingzhai Sun, Joshua W. Shaevitz.

2801-PLAT 10:00 AM
BALLISTIC MOTION OF SPIROCHETE MEMBRANE PROTEINS. **Holger Kress**, Rostislav Boltyanskiy, Alexia A. Belperron, Cecile O. Mejean, Charles W. Wolgemuth, Linda K. Bockenstedt, Eric R. Dufresne.

8:15 AM–10:15 AM, Ballroom IV
PLATFORM AX
Protein Folding & Stability II

Chair
Vincent Voelz, Stanford University
Lillian Chong, University of Pittsburgh

2802-PLAT 8:15 AM
PROTEIN PROTEIN INTERACTIONS - THE EFFECTS OF COSOLVENTS, CROWDING AND PRESSURE. **Roland Winter**.

2803-PLAT 8:30 AM
MARKOV STATE MODELS OF MILLISECOND FOLDER ACBP REVEALS NEW VIEWS OF THE FOLDING REACTION. **Vincent A. Voelz**, Marcus Jäger, Li Zhu, Shuhuai Yao, Olgica Bakajin, Shimon Weiss, Lisa J. Lapidus, Vijay S. Pande.

2804-PLAT 8:45 AM
IS THE SERPIN FOLDING MECHANISM CONSERVED? THE FOLDING PATHWAYS OF HUMAN ALPHA-1 ANTITRYPSIN AND NEUROSERPIN. **Anindya Sarkar**, Crystal Zhou, Patrick L. Wintrode.

2805-PLAT 9:00 AM STUDENT TRAVEL AWARDEE
ENGINEERED ALLOSTERIC ACTIVATION OF KINASES IN LIVING CELLS. Andrei Karginov, Feng Ding, **Pradeep Kota**, Nikolay Dokholyan, Klaus Hahn.

2806-PLAT 9:15 AM
MOLECULAR SIMULATIONS OF MUTUALLY EXCLUSIVE FOLDING IN A TWO-DOMAIN PROTEIN SWITCH. **Lillian T. Chong**.

2807-PLAT 9:30 AM
EXPLORING THE TRAFFICKING, LIGAND-BINDING ACTIVITY, AND UNFOLDING OF A MODEL GPCR. **Andrea N. Naranjo**, Michelle A. O'Malley, Amy N. Chavalier, Anne S. Robinson.

2808-PLAT 9:45 AM
DETERMINANTS OF COOPERATIVITY IN REPEAT PROTEIN FOLDING. **Tural Aksel**, Ananya Majumdar, Doug Barrick.

2809-PLAT 10:00 AM
OUTER MEMBRANE SECRETION EFFICIENCY OF AUTOTRANSPORTER VIRULENCE PROTEINS CORRELATES WITH PASSENGER DOMAIN FOLDING PROPERTIES. Jonathan P. Renn, Mirco Junker, **Patricia L. Clark**.

8:15 AM–10:15 AM, Room 307

PLATFORM AY
Calcium Signaling Pathways

Co-Chairs
Peter Lipp, Saarland University
George Holz, SUNY Upstate Medical University

2810-PLAT 8:15 AM
PHOSPHOLIPASE C-EPSILON COUPLES CAMP PRODUCTION AND EPAC2 ACTIVATION TO THE FACILITATION OF CALCIUM-INDUCED CALCIUM RELEASE (CICR) IN PANCREATIC BETA CELLS. **George G. Holz**, Igor Dzhura, Oleg Chepurny, Colin A. Leech, Elvira Dzhura, Parisa Afshari, Grant G. Kelley, Michael W. Roe, Michael J. Rindler, Xin Xu, Youming Lu, Sundeep Malik, Alan V. Smrcka.

2811-PLAT 8:30 AM
PKA IS A CONTROL NODE IN A CALCIUM-DEPENDENT OSCILLATORY CIRCUIT IN PANCREATIC BETA CELLS. **Ambhighainath Ganesan**, Qiang Ni, Nwe-Nwe Aye-Han, Xinxin Gao, Michael D. Allen, Andre Levchenko, Jin Zhang.

2812-PLAT 8:45 AM
BASAL PHOSPHOLIPASE C (PLC) ACTIVATION IS OBLIGATORY FOR CARDIAC PACEMAKER ACTIVITY. **Tatiana M. Vinogradova**, Edward G. Lakatta.

2813-PLAT 9:00 AM
ALTERED NUCLEAR CALCIUM SIGNALING IN TACHYCARDIA-INDUCED REMODELING IN RABBIT ATRIA: A MECHANISM OF ALTERED EXCITATION-TRANSCRIPTION COUPLING IN ATRIAL FIBRILLATION? **Benoit-Gilles Kerfant**, Marion Kuiper, Arne Van Hunnik, Maura Greiser, Sander Verheule, Ulrich Schotten.

2814-PLAT 9:15 AM
ALTERATIONS OF MEMBRANE CURRENTS, CONTRACTILITY AND CALCIUM SIGNALING IN GQ/G11 SINGLE AND DOUBLE KO MICE. Qinghai Tian, Sara Pahlavan, Sandra Ruppenthal, Anke Scholz, Kathrina Wiesen, Martin Oberhofer, Lars Kaestner, **Peter Lipp**.

2815-PLAT 9:30 AM
NUCLEAR INOSITOL 1,4,5-TRIPHOSPHATE IS AN ABSOLUT REQUIREMENT FOR CARDIOMYOCYTE HYPERTROPHY. **Lilian M. Arantes**, Carla J. Aguiar, M. Jimena Amaya, S. Guatimosim, M. Fátima Leite.

2816-PLAT 9:45 AM
CA2+ BINDING AND TRANSPORT: A NOVEL FUNCTION FOR COENZYME Q. **Ivan Bogeski**, Rubin Gulaboski, Valentin Mirceski, Reinhard Kappl, Markus Hoth.

2817-PLAT 10:00 AM
CALCIUM SIGNALLING IN RED BLOOD CELLS. **Lars Kaestner**, Patrick Steffen, Jue Wang, Asya Makhro, Achim Jung, Duc Bach Nguyen, Ingolf Bernhardt, Anna Bogdanova, Peter Lipp, Christian Wagner.

8:15 AM–10:15 AM, Room 308

PLATFORM AZ
Member-organized Session: Disordered and Self-Aggregated Peptides and Proteins

Co-Chairs
Rohit Pappu, Washington University St. Louis
Reinhard Schweitzer-Stenner, Drexel University

2818-PLAT 8:15 AM
THE EVOLUTION OF THE NATIVELY DISORDERED REGION IN P53 FAMILY PROTEINS. **Buyong Ma**, Ruth Nussinov.

2819-PLAT 8:30 AM
CONFORMATIONAL DISCREPANCIES BETWEEN MOLECULAR DYNAMICS FORCE FIELDS AND VIBRATIONAL SPECTROSCOPY IN SHORT ALANINE-BASED PEPTIDES. **Daniel Verbaro**, Indrajit Gosh, Werner Nau, Reinhard Schweitzer-Stenner.

2820-PLAT 8:45 AM
THE ROLE OF DYNAMIC PROTEIN COMPLEXES IN THE UBIQUITIN-PROTEASOME PATHWAY. **Tanja Mittag**, Stephen Orlicky, Xiaojing Tang, Frank Sicheri, Mike Tyers, Julie D. Forman-Kay.

2821-PLAT 9:00 AM
INTRINSIC DISORDER IN THE BASIC REGIONS OF BZIP TRANSCRIPTION FACTORS: WHAT IT MEANS TO BE DISORDERED AND WHY IT MIGHT MATTER! Rahul K. Das, Scott L. Crick, **Rohit V. Pappu**.

2822-PLAT 9:15 AM
INTRINSICALLY DISORDERED PROTEINS EVOLVE DIFFERENTLY FROM ORDERED (STRUCTURED) PROTEINS. **Celeste J. Brown**, Gary W. Daughdrill, A. Keith Dunker.

2823-PLAT 9:30 AM
NEGATIVE DESIGN IN PROTEIN COILS. **Lauren L. Perskie**, George D. Rose.

2824-PLAT 9:45 AM
EVOLUTION OF STRUCTURE AND DYNAMICS FOR A FAMILY OF DISORDERED PROTEINS. **Wade M. Borcherds**, Hongwei Wu, Anne T. Pine, Katie M. Mishall, Gary W. Daughdrill.

2825-PLAT 10:00 AM
TRANSIENT PROTEIN-PROTEIN INTERACTIONS IN THE IDP ALPHA-SYNUCLEIN DETECTED BY NMR: IMPLICATIONS FOR PROTEIN AGGREGATION. **Kuen-Phon Wu**, Jean Baum.

8:15 AM–10:15 AM, Room 309

PLATFORM BA
TRP Channels

Co-Chairs
Feng Qin, SUNY, Buffalo
Emily Liman, University of Southern California

2826-PLAT 8:15 AM
ACTIVATION MECHANISMS AND MOLECULAR PROPERTIES OF CYCLOPIAZONIC ACID (CPA)-EVOKED TRPC CHANNELS IN VASCULAR MYOCYTES FROM TRPC1-/- MICE. **Anthony P. Albert**, Jian Shi, Min Ju, Lutz Birnbaumer, William A. Large.

2827-PLAT 8:30 AM
ENGINEERING OF THE TRPC3 SELECTIVITY FILTER IDENTIFIES A UNIQUE, DUAL SIGNALING FUNCTION OF TRPC3 IN THE HEART. **Michaela Lichtenegger**, Michael Poteser, Thomas Stockner, Hannes Schleifer, Christoph Romanin, Klaus Groschner.

2828-PLAT 8:45 AM
EFFECTS OF EXTRACELLULAR CA^{2+} ON TRPM2 CHANNEL GATING. **Balázs Tóth**, László Csanády.

2829-PLAT 9:00 AM
TRPAI IS A CO2 SENSOR IN NOCICEPTORS. **Yuanyuan Wang**, Rui B. Chang, Emily R. Liman.

2830-PLAT 9:15 AM
MOLECULAR BASIS OF THERMAL SENSITIVITY OF HEAT-ACTIVATED VANILLOID RECEPTOR ION CHANNELS. Beiying Liu, Jing Yao, **Feng Qin**.

2831-PLAT 9:30 AM
THE PORE TURRET OF THERMOTRP CHANNELS IS A PORTABLE DOMAIN CONTRIBUTING TO TEMPERATURE SENSING.
Cui Yuanyuan, Xu Cao, Fan Yang, KeWei Wang, Jie Zheng.

2832-PLAT 9:45 AM
IDENTIFICATION OF A TETRAMERIC ASSEMBLY DOMAIN IN THE C-TERMINUS OF HEAT-ACTIVATED TRPV CHANNELS. Feng Zhang, Shuang Liu, Fan Yang, Jie Zheng, **KeWei Wang**.

2833-PLAT 10:00 AM
COMPLEX REGULATION OF TRPV1 BY PHOSPHOINOSITIDES. **Viktor Lukacs**, Baskaran Thyagarajan, Tibor Rohacs.

8:15 AM–10:15 AM, Room 310
PLATFORM BB
Micro and Nanotechnology; Nanopores

Co-Chairs
Cees Dekker, TU Delft
Charles Collier, Oak Ridge National Laboratory

2834-PLAT 8:15 AM
DNA TRANSLOCATION THROUGH GRAPHENE NANOPORES. **Chris Merchant**.

2835-PLAT 8:30 AM
USING MEASUREMENTS OF THE ION CURRENT THROUGH A SYNTHETIC NANOPORE TO DISCRIMINATE NUCLEOTIDES IN A SINGLE *DNA* MOLECULE. **Deqiang Wang**, JiWook Shim, Winston G. Timp, Anthony Ho, Aleksei Aksimentiev, Gregory Timp.

2836-PLAT 8:45 AM
IN VITRO MEASUREMENTS OF SINGLE-MOLECULE TRANSPORT ACROSS AN INDIVIDUAL BIOMIMETIC NUCLEAR PORE COMPLEX. **Cees Dekker**, Stefan Kowalczyk, Larissa Kapinos, Roderick Y.M. Lim.

2837-PLAT 9:00 AM
INTEGRATED MICROFLUIDIC PLATFORM FOR STUDIES ON MEMBRANE PROTEINS AND DRUG SCREENING ASSAYS. **Verena Stimberg**.

2838-PLAT 9:15 AM
INTERFACIAL TENSION CONTROLLED FUSION OF INDIVIDUAL FEMTOLITER DROPLETS AND TRIGGERING OF CONFINED CHEMICAL REACTIONS ON DEMAND.
Charles P. Collier, Scott T. Retterer, Seung-Yong Jung.

2839-PLAT 9:30 AM
ELUCIDATION AND CONTROL OF THE HYBRIDIZATION CHAIN REACTION. **Victor A. Beck**, Justin S. Bois, Robert M. Dirks, Niles A. Pierce.

2840-PLAT 9:45 AM
PRECISE TRANSFECTION CONTROL OF CELL REPROGRAMMING FACTORS VIA A HIGH THROUGHPUT ELECTROPORATION SYSTEM. **Ebrahim Ghafar-Zadeh**, Erh-Chia Yeh, Chi-cheng Fu, Luke P. Lee.

2841-PLAT 10:00 AM
A PORE-CAVITY-PORE DEVICE TO TRAP AND INVESTIGATE SINGLE NANO-SCALE OBJECTS IN FEMTO-LITER COMPARTMENTS: CONFINED DIFFUSION AND NARROW ESCAPE. **Martin Langecker**, Daniel Pedone, Robin D. Nagel, Friedrich Simmel, Ulrich Rant.

10:30 AM–12:30 PM, Hall C
POSTER PRESENTATIONS & LATE POSTERS
(For a complete listing of Wednesday Poster Presentations and posting information, see page 133.)

10:30 AM–11:15 AM, Hall C
COFFEE BREAK

1:00 PM–3:00 PM, Ballroom I
SYMPOSIUM 20
Single Molecule Biophysics of the Central Dogma

Chair
Joseph Puglisi, Stanford University School of Medicine

2842-SYMP 1:00 PM
SINGLE MOLECULE PROBING OF HELICASE DYNAMICS. **Sua Myong**.

2843-SYMP 1:30 PM
FORWARD AND BACKWARD MOTION OF REPLICATIVE POLYMERASES AND THEIR COUPLING WITH THE HELICASE. **Vincent Croquette**, Maria Manosas, Fangyuan Ding, Michelle Spiering, Stephen Benkovic.

2844-SYMP 2:00 PM
THE PRICE OF BEING RIGHT: TRANSCRIPT ELONGATION, BACKTRACKING, AND POST-INCORPORATION PROOFREADING. **Stephan W. Grill**.

2845-SYMP 2:30 PM
REAL-TIME DYNAMICS OF TRANSLATION. **Joseph Puglisi**.

1:00 PM–3:00 PM, Ballroom II
SYMPOSIUM 21
Mechanotransduction at the Cellular Level: Detection and Response

Chair
Michael Sheetz, Columbia University

2846-SYMP 1:00 PM
TRP CHANNELS AND CELL MECHANOSENSITIVITY. **Ching Kung**.

2847-SYMP 1:30 PM
SENSORY MECHANISMS IN MAMMALIAN TOUCH RECEPTOR CELLS. **Ellen A. Lumpkin**.

2848-SYMP 2:00 PM
MECHANOTRANSDUCTION AND DEVELOPMENTAL CONTROL. **Donald Ingber**.

2849-SYMP 2:30 PM
CELL MECHANOSENSING BY PROTEIN STRETCHING AGAIN AND AGAIN. **Michael Sheetz**.

1:00 PM–3:00 PM, Room 310

MINISYMPOSIUM 4

Non-Equilibrium Statistical Mechanics: Theory and Experiment

Co-Chairs
Angel Garcia, Rensallaer Polytechnic Institute
Rigoberto Hernandez, Georgia Institute of Technology

2850-MINISYMP 1:00 PM
THERMODYNAMIC EFFICIENCY OUT OF EQUILIBRIUM. **David Sivak**, Gavin Crooks.

2851-MINISYMP 1:20 PM
ADAPTIVE STEERED MOLECULAR DYNAMICS: UNFOLDING OF NEUROPEPTIDE Y AND DECAALANINE STRETCHING. Gungor Ozer, Stephen Quirk, **Rigoberto Hernandez**.

2852-MINISYMP 1:40 PM
NON-EQUILIBRIUM WORK DISSIPATION IN MECHANICAL UNFOLDING OF LARGE RNAS. **Pan T.X. Li**.

2853-MINISYMP 2:00 PM
ATOMISTIC SIMULATIONS OF THE FORCE-INDUCED DISSOCIATION OF RETROVIRAL RNA KISSING-LOOPS. **Alan A. Chen**, Angel E. Garcia.

2854-MINISYMP 2:20 PM
AN INTRUSIVE ENTROPIC BARRIER INDUCED BY FORCE. **Ronen Berkovich**, Sergi Garcia-Manyes, Joseph Klafter, Michael Urbakh, Julio M. Fernandez.

2855-MINISYMP 2:40 PM
BUILDING STOCHASTIC FEEDBACK MODELS FROM LIMITED DATA; A MAXIMUM ENTROPY-BASED SOLUTION. **Steve Presse**.

1:00 PM–3:00 PM, Ballroom III

PLATFORM BC

Interfacial Protein-Lipid Interactions

Co-Chairs
Roger Koeppe, University of Arkansas
Ka Yee Lee, University of Chicago

2856-PLAT 1:00 PM
LUNG SURFACTANT PEPTIDE-MIMIC KL4 IMPROVES REVERSIBILITY OF SYNTHETIC MODEL LUNG SURFACTANT COLLAPSE BEHAVIOR. Niels Holten-Andersen, Phillip W. Miller, Alan J. Waring, Frans J. Walther, **Ka Yee C. Lee**.

2857-PLAT 1:15 PM
EXPLORING SUPRAMOLECULAR ASPECTS OF THE EFFECT OF SPHINGOMYELINASE D ON SPHINGOMYELIN-CONTAINING MEMBRANES. **Kerstin Wagner**, Blanca Ramos-Cerrillo, Roberto P. Stock, Luis A. Bagatolli.

2858-PLAT 1:30 PM
PROTEIN-LIPID INTERACTIONS SHAPING THE ELECTROSTATIC MEMBRANE SEARCH OF A PLECKSTRIN HOMOLOGY DOMAIN. **Anna R. Chase**, Jefferson D. Knight, Joseph J. Falke.

2859-PLAT 1:45 PM
BINDING AFFINITIES OF WT AND H93R PTEN TO LIPID MEMBRANES CONTAINING PS AND PI(4,5)P2. **Siddharth Shenoy**, Arne Gericke, Alonzo Ross, Mathias Lösche.

2860-PLAT 2:00 PM
A PROLINE KINK IN GWALP23. **Roger E. Koeppe II**, Johanna M. Froyd-Rankenberg, Vitaly V. Vostrikov, Christopher D. DuVall, Denise V. Greathouse, Christopher V. Grant, Stanley J. Opella.

2861-PLAT 2:15 PM
RHODOPSIN - RHODOPSIN OLIGOMERIZATION IN MODEL LIPID BILAYERS - FUNCTIONAL IMPLICATIONS. **Olivier Soubias**, Walter E. Teague, Kirk G. Hines, Klaus Gawrisch.

2862-PLAT 2:30 PM
EFFECTS OF MEMBRANE GEOMETRY ON VOLTAGE-GATED ION CHANNEL DISTRIBUTION STUDIED WITH A MODEL SYSTEM. **Sophie Aimon**, Gilman Toombes, Domanov Yegor, Patricia Bassereau.

2863-PLAT 2:45 PM
THE ROLE OF CARDIOLIPIN DOMAINS IN PROTEIN LOCALIZATION IN BACTERIAL CELLS. **Lars D. Renner**, Douglas B. Weibel.

1:00 PM–3:00 PM, Ballroom IV

PLATFORM BD

Protein-Ligand Interactions

Co-Chairs
Ernesto Fuentes, University of Iowa
Maria Shubina-McGresham, Texas A&M University

2864-PLAT 1:00 PM
PROTEIN AFFINITY PATTERN CALCULATIONS USING PROTEIN-FRAGMENT SITE IDENTIFICATION BY LIGAND COMPETITIVE SATURATION (SILCS). **E. Prabhu Raman**, Wenbo Yu, Alexander D. MacKerell, Jr.

2865-PLAT 1:15 PM
CHARMM ADDITIVE ALL-ATOM FORCE FIELD FOR O-GLYCAN AND N-GLYCAN LINKAGES IN CARBOHYDRATE-PROTEIN MODELING. **Sairam S. Mallajosyula**, Olgun Guvench, Alexander D. MacKerell, Jr.

2866-PLAT 1:30 PM
KINETIC PROPERTIES OF THE TWO-STATE MODEL FOR COOPERATIVITY. Sargis Simonyan, **Nadja Hellmann**.

2867-PLAT 1:45 PM
MULTISCALE SIMULATION OF INTRA-PROTEIN COMMUNICATION. Jordi Silvestre-Ryan, **Jhih-Wei Chu**.

2868-PLAT 2:00 PM
ENHANCING ALLOSTERIC RESPONSE IN THERMUS THERMOPHILUS PHOSPHOFRUCTOKINASE. **Maria Shubina-McGresham**, Gregory D. Reinhart.

2869-PLAT 2:15 PM
STRUCTURAL AND THERMODYNAMIC ORIGINS OF LIGAND SPECIFICITY IN HOMOLOGOUS PDZ DOMAINS FROM THE TIAM-FAMILY OF GUANINE EXCHANGE FACTORS. **Ernesto J. Fuentes**, Tyson R. Shepherd.

2870-PLAT 2:30 PM
THE BINDING ENERGETICS OF A T-CELL RECEPTOR SHOW A BIAS TOWARD THE CONSERVED ANTIGEN PRESENTATION MOLECULE, HLA. **Kurt H. Piepenbrink**, Brian M. Baker.

2871-PLAT 2:45 PM
STRUCTURAL BASIS OF LIGAND RECOGNITION BY THE TOLLIP C2 AND CUE DOMAINS. Sharmistha Mitra, Gayatri Ankem, Urmila Maitra, Iriscilla Ayala, Anna C. Moreno, Derrick Zhang, Hugo F. Azurmendi, Carla V. Finkielstein, Liwu Li, **Daniel G. Capelluto**.

1:00 PM–3:00 PM, Room 307

PLATFORM BE

Voltage-gated Ca Channels

Co-Chairs
Henry Colecraft, Columbia University
Elise Stanley, Toronto Western Research Institute

2872-PLAT 1:00 PM
A SPIDER TOXIN AND ITS RECOMBINANT ISOFORM BLOCK T-TYPE AND N-TYPE CALCIUM CHANNELS WITH HIGH AFFINITY. **Xiao Zhang**, Li Dai, Michael E. Adams.

2873-PLAT 1:15 PM
CAVEOLIN-3 INHIBITS CAV3.2 (α1H) CURRENTS AND REGULATES HYPERTROPHIC SIGNALING IN VENTRICULAR MYOCYTES. Yogananda S. Markandeya, Jonathan M. Fahey, **Ravi C. Balijepalli**.

2874-PLAT 1:30 PM
MOLECULAR MECHANISM OF CALCIUM CHANNEL REGULATION IN THE FIGHT-OR-FLIGHT RESPONSE. **Matthew D. Fuller**, Michelle A. Emrick, Martin Sadilek, Todd Scheuer, William A. Catterall.

2875-PLAT 1:45 PM
THE CALCIUM CHANNEL SINGLE CHANNEL CONDUCTANCE HEIRARCHY IS N>L>T AT PHYSIOLOGICAL EXTERNAL CALCIUM: IMPLICATIONS FOR PRESYNAPTIC TRANSMITTER RELEASE SITE GATING. **Elise F. Stanley**, Fiona K. Wong, Alex M. Weber, Adele R. Tufford, Lyanne C. Schlichter, Victor Matveev.

2876-PLAT 2:00 PM
MECHANISM OF AUXILIARY BETA-SUBUNIT-MEDIATED MEMBRANE TARGETING OF CAV1.2 CHANNELS. **Kun Fang**, Henry M. Colecraft.

2877-PLAT 2:15 PM
MOLECULAR DETERMINANTS OF VOLTAGE-GATED CALCIUM CHANNEL INHIBITION BY GEM. **Zafir Buraei**, Rose Levenson-Palmer, Jian Yang.

2878-PLAT 2:30 PM
CALMODULIN INTERFERES WITH CAV1.2 C-TERMINAL REGULATION OF L-TYPE CHANNEL CURRENT. **Shawn M. Crump**, Elizabeth A. Schroder, Gail A. Sievert, Douglas A. Andres, Jonathan Satin.

2879-PLAT 2:45 PM
MOLECULAR EVENTS BEYOND APOCAM PREASSOCIATION IN THE CAM REGULATION OF CAV1.3 CHANNELS. **Manu B. Johny**, Philemon S. Yang, David T. Yue.

1:00 PM–3:00 PM, Room 308

PLATFORM BF
Microtubular Motors

Co-Chairs
Alan Hunt, University of Michigan
Janet Paluh, CNSE, University at Albany

2880-PLAT 1:00 PM
DETAILED ANALYSIS OF THE DYNEIN STEPPING MECHANISM USING MULTICOLOR TRACKING. **Mark A. DeWitt**, Peter Combs, Bruce Cohen, Ahmet Yildiz.

2881-PLAT 1:15 PM
TWO MOTOR DOMAINS OF CYTOPLASMIC DYNEIN DIRECTLY INTERACT EACH OTHER. **Tomohiro Shima**, Kohji Ito, Takahide Kon, Motoshi Kaya, Hideo Higuchi, Kazuo Sutoh.

2882-PLAT 1:30 PM
STRUCTURES OF THE MOTOR SUBUNITS FROM A NOVEL ASYMMETRIC KINESIN PROVIDE INSIGHT INTO ITS MOTILE MECHANISM. **John Allingham**, Da Duan, Darlene Davis.

2883-PLAT 1:45 PM
MECHANISTIC ANALYSIS OF HUMAN MITOTIC KINESIN CENP-E. **Harjinder S. Sardar**, Susan P. Gilbert.

2884-PLAT 2:00 PM
LOOP L5 ACTS AS A CONFORMATIONAL LATCH IN THE MITOTIC KINESIN EG5. William M. Behnke-Parks, Jeremie Vendome, Zoltan Maliga, Carolyn Moores, **Steven Rosenfeld**.

2885-PLAT 2:15 PM
MITOTIC FUNCTIONS AND MOTILE PROPERTIES OF THE S. CEREVISIAE KINESIN-5 MOTORS. Vladimir Fridman, Adina Gerson-Gurwitz, Christina Thiede, Maria Podolskaya, Movshovich Natalia, Stefan Lakamper, **Christoph F. Schmidt**, Larisa Gheber.

2886-PLAT 2:30 PM
KINETICS OF MICROTUBULE ASSEMBLY. Melissa K. Gardner, Blake D. Charlebois, Imre M. Jánosi, Jonathon Howard, **Alan J. Hunt**, David J. Odde.

2887-PLAT 2:45 PM
TENSION DIRECTLY STABILIZES RECONSTITUTED KINETOCHORE-MICROTUBULE ATTACHMENTS. **Charles L. Asbury**, Bungo Akiyoshi, Krishna K. Sarangapani, Andrew F. Powers, Christian R. Nelson, Steve L. Reichow, Tamir Gonen, Jeffrey A. Ranish, Sue Biggins.

1:00 PM–3:00 PM, Room 309

PLATFORM BG
Protein Aggregates

Co-Chairs
Ricardo Pires, Semmelweis University
Roland Winter, University of Dortmund, Germany

2888-PLAT 1:00 PM
ALZHEIMER Aβ AMYLOID ANNULAR FIBRILS: INSIGHT INTO POLYMORPHISM. **Yifat Miller**, Buyong Ma, Ruth Nussinov.

2889-PLAT 1:15 PM
A SOLID-STATE NMR STUDY OF ABETA PROTOFIBRILS. **Holger A. Scheidt**, Isabel Morgado, Sven Rothemund, Marcus Fändrich, Daniel Huster.

2890-PLAT 1:30 PM
KINETICS OF AMYLOID-BETA MONOMER TO OLIGOMER EXCHANGE BY NMR RELAXATION. **Nicolas L. Fawzi**, Jinfa Ying, Dennis A. Torchia, G Marius Clore.

2891-PLAT 1:45 PM
INVESTIGATING PROTEIN AGGREGATION USING SEGMENTAL ISOTOPE LABELING AND 2D IR SPECTROSCOPY. **Sean D. Moran**, Eli Bixby, Sean M. Decatur, Martin T. Zanni.

2892-PLAT 2:00 PM STUDENT TRAVEL AWARDEE
STRUCTURAL VARIATIONS IN THE AGGREGATION PATHWAYS OF NORMAL AND PATHOLOGICAL HUNTINGTIN-LIKE PEPTIDES. **Tatiana Perevozchikova**, Christopher Stanley, Helen P. McWilliams-Koeppen, Valerie Berthelier.

2893-PLAT 2:15 PM
TIME-RESOLVED SMALL-ANGLE X-RAY SCATTERING STUDY OF THE EARLY FORMATION OF AMYLOID PROTOFIBRILS ON A APOMYOGLOBIN MUTANT. **Maria Grazia Ortore**, Francesco Spinozzi, Silvia Vilasi, Ivana Sirangelo, Gaetano Irace, Anuji Shukla, Theyencheri Narayanan, Raffaele Sinibaldi, Paolo Mariani.

2894-PLAT 2:30 PM
AFM IMAGING AND SINGLE-MOLECULE FORCE SPECTROSCOPY OF TRANSTHYRETIN AMYLOID INTERMEDIATES. **Ricardo H. Pires**, Maria J. Saraiva, Ana M. Damas, Miklós S. Z. Kellermayer.

2895-PLAT 2:45 PM
CHARACTERIZATION AND SINGLE MOLECULE CONFORMATIONAL STUDIES OF SOLUBLE ALPHA-SYNUCLEIN OLIGOMERS. **Adam Trexler**, Elizabeth Rhoades.

10:30 AM–12:30 PM, Hall C

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 on-line Abstracts Issue. Board numbers indicate where they are located in Hall C.

Authors Present

ODD-NUMBERED BOARDS
10:30 AM–11:30 AM

BOARD NUMBERS
Board #B1–Board #B30
Board #B31–Board #B52
Board #B53–Board #B58
Board #B59–Board #B85
Board #B86–Board #B114
Board #B115–Board #B128
Board #B129–Board #B158
Board #B159–Board #B167
Board #B168–Board #B180
Board #B181–Board #B203
Board #B204–Board #B205
Board #B206–Board #B225
Board #B226–Board #B244
Board #B245–Board #B265
Board #B266–Board #B292
Board #B293–Board #B316
Board #B317–Board #B335
Board #B336–Board #B347
Board #B348–Board #B357
Board #B358–Board #B384
Board #B385–Board #B397
Board #B398–Board #B405
Board #B406–Board #B432
Board #B433–Board #B458
Board #B459–Board #B483
Board #B484–Board #B507
Board #B508–Board #B526
Board #B527–Board #B545
Board #B546–Board #B572
Board #LB1–Board #LB392

EVEN-NUMBERED BOARDS
11:30 AM–12:30 PM

POSTER CATEGORIES
Protein Dynamics – Simulations
Protein Aggregates II
Protein Folding & Stability III
Membrane Protein Functions
Protein Ligand Interactions: Receptors & Small Molecules
Local Calcium Signaling
Calcium Fluxes, Sparks, & Waves
Intercellular Communications & Gap Junctions
Voltage-gated K Channels - Permeation
Voltage-gated Ca Channels
Channel Regulation & Modulation II
Cardiac Electrophysiology II
Biophysics of Ion Permeation
Voltage-gated K Channels – Gating: BK Channels
Muscle: Fiber and Molecular Mechanics & Structure II
Excitation Contraction Coupling II
Actin & Actin-binding Proteins II
Cell and Bacterial Mechanics & Motility III
Intracellular Cargo Transport
Biomolecular NMR
Micro and Nanotechnology Nanopores III
Fluorescence Spectroscopy III
Computational Methods II
Imaging and Optical Microscopy III
Biotechnology & Bioengineering II
Membrane Structure III
Membrane Dynamics & Bilayer Probes II
Membrane Fusion II
Interfacial Protein-Lipid Interactions II
Late Posters

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 on the day of presentation. Please do not leave materials or belongings under poster boards or in the poster area. Posters will not be collected and stored for pick up at a later time. The Biophysical Society is not responsible for any articles left in the poster area.

Protein Dynamics - Simulations (Boards #B1-#B30)

2896-Pos Board #B1
IDENTIFYING BINDING COOPERATIVITY IN PROTEIN KINASE A THROUGH COMMUNITY ANALYSIS. **Mikolai Fajer**, J. Andrew McCammon.

2897-Pos Board #B2
MOLECULAR DYNAMICS INVESTIGATION ON CONFORMATIONAL DYNAMICS OF G PROTEINS. **Jackson Chief Elk**, J.B. Alexander Ross, Stephen R. Sprang.

2898-Pos Board #B3
MICROSCOPIC PICTURE OF THE MECHANISM OF ENERGY TRANSMISSION IN F1-ATPASE AS REVEALED BY MOLECULAR DYNAMICS SIMULATIONS. **Jacek Czub**, Helmut Grubmueller.

2899-Pos Board #B4
CLASS A BETA-LACTAMASE DYNAMICS FROM MOLECULAR DYNAMICS SIMULATIONS. **Olivier Fisette**, Patrick Lagüe, Stéphane Gagné.

2900-Pos Board #B5
"DFG-FLIP" IN THE INSULIN RECEPTOR KINASE IS FACILITATED BY A HELICAL INTERMEDIATE STATE OF THE ACTIVATION LOOP. **Harish Vashisth**, Cameron F. Abrams.

2901-Pos Board #B6
HEIRARCHICAL CONSTRAINED MOLECULAR DYNAMICS SIMULATIONS FOR PROTEINS. **Nagarajan Vaidehi**, Gouthaman Balaraman, In-Hee Park, Jeff Wagner, Abhinandan Jain.

2902-Pos Board #B7
UNBIASED SIMULATION OF THE BACK AND FORTH APO TO HOLO CONFORMATIONS FOR THE CALMODULIN N-TERMINAL NODULE: A SEQUENCE OF SPECIFIC EVENTS. **Dupuis Lilianne**, Normand Mousseau.

2903-Pos Board #B8
MOLECULAR RECOGNITION MECHANISM OF CALMODULIN EXAMINED BY PERTURBATION-RESPONSE SCANNING. **Canan Atilgan**, A. Ozlem Aykut, Ali Rana Atilgan.

2904-Pos Board #B9
MODELING THE UNBINDING MECHANISM OF THE NEUTRAL AND ANIONIC SEMI-QUINONE FROM THE QA SITE OF BACTERIAL REACTION CENTERS USING STEERED MOLECULAR DYNAMICS SIMULATIONS. **Jennifer Madeo**, Maja Mihajlovic, Themis Lazaridis, M.R. Gunner.

2905-Pos Board #B10
HIERARCHICAL ELASTIC NETWORK MODELING OF CRYO-EM DATA. **Virginia Burger**, Ivet Bahar, Chakra Chennubhotla.

2906-Pos Board #B11
VECTORIAL NETWORK MODEL (VNM) FOR PROTEIN DYNAMICS: AN ANALYTICAL TOOL FOR PROTEIN FLUCTUATIONS. **Yun Xu**, Larisa Adamian, Jie Liang.

2907-Pos Board #B12
TOWARDS FINDING A BETTER REACTION COORDINATE: NTRC AND DIMS. **Juan R. Perilla**, Thomas B. Woolf.

2908-Pos Board #B13
THE SHORT-TIME DYNAMICS OF PROTEINS NEAR NATIVE STATE CONDITIONS SIGNAL TO ROBUST MECHANISMS ACCESSIBLE AT LONG TIMES. **Lin Liu,** Angela M. Gronenborn, Ivet Bahar.

2909-Pos Board #B14
ALLOSTERISM IN MUTS PROTEINS: HOW DNA MISMATCH RECOGNITION SIGNALS REPAIR. **Susan N. Pieniazek**, Manju M. Hingorani, David L. Beveridge.

2910-Pos Board #B15
DYNAMICS ENCODE DYNAMICALLY COMMITTED AND UNCOMMITTED STATES IN PROTEIN KINASE A. **Larry R. Masterson**, Gianluigi Veglia.

2911-Pos Board #B16
MOLECULAR AND STRUCTURAL INSIGHT FOR THE ROLE OF KEY RESIDUES OF THROMBOSPONDIN-1 AND CALRETICULIN IN THROMBOSPONDIN-1- CALRETICULIN BINDING. Qi Yan, Joanne E. Murphy-Ullrich, **Yuhua Song**.

2912-Pos Board #B17
STRUCTURAL AND DYNAMIC EFFECTS DUE TO GLYCATION ON CHOLINESTERASES. **César Millán-Pacheco**, Benjamín Pérez-Aguilar, Noé Salinas-Arreortua, Eduardo Jardón-Valadez, José Luís Gómez-Olivares.

2913-Pos Board #B18
DYNAMICS OF CONFORMATIONAL HETEROGENEITY WITHIN THE MICHAELIS COMPLEX OF LACTATE DEHYDROGENASE. **Ruel Z. Desamero**, Beining Nie, Nick Zhadin, Hua Deng, Robert Callender.

2914-Pos Board #B19
SEQUENCE, STRUCTURE AND DYNAMICS ANALYSIS OF THERMOSTABILITY IN ENDOGLUCANASES. **Ragothaman M. Yennamalli**, Jeffrey D. Wolt, Andrew J. Rader, Taner Z. Sen.

2915-Pos Board #B20
THE ROLE OF DYNAMICS IN PROTEIN EVOLUTION. **Tyler Glembo**.

2916-Pos Board #B21
CONDITIONAL MG2+-ASSISTED CATALYSIS: A MASTER SWITCHING MOTIF RESPONSIBLE FOR DIFFERENTIAL STABILITY SUGGESTS A GENERAL TRANSDUCING MECHANISM. **Charles W. Carter**, Violetta Weinreb, Li Li, Brian Kuhlman.

2917-Pos Board #B22
EVOLUTIONARILY CONSERVED LINKAGE BETWEEN ENZYME FOLD, FLEXIBILITY, AND CATALYSIS. **Pratul K. Agarwal**.

2918-Pos Board #B23
PROBING THE KINETIC NETWORK OF FOLDING-UNFOLDING TRANSITIONS IN PROTEINS. Ronan D. Murphy, **Nicolae-Viorel Buchete**.

2919-Pos Board #B24
FLOW-INDUCED BETA-HAIRPIN FOLDING OF THE GLYCOPROTEIN IB-ALPHA BETA-SWITCH. **Xueqing Zou**.

2920-Pos Board #B25
PROTEIN FLEXIBILITY PARTITIONS THE EFFECTS OF ENERGY LANDSCAPE ROUGHNESS BETWEEN ACTIVATION ENERGY AND INTERNAL FRICTION. Anna A. Rauscher, Zoltan Simon, Gergely J. Szollosi, Laszlo Graf, **Imre Derenyi**, Andras Malnasi-Csizmadia.

2921-Pos Board #B26
RELATIONSHIP BETWEEN INTERNAL FRICTION AND THE ROUGHNESS OF THE ENERGY LANDSCAPE OF PROTEIN CONFORMATIONAL CHANGES. **Anna Á. Rauscher**, Zoltán Simon, Gergely J. Szöllősi, László Gráf, Imre Derényi, Andras Malnasi-Csizmadia.

2922-Pos Board #B27
PREDICTING SEQUENCE OF EVENTS UPON LIGAND BINDING USING PMT MODEL: A CASE STUDY OF ADENYLATE KINASE. **Gamze Gursoy**, Hsiao-Mei Lu, Jie Liang.

2923-Pos Board #B28
A COMPREHENSIVE EXAMINATION OF THE CONTRIBUTIONS TO BINDING AND ACTIVATION ENTROPIES. **Jie Cao**, Arieh Warshel.

2924-Pos Board #B29
STRUCTURAL INSTABILITY OF THE ACTIVE SITE OF T1 LIPASE WHERE NA^{+}-π INTERACTION IS REPLACED WITH WATER-π COMPLEX. Yohsuke Hagiwara, **Jiyoung Kang**, Masaru Tateno.

2925-Pos Board #B30
PROTEIN DEGRADATION KINETICS AND BIOCHEMICAL OSCILLATIONS. **Lida Xu**, Zhilin Qu.

Protein Aggregates II (Boards #B31-#B52)

2926-Pos Board #B31 CPOW TRAVEL AWARDEE
HALTING THE AMYLOID MARCH: HOW A NOVEL CA^{2+}-BINDING PROTEIN, NUCB1, PREVENTS THE FORMATION OF AMYLOID FIBRILS. **Ruchi Gupta**, Neeraj Kapoor, Daniel P. Raleigh, Thomas P. Sakmar.

2927-Pos Board #B32
DECREASE IN SIZE OF HEN EGG WHITE LYSOZYME AGGREGATES WITH DECREASE IN MONOMER CONCENTRATION FROM MICRO TO NANOMOLAR IN ALKALINE PH. **Vijay K. Ravi**, Kapil D. Singh, Aditya Iyer, C N. Reddy, Rajaram Swaminathan.

2928-Pos Board #B33
DOES THIOFLAVIN-T DETECT OLIGOMERS FORMED DURING AMYLOID FIBRIL ASSEMBLY. Christopher Persichilli, Shannon E. Hill, Jason Mast, **Martin Muschol**.

2929-Pos Board #B34
PHOTO-INDUCED FIBRILLAR FORMATION OF CHICKEN EGG WHITE LYSOZYME UNDER NATIVE CONDITIONS. Jin-Bing Xie, Meng Qin, Zhi-Qiang Yan, Yi Cao, **Wei Wang**.

2930-Pos Board #B35
A 2DCOS INFRARED STUDY OF FIBRIL FORMATION. Igor de la Arada, Nerea Andraka, **Jose Luis R. Arrondo**.

2931-Pos Board #B36
GENERAL *IN-VITRO* CATALYSIS OF AMYLOID FORMATION BY THE BACTERIAL CURLI PROTEIN. **Kevin Hartman**, Jeffery Brender, Nataliya Popovych, Matthew R. Chapman, Ayyalusamy Ramamoorthy.

2932-Pos Board #B37
STRUCTURE, DYNAMICS AND SURFACE HYDROPHOBICITY OF THE CATARACT-ASSOCIATED MUTANT, PRO23THR OF HUMAN GAMMA-D CRYSTALLIN: MOLECULAR BASIS OF CATARACT FORMATION. **Priya R. Banerjee**, Swamy Puttamadappa, Ajay Pande, Alexander Shekhtman, Jayanti Pande.

2933-Pos Board #B38
POLYMORPHISM OF AMYLOID FIBRILS FORMED BY A SHORT PEPTIDE FROM YEAST PRION PROTEIN SUP35: AFM AND TIP ENHANCED RAMAN SCATTERING STUDY. **Alexey V. Krasnoslobodtsev**, Alexander M. Portillo, Tanja Deckert-Gaudig, Volker Deckert, Yuri L. Lyubchenko.

2934-Pos Board #B39
AMYLOID AGGREGATES ALTER THE MEMBRANE MOBILITY OF GM1 GANGLIOSIDES. **Martino Calamai**, Francesco S. Pavone.

2935-Pos Board #B40
MODULATION OF TAU FIBRIL GROWTH IN VITRO BY HSP27 VS FKBP51 AND THEIR MUTANTS. **Shannon Elizabeth Hill**, Tatiana Miti, Jeffery Jones, Zachary Davey, Jose F. Abisambra, Chad Dickey, Martin Muschol.

2936-Pos Board #B41
BIOPHYSICAL CHARACTERIZATION OF AN ELASTIN-LIKE-POLYPEPTIDE. **Daniel Lyons**, Gene L. Bidwell, Wolfgang H. Kramer, Drazen Raucher, John J. Correia.

2937-Pos Board #B42
FIBER FORMATION OF A SYNTHETIC PEPTIDE DERIVED FROM SPIDER DRAGLINE OF *NEPHILA CLAVATA*. **Ko-ichi Kontani**, Mitsuhiro Miyazawa, Yuji Hidaka.

2938-Pos Board #B43
THE REPEAT DOMAIN OF PMEL17 ORTHOLOGS FORM AMYLOID FIBRILS AT THE ACIDIC MELANOSOMAL PH. **Ryan P. McGlinchey**, Candace M. Pfefferkorn, Reed B. Wickner, Jennifer C. Lee.

2939-Pos Board #B44
STUDYING THE ALPHA-SYNUCLEIN MEMBRANE INTERFACE WITH PHOTONS AND NEUTRONS. **Candace M. Pfefferkorn**, Frank Heinrich, Jennifer C. Lee.

2940-Pos Board #B45 STUDENT TRAVEL AWARDEE
MOLECULAR BASIS OF THE INTERACTION BETWEEN ZINC AND THE AMYLOIDOGENIC ISLET AMYLOID POLYPEPTIDE. **Samer Salamekh**, Jeffrey R. Brender, Ravi P. R. Nanga, Sukjoon Hyung, Kevin Hartman, Brandon T. Ruotolo, Ayyalusamy Ramamoorthy.

2941-Pos Board #B46
LIPID COMPOSITION AND RAFT DOMAIN FORMATION ON THE IAPP-MEMBRANE INTERACTION: THE ROLE OF CHOLESTEROL ON THE INHIBITION OF IAPP (AMYLIN) FIBRILIZATION AND THE REDUCTION OF MEMBRANE DISRUPTION IN MODEL LIPOSOMES AND MOUSE PANCREATIC ISLETS. **Austin J. McHenry**, Jeffrey R. Brender, Kevin Hartman, Ayyalusamy Ramamoorthy.

2942-Pos Board #B47
NUCLEATION OF HYBRID POLYMERS IN SICKLE CELL DISEASE. **Donna Yosmanovich**, Alexey Aprelev, Maria Rotter, Frank Ferrone.

2943-Pos Board #B48
SINGLE SICKLE CELL OCCLUSION AND MANIPULATION IN MICROCHANNELS. **Alexey Aprelev**, William Stephenson, Hongseok (Moses) Noh, Maureen Meier, Frank A. Ferrone.

2944-Pos Board #B49
ELASTIC LIGHT SCATTERING MEASUREMENTS OF HEMOGLOBIN OLIGOMERS. **Yihua Wang**, Alexey Aprelev, Frank A. Ferrone.

2945-Pos Board #B50
COMPARING THE FOLDING AND MISFOLDING ENERGY LANDSCAPES OF PHOSPHOGLYCERATE KINASE. **Gergely Agócs**, Bence T. Szabó, Gottfried Köhler, Szabolcs Osváth.

2946-Pos Board #B51
PROBING AGGRECAN INTERACTIONS BY ATOMIC FORCE MICROSCOPY. **Preethi L. Chandran**, Emilios K. Dimitriadis, Peter J. Basser, Ferenc Horkay.

2947-Pos Board #B52
ELECTROSTATIC ANALYSIS OF THE AGGREGATION OF TRV VIRAL PARTICLES. Marcelo D. Costabel, María J. Amundarain, Fernando Zamarreño, Rubén Sánchez-Eugenia, Jon Agirre, **Diego M A Guérin**.

Protein Folding & Stability III (Boards #B53-#B58)

2948-Pos Board #B53
HIGH PRESSURE FTIR STUDIES ON MODEL α-HELICAL PEPTIDES. **Teraya Donaldson**, Alice Smith-Gicklhorn, Sean M. Decatur.

2949-Pos Board #B54
SAXS STUDY OF CYTOCHROME-C COLD DENATURATION. Margaret Elmer, Christopher Asta, Katherine Butler, Apratim Dhar, Martin Gruebele, Liang Guo, Thomas Irving, Joseph Marcus, Sarah Rice, **Eric Landahl**.

2950-Pos Board #B55
APOLIPOPROTEIN B RECONSTRUCTION AT SINGLE MOLECULAR LEVEL. **Hsueh-Liang Chu**, Tsai-Mu Cheng, Yu-Chuan Chang, Hung-Wei Chen, Wei-Hsien Chung, Chia-Ching Chang.

2951-Pos Board #B56
FOLDING STUDIES OF BETA-STRAND-CONTAINING REPEAT PROTEINS THROUGH NATURALLY-OCCURRING AND CONSENSUS-DESIGNED SEQUENCES. **Thuy P. Dao**, Ananya Majumdar, Doug Barrick.

2952-Pos Board #B57
THE STRUCTURAL AND FUNCTIONAL ROLE FO THE SOLE TRYPTOPHAN RESIDUE IN THE HUMAN ACIDIC FIBROBLAST GROWTH FACTOR. **Hannah M. Henson**, Anna E. Daily, Suresh Kumar.

2953-Pos Board #B58
FOLDING MECHANISM REVEALING OF PGB1 BY FRET AND MOLECULAR SIMULATION. **Chung Wei-Hsien**, Yi-Chen Yeh, Nan-Yow Cheng, Chung-Yu Mou, Chia-Ching Chang.

Membrane Protein Functions (Boards #B59-#B85)

2954-Pos Board #B59
PROBING MECHANISM FOR THE ENHANCEMENT OF UPTAKE OF FATTY ACID INTO CELLS BY THE MEMBRANE PROTEIN CD36. **Su Xu**, Michael Kirber, Nasi Huang, Kellen Brunaldi, James A. Hamilton.

2955-Pos Board #B60
MEMBRANE TRANSPORT OF CO_2 AND H_2S: NO FACILITATOR REQUIRED. Florian Zocher, John C. Mathai, Andreas Missner, Mark L. Zeidel, **Peter Pohl**.

2956-Pos Board #B61
F65S MUTATION IN RHAG IS ASSOCIATED WITH DECREASED AMMONIA FLUX THROUGH OVERHYDRATED STOMATOCYTIC ERYTHROCYTES. Sandrine Genetet, Pierre Ripoche, Julien Picot, Sylvain Bigot, Jean Delaunay, Corinne Amari-Alla, Yves Colin, **Isabelle Mouro-Chanteloup**.

2957-Pos Board #B62
MOLECULAR MODELING OF THE ATP-SYNTHASE MOTOR F0 SUBUNIT OF ESCHERICHIA COLI AND PROTON TRANSLOCATION. **Megan Scoppa**, Margaret Cheung.

2958-Pos Board #B63
ALL-ATOM MOLECULAR DYNAMICS SIMULATION OF MULTIDRUG EFFLUX TRANSPORTER ACRB. **Tsutomu Yamane**, Mitsunori Ikeguchi.

2959-Pos Board #B64
PATHWAYS TO EXIT A RECEPTOR: AGONISTS AND DELTA-OPPIOID STUDIED VIA COMPUTER SIMULATIONS. Francesca Collu, Matteo Ceccarelli, **Paolo Ruggerone**.

2960-Pos Board #B65
COMPUTATIONAL STUDIES OF TRANSLOCON-ASSISTED PROCESSES OF MEMBRANE PROTEIN INSERTION AND TRANSLOCATION. **Anna Rychkova**, Arieh Warshel.

2961-Pos Board #B66
AN ATOMISTIC GATING MECHANISM OF THE AMPA-SUBTYPE GLUTAMATE RECEPTOR. **Hao Dong**, Huan-Xiang Zhou.

2962-Pos Board #B67
MODELING KCNQ1 CHANNEL AND KCNE1 INTERACTIONS. Xuanyu Meng, Yu Xu, Hongxing Zhang, Gea-Ny Tseng, **Meng Cui**.

2963-Pos Board #B68
SIMULATED SUBSTRATE BINDING TO THE INNER MEMBRANE TRANSLOCASE ACRB. **Lars Lüdicke**.

2964-Pos Board #B69
UTILIZATION OF THERMODYNAMIC LINKAGE RELATIONSHIPS TO TEST FOR INTERACTIONS BETWEEN THE C2 DOMAINS OF SYNAPTOTAGMIN 1. **Sarah C. Kempka**, Katie Miller, Jacob W. Gauer, R Bryan Sutton, Greg Gillispie, Anne Hinderliter.

2965-Pos Board #B70
MECHANISTIC AND THERMODYNAMIC INSIGHTS INTO THE TRANSPORT CYCLE OF LACTOSE PERMEASE. **Pushkar Pendse**, Jeffery B. Klauda.

2966-Pos Board #B71
PURIFICATION OF G-PROTEIN COUPLED RECEPTORS USING NANODISCS. **Nivedita Mitra**, Elsa C.Y. Yan.

2967-Pos Board #B72 STUDENT TRAVEL AWARDEE
MONITORING PROTEIN ASSOCIATION WITH A MEMBRANE BILAYER USING ULTRAVIOLET RESONANCE RAMAN (UVRR) SPECTROSCOPY. **Rauta A. Yakubu**.

2968-Pos Board #B73
THERMAL STABILITY OF RHODOPSIN AND IMPLICATIONS FOR RETINITIS PIGMENTOSA. **Monica Yun Liu**, Jian Liu, Elsa Yan.

2969-Pos Board #B74
ASSEMBLY AND FUNCTION OF THE TRANSMEMBRANE DOMAIN OF THE TWO-COMPONENT SYSTEM PHOQ FROM E.COLI. **Matteo Dal Peraro**, Thomas Lemmin.

2970-Pos Board #B75
DISSECTING THE OLIGOMERIC BEHAVIOR OF CAVEOLIN-1 USING THE ANALYTICAL ULTRACENTRIFUGE. **Monica D. Rieth**.

2971-Pos Board #B76
SYNTHETIC ADHESION AND MIGRATION MODELS OF LIVING CELLS. **Christian Kreidler**, Michael Bärmann, Joachim P. Spatz.

2972-Pos Board #B77
EFFECT OF FGFR3 JUXTAMEMBRANE DOMAIN ON FGFR3 DIMERIZATION. **Sarvenaz Sarabipour**, Edwin Li, Kalina Hristova.

2973-Pos Board #B78
UNRAVELING TWO DISTINCT BINDING INTERFACES FOR E CADHERIN DIMERIZATION: A STRUCTURAL STUDY USING SINGLE-MOLECULE SUPER-RESOLVED FLUORESCENCE IMAGING. **Yunxiang Zhang**, Alexandros Pertsinidis, W. James Nelson, Steven Chu.

2974-Pos Board #B79
THE CHARACTERIZATION OF THE BINDING OF OPACITY-ASSOCIATED PROTEINS TO HUMAN HOST CELL RECEPTORS. **Jacqueline C. Hodges**, Alison H. Dewald, Linda Columbus.

2975-Pos Board #B80
TYROSINE REPLACEMENT DIMINISHES ASSOCIATION OF PSGL-1 WITH P- AND L-SELECTINS ON THE CELL MEMBRANE. **Botao Xiao**, Xiaoling Jia, Rui Guo, ChunFang Tong, Shouqin Lü, Yan Zhang, Rodger P. McEver, Cheng Zhu, Mian Long.

2976-Pos Board #B81
THE HYDROPHOBIC PROTEINS OF PULMONARY SURFACTANT REDUCE BILAYER ELASTICITY. **Leonard E. Schulwitz, Jr.**, Mariya Chavarha, Shankar B. Rananavare, Stephen B. Hall.

2977-Pos Board #B82
PROBING SKELETAL DYSPLASIAS CAUSED BY MUTATIONS OF FGFR3 USING QI-FRET. **Jesse Placone**, Kalina Hristova.

2978-Pos Board #B83
KINETICS OF THE CYTOCHROME C OXIDASE FROM *R. SPHAEROIDIS* UNDER TURN-OVER CONDITIONS BY TIME-RESOLVED SURFACE-ENHANCED INFRARED ABSORPTION SPECTROSCOPY (SEIRAS). **Renate C. Naumann**, Christoph Nowak, Dieter Walz, Robert B. Gennis, Shelagh Ferguson-Miller, Wolfgang Knoll.

2979-Pos Board #B84
STRUCTURE-BASED DESIGN OF PHOSPHOLAMBAN MUTANTS FOR TREATMENT OF HEART FAILURE. **Simon J. Gruber**, David D. Thomas.

2980-Pos Board #B85
ANALYZING THE ROLE OF NCKX2 IN HIPPOCAMPAL LONG TERM POTENTIATION. **Yuntian Zhang**, Ray W. Turner, Jonathan Lytton.

Protein Ligand Interactions: Receptors & Small Molecules (Boards #B86-#B114)

2981-Pos Board #B86
ANESTHETIC MODULATION OF SIGNAL TRANSDUCTION PATHWAYS IN THE $\alpha 4\beta 2$ NACHR REVEALED BY THE PERTURBATION-BASED MARKOVIAN TRANSMISSION MODEL. **Lu Tian Liu**, Mingzhu Li, David Mowrey, Hsiao-Mei Lu, Jie Liang, Yan Xu, Pei Tang.

2982-Pos Board #B87
CATHARANTHINE ALKALOIDS ARE NONCOMPETITIVE INHIBITORS OF MUSCLE-TYPE NICOTINIC ACETYLCHOLINE RECEPTORS. **Ruin Moaddel**.

2983-Pos Board #B88
A COMBINED EXPERIMENTAL AND SIMULATION APPROACH TO DEVELOP SELECTIVE HIGH-AFFINITY SMALL-MOLECULE INHIBITORS OF CANNABINOID RECEPTORS CB1/CB2.
Irene Meliciani, Nicole Volz, Viktor Rempel, Sonja Hinz, Tadeusz Karcz, Christa E. Müller, Stefan Bräse, Wolfgang Wenzel.

2984-Pos Board #B89
FIELD-MODULATED MAGNETIC BIREFRINGENCE RELAXATION TO ASSAY B-ADRENERGIC RECEPTOR-LIGAND ASSOCIATION. Louis H. Strong, Daniel B. Hall, Hiep-hoa Nguyen, **Gyula Varadi**.

2985-Pos Board #B90
TRANSIENT KINETICS OF NUCLEOTIDE BINDING TO THE P-GLYCOPROTEIN MULTIDRUG TRANSPORTER.
Miguel R. Lugo, Joseph W.K. Chu, Frances J. Sharom.

2986-Pos Board #B91
IDENTIFICATION OF AN EFFICACY PHARMACOPHORE FOR MU OPIOID RECEPTOR LIGANDS USING THE CONFORMATIONALLY SAMPLED PHARMACOPHORE (CSP) METHOD.
Jihyun Shim, Andrew Coop, Alexander D. MacKerell, Jr.

2987-Pos Board #B92
PROBING BINDING OF APELIN TO THE EXTRACELLULAR LOOPS OF THE APELIN RECEPTOR (APJ) IN LIPID MIMETIC ENVIRONMENTS. **Pascaline Ngweniform**, Jan K. Rainey.

2988-Pos Board #B93
DESIGN AND BIOPHYSICAL CHARACTERIZATION OF A SINGLE CHAIN FOUR-ALPHA-HELIX BUNDLE PROTEIN WHICH BINDS VOLATILE GENERAL ANESTHETICS. **Lucia M. Morstadt**, Qing Cheng Meng, Jonas S. Johansson.

2989-Pos Board #B94
BINDING PROFILES BASED ON NORMAL MODE ANALYSIS AS A FOUNDATION FOR A UNIFIED APPROACH TO ALLOSTERIC ACTIVATION OF PROLACTIN RECEPTOR.
Adam D. Schuyler.

2990-Pos Board #B95
SOLID-STATE NMR STUDY OF LIGAND BINDING TO HUMAN PERIPHERAL CANNABINOID RECEPTOR CB2.
Tomohiro Kimura, Alexei Yeliseev, Mihaela Mihailescu, Kejun Cheng, Kenner C. Rice, Klaus Gawrisch.

2991-Pos Board #B96
FLUORESCENCE GUIDED FORCE MICROSCOPY (FGFM) USED TO MEASURE RECEPTOR LIGAND INTERACTIONS IN LIVE MAMMALIAN CELLS. **Jeremy C. Bonor**.

2992-Pos Board #B97
NANOPARTICLES MASQUERADE AS "SELF" TO INHIBIT PHAGOCYTOSIS. **Pia L. Rodriguez**, Takamasa Harada, Dennis E. Discher.

2993-Pos Board #B98
IN VIVO BINDING KINETICS AND STOICHIOMETRY OF TOLL-LIKE RECEPTOR 9 AND CPG DNA RESOLVED BY MULTIPARAMETRIC SINGLE MOLECULE TECHNIQUES.
Jiji Chen, Suman Nag, Joseph Irudayaraj.

2994-Pos Board #B99
REGULATION OF INTEGRIN ACTIVATION IN ACIDIC EXTRACELLULAR MICROENVIRONMENTS.
Ranjani K. Paradise, Douglas A. Lauffenburger, Krystyn J. Van Vliet.

2995-Pos Board #B100 INTERNATIONAL TRAVEL AWARDEE
UNRAVELING KEY FEATURES OF THE BETA-GALACTOSIDE BINDING PROTEIN GALECTIN-1 IN INTERPLAY WITH LIGAND BINDING AND DIMERIZATION EQUILIBRIA.
Santiago Di Lella, Julio J. Caramelo, Carlos M. Guardia, Marcelo A. Martí, Gabriel A. Rabinovich, Darío A. Estrin.

2996-Pos Board #B101
CHARACTERIZATION OF THE PHOSPHATIDYLINOSITOL 3-PHOSPHATE BINDING MECHANISM OF THE *PHYTOPHTHORA SOJAE* EFFECTOR AVH5. **Furong Sun**, Dan Li, Brett M. Tyler, Daniel G.S. Capelluto.

2997-Pos Board #B102 STUDENT TRAVEL AWARDEE
RELATIVE AFFINITIES OF FATTY ACID BINDING SITES ON HUMAN SERUM ALBUMIN PROBED BY 2D-NMR.
Eileen Krenzel, Zhongjing Chen, James A. Hamilton.

2998-Pos Board #B103
SOLUTION NMR SPECTROSCOPY AND PROTEIN INTERACTION STUDIES OF MEMBRANE PROTEINS IN NANODISCS.
Julian M. Glück, Marc Wittlich, Sophie Feuerstein, Dieter Willbold, **Bernd W. Koenig**.

2999-Pos Board #B104
31P NMR STUDIES OF ACTIVE SITE AND ACTIVATOR SITE LIGANDS BINDING TO PTEN. **Yang Wei**, Mary F. Roberts.

3000-Pos Board #B105
B-LACTAMASE INHIBITION: MECHANISTIC DETAILS AND NOVEL INHIBITORS. **Elizabeth A. Rodkey**, Jared M. Sampson, Matthew Kalp, Christopher R. Bethel, John D. Buynak, Paul R. Carey, Robert A. Bonomo, Focco van den Akker.

3001-Pos Board #B106
LIGAND-BINDING DOMAIN OF TYPE 1 METABOTROPIC GLUTAMATE RECEPTOR IS FULLY FUNCTIONAL IN ITS MONOMERIC FORM. **Eugene Serebryany**, Ewa Folta-Stogniew, Elsa C. Y. Yan.

3002-Pos Board #B107
THE RESPONSE OF ENZYMATIC PARAMETERS TO THE PRESENCE OF OSMOLYTES. **Mikhail Sinev**, Joerg Roesgen.

3003-Pos Board #B108
ROLE OF ELECTROSTATIC AND HYDROGEN BONDING ENVIRONMENT IN SEQUESTERING LIPIDS FROM MEMBRANES INTO THE SEC14 PROTEIN CAVITY.
Tatyana I. Smirnova, Thomas G. Chadwick, Vytas A. Bankaitis, Gabriel Schaaf, Oleg G. Poluektov, Alex I. Smirnov.

3004-Pos Board #B109
A STUDY OF TRADITIONAL CHINESE MEDICINE IN MODULATIONS OF EGFR-EGF INTERACTION BY USING SPR.
Guo-Chung Dong.

3005-Pos Board #B110
TARGETING THE NADPH BINDING SITE OF NITRIC OXIDE SYNTHASE BY A LIGAND WITH TWO-PHOTON ABSORPTION PROPERTIES. Etienne Henry, Yun Xu-Li, Huan Wang, Patrick Tauc, Jean-Luc Boucher, Anny Slama-Schwok, **Eric Deprez**.

3006-Pos Board #B111
FLUORESCENT BINDING STUDIES OF PHOSPHOFRUCTOKINASE FROM BACILLUS STEAROTHERMOPHILUS USING A TRYPTOPHAN-SHIFTED MUTANT. **Amy M. Knutson**, Gregory D. Reinhart.

3007-Pos Board #B112
CHARACTERIZING RIBOFLAVIN ANTAGONISTS FOR TARGETED DRUG DELIVERY APPLICATIONS. **Anna Plantinga**, Amanda Witte, Seok-Ki Choi, Kumar Sinniah.

3008-Pos Board #B113
ALUMINUM PHOSPHATE ADSORPTION OF PROTEINS USING ISOTHERMAL TITRATION CALORIMETRY.
Ronan O'Brien, **Verna Frasca**, Mark Arsenault, Mary Jo Wojtusik.

3009-Pos Board #B114
CHARACTERIZING THE INTERACTION BETWEEN PHTHALOCYANINE TETRASULFONATES AND MAMMALIAN PRION PROTEIN. **Iveta Sosova**, Abhilash Vincent, Amarnath Gupta, Max Anikovskiy, Angela Brigley, Michael T. Woodside.

Local Calcium Signaling (Boards #B115-#B128)

3010-Pos Board #B115 INTERNATIONAL TRAVEL AWARDEE
FAMILIAL ALZHEIMER'S DISEASE MUTATIONS IN PRESENILIN-1 AND STORE-OPERATED CALCIUM ENTRY.
Maria Ryazantseva, Lyubov Glushankova, Ilya Pozdnyakov, Ilya Bezprozvanny, Elena Kaznacheyeva.

3011-Pos Board #B116
APPLICATION OF DESIGNED CALCIUM SENSORS WITH FAST KINETIC RESPONSES. **You Zhuo**, Shen Tang, Yusheng Jiang, Chen Zhang, Florence Reddish, Jenny Jie Yang.

3012-Pos Board #B117
RATIONAL DESIGN AND STRUCTURAL ANALYSIS OF CALCIUM BIOSENSORS AND THEIR APPLICATION TO THE STUDY OF SR/ER CALCIUM DYNAMICS. **Shen Tang**, You Zhuo, Yusheng Jiang, Hing-Chueng Wong, Zhong-min Wang, Osvaldo Delbono, Jenny J. Yang.

3013-Pos Board #B118
EVOKED CENTRIPETAL CA^{2+} ACTIVATION IN CARDIAC PURKINJE CELLS: CICR OR CA^{2+} DIFFUSION? Kazi T. Haq, Rebecca Daniels, Sharene Bungay, **Bruno D. Stuyvers**.

3014-Pos Board #B119
LOCAL CONTROL OF CARDIAC SODIUM-CALCIUM EXCHANGER BY PMCA IN SUBMEMBRANE MICRODOMAIN IN MOUSE HEART CELLS. **Takao Shioya**.

3015-Pos Board #B120
$INSP_3$ TRIGGERED CALCIUM RELEASE EVENTS IN MOUSE ATRIAL MYOCYTES. Tamara Horn, **Marcel Egger**.

3016-Pos Board #B121
EFFECTS OF MITOCHONDRIAL MEMBRANE DEPOLARIZATION ON CELLULAR FUNCTION IN CARDIAC MYOCYTES. **Aristide Chikando**, Joseph P.Y. Kao, W. J. Lederer.

3017-Pos Board #B122
A COMPARATIVE ASSESSMENT OF FLUO CA^{2+} INDICATORS IN RAT VENTRICULAR MYOCYTES. **Brian M. Hagen**, Liron Boyman, Joseph P.Y. Kao, W. Jonathan Lederer.

3018-Pos Board #B123
IMPAIRED LOCAL CALCIUM SIGNALING IN PRIMARY CULTURED ADULT RAT VENTRICULAR MYOCYTES. **Joon-Chul Kim**, Min-Jeong Son, Yuhua Li, Suk-Han Jung, Sun-Hee Woo.

3019-Pos Board #B124
A CAVEOLIN TARGETED L-TYPE CALCIUM CHANNEL ANTAGONIST INHIBITS HYPERTROPHIC SIGNALING WITHOUT REDUCING CONTRACTILITY OF CARDIAC MYOCYTES. **Catherine A. Makarewich**, Hui Gao, Hongyu Zhang, Nathan Correll, Jeffrey D. Molkentin, Steven R. Houser.

3020-Pos Board #B125
DANTROLENE RESTORES ALTERED RYR2-MEDIATED CA SIGNALING IN HEART FAILURE. **Joshua T. Maxwell**, Timothy L. Domeier, Lothar A. Blatter.

3021-Pos Board #B126
A STOCHASTIC MODEL OF THE RYANODINE RECEPTOR FEATURING COUPLED GATING AND COMPETITIVE BINDING OF LUMINAL AND CYTOSOLIC CA^{2+} AND MG^{2+}. **Johan Hake**, William E. Louch, K Haugen, Ivar Sjaastad, Ole M. Sejersted, Andrew McCulloch, Anushka Michailova, Glenn T. Lines.

3022-Pos Board #B127 CPOW TRAVEL AWARDEE
DETERMINANTS OF THE SITE OF CA^{2+} WAVE INITIATION IN SMOOTH MUSCLE. **Marnie L. Olson**, John G. McCarron.

3023-Pos Board #B128
SUSTAINABLE TRPM4 CHANNEL ACTIVITY FOLLOWING RESTORATION OF CYTOSOLIC CALCIUM BUFFERING IN FRESHLY ISOLATED CEREBRAL SMOOTH MUSCLE CELLS. **Albert L. Gonzales**, Scott Earley.

Calcium Fluxes, Sparks, & Waves (Boards #B129-#B158)

3024-Pos Board #B129
MODELING THE MECHANISMS OF CALCIUM-MEDIATED CARDIAC ARRHYTHMIAS. **M. Saleet Jafri**, W. Jonathan Lederer, George S. B. Williams, Joseph L. Greenstein, Raimond L. Winslow.

3025-Pos Board #B130
SELF-ORGANIZATION OF PACEMAKING SITES FOR CALCIUM WAVES AND OSCILLATIONS IN CARDIAC MYOCYTES. **Michael Nivala**, Chris Ko, Alan Garfinkel, James N. Weiss, Zhilin Qu.

3026-Pos Board #B131
CA^{2+} LEAK AND CA^{2+} SPARKS IN MAMMALIAN HEART: INSIGHTS FROM A COMPUTATIONAL MODEL. **George S. B. Williams**, Aristide C. Chikando, W Jonathan Lederer, Eric A. Sobie, Hoang-Trong M. Tuan, M Saleet Jafri.

3027-Pos Board #B132
GPU-ENABLED STOCHASTIC SPATIOTEMPORAL MODEL OF RAT VENTRICULAR MYOCYTE CALCIUM DYNAMICS. **Tuan M. Hoang-Trong**, George S.B. Williams, Jonathan W. Lederer, Saleet Jafri.

3028-Pos Board #B133
CONTRIBUTIONS OF STRUCTURAL T-TUBULE HETEROGENEITIES AND MEMBRANE CA^{2+} FLUX LOCALIZATION TO LOCAL CA^{2+} SIGNALING IN RABBIT VENTRICULAR MYOCYTES. **Peter M. Kekenes-Huskey**, Yuhui Cheng, Johan Hake, Frank Sachse, John Bridge, J A. McCammon, Anushka Michailova.

3029-Pos Board #B134
HOW DOES RYR2-MEDIATED SR CALCIUM LEAK FAIL TO CAUSE SPARKS? **Daisuke Sato**, Donald M. Bers.

3030-Pos Board #B135
MITOCHONDRIAL-SR CA^{2+} CYCLING MODULATES NORMAL AUTOMATICITY OF RABBIT CARDIAC SINOATRIAL NODAL PACEMAKER CELLS. **Yael Yaniv**, Harold A. Spurgeon, Alexey E. Lyashkov, Bruce D. Ziman, Edward G. Lakatta.

3031-Pos Board #B136
STOCHASTIC BEAT-TO-BEAT VARIATION IN PERIODICITY OF LOCAL CALCIUM RELEASES PREDICTS INTRINSIC CYCLE LENGTH VARIABILITY IN SINGLE SINOATRIAL NODE CELLS. **Oliver J. Monfredi**, Larissa A. Maltseva, Mark R. Boyett, Edward G. Lakatta, Victor A. Maltsev.

3032-Pos Board #B137
SPATIALLY COMPLEX DIFFRACTION-LIMITED PHOTOLYSIS OF CAGED CALCIUM AND IP3 COMBINED WITH HIGH-SPEED CONFOCAL IMAGING. Vyacheslav M. Shkryl, Joshua T. Maxwell, **Lothar A. Blatter**.

3033-Pos Board #B138
CALCIUM SPARK TERMINATION: RYANODINE RECEPTOR UNITARY FLUX DEPENDENT MECHANISM. **Tao Guo**, Dirk Gillespie, Michael Fill.

3034-Pos Board #B139
4-D SCANNING OF CALCIUM SPARKS IN CARDIOMYOCYTES REVEALS THEIR IN-FOCUS AMPLITUDE. **Vyacheslav M. Shkryl**, Lothar A. Blatter, Eduardo Ríos.

3035-Pos Board #B140
ISOPROTERENOL WIDENS THE SOURCE OF RELEASE FLUX UNDERLYING CA SPARKS. **Demetrio J. Santiago**, Eduardo Rios, Thomas R. Shannon.

3036-Pos Board #B141
ACTIVATION OF CALCIUM SPARKS IN RESTING CARDIOMYOCYTES BY β-ADRENERGIC STIMULATION MAY INVOLVE CAMKII AND NNOS. **Daniel Gutierrez**, Jakob Ogrodnik, Ernst Niggli.

3037-Pos Board #B142
B-ADRENERGIC STIMULATION ACCELERATES LOCAL RECOVERY OF CARDIAC CA^{2+} RELEASE. **Ona Liu**, Hena Ramay, Eric A. Sobie.

3038-Pos Board #B143
BETA-ADRENERGIC STIMULATION INCREASES THE INTRA-SARCOPLASMIC RETICULUM CA THRESHOLD FOR SPONTANEOUS CA WAVES. **Timothy L. Domeier**, Joshua T. Maxwell, Lothar A. Blatter.

3039-Pos Board #B144
β-ADRENERGIC RECEPTOR STIMULATION OF ROS PRODUCTION GENERATES SPONTANEOUS CA^{2+} WAVES IN RABBIT VENTRICULAR MYOCYTES. Elisa Bovo, Stefan R. Mazurek, Stephen L. Lipsius, **Aleksey V. Zima**.

3040-Pos Board #B145
REGULATION OF SARCOPLASMIC RETICULUM [CA^{2+}] DURING REST IN RABBIT VENTRICULAR MYOCYTES. **Elisa Bovo**, Aleksey V. Zima.

3041-Pos Board #B146
INCREASED MYOFILAMENT CA^{2+} SENSITIVITY DECREASES SARCOMERE LENGTH AND INCREASES SPARK-SPARK INTERACTIONS. Ye Chen-Izu, Tamas Banyasz, Shaden Khabbaz, Stephanie Edelmann, Charles Payne, Jil C. Tardiff, **Leighton T. Izu**.

3042-Pos Board #B147
RYR2 CHANNEL ACTIVITY DETERMINES THE POTENCY OF STATE-DEPENDENT RYR2 BLOCKERS FOR SUPPRESSING ARRHYTHMOGENIC CALCIUM WAVES.
Eleonora Savio Galimberti, Bjorn C. Knollmann.

3043-Pos Board #B148
FKBP12.6 'STABILISES' CARDIAC SR CA^{2+}-RELEASE BY ANTAGONISING HIGH-AFFINITY REVERSIBLE ACTIVATION OF RYR2 BY FKBP12. **Elena Galfrè**, Mano Sitsapesan, Samantha J. Pitt, Elisa Venturi, Stephen O'Neill, Rebecca Sitsapesan.

3044-Pos Board #B149
INCREASED LEVELS OF MICRORNAS MIR-1 AND MIR-133 IN FAILING HEART UNDERLIE DISSOCIATION OF PHOSPHATASE ACTIVITY FROM RYR2 COMPLEX RESULTING IN ENHANCED RYR2 CAMKII-DEPENDENT PHOSPHORYLATION AND CARDIAC ARRHYTHMIAS. Andriy E. Belevych, Sarah E. Sansom, Radmila Terentyeva, Mickey M. Martin, Cynthia A. Carnes, Terry S. Elton, Sandor Gyorke, **Dmitry Terentyev**.

3045-Pos Board #B150
VOLTAGE-DEPENDENT ANION CHANNEL 2 MODULATES RESTING CALCIUM SPARKS, BUT NOT ACTION POTENTIAL-INDUCED GLOBAL CALCIUM SIGNALING IN CARDIAC MYOCYTES. Krishna P. Subedi, Joon-Chul Kim, Moonkyung Kang, Yeon-Soo Kim, **Sun-Hee Woo**.

3046-Pos Board #B151
AFRICAN TRYPANOSOMES INCREASE CALCIUM WAVE FREQUENCY IN ISOLATED ADULT RAT CARDIOMYOCYTES VIA SECRETION OF CATHEPSIN L. **Elspeth B. Elliott**, Liam J. Morrison, Hisashi Hasumi, Christopher M. Loughrey.

3047-Pos Board #B152
CALCIUM HANDLING IN HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES. **E. Michelle Capes**, Randall E. Loaiza, Roberto Ramos, Jianhua Zhang, Timothy J. Kamp, Hector H. Valdivia.

3048-Pos Board #B153
IMPAIRED CALCIUM SIGNALING REFRACTORINESS CONTIBUTES TO INCREASED RATE OF DIASTOLIC CALCIUM WAVES IN MYOCYTES FROM POST-MYOCARDIAL INFARCTION HEARTS. **Andriy E. Belevych**, Dmitry Terentyev, Radmila Terentyeva, Hsiang-Ting Ho, Cynhtia A. Carnes, George E. Billman, Sandor Gyorke.

3049-Pos Board #B154
INOSITOL 1,4,5 TRIPHOSPHATE (IP3) RECEPTORS ACTIVATE TYPE 1 RYANODINE RECEPTORS TO MEDIATE CA^{2+} SPARKS SIGNALING IN ADULT MAMMALIAN SKELETAL MUSCLE. **Andoria Tjondrokoesoemo**, Na Li, Noah Weisleder, Jianjie Ma.

3050-Pos Board #B155
RECOVERY OF THE COMPROMISED CA^{2+} SPARK SIGNALING IN AGED SKELETAL MUSCLE THROUGH RESTORATION OF MG29. **Xiaoli Zhao**, Norio Takizawa, KiHo Park, Kyoung-Han Choi, Hilary A. Wilkinson, Dennis M. Zaller, Noah Weisleder, Jianjie Ma.

3051-Pos Board #B156
HYPERSENSITIVE INTRACELLULAR CA^{2+} SIGNALING PRECEDES DETERIORATION OF CARDIAC FUNCTIONS IN MUSCULAR DYSTROPHY. **Sergii Kyrychenko**, Eva Poláková, Krisztina Poscai, Nina D. Ullrich, Ernst Niggli, Natalia Shirokova.

3052-Pos Board #B157
A NOVEL ROLE FOR POLYPHOSPHATE IN ASTROCYTE SIGNALLING. **Kira M. Holmstrom**, Alexander V. Gourine, Andrey Y. Abramov.

3053-Pos Board #B158
DYNAMIC CONTROL OF NEURONAL FIRING THRESHOLD BY CALCIUM BUFFERING : A NEW ROLE FOR CALCIUM BINDING PROTEINS. Patrick Bischop, Céline Roussel, David Orduz, Serge N. Schiffmann, **David Gall**.

Intercellular Communications & Gap Junctions (Boards #B159-#B167)

3054-Pos Board #B159
SINGLE HEMICHANNELS RECORDED IN LIPID BILAYERS AND ARTIFICIAL GAP JUNCTION FORMATION WITH CELLS. **Mohamed Kreir**, Christoph Methfessel, Christian Carnarius, Claudia Steinem, Niels Fertig.

3055-Pos Board #B160
ASPARAGINE175 OF CX32 IS A CRITICAL RESIDUE FOR DOCKING AND FORMING FUNCTIONAL HETEROTYPIC GAP JUNCTION CHANNELS WITH CX26. So Nakagawa, **Xiang-Qun Gong**, Shoji Maeda, Yuhua Dong, Yuko Misumi, Tomitake Tsukihara, Donglin Bai.

3056-Pos Board #B161
CALCIUM PERMEABILITY OF PURIFIED AND RECONSTITUTED HEMICHANNELS FORMED BY CONNEXIN 26 AND THE DEAFNESS-CAUSING MUTANT R75W. **Mariana C. Fiori**, Maria E. Zoghbi, Guillermo A. Altenberg.

3057-Pos Board #B162
ORIGIN AND DYNAMICS OF CALCIUM WAVES IN THE ISLET OF LANGERHANS. **Richard K.P. Benninger**, Troy Hutchens, W. Steven Head, David W. Piston.

3058-Pos Board #B163
TRANSCRIPTIONAL SUPPRESSION OF CONNEXIN 43 BY TBX18 UNDERMINES CELL-CELL ELECTRICAL COUPLING IN POSTNATAL CARDIOMYOCYTES. **Nidhi Kapur**, Eduardo Marbán, Hee Cheol Cho.

3059-Pos Board #B164
CARDIAC MYOFIBROBLAST-MYOCYTE GAP JUNCTION COUPLING PROMOTES AFTERDEPOLARIZATIONS.
Thao P. Nguyen, Yuanfang Xie, Alan Garfinkel, Zhilin Qu, James N. Weiss.

3060-Pos Board #B165
TARGETED INHIBITION OF CONNEXIN 43 HEMICHANNELS BLUNTS CA^{2+}-INDUCED INTERCELLULAR DYSSYNCHRONY AND ATP EFFLUX IN HL-1 CARDIOMYOCYTE SYNCITIA.
Nicole C. Silvester, Hala Jundi, Archana Jayanthi, Steven R. Barberini-Jammaers, W Howard Evans, Christopher H. George.

3061-Pos Board #B166
BINDING KINETICS OF INTER-CONNEXON INTERACTION.
Felix Rico, Atsunori Oshima, Yoshinori Fujiyoshi, Peter Hinterdorfer, Simon Scheuring.

3062-Pos Board #B167
A STOCHASTIC MODEL OF VOLTAGE-GATING OF CONNEXIN-BASED GAP JUNCTION CHANNELS CONTAINING FAST AND SLOW GATES. Nerijus Paulauskas, Henrikas Pranevicius, **Feliksas Bukauskas**.

Voltage-gated K Channels - Permeation (Boards #B168-#B180)

3063-Pos Board #B168
ION CONDUCTION IN A SHAKER POTASSIUM CHANNEL MUTANT HAVING AN UNUSUALLY HIGH SINGLE CHANNEL CONDUCTANCE. **David Naranjo**, Ignacio Valencia, Cristian Moscoso, Katherine Stack, Valeria Márquez, Ariela Vergara, Marcos Sotomayor, Fernando González-Nilo.

3064-Pos Board #B169
CALCULATING CONDUCTANCE AND SIZE OF THE ENTRANCE TO THE INNER CAVITY OF BK CHANNELS WITH SIDE-CHAIN REPLACEMENT AND A TWO-RESISTOR MODEL.
Yanyan Geng, Karl L. Magleby.

3065-Pos Board #B170
MECHANISM FOR SELECTIVITY-INACTIVATION COUPLING IN KCSA POTASSIUM CHANNELS. **Jason G. McCoy**, Wayland Cheng, Ameer N. Thompson, Crina M. Nimigean, Colin G. Nichols.

3066-Pos Board #B171 CPOW TRAVEL AWARDEE
STRUCTURAL CHARACTERIZATION OF THE VOLTAGE SENSOR DOMAIN OF THE KVAP CHANNEL VECTORIALLY-ORIENTED WITHIN A PHOSPHOLIPID BILAYER MEMBRANE. **Sanju Gupta**, J. Liu, A. Tronin, J. Strzalka, D. Krepkiy, K. Swartz, J. Kent Blasie.

3067-Pos Board #B172
KCSA ION AFFINITY AT AN EXTERNAL SITE PROBED BY BARIUM BLOCK. **Kene N. Piasta**, Christopher Miller.

3068-Pos Board #B173
QM/MM MODELING OF BA^{2+} BLOCKADES IN POTASSIUM ION CHANNELS. **Christopher N. Rowley**, Bogdan Lev, Sergei Noskov, Benoit Roux.

3069-Pos Board #B174
HUMAN *ETHER-A-GO-GO*-RELATED GENE (HERG) K^+ CHANNEL INHIBITION BY THE ANTIDEPRESSANT PAROXETINE. Hee-Kyung Hong, **Su-Hyun Jo**.

3070-Pos Board #B175
QUINIDINE BLOCK OF SHAB K CHANNELS: IRREVERSIBLE COLLAPSE OF THE K+ CONDUCTANCE, AND CHARACTERIZATION OF AN EXTERNAL SELECTIVITY FILTER K+ BINDING SITE. **Froylan Gomez-Lagunas**, Elisa Carrillo.

3071-Pos Board #B176
EFFECT OF MTS REAGENTS ON WILDTYPE AND HKV1.3_V417C MUTANT CHANNELS AND ITS IMPLICATIONS FOR C-TYPE INACTIVATION. **Sonja I. Schmid**, Stephan Grissmer.

3072-Pos Board #B177
DISCRIMINATION AMONG HETEROMERIC POTASSIUM CHANNELS BY PORE-BLOCKING CONOTOXINS. **Rocio K. Finol-Urdaneta**, Stefan Becker, Baldomero M. Olivera, Heinrich Terlau, Robert J. French.

3073-Pos Board #B178
SCORPION TOXINS MODIFY C-TYPE INACTIVATION IN A MUTANT POTASSIUM CHANNEL. **Azadeh Nikouee Ghadikolaei**, Stephan Grissmer.

3074-Pos Board #B179
QUANTIFICATION OF NON-CONDUCTING KV2.1 CHANNELS IN TRANSFECTED HEK CELLS AND CULTURED HIPPOCAMPAL NEURONS. **Philip D. Fox**, Robert Loftus, Emily Deutsch, Michael M. Tamkun.

3075-Pos Board #B180
EFFECTS OF ELECTRIC FIELD ON CHANNEL PROTEINS THROUGH DIPOLE PERTURBATION AND NETWORK OF SIGNAL TRANSMISSION. **Gamze Gursoy**, Larisa Adamian, Hsiao-Mei Lu, Jie Liang.

Voltage-gated Ca Channels (Boards #B181-#B203)

3076-Pos Board #B181
CAV3.1/α1G T-TYPE CA^{2+} CHANNELS ARE INVOLVED IN THE HEART RATE REGULATION. **Yingxin Li**, Fang Wang, Xiaoying Zhang, Zhao Qi, Christopher Szeto, Mingxin Tang, Yinzheng Guan, Xiaojie Ai, Hongyu Zhang, Jeffery D. Molkentin, Xiongwen Chen.

3077-Pos Board #B182
CAV1.3 L-TYPE CALCIUM CHANNELS-MEDIATED RYANODINE RECEPTOR DEPENDENT CALCIUM RELEASE CONTROLS HEART RATE. **Angelo Torrente**, Pietro Mesirca, Patricia Neco, Martina Sinegger-Brauns, Joerg Striessnig, Joël Nargeot, Sylvain Richard, Ana Maria Gomez, Matteo E. Mangoni.

3078-Pos Board #B183
EVIDENCE FOR A ROLE FOR THE CYTOSKELETON IN COMMUNICATION BETWEEN THE L-TYPE CALCIUM CHANNEL AND THE MITOCHONDRIA IN ISOLATED CARDIAC MYOCYTES. **Helena M. Viola**, Livia C. Hool.

3079-Pos Board #B184
THE CARDIAC L-TYPE CA^{2+} CHANNEL IS DOWNREGULATED BY ISCHEMIC AND PHARMACOLOGICAL PRECONDITIONING. **Jorge A. Sanchez**, German González, Daniel Zaldívar, Elba D. Carrillo, Maria C. García.

3080-Pos Board #B185
EXPRESSION PATTERN OF L-TYPE CALCIUM CHANNEL SUBUNITS IN HUMAN AND MURINE ATHEROSCLEROSIS. **Ann Kristin Boehnke**, Margarete Odenthal, Michael Gawenda, Jan Matthes, Peter Hein, Stefan Herzig.

3081-Pos Board #B186
NOVEL BLOCKERS OF T-TYPE CALCIUM CHANNELS MODIFY GATING. **Pamela Bergson**, Victor N. Uebele, John J. Renger, Dorothy A. Hanck.

3082-Pos Board #B187
AMILORIDE DOCKING TO T-TYPE CALCIUM CHANNELS. **Manuel Rivera**, Osbaldo López-Charcas, Juan C. Gomora.

3083-Pos Board #B188
INTERACTION OF DILTIAZEM WITH AN INTRACELLULARLY ACCESSIBLE BINDING SITE ON CAV1.2. **Stanislav Beyl**, Waheed Shabbir, Eugen Timin, Denise Schellmann, Thomas Erker, Annette Hohaus, Gregory H. Hockerman, Steffen Hering.

3084-Pos Board #B189
THERMODYNAMIC LINKAGE WITH VOLTAGE SENSING EXPLAINS THE LARGE VARIABILITY OF INACTIVATION IN L-TYPE CA CHANNELS WITH γ1 SUBUNIT. Anna Angelova, **Roman Shirokov**.

3085-Pos Board #B190
PHYSICOCHEMICAL PROPERTIES OF PORE RESIDUES PREDICT ACTIVATION GATING OF CAV1.2: A CORRELATION MUTATION ANALYSIS. **Katrin Depil**, Stanislav Beyl, Annette Hohaus, Anna Stary-Weinzinger, Eugen Timin, Waheed Shabbir, Michaela Kudrnac, Steffen Hering.

3086-Pos Board #B191
MUTATIONAL ANALYSIS IN THE BUNDLE CROSSING REGION GUIDES THE DESIGN OF CAV1.2 HOMOLOGY MODELS. **Anna Weinzinger**, Katrin Depil, Stanislav Beyl, Eugen Timin, Steffen Hering.

3087-Pos Board #B192
MODULATING RECOVERY OF N-TYPE CALCIUM CHANNELS FROM VOLTAGE-DEPENDENT INACTIVATION: A NOVEL PKC-INDEPENDENT EFFECT OF PHORBOL ESTERS. Lei Zhu, Sarah M. McDavid, **Kevin P. M. Currie**.

3088-Pos Board #B193
COMPETITION OF CAVβ-SUBUNITS FOR CARDIAC L-TYPE CALCIUM CHANNELS. **Wanchana Jangsangthong**, Elza Kuzminkina, Stefan Herzig.

3089-Pos Board #B194
BIOPHYSICAL PROPERTIES OF A HUMAN DISEASE-CAUSING MUTATION IN CAV1.3 L-TYPE CALCIUM CHANNELS. **Andreas Lieb**, Shahid M. Baig, Mathias Gebhart, Claudia Dafinger, Jutta Engel, Martina J. Sinnegger-Brauns, Matteo E. Mangoni, Habib U. Khan, Peter Nürnberg, Hanno J. Bolz, Alexandra Koschak, Jörg Striessnig.

3090-Pos Board #B195 INTERNATIONAL TRAVEL AWARDEE
ROLE OF THE PUTATIVE GLYCINES HINGE OF CAV3.3 CHANNELS. **Ricardo K. Sepúlveda-Hirose**, Juan M. Arias-Montaño, Clara E. Díaz-Velásquez, Manuel Rivera, Juan C. Gomora.

3091-Pos Board #B196
MECHANICAL INDUCED INHIBITION OF L-TYPE CALCIUM CHANNELS. **Angelo O. Rosa**, Naohiro Yamaguchi, Martin Morad.

3092-Pos Board #B197
A MODEL OF THE INNER PORE OF CA CHANNELS IN THE OPEN STATE. **Gregory M. Lipkind**, Harry A. Fozzard.

3093-Pos Board #B198
SIGNALING COMPLEX OF CALCIUM/CALMODULIN-DEPENDENT PROTEIN KINASE II ASSOCIATED WITH THE C-TERMINAL DOMAIN OF CAV2.1 CHANNELS.
Venkat G. Magupalli, Xin Jiang, Ruth E. Westenbroek, Todd Scheuer, Thomas R. Soderling, Angus C. Nairn, William A. Catterall.

3094-Pos Board #B199
TARGETING OF PROTEIN PHOSPHATASES PP2A AND PP2B TO THE C TERMINUS OF L-TYPE CALCIUM CHANNEL $CA_V1.2$. Hui Xu, **Kenneth Ginsburg**, Duane Hall, Maike Zimmermann, Mingxu Zhang, Samvit Tandan, Joseph Hill, Mary Horne, Donald M. Bers, Johannes Hell.

3095-Pos Board #B200
DEPARTURE OF CALMODULIN FROM THE IQ DOMAIN OF $CA_V1.3$ CHANNELS DURING CALCIUM-DEPENDENT INACTIVATION. **Hojjat Bazzazi,** Manu Ben Johnny, David T. Yue.

3096-Pos Board #B201
AN IMPROVED MODEL OF VOLTAGE- AND CA-DEPENDENT INACTIVATION OF THE L-TYPE CA CHANNELS.
Stefano Morotti, Eleonora Grandi, Aurora Summa, Kenneth Ginsburg, Stefano Severi, Donald M. Bers.

3097-Pos Board #B202
RYR(R4496C) MUTANT MICE MODEL REVEALS A NEW PARADIGM ON LOCAL CA^{2+} CONTROL OF ICAL.
Maria Fernandez-Velasco, Gema Ruiz-Hurtado, Angelica Rueda, Patricia Neco, Carlo Napolitano, Silvia G. Priori, Sylvain Richard, **Ana M. Gomez**, Jean-Pierre Benitah.

3098-Pos Board #B203
GLUCOSE INHIBITS GLUCAGON SECRETION FROM PANCREATIC ALPHA-CELLS BY CLOSURE OF K_{ATP}-CHANNELS. Quan Zhang, Reshma Ramracheya, Orit Braha, **Patrik Rorsman**.

Channel Regulation & Modulation II (Boards #B204-#B205)

3099-Pos Board #B204
TMEM16A CA^{2+} ACTIVATED CHLORIDE CHANNELS IN SENSORY NEURONS CAN DISCRIMINATE BETWEEN DIFFERENT INTRACELLULAR CA^{2+} SOURCES.
Xin Jin, Hailin Zhang, **Nikita Gamper**.

3100-Pos Board #B205
CARDIAC BACKGROUND POTASSIUM CHANNELS CHANGE ION SELECTIVITY AND CONDUCT INWARD LEAK SODIUM CURRENTS IN HYPOKALEMIA. Liqun Ma, Xuexing Zhang, **Haijun Chen**.

Cardiac Electrophysiology II (Boards #B206-#B225)

3101-Pos Board #B206
PHARMACOLOGICAL IKS ACTIVATION SLOWS CARDIAC CONDUCTION AND EXACERBATES THE EFFECT OF INA BLOCKADE. **Rengasayee Veeraraghavan**, Anders Peter Larsen, Steven Poelzing.

3102-Pos Board #B207
EVIDENCE FOR FUNCTIONAL SK CHANNELS IN ISOLATED ATRIAL MYOCYTES. **Jane M. Hancock**, Andrew F. James, Jules C. Hancox, Neil V. Marrion.

3103-Pos Board #B208
PLASTICITY IN KCNQ1 SUBCELLULAR DISTRIBUTION AND PARTNERSHIP WITH DIFFERENT KCNE SUBUNITS CONTRIBUTE TO VARIATIONS IN IKS CHANNEL FUNCTION IN THE HEART. **Dimitar P. Zankov**, Min Jiang, Mei Zhang, Yuhong Wang, Gea-Ny Tseng.

3104-Pos Board #B209
SIALYTRANSFERASE ST3GAL4 DEFICIENT MICE DEMONSTRATE LEFT VENTRICULAR ACTION POTENTIAL EXTENSION AND ATTENUATED IK. **Andrew R. Ednie**, Eric S. Bennett.

3105-Pos Board #B210 INTERNATIONAL TRAVEL AWARDEE
A KCNE1 C-TERMINUS LONG QT MUTATION DISRUPTS A CRUCIAL INTERACTION WITH THE KV7.1 COILED-COIL HELIX C AND REDUCES I_{KS} CHANNEL EXPRESSION.
Meidan Dvir, Dana Shaham, Yoni Haitin, Enbal Ben-Tal Cohen, Joel Hirsch, Bernard Attali.

3106-Pos Board #B211
EVOLUTION OF KCHIP2 GENE FUNCTION IS LOCALIZED WITHIN THE CORE PROMOTER AND 5′ UTR. **Qinghong Yan**, Rajeev Masson, Maria Magdalena Pritz, Barbara Rosati, David McKinnon.

3107-Pos Board #B212
TEMPERATURE DEPENDENCE OF HERG BLOCKER PHARMACOLOGY - AN AUTOMATED PATCH CLAMP STUDY. Cristian Ionescu-Zanetti, **Qin Chen**.

3108-Pos Board #B213
COMBINATION IN VITRO AND IN SILICO METHODOLOGY FOR RISK ASSESSMENT OF LONG QT TYPE 1 PATIENTS. **John J. Rice**, Matthias Reumman, Coeli Lopes.

3109-Pos Board #B214
SERCA2 KNOCKOUT MICE EXHIBIT IMPAIRED CONTROL OF CA^{2+} CURRENT BUT NOT VENTRICULAR ARRHYTHMIAS. Halvor K. Mørk, Sylvain Richard, Mathis K. Stokke, Ivar Sjaastad, Kristin B. Andersson, Geir Christensen, Ole M. Sejersted, **William E. Louch**.

3110-Pos Board #B215
NON-GENOMIC EFFECTS OF 17BETA-ESTRADIOL ON CARDIOMYOCYTES. **Rebecca C. Stratton**, CHARLOTTE POILE, NINA M. STOREY.

3111-Pos Board #B216
EXTRACELLULAR PROTON MODULATION OF PEAK AND LATE SODIUM CURRENT IN THE CANINE LEFT VENTRICLE. Lisa Murphy, Danielle M. Renodin, Charles Antzelevitch, Jose M. Di Diego, **Jonathan M. Cordeiro**.

3112-Pos Board #B217
NORMALIZING ACTION-POTENTIAL MORPHOLOGY IN LONG-TERM CULTURES OF ADULT GUINEA-PIG VENTRICULAR CARDIOMYOCYTES BY CA_VBETA EXPRESSION. **Rosy Joshi-Mukherjee**, Ivy E. Dick, Ting Liu, Brian O'Rourke, Leslie Tung, David T. Yue.

3113-Pos Board #B218
EFFECTS OF VOLUNTARY EXERCISE ON VIABILITY AND ELECTRICAL REMODELING IN DCN MODEL MICE.
Masami Sugihara, Takeshi Suzuki, Fuminori Odagiri, Yuji Nakazato, Takashi Sakurai, Hiroyuki Daida, Sachio Morimoto, Nagomi Kurebayashi.

3114-Pos Board #B219
POSSIBLE ROLES OF CANNABINOID RECEPTORS IN CARDIAC MYOCYTES. **Emma L. Bolton**, Derek A. Terrar.

3115-Pos Board #B220
HUMAN HEART SLICES - A NOVEL MULTICELLULAR SYSTEM SUITABLE FOR ELECTROPHYSIOLOGICAL AND PHARMACOLOGICAL STUDIES. **Patrizia Camelliti**, Sara A. Al-Saud, Ryszard T. Smolenski, Samha Al-Ayoubi, Nicholas R. Banner, Christopher T. Bowles, Magdi H. Yacoub, Cesare M. Terracciano.

3116-Pos Board #B221
VOLTAGE SENSITIVE PROTEIN 2.3: A NOVEL TOOL TO STUDY SARCOLEMMAL STRUCTURE AND ELECTRICAL ACTIVITY IN MOUSE HEARTS. **Mei-Ling Chang Liao**, Hiroki Mutoh, Yuka Iwamoto, Nour Raad, Viacheslav Nikolaev, Stefan Luther, Stephan Lehnart, Stefan Wagner, Lars Maier, Walter Stühmer, Thomas Knöpfel, Wolfram-Hubertus Zimmermann.

3117-Pos Board #B222
SINOATRIAL NODAL (SAN) CELLS FROM CENTER OR PERIPHERAL SAN AREA ARE NOT FUNCTIONALLY DIFFERENT. **Dongmei Yang**, Ihor Zahanich, Alexey E. Lyashkov, Edward G. Lakatta.

3118-Pos Board #B223
CELLULAR BASIS OF PHASE 2 IN MOUSE VENTRICULAR ACTION POTENTIALS. **Marcela Ferreiro**, Ariel L. Escobar.

3119-Pos Board #B224
COMPARISON OF ACTION POTENTIAL CHARACTERISTICS FROM INTACT RABBIT MYOCARDIUM USING 2-PHOTON EXCITATION, WIDEFIELD EPIFLUORESCENCE AND MICROELECTRODE RECORDINGS. **Allen Kelly**, Ole J. Kemi, Iffath A. Ghouri, Francis L. Burton, Rachel C. Myles, Godfrey L. Smith.

3120-Pos Board #B225
CARDIAC VORTEX DYNAMICS: FROM CELL TO TISSUE. **Ashley E. Raba**, Jacques Beaumont.

Biophysics of Ion Permeation (Boards #B226-#B244)

3121-Pos Board #B226
MOLECULAR DYNAMICS STUDIES OF ION PERMEATION IN VDAC. **Huan Rui**, Kyu Il Lee, Richard W. Pastor, Wonpil Im.

3122-Pos Board #B227
EFFECTS OF DIVALENT CATIONS ON THE SINGLE-CHANNEL CONDUCTANCE OF THE OMPF CHANNEL: LINEARITY, SATURATION AND BLOCKING. **M Lidón López**, Elena García-Giménez, Vicente M. Aguilella, Antonio Alcaraz.

3123-Pos Board #B228
SIALIC ACID TRANSPORT IN E. COLI: ROLE OF OUTER MEMBRANE PORIN NANC. **Janhavi Giri**, John M. Tang, Christophe Wirth, Caroline M. Peneff, Tilman Schirmer, Bob Eisenberg.

3124-Pos Board #B229
MEASUREMENT AND INTERPRETATION OF ION SELECTIVITY IN WIDE CHANNELS: MERGING INFORMATION FROM DIFFERENT APPROACHES. **Antonio Alcaraz**, Elena García-Giménez, María L. López, Vicente M. Aguilella.

3125-Pos Board #B230
NUMERICAL SIMULATION OF MOLECULAR DELIVERY VIA ELECTROPORATION. **Hao Lin**, Mohamed Sadik, Jianbo Li, Jerry W. Shan, David I. Shreiber.

3126-Pos Board #B231
A PRESSURE-POLISH SETUP TO FABRICATE PATCH PIPETTES YIELDING LOW ACCESS RESISTANCE AND EFFICIENT INTRACELLULAR PERFUSION. Mascia Benedusi, Alberto Milani, Marco Aquila, **Giorgio Rispoli**.

3127-Pos Board #B232
RECREATING ION CHANNEL IV CURVES USING SPECIFIC FREQUENCY COMPONENTS. **John Rigby**, Steven Poelzing.

3128-Pos Board #B233
MAPPING THE IMPORTANCE OF 4 FACTORS IN CREATING MONOVALENT ION SELECTIVITY IN BIOLOGICAL MOLECULES. **Michael Thomas**, Dylan Jayatilaka, Ben Corry.

3129-Pos Board #B234
TESTING THE APPLICABILITY OF NERNST-PLANCK THEORY IN ION CHANNELS. **Chen Song**, Ben Corry, Bert de Groot.

3130-Pos Board #B235
A NEW POISSON-NERNST-PLANCK EQUATION (PNP-FS-IF) FOR CHARGE INVERSION NEAR WALLS. **YunKyong Hyon**, James E. Fonseca, Bob Eisenberg, Chun Liu.

3131-Pos Board #B236
HOW INTERACTIONS CONTROL MOLECULAR TRANSPORT IN CHANNELS. **Anatoly B. Kolomeisky**, Karthik Uppulury.

3132-Pos Board #B237
INVESTIGATING CO-TRANSPORT MECHANISMS IN THE AMTB AMMONIUM TRANSPORTER USING QM/MM MOLECULAR DYNAMICS. **Shihao Wang**, Sefer Baday, Simon Bernèche, Guillaume Lamoureux.

3133-Pos Board #B238
PERMEATION MECHANISM IN THE AMTB AMMONIUM TRANSPORTER: PUTATIVE ELECTROGENIC CO-TRANSPORT OF NH3 AND H+. Shihao Wang, Sefer Baday, Esam A. Orabi, Simon Bernèche, **Guillaume Lamoureux**.

3134-Pos Board #B239
INVESTIGATING AMMONIUM TRANSPORT MECHANISMS IN AMTB AND RHCG BY MOLECULAR DYNAMICS SIMULATIONS. **Sefer Baday**, Shihao Wang, Guillaume Lamoureux, Simon Bernèche.

3135-Pos Board #B240
A VIEW OF HYDROGEN/HYDROXIDE FLUX ACROSS LIPID MEMBRANES. J. Wylie Nichols, **Ronald F. Abercrombie**.

3136-Pos Board #B241
SINGLE CHANNEL MEASUREMENTS OF N-ACETYLNEURAMINIC ACID-INDUCIBLE CHANNEL (NANC) IN E. COLI. Janhavi Giri, **John M. Tang**, Christophe Wirth, Caroline M. Peneff, Tilman Schirmer, Bob Eisenberg.

3137-Pos Board #B242
BLEBBISTATIN PROTECTS RODENT MYOCYTES FROM DEATH IN PRIMARY CULTURE VIA INHIBITING NA/CA EXCHANGE. **Yinzheng Guan**, Xiaoying Zhang, Yingxin Li, Chris Szeto, Xiajie Ai, Xiongwen Chen.

3138-Pos Board #B243
ON CONDUCTION AND GATING IN K^+-CHANNELS. **Carmen Domene**, Simone Furini.

3139-Pos Board #B244
SODIUM-POTASSIUM ION CHANNEL SELECTIVITY CAN BE MODELED BY THYROFLUIDIC CHANNEL GATING. James P. Barger, **Patrick F. Dillon**.

Voltage-gated K Channels — Gating: BK Channels (Boards #B245-#B265)

3140-Pos Board #B245
A PROTON PATHWAY IN THE VOLTAGE SENSING DOMAIN OF K_V CHANNELS, WITH A POSSIBLE RELATION OF GATING TO THE PORE CAVITY AND TO THE T1 MOIETY. Alisher M. Kariev, **Michael E. Green**.

3141-Pos Board #B246
"MUST CHANNELS OPEN BEFORE INACTIVATING?" REDUX. **Jeffrey D. Fineberg**, Manuel Covarrubias.

3142-Pos Board #B247
THE NATURE OF THE ENERGY BARRIER FOR THE CHARGE MOVEMENT IN VOLTAGE-SENSORS. **Jerome J. Lacroix**, Fabiana V. Campos, Francisco Bezanilla.

3143-Pos Board #B248
GATE CLOSURE STRICTLY FOLLOWS VOLTAGE-SENSOR MOVEMENTS IN K_V CHANNELS. **Alain J. Labro**, Jerome J. Lacroix, Carlos A. Villalba-Galea, Dirk J. Snyders, Francisco Bezanilla.

3144-Pos Board #B249
USE OF TETHERED SPECTROSCOPIC PROBES AS CHEMICAL CALIPERS TO MEASURE MOLECULAR DISTANCES. **Brian W. Jarecki**, Suquing Zheng, Xiaoxun Li, Alessandro Senes, Weiping Tang, Baron Chanda.

3145-Pos Board #B250
CA^{2+} DEPENDENT ACTIVATION OF LARGE CONDUCTANCE CA^{2+} ACTIVATED POTASSIUM (BK) CHANNELS BY BINDING TO THE RCK1 DOMAIN. **Guohui Zhang**, Shenyou Huang, Junqiu Yang, Jingyi Shi, Xiao Yang, Alyssa Moller, Xiaoqin Zou, Jianmin Cui.

3146-Pos Board #B251
CALCIUM-DEPENDENT OPERATION OF THE HUMAN BK CHANNEL GATING RING APPARATUS. Taleh Yusifov, Anoosh Javaherian, Chris Gandhi, **Riccardo Olcese**.

3147-Pos Board #B252
ON THE PROPERTIES OF THE RCK1 DOMAIN OF THE HUMAN BK *(SLO1)* CHANNEL. **Taleh Yusifov**, Anoosh Anoosh Javaherian, Antonios Pantazis, Chris Gandhi, Riccardo Olcese.

3148-Pos Board #B253
PROBING THE DYNAMIC STRUCTURE OF THE BKCA VOLTAGE SENSOR: RELATIVE MOTION OF SEGMENTS S0 & S4 DURING ACTIVATION. **Antonios Pantazis**, Azadeh Kohanteb, Riccardo Olcese.

3149-Pos Board #B254
MODULAR ALLOSTERISM IN POTASSIUM CHANNELS. **Daniel M. Sigg**, Riccardo Olcese.

3150-Pos Board #B255
VOLTAGE SENSOR DEACTIVATION INHIBITS BK CHANNEL OPENING BY MG2+. **Ren-Shiang Chen**, Yanyan Geng, Karl L. Magleby.

3151-Pos Board #B256
INFLUENCE OF HYDROPHOBIC RESIDUES ON BK CHANNEL GATING. **Guido Gessner**, Toshinori Hoshi, Stefan H. Heinemann.

3152-Pos Board #B257
VOLTAGE-DEPENDENT INACTIVATION GATING AT THE SELECTIVITY FILTER OF THE MTHK K+ CHANNEL. **Andrew S. Thomson**, Brad S. Rothberg.

3153-Pos Board #B258
C. ELEGANS SLO-2B USES ITS RCK1 DOMAIN AS A CA^{2+} SENSOR AND DOES NOT EXHIBIT CL^- DEPENDENCE. **Zhe Zhang**, Qiong-Yao Tang, Diomedes E. Logothetis.

3154-Pos Board #B259
AN EPILEPSY/DYSKINESIA-ASSOCIATED MUTATION IN BK CHANNEL ENHANCED CHANNEL-PIP_2 APPARENT AFFINITY. **Qiong-Yao Tang**, Zhe Zhang, Vasileios I. Petrou, Diomedes E Logothetis.

3155-Pos Board #B260
STRUCTURE-FUNCTION STUDIES OF THE LARGE CONDUCTANCE VOLTAGE- AND CALCIUM-ACTIVATED POTASSIUM CHANNEL BETA1 AUXILIARY SUBUNIT. **Bin Wang**, Aleksandra Gruslova, Iurii Semenov, Robert Brenner.

3156-Pos Board #B261
INVESTIGATION OF BK CHANNEL GATING USING MALLOTOXIN. **Janos Almassy**, Ted Begenisich.

3157-Pos Board #B262
CHOLESTEROL REGULATES THE BASAL FUNCTIONS AND ETHANOL SENSITIVITY OF LARGE CONDUCTANCE, CA^{2+}-SENSITIVE K+ CHANNEL THROUGH SPECIFIC CHOLESTEROL-PROTEIN INTERACTION. **Chunbo Yuan**, Steven N. Treistman, Douglas F. Covey, Maohui Chen, Linda J. Johnston.

3158-Pos Board #B263
THE SLO1 C-TAIL DOMAIN CONFERS CHOLESTEROL-SENSITIVITY TO ARTERIAL SMOOTH MUSCLE BK CHANNELS. **Aditya K. Singh**, Anna N. Bukiya, Alejandro M. Dopico.

3159-Pos Board #B264
A FUNCTIONAL ANALYSIS OF NAK AT THE SINGLE CHANNEL LEVEL. **Raymond W. Bourdeau**, Valeria Vasquez, Julio F. Cordero-Morales, Eduardo Perozo.

3160-Pos Board #B265
ENGINEERING THE HERG1 SELECTIVITY FILTER INTO THE NAK PORE DOMAIN. **Julio F. Cordero-Morales**, Vishwanath Jogini, Valeria Vasquez, Raymond W. Bourdeau, Haibo Yu, Benoit Roux, Martin Tristani-Firouzi, Eduardo Perozo.

Muscle: Fiber and Molecular Mechanics & Structure II (Boards #B266-#B292)

3161-Pos Board #B266
RADIAL MOTION OF MYOSIN HEADS IN ISOLATED INTACT RAT MYOCARDIUM IN DIASTOLE. Gerrie P. Farman, HsiaoMan Hsu, David Gore, Edward J. Allen, Kelly Q. Schoenfelt, Younss Ait Mou, Thomas C. Irving, **Pieter P. de Tombe**.

3162-Pos Board #B267
ELECTRON TOMOGRAPHY OF THICK SECTIONS OF INSECT FLIGHT MUSCLE. **Claudia L. Vargas**, Anthony Warrington, Kenneth A. Taylor, Susan Hester, R. J. Perz-Edwards, Michael K. Reedy.

3163-Pos Board #B268
VANADATE RESPONSES OF INSECT FIGHT MUSCLE. Robert J. Perz-Edswards, Rebecca L. Porter, **Michael K. Reedy**.

3164-Pos Board #B269
N-BENZYL-P-TOLUENESULFONAMIDE (BTS) TRAPS THE MYOSIN HEAD IN A CONFORMATION ASSOCIATED WITH STRONG MYOSIN BASED LAYER LINES AND WEAK, RAPIDLY REVERSIBLE ACTIN BINDING EVEN IN THE ABSENCE OF NUCLEOTIDE. Theresia Kraft, Ante Radocaj, **Bernhard Brenner**.

3165-Pos Board #B270
A REINVESTIGATION OF THE SOURCE OF COMPLIANCE OF MUSCLE CROSS-BRIDGES. **Massimo Reconditi**, Marco Linari, Gabriella Piazzesi, Malcolm Irving, Vincenzo Lombardi.

3166-Pos Board #B271
MULTISCALE MODEL PREDICTIONS OF X-RAY DIFFRACTION PATTERNS IN CONTRACTING SKELETAL MUSCLE. **Srboljub M. Mijailovich**, Boban Stojanovic, Thomas Irving.

3167-Pos Board #B272
EFFECTS OF CARDIAC MYOSIN BINDING PROTEIN-C AND ITS DOMAINS ON THE ROTATIONAL DYNAMICS OF ACTIN FILAMENTS. **Brett A. Colson**, Inna N. Rybakova, Ewa Prochniewicz, Richard L. Moss, David D. Thomas.

3168-Pos Board #B273
SIMILAR REGIONS OF INSTABILITY IN TROPOMYOSIN AND MYOSIN COILED COILS. **Douglas D. Root**, Nakiuda Hall, Lee Chen, Yuxiao Qian, Nasrin Taei.

3169-Pos Board #B274
ORIENTATION OF THE CALCIUM SENSITIZING AGENT DFBP-O, WHEN BOUND TO TROPONIN IN A MUSCLE FIBER AS DETERMINED BY SOLID-STATE NMR SPECTROSCOPY. Samuel S. W. Szeto, **Ian M. Robertson**, Yin-Biao Sun, Brian D. Sykes.

3170-Pos Board #B275
CARDIAC-SPECIFIC HELICAL STRUCTURE IN TROPONIN I IMPARTS UNIQUE, CARDIAC-SPECIFIC CONTRACTILE FUNCTION. **Steven J. Ford**, Ranganath Mamidi, Murali Chandra.

3171-Pos Board #B276
DELETIONS IN THE N-TERMINUS OF TROPONIN T REVEAL A REGION IMPORTANT FOR CA^{2+}- AND LENGTH-DEPENDENT CARDIAC MYOFILAMENT ACTIVATION. **Ranganath Mamidi**, Steven J. Ford, Murali Chandra.

3172-Pos Board #B277 STUDENT TRAVEL AWARDEE
FLEXIBILITY CHANGE IN HUMAN CARDIAC α-TROPOMYOSIN E180G MUTANT: POSSIBLE LINK TO CARDIAC HYPERTROPHY. **Campion Loong**, Huan-Xiang Zhou, P. Bryant Chase.

3173-Pos Board #B278
ATOMIC MODEL OF F-ACTIN-TROPOMYOSIN. Xiaochuan Edward Li, Larry S. Tobacman, Ji Young Mun, Roger Craig, Stefan Fischer, **William Lehman**.

3174-Pos Board #B279
STRUCTURAL SIMULATIONS OF TROPONIN-REGULATED TROPOMYOSIN MOVEMENT ON F-ACTIN. **Marek Orzechowski**, Stefan Fischer, William Lehman.

3175-Pos Board #B280
MOLECULAR DYNAMICS OF TROPOMYOSIN BOUND TO F-ACTIN. **Xiaochuan Edward Li**, Stefan Fischer, William Lehman.

3176-Pos Board #B281
THIN FILAMENT LENGTH IN MOUSE SKELETAL MUSCLE AND ITS RELATIONSHIP TO DIFFERENTIAL SPLICING OF NEBULIN. **Danielle Buck**, Paola Tonino, Adam Hoying, Henk Granzier.

3177-Pos Board #B282
THE FUNCTION OF OBSCURIN IN REGULATING ASSEMBLY AND SYMMETRY OF THE SARCOMERE IN DROSOPHILA FLIGHT MUSCLE. Anja R. Katzemich, Kevin R. Leonard, John C. Sparrow, **Belinda Bullard**.

3178-Pos Board #B283
EFFECT OF CONFINEMENT ON TITIN CONFORMATION AND ELASTICITY. Tannie B. Liverpool, **Larissa Tskhovrebova**, John A. Trinick.

3179-Pos Board #B284
FREE FALL FORCE SPECTROSCOPY OF NEBULIN SUGGESTS IMPROVED FOLDING AFTER REPEATED STRETCHING. **James W. Dunn**, Jeffrey G. Forbes, Kuan Wang, Douglas D. Root.

3180-Pos Board #B285
NEW OBSCURINS PLAY A ROLE IN CARDIAC ELECTROCHEMICAL SIGNALING. **Maegen A. Ackermann**, Jane Valenti, Aikaterini Kontrogianni-Konstantopoulos.

3181-Pos Board #B286
HOW TO CATCH MOBY DICK: SYSTEMATIC IDENTIFICATION OF BINDING PARTNERS FOR UNC-89 (OBSCURIN). Hiroshi Qadota, Ge Xiong, Kristy Wilson, M. Berenice Duran, Emily Swartzbaugh, John Nahabedian, **Guy Benian**.

3182-Pos Board #B287
INTERACTION OF OBSCURIN A WITH SMALL ANKYRIN 1. **Robert J. Bloch**, Ben Busby, Taiji Oashi, Chris Willis, Maegen Ackermann, Aikaterini Kontrogianni-Konstantopoulos, Alexander D. Mackerell, Jr.

3183-Pos Board #B288
NOVEL INSIGHTS IN THE FUNCTION OF THE GIANT SARCOMERIC PROTEINS TITIN AND NEBULIN. **Henk Granzier**.

3184-Pos Board #B289
DECIPHERING THE FUNCTIONAL PROPERTIES OF NEBULIN: IT IS A STABILIZER! Chris T. Pappas, Paul A. Krieg, **Carol Gregorio**.

3185-Pos Board #B290
A NOVEL ASSAY OF MECHANO-TRANSDUCTION IN SINGLE MUSCLE CELLS. **Christopher W. Ward**, Benjamin L. Prosser, Maura Greiser, Håkan Westerblad, Ramzi Khairallah, W J. Lederer.

3186-Pos Board #B291
DYNAMIC INTERACTIONS BETWEEN THE MYOCYTE AND EXTRACELLULAR MATRIX PROMOTE MYOCYTE DIFFERENTIATION AND MYOFIBRIL ASSEMBLY. Maide O. Raeker, **Mark W. Russell**.

3187-Pos Board #B292
MUSCLE GIANTS CREATE ORDER FROM CHAOS WITH FORCE. **Kuan Wang**, Jeffrey G. Forbes.

Excitation Contraction Coupling II (Boards #B293-#B316)

3188-Pos Board #B293
ELECTRON MICROSCOPY OF CRYO-SECTIONED SKELETAL MUSCLE BY FOCUSED ION BEAM MILLING. **Terence Wagenknecht**, Chyong-ere Hsieh, Michael Marko, Clara Franzini-Armstrong.

3189-Pos Board #B294
INDUCIBLE SILENCING OF JUNCTOPHILINS IN SKELETAL MUSCLE LEADS TO REVERSIBLE REMODELING OF THE TRIAD JUNCTION STRUCTURE AND COMPROMISED STORE-OPERATED CALCIUM ENTRY. **Jae-Kyun Ko**, Kyoung-Han Choi, Xiaoli Zhao, Shinji Komazaki, Zui Pan, Noah Weisleder, Jianjie Ma.

3190-Pos Board #B295
EXTRUSION OF CA^{2+} ACROSS THE TUBULAR SYSTEM MEMBRANE IS DEPENDENT ON MEMBRANE POTENTIAL AND THE CYTOPLASMIC CA^{2+} IN RAT SKELETAL MUSCLE. Joshua N. Edwards, **Bradley S. Launikonis**.

3191-Pos Board #B296
USING SUPERFAST CONFOCAL MICROSCOPY TO MEASURE THE CA^{2+} RELEASE WAVEFORM AND SPREAD OF EXCITATION THROUGHOUT THE TUBULAR NETWORK IN MAMMALIAN SKELETAL MUSCLE. **Joshua N. Edwards**, Tanya R. Cully, Thomas R. Shannon, Bradley S. Launikonis.

3192-Pos Board #B297
DIFFERENTIAL RECORDING OF VOLTAGE CHANGES AT THE SURFACE AND TRANSVERSE TUBULAR SYSTEM MEMBRANES OF MAMMALIAN SKELETAL MUSCLE FIBERS USING DI-8-ANEPPS AND GLOBAL AND TIRFM. **Joana C. Capote**, Marino DiFranco, Julio L. Vergara.

3193-Pos Board #B298
FATIGUE-INDUCED KINETIC CHANGES IN TETANIC CA^{2+} TRANSIENTS IN ENZYMATICALLY DISSOCIATED MOUSE FIBERS. **Juan C. Calderón**, Pura Bolaños, Carlo Caputo.

3194-Pos Board #B299
ROLE OF C-TERM TAIL OF DHPR β1A IN THE DHPR/RYR1 INTERACTION. Feng Wei, Kim Truong, Paul D. Allen, Isaac N. Pessah, **Claudio F. Perez**.

3195-Pos Board #B300
HYDROPHOBIC RESIDUES THAT DETERMINE *IN VITRO* ACTIVATION OF RYR1 BY THE $BETA_{1A}$ SUBUNIT OF DHPR. Robyn T. Rebbeck, Yamuna Karunasekara, Esther M. Gallant, Nicole A. Beard, Philip G. Board, Marco Giovani Casarotto, **Angela F. Dulhunty**.

3196-Pos Board #B301
INTRAMOLECULAR CAV1.1 CHIMERAS REVEAL THE MOLECULAR MECHANISM DETERMINING THE CHARACTERISTIC GATING BEHAVIOUR OF THE SKELETAL MUSCLE CALCIUM CHANNEL. **Petronel Tuluc**, Manfred Grabner, Bernhard E. Flucher.

3197-Pos Board #B302
ELECTROPHYSIOLOGICAL ANALYSIS OF TWO MALIGNANT HYPERTHERMIA-LINKED MUTATIONS IN THE 1,4-DIHYDROPYRIDINE RECEPTOR α_{1S} SUBUNIT. **Roger A. Bannister**, Ong Moua, Jose M. Eltit, Paul D. Allen, Kurt G. Beam.

3198-Pos Board #B303
EFFECTS OF CAV1.1 MUTATION (S4-II-R528H) CAUSING HYPOKALEMIC PERIODIC PARALYSIS ON L-TYPE CALCIUM CURRENT AND VOLTAGE DEPENDENT CALCIUM RELEASE IN ISOLATED MUSCLE FIBERS. **Erick O. Hernández-Ochoa**, Vicky Fu, Wentao Mi, Martin F. Schneider, Stephen C. Cannon.

3199-Pos Board #B304
REGIONS OF THE DHPRβ1A SUBUNIT RESPONSIBLE FOR DHPR VOLTAGE-SENSING IN SKELETAL MUSCLE EXCITATION-CONTRACTION COUPLING. **Vinaya Kumar Bhat**, Anamika Dayal, Manfred Grabner.

3200-Pos Board #B305
TROPONIN T3 REGULATES CALCIUM CHANNEL BETA1A SUBUNIT NUCLEAR TRANSLOCATION IN SKELETAL MUSCLE. **Tan Zhang**, Jackson Taylor, Zhongmin Wang, Osvaldo Delbono.

3201-Pos Board #B306
ATP SENSITIVITY AND IP_3-DEPENDENT CALCIUM TRANSIENTS WHICH REGULATE GENE EXPRESSION IN ADULT MUSCLE FIBERS ARE ALTERED IN MDX MICE. Denisse Valladares, Mariana Casas, Reinaldo Figueroa, Alejandro Leyton, Sonja Buvinic, **Enrique Jaimovich**.

3202-Pos Board #B307
THE ROLE OF RYANODINE RECEPTOR PHOSPHORYLATION IN SKELETAL MUSCLE EXCITATION-CONTRACTION COUPLING. **Matthew J. Betzenhauser**, Daniel C. Andersson, Steven Reiken, Andrew R. Marks.

3203-Pos Board #B308
NOX2 DEPENDENT MODULATION OF SKELETAL MUSCLE EC COUPLING. **George G. Rodney**, Guoli Shi.

3204-Pos Board #B309
PATHOLOGICAL RYR1 MUTATIONS TO IDENTIFY RYR1 FUNCTIONAL DOMAINS. Marine Cacheux, Julien Fauré, Julie Brocard, Nicole Monnier, Joël Lunardi, **Isabelle Marty**.

3205-Pos Board #B310
SARCOPLASMIC RETICULUM CA^{2+} RELEASE IN MOUSE MUSCLE FIBERS EXPRESSING PATHOLOGICAL MUTANT FORMS OF THE TYPE 1 RYANODINE RECEPTOR. **Romain Lefebvre**, Claude Legrand, Estela Gonzalez-Rodriguez, Linda Groom, Robert T. Dirksen, Vincent Jacquemond.

3206-Pos Board #B311
MODULATION OF SARCOPLASMIC RETICULUM CA^{2+} RELEASE BY PHOSPHATIDYLINOSITOL-PHOSPHATE LIPIDS IN ISOLATED MOUSE SKELETAL MUSCLE FIBERS. Estela Gonzalez-Rodriguez, Romain Lefebvre, Karine Poulard, Claude Legrand, Anna Buj-Bello, **Vincent Jacquemond**.

3207-Pos Board #B312
CULTURE METHODS AND INITIAL CHARACTERIZATION OF CALCIUM HOMEOSTASIS IN INTERCOSTAL SKELETAL FIBERS ISOLATED FROM THE ADULT MOUSE.
Patrick Robison, Erick O. Hernández-Ochoa, Martin F. Schneider.

3208-Pos Board #B313
MUSCLE PERFORMANCE AND ELECTRICALLY EVOKED CA^{2+} RELEASE ARE COMPROMISED IN CALSEQUESTRIN-1 NULL MICE. **Rotimi Olojo**, Erick O. Hernández-Ochoa, Paul D. Allen, Martin F. Schneider, Christopher W. Ward.

3209-Pos Board #B314
MEASUREMENT OF INTRA-SR [CA^{2+}] REVEALS CHANGES IN SR CA^{2+} PERMEABILITY DURING INTRACELLULAR CA^{2+} RELEASE IN SKELETAL MUSCLE. **Monika Sztretye**, Jianxun Yi, Leandro Royer, Jingsong Zhou, Lourdes Figueroa, Paul D. Allen, Eduardo Rios.

3210-Pos Board #B315
THE SR CALCIUM CONTENT OF FAST MUSCLE FIBRES LACKING CALSEQUESTRIN IS REDUCED AND NOT SUFFICIENT FOR SUSTAINED CONTRACTIONS.
Carlo Reggiani, Ger Stienen, Marco Quarta, Marta Canato, Michele Scorzeto, Luana Toniolo, Feliciano Protasi.

3211-Pos Board #B316
ACTIVITY-DEPENDENT REGULATION OF MITOCHONDRIAL SUPEROXIDE FLASHES IN SKELETAL MUSCLE. **Lan Wei**, Gheorghe Salahura, Karl A. Kasischke, Shey-Shing Sheu, Robert T. Dirksen.

Actin & Actin-binding Proteins II (Boards #B317-#B335)

3212-Pos Board #B317
ALLOSTERIC EFFECTS WITHIN THE CATALYTIC DOMAIN OF DICTYOSTELIUM MYOSIN ON INTERACTION WITH ACTIN AND NUCLEOTIDE. **Piyali Guhathakurta**, Ewa Prochniewicz, Joseph M. Muretta, David D. Thomas.

3213-Pos Board #B318
EXPRESSION AND CHARACTERIZATION OF FULL LENGTH NONMUSCLE MYOSIN IIS. **Aibing Wang**, Neil Billington, Robert S. Adelstein, James R. Sellers.

3214-Pos Board #B319
MOUSE MODELS OF HUMAN *MYH9*-RELATED DISEASES.
Yingfan Zhang, Mary Anne Conti, Patricia Zerfas, Yelena Shmist, Sachiyo Kawamoto, Chengyu Liu, Jeffrey Kopp, Chi Cho Chan, Michael J. Kelley, Robert S. Adelstein.

3215-Pos Board #B320
FORCE AMPLIFICATION RESPONSE OF ACTIN FILAMENTS UNDER CONFINED COMPRESSION. **George W. Greene**.

3216-Pos Board #B321
STRUCTURE AND MECHANICAL PROPERTIES OF ACTIN NETWORKS CROSSLINKED WITH MUTUALLY INTERACTING CROSSLINKERS. **Brian Grooman**, Ikoku Fujiwara, Carol Otey, Arpita Upadhyaya.

3217-Pos Board #B322
STRAIN STIFFENING INDUCED BY MOLECULAR MOTORS IN ACTIVE CROSSLINKED BIOPOLYMER NETWORKS.
Peng Chen, Vivek B. Shenoy.

3218-Pos Board #B323 INTERNATIONAL TRAVEL AWARDEE
FILAMIN A SEGMENTS RESPOND FORCE DIFFERENTLY.
Hu Chen, Xiaoying Zhu, Michael Sheetz, Fumihiko Nakamura, Jie Yan.

3219-Pos Board #B324
MEASUREMENT AND ORIGIN OF A FORCE THAT PUSHES AND PULLS THE PLASMA MEMBRANE. **Brenda Farrell**, Feng Qian, Anatoly B. Kolomeisky, Bahman Anvari, William E. Brownell.

3220-Pos Board #B325
AN AUTOCATALYTIC ACTIVATOR-INHIBITOR MODEL OF ACTIN POLYMERIZATION AT THE LEADING EDGE OF FIBROBLAST LAMELLIPODIA. **Gillian L. Ryan**, Matthew B. Smith, Heather Petroccia, Naoki Watanabe, Dimitrios Vavylonis.

3221-Pos Board #B326
MYOSIN MOTOR DYNAMICS IN FILOPODIA. Pavel I. Zhuravlev, **Maria Minakova**, Yueheng Lan, Garegin A. Papoian.

3222-Pos Board #B327
MODEL OF THE ROLE OF ACTIN CROSSLINKER PROTEINS DURING CONTRACTILE RING ASSEMBLY IN FISSION YEAST.
Nikola Ojkic, Dimitrios Vavylonis.

3223-Pos Board #B328
FLUCTUATION-DISSIPATION RELATIONS IN MINIMAL MODELS FOR ACTIVE DRIVING. **Yair Shokef**, Eyal Ben-Isaac, Nir S. Gov.

3224-Pos Board #B329
INVESTIGATING FUNCTION OF *NCK* ADAPTOR IN TYROSINE KINASE SIGNALING TO THE ACTIN CYTOSKELETON.
Sofya Borinskaya, Jon A. Ditlev, Les M. Loew, Bruce J. Mayer.

3225-Pos Board #B330
NCK FUNCTION IN TYROSINE KINASE SIGNALING TO THE ACTIN CYTOSKELETON. **Jonathon A. Ditlev**, Bruce J. Mayer, Leslie M. Loew.

3226-Pos Board #B331
TRANSCRIPTIONAL REGULATION OF MOUSE H2-CALPONIN GENE BY MECHANICAL TENSION. **Wenrui Jiang**, J.-P. Jin.

3227-Pos Board #B332
LOSS OF REGENERATION IN MAMMALIAN EARS PARALLELS THE ACCUMULATION AND STABILIZATION OF JUNCTIONAL ACTIN IN SUPPORTING CELLS. **Joseph Burns**, Jeffrey T. Corwin.

3228-Pos Board #B333
MODULATION OF THE ACTIN FILAMENT REORGANIZATION ALTERS CELLULAR CALCIUM AND SURFACE ADHESION IN WHARTON'S JELLY CELLS. **Ying-Ming Liou**, Kang-Wei Peng.

3229-Pos Board #B334
MOLECULAR MOTORS AT THE T CELL IMMUNOLOGICAL SYNAPSE. **Yan Yu**, Alex Smoligovets, Jay T. Groves.

3230-Pos Board #B335
DIAMAGNETIC LEVITATION CAUSES CHANGES IN ACTIN ARCHITECTURE AND ACTIN-BINDING PROTEINS IN BONE CELLS. **Ai-Rong Qian**, Xiang Gao, Wei Zhang, Li-Fang Hu, Peng Shang, Jian-Ping Jin.

Cell and Bacterial Mechanics & Motility III (Boards #B336-#B347)

3231-Pos Board #B336
THERMODYANMIC CONTROL ON THE TORQUE GENERATION OF BACTERIAL FLAGELLAR MOTORS.
Manabu Hasumi, Masahide Terazima, **Masayoshi Nishiyama**.

3232-Pos Board #B337 CPOW TRAVEL AWARDEE
ARE BIOMECHANICAL CHANGES NECESSARY FOR TUMOR PROGRESSION? - THE IMPACT OF CELL MECHANICS ON CANCER PROGRESSION. **Mareike Zink**, Anatol Fritsch, Tobias Kiessling, Kenechukwu D. Nnetu, Steve Pawlizak, Franziska Wetzel, Josef A. Käs.

3233-Pos Board #B338
DUAL MECHANICAL SIGNAL INTEGRATION REVEALS NON LINEAR CELL BEHAVIOR. **Robert L. Steward Jr.**, Chao-Min Cheng, Philip LeDuc.

3234-Pos Board #B339
SUBSTRATE-LIGAND FRICTION CONTROLS TRACTION FORCE IN CELL ADHESION. **Tilo Pompe**, Thomas Bischoff, Stefan Glorius, Stephanie Johne, Maria Kasimir, Martin Kaufmann, Ina Uhlmann, Manfred Bobeth, Wolfgang Pompe, Carsten Werner.

3235-Pos Board #B340
ENGINEERING THE MECHANOBIOLOGICAL OSCILLATIONS OF SINGLE CELLS. **Tianzhi Luo**, Douglas N. Robinson.

3236-Pos Board #B341
INFLUENCE OF ALTERED LOCAL EFFECTIVE CONCENTRATION ON CYTOSKELETAL AND ECM STRUCTURE IN HUMAN MESENCHYMAL STEM CELLS. **Adam S. Zeiger**, Felicia C. Loe, Michael Raghunath, Krystyn J. Van Vliet.

3237-Pos Board #B342
REGULATING CELL-SUBSTRATE ADHESION VIA PRESTRESS IN THE CYTOSKELETON. **Bin Chen**, Huajian Gao.

3238-Pos Board #B343
TENSILE MECHANICAL CHARACTERIZATION OF CELL STIFFNESS IMPROVES CORRELATION TO METASTATIC POTENTIAL IN MODELS OF OSTEOSARCOMA. **Guido Bartalena**, Yannick Loosli, Tomaso Zambelli, Roman Muff, Jess Snedeker.

3239-Pos Board #B344
PHOTOBLEACHING FLUCTUATIONS LEAD TO APPARENT NON-EXPONENTIAL DECAY, BUT CAN BE USED TO ESTIMATE NUMBER OF FLUOROPHORES. **Chitra Raju Nayak**, Manfred H. Jericho, Andrew Rutenberg.

3240-Pos Board #B345
TRACKING BACTERIAL SWIMMING NEAR A SOLID OR AIR SURFACE. **Liana Nisimova**, James Bensson, Guanglai Li, Martin Maxey, Jay X. Tang.

3241-Pos Board #B346
THE INTEGRINS A5B1 AND A2B1 ENHANCE CELL MOTILITY. **Claudia Tanja Mierke**, Martin Herrmann, Ben Fabry.

3242-Pos Board #B347
THE GPI-ANCHORED RECEPTOR CD24 INCREASES CANCER CELL INVASION THROUGH ENHANCED CONTRACTILE FORCES. **Claudia Tanja Mierke**, Martina Fellner, Steffen Runz, Peter Altevogt, Ben Fabry.

Intracellular Cargo Transport (Boards #B348-#B357)

3243-Pos Board #B348
LIVE-CELL IMAGING OF COLLOIDAL MESOPOROUS SILICA NANOPARTICLES FOR DRUG DELIVERY: DRUG LOADING, PORE SEALING AND CONTROLLED RELEASE. **Anna M. Sauer**, Axel Schlossbauer, Valentina Cauda, Hanna Engelke, Christian Argyo, Delphine Arcizet, Nadia Ruthardt, Joachim Rädler, Thomas Bein, Christoph Bräuchle.

3244-Pos Board #B349
INTERNALIZATION PATHWAYS AND INTRACELLULAR FATE OF POLY(LYSINE) ANALOGUES. **Zuzana Kadlecova**, Laurence Abrami, Alessandra Griffa, Matthias Geissbühler, Theo Lasser, Florian M. Wurm, F. Gisou van der Goot, Harm-Anton Klok.

3245-Pos Board #B350
GSK-3 REGULATES BIDIRECTIONAL TRANSPORT OF KINESIN-1 DRIVEN CARGOES. **Christina Leidel**, Carole Weaver, Lukasz Szpankowski, Lawrence S. B. Goldstein, George T. Shubeita.

3246-Pos Board #B351
COARSE-GRAINED MODELING OF ORGANELLE MOTILITY IN LIVING CELLS. Kristopher E. Daly, Kyle Lemoi, Yen-Chun Liu, Luis Vidali, **Erkan Tuzel**.

3247-Pos Board #B352
NOVEL MECHANISMS OF CELL UPTAKE IN LIPID-MEDIATED GENE DELIVERY. **Giulio Caracciolo**, Daniela Pozzi, Cristina Marchini, Maura Montani, Augusto Amici, Michelle A. Digman, Susana S. Sanchez, Enrico A. Gratton, Anna Laura Capriotti, Aldo Laganà.

3248-Pos Board #B353
LIPID TRAFFICKING IN NEURONS AND SCHWANN CELLS. **James Matthew Love**, Gunja Dave, Joshua Chetta, Sameer Shah.

3249-Pos Board #B354
MRNA TRANSPORT IN THE PROJECTIONS OF MATURING HIPPOCAMPAL NEURONS. **Gunja Dave**, James Love, Joshua Chetta, Sameer Shah.

3250-Pos Board #B355
MICROTUBULE MOTORS CANNOT COORDINATE BIDIRECTIONAL TRANSPORT OF LIPID DROPLETS IN THE ABSENCE OF CYTOSOLIC COMPONENTS. **Rafael A. Longoria Casasa**, Hayley Manning, George T. Shubeita.

3251-Pos Board #B356
DYNAMIC BEHAVIOR OF INTRACELLULAR VESICLES PROBED WITH TWO-COLOR SINGLE PARTICLE TRACKING. **Craig J. Szymanski**, Christine K. Payne, William H. Humphries IV.

3252-Pos Board #B357 MINORITY BIOPHYSICIST TRAVEL AWARDEE
SUPERRESOLUTION STUDIES TO REVEAL THE INTERACTIONS BETWEEN MOTOR PROTEINS AND INDIVIDUAL CARGOS IN CHLAMYDOMONAS FLAGELLA. **Ziah Dean**, Pamela Duboc, Ahmet Yildiz.

Biomolecular NMR (Boards #B358-#B384)

3253-Pos Board #B358
THE HIS-75-ASP-97 CLUSTER IN PROTEORHODOPSIN: A DNP AND SOLID-STATE NMR STUDY. Franziska Hempelmann, Mirka-Kristin Verhoefen, Soraya Hölper, Lenica Reggie, Johanna Baldus-Becker, Sarah-Anna Fiedler, Andreas Wörner, Thomas Köhler, Josef Wachtveitl, **Clemens Glaubitz**.

3254-Pos Board #B359
STRUCTURAL DYNAMICS OF PHOSPHORYLATED PENTAMERIC PHOSPHOLAMBAN IN LIPID MEMBRANES USING A COMBINATION OF SOLUTION AND SOLID-STATE NMR SPECTROSCOPY. **Raffaello Verardi**, Martin Gustavsson, Nathaniel J. Traaseth, Gianluigi Veglia.

3255-Pos Board #B360
SOLID STATE NMR STUDIES OF LUNG SURFACTANT PROTEIN B FRAGMENT, MINI-B, IN MECHANICALLY ORIENTED LIPID BILAYERS. **Dharamaraju Palleboina**, Michael R. Morrow, Valerie K. Booth.

3256-Pos Board #B361 STUDENT TRAVEL AWARDEE
THE SELECTIVITY FILTER OF THE HERG CHANNEL - NMR STUDY OF ITS STRUCTURE AND INTERACTION WITH MEMBRANES AND DRUGS INVOLVED IN THE LONG QT SYNDROME. **Andrée Gravel**, Alexandre A. Arnold, Érick J. Dufourc, Isabelle Marcotte.

3257-Pos Board #B362
STRUCTURAL STUDIES OF MAMMALIAN DYNACTIN CAP-GLY DOMAIN BY SOLID-STATE NMR. **Si Yan**, Shangjin Sun, Guangjin Hou, John C. Williams, Tatyana Polenova.

3258-Pos Board #B363
CHARACTERIZING RECOMBINANT SPIDER WRAPPING SILK MONOMERS AND FIBERS BY NMR AND AFM. **Marie-Laurence Tremblay**, Lingling Xu, Paul X.-Q. Liu, Jan K. Rainey.

3259-Pos Board #B364
STRUCTURAL ANALYSIS OF THE PF1 SUBUNIT OF THE SIN3S/RPD3S COMPLEX AND ITS IMPLICATIONS IN CHROMATIN TARGETING AND COMPLEX ASSEMBLY. **Senthil Kumar Ganesan**, Tao Xie, Chetan Velagapudi, Yongbo Zhang, Ishwar Radhakrishnan.

3260-Pos Board #B365
STRUCTURE-FUNCTION ANALYSIS OF MRG15, A CHROMATIN-TARGETING PROTEIN INVOVLED IN CELL GROWTH AND AGING. **Tao Xie**, Anand Patel, Arvind Krishnan, Yongbo Zhang, Ishwar Radhakrishnan.

3261-Pos Board #B366
NMR DISSECTION OF THE DETAILED MECHANISM FOR ANTIBIOTIC BINDING TO ASITE RNA. **Jeetender Chugh**, Anette Casiano-Negroni, Hashim M. Al-Hashimi.

3262-Pos Board #B367
ENZYMATIC SYNTHESIS OF SITE-SPECIFIC LABELED NTPS USED FOR *IN VITRO* TRANSCRIPTION OF RNAS TO FACILITATE MULTI-DIMENSIONAL NUCLEAR MAGNETIC RESONANCE SPECTROSCOPIC STUDIES. **Luigi J. Alvarado**, Kwaku Dayie.

3263-Pos Board #B368
MAPPING COL E1 RNA I - RNA II KISSING COMPLEX AND ROM BINDING INTERFACE USING PARAMAGNETIC RELAXATION ENHANCEMENT NMR. **Raviprasad Aduri**, John P. Marino.

3264-Pos Board #B369
EARLY BIOMINEARALIZATION OF MICE BONE STUDIED BY ^{31}P AND ^{13}C SOLID STATE NMR AT DIFFERENT STAGE OF AGE.
Peizhi Zhu, Jiadi Xu, Guisheng Zhao, Michael D. Morris, Ayyalusamy Ramamoorthy, Renny T. Franceschi.

3265-Pos Board #B370
SPECIATION OF ORGANIC PHOSPHORUS IN P-IMMOBILIZING SOILS: A ^{31}P NMR STUDY.
Johan E. Vestergren, Andrea Vincent, Per Persson, Mats Jansson, Juergen Schleucher, Reiner Giesler, Gerhard Gröbner.

3266-Pos Board #B371
STRUCTURAL STUDIES OF AN IMMUNOGLOBULIN-FIBRONECTIN TYPE III DOMAIN TANDEM FROM TITIN. **Andras Czajlik**, Gary Thompson, Ghulam N. Khan, Arnout Kalverde, Steve W. Homans, John Trinick.

3267-Pos Board #B372
INTRINSIC DYNAMICS PRIME CALMODULIN FOR PEPTIDE BINDING: CHARACTERIZING LOWLY POPULATED STATES BY PARAMAGNETIC RELAXATION ENHANCEMENT. **Nicholas J. Anthis**, Marius Clore.

3268-Pos Board #B373
DYNAMICS STUDIES OF HIV-1 CA PROTEIN ASSEMBLIES BY SOLID-STATE MAS NMR SPECTROSCOPY. **Guangjin Hou**, Yun Han, Christopher Suiter, In-Ja L. Byeon, Jinwoo Ahn, Jason Concel, Angela M. Gronenborn, Tatyana Polenova.

3269-Pos Board #B374
CHARACTERIZING THE INTERACTION OF HUMAN CD4 AND THE HIV-1 ACCESSORY PROTEIN VPU USING LIQUID STATE NMR. **Sameer K. Singh**, Luis Möckel, Marc Wittlich, Dieter Willbold, Bernd W. Koenig.

3270-Pos Board #B375
STRUCTURAL STUDIES OF RNASE H DOMAIN TO DEVELOP HIV-1 REVERSE TRANSCRIPTASE INHIBITORS USING SOLUTION NMR. **Lakshmi Menon**, Qingguo Gong, Jinwoo Ahn, Michael A. Parniak, Rieko Ishima.

3271-Pos Board #B376
STUDIES OF HIV-1 GAG PROTEIN ASSEMBLIES BY SOLID-STATE MAS NMR SPECTROSCOPY. **Christopher L. Suiter**, Guangjin Hou, Yun Han, Jinwoo Ahn, Angela Gronenborn, Sherimay Ablan, Eric Freed, Tatyana Polenova.

3272-Pos Board #B377
CHARACTERIZATION OF FUNCTIONAL AND STRUCTURAL DOMAINS IN THE ADAPTOR PROTEIN LMO7 AND THEIR INTERACTIONS WITH PROTEINS AT THE ADHERENS JUNCTIONS. Justin C. Baker, Jun Li, Shannon C. Banning, Pradeep R. Rajasekaran, Janelle M. Owens, Fernando F. Cuadrado, Yuanxiufu Cao, Justin M. Hennings, Mateo C. Houle, Tori L. Nosovitsky, Catherine A. Carney, **Gabriela C. Pérez-Alvarado**.

3273-Pos Board #B378
BACKBONE DYNAMICS STUDIES OF MAMMALIAN DYNACTIN CAP-GLY DOMAIN BY SOLID-STATE NMR. **Si Yan**, Alexander J. Vega, John C. Williams, Tatyana Polenova.

3274-Pos Board #B379
SOLUTION STRUCTURE DETERMINATION OF NORWALK VIRUS 3C-LIKE CYSTEINE PROTEASE. **Daisuke Takahashi**, Yunjeong Kim, Kyeong-Ok Chang, Asokan Anbanandam, Om Prakash.

3275-Pos Board #B380
STRUCTURAL CHARACTERIZATION OF THE ZINC FINGER DOMAIN OF CYTOPLASMIC POLYADENYLATION ELEMENT-BINDING PROTEIN. **Daniel Merkel**, Bryce Hilburn, Sarah Wells, Stephanie Geiser, Haley Hoover, Oluwatobi Ajoku, Brian Lee.

3276-Pos Board #B381
DOMAIN STRUCTURE OF THE MAJOR ALLERGEN OVOMUCOID BY SOLUTION NMR. **Natalie E. Stenzoski**.

3277-Pos Board #B382
SOLUTION STRUCTURE OF A CENTRAL DOMAIN OF THE CONJUGATIVE TRANSFER PROTEIN TRAI. **Nathan T. Wright**, Joel F. Schildbach.

3278-Pos Board #B383
APPLICATION OF MAGNETIC RESONANCE FOR METABOLOMIC INVESTIGATION OF MOLLUSKS. **Andrey P. Tikunov**, Haakil Lee, Michael K. Stoskopf, Jeffrey M. Macdonald.

3279-Pos Board #B384
PARAMAGNETIC CONTRIBUTIONS TO NUCLEAR SPIN-LATTICE RELAXATION IN PROTEINS. **Robert G. Bryant**, Galina Diakova, Yanina Goddard, Jean-Pierre Korb.

Micro and Nanotechnology; Nanopores III (Boards #B385-#B397)

3280-Pos Board #B385
A MULTIPLEXED ELECTROCHEMICAL MICROELECTRODE ARRAY FOR HIGH-THROUGHPUT MEASUREMENT OF QUANTAL EXOCYTOSIS. **Jia Yao**, Kevin D. Gillis.

3281-Pos Board #B386
NANO-SCALE SURFACE TOPOLOGY IMPROVES NEURONAL DEVELOPMENT IN CULTURE. **Ghislain Bugnicourt**, Jacques Brocard, Mariano Bisbal, Nora Collomb, Annie Schweitzer, Catherine Villard.

3282-Pos Board #B387
ADAPTIVE MECHANICALLY CONTROLLED LUBRICATION MECHANISM FOUND IN ARTICULAR JOINTS. **George W. Greene**.

3283-Pos Board #B388
TOWARDS THE WORLD SMALLEST CHEMICAL REACTORS: ON-DEMAND GENERATION AND FUSION OF FEMTOLITER AQUEOUS DROPLETS. **Seung-Yong Jung**, C. Patrick Collier, Scott Retterer.

3284-Pos Board #B389
A COMBINED SURFACE CHEMISTRY / MICROWELL APPROACH FOR TRAPPING SINGLE CELLS ON ELECTROCHEMICAL MICROELECTRODES FOR MEASUREMENT OF QUANTAL EXOCYTOSIS. **Xin (Alice) Liu**, Syed Barizuddin, Wonchul Shin, Cherian J. Mathai, Shubhra Gangopadhyay, Kevin D. Gillis.

3285-Pos Board #B390
MICRO- AND NANOPARTICLE TRANSLOCATION THROUGH A SOLID-STATE MEMBRANE PORE THINNER THAN THEIR DIAMETERS. **Ken Healy**, Matthew Davenport, Sonia E. Letant, Zuzanna S. Siwy.

3286-Pos Board #B391
ELECTRICAL CELLULAR INTERFACE BY NANOELECTRODES. **Chong Xie**, Lindsey Hanson, Carter Lin, Yi Cui, Bianxiao Cui.

3287-Pos Board #B392
NEAR FIELD DETECTION OF BETA-AMYLOID PROTEINS BY THE USE OF OLFACTORY CELLS AND NANO PARTICLES IN A MICROFLUIDIC CHANNEL. **Hee-Kyeong Sung**, Jong-Il Ju, Chang-bum Kim, Jung-Dae Suh, Kwan-Soo Kim, Chul-Ju Chae, Hyo-Bong Hong, Ki-Bong Song.

3288-Pos Board #B393
THE MECHANISMS OF DECREASING VOLTAGE-GATED SODIUM CURRENT BY NANOSECOND ELECTRIC PULSES. **Vasyl Nesin**.

3289-Pos Board #B394
HIGH RESOLUTION SINGLE MOLECULE ANALYSIS USING NANOPORE RECORDING ON MICROELECTRODE CAVITY ARRAYS. **Gerhard Baaken**, Srujan K. Dondapati, Norbert Ankri, Jürgen Rühe, Jan C. Behrends.

3290-Pos Board #B395
BIOPHYSICAL PROPERTIES OF DNA STRANDS ATTACHED INSIDE SINGLE NANOPORES. **Gael H. Nguyen**, Stefan Howorka, Zuzanna Siwy.

3291-Pos Board #B396
AUTOMATED LIPID BILAYER FORMATION FACILITATED BY SOLVENT EXTRACTION. You-Hyo Baek, Joongjin Park, Seunghwan Jeong, Wonyoung Kim, **Tae-Joon Jeon**.

3292-Pos Board #B397
NOISE PROPERTIES OF ION CURRENT IN RECTIFYING NANOPORES. **Matthew Powell**, Ken Healy, Matt Davenport, Sa Niya, Lane Baker, Sonia Letant, Zuzanna Siwy.

Fluorescence Spectroscopy III (Boards #B398-#B405)

3293-Pos Board #B398
TRYPTOPHAN FLUORESCENCE FROM G. WEBER TO THE PRESENT. **Ludwig Brand**.

3294-Pos Board #B399
PROTEIN HYDRATION AND COULPLED WATER-PROTEIN FLUCTUATIONS PROBED BY TRYPTOPHAN. **Dongping Zhong**.

3295-Pos Board #B400
TDSS IN TRP FLUORESCENCE REVEALS MULTIPLE PROTEIN AND SOLVENT RELAXATION MODES. **Dmitri Toptygin**, Thomas B. Woolf, Ludwig Brand.

3296-Pos Board #B401
NONRADIATIVE PROCESSES IN CONSTRAINED TRPS AND MODEL COMPOUNDS. **Mary D. Barkley**.

3297-Pos Board #B402
5-FLUOROTRYPTOPHAN AS FLUORESCENT PROBE TO CHARACTERIZE AN OLIGOMERIC MEMBRANE PROTEIN. **Jaap Broos**.

3298-Pos Board #B403
TIME RESOLVED FLUORESCENCE OF THE SINGLE TRYPTOPHAN IN R61, A DD-CARBOXYPEPTIDASE FROM STREPTOMYCES: CONTRIBUTIONS OF DYNAMICS AND HETEROGENEITY. Abel Jonckheer, Marc De Maeyer, Anton JWG Visser, Nina Visser, Olaf Rolinsky, Jean-Marie Frere, **Yves Engelborghs**.

3299-Pos Board #B404
NON-EXPONENTIAL DECAY: UNDERSTANDING THE CORRELATION OF WAVELENGTH AND LIFETIME CAUSED BY HETEROGENEITY. **Patrik R. Callis**.

3300-Pos Board #B405
ULTRAFAST ("QUASI-STATIC") QUENCHING OF TRP IN PROTEINS AND PEPTIDES. **Jay R. Knutson**, Arianna Biesso, Jianhua Xu.

Computational Methods II (Boards #B406-#B432)

3301-Pos Board #B406
AUTOMATED UMBRELLA SAMPLING SIMULATIONS FOR THE CALCULATION OF MULTIDIMENSIONAL POTENTIALS OF MEAN FORCE. **Wojciech Wojtas-Niziurski**.

3302-Pos Board #B407
A DYNAMIC MODEL OF FURROW INGRESSION DURING CYTOKINESIS. Christopher C. Poirier, Win-Pin Ng, Douglas N. Robinson, **Pablo A. Iglesias**.

3303-Pos Board #B408
MAXWELL RELATIONS FOR SINGLE-DNA EXPERIMENTS: MONITORING PROTEIN BINDING AND DOUBLE-HELIX TORQUE WITH FORCE-EXTENSION MEASUREMENTS. **Houyin Zhang**, John F. Marko.

3304-Pos Board #B409
STRUCTURAL MAPPING OF MHCII-ELUTED PEPTIDES TO THEIR SOURCE PROTEINS: A PRELIMINARY SURVEY OF THE EFFECT OF STRUCTURE ON IMMUNODOMINANCE. **Karen Katrina Manalastas**, Denise Mirano-Bascos, Neil Andrew Bascos, Pablo Manalastas.

3305-Pos Board #B410
A MULTISCALE APPROACH FOR PATH SAMPLING. **Hiroshi Fujisaki**, Motoyuki Shiga, Akinori Kidera.

3306-Pos Board #B411
IN SILICO INVESTIGATION OF A MISSENSE MUTATION IN CLIC2 ASSOCIATED WITH INTELLECTUAL DISABILITY. **Shawn Witham**, Kyoko Takano, Charles Schwartz, Emil Alexov.

3307-Pos Board #B412
AUTOMATION OF THE CHARMM GENERAL FORCE FIELD FOR DRUG-LIKE MOLECULES. **Kenno Vanommeslaeghe**, Jayeeta Ghosh, Narendra K. Polani, Michael Sheetz, Sudhakar V. Pamidighantam, John W. D. Connolly, Alexander D. MacKerell Jr.

3308-Pos Board #B413
FROM SMALL MOLECULES TO MACROMOLECULES: PROGRESS TOWARDS A CHARMM DRUDE POLARIZABLE FORCE FIELD FOR THE NUCLEIC ACIDS. **Christopher M. Baker**, Alexander D. MacKerell Jr.

3309-Pos Board #B414
SOLID-STATE NMR ENSEMBLE DYNAMICS AS A MEDIATOR BETWEEN EXPERIMENT AND SIMULATION. **Taehoon Kim**, Sunhwan Jo, Wonpil Im.

3310-Pos Board #B415
AN INTEGRATIVE APPROACH USING NUMERICAL MODELS TO BRIDGE SPATIOTEMPORAL INTERACTIONS OF SUBCELLULAR PROCESSES: CELL SPREADING. **Yannick Loosli**, Reto Luginbuehl, Jess Snedeker.

3311-Pos Board #B416
DEVELOPING A FAST POLARIZABLE FORCE FIELD FOR BIOPHYSICAL SIMULATIONS. **George Kaminski**.

3312-Pos Board #B417
COMPARTMENTAL ANALYSIS OF INTRAVAGINAL HIV TRANSPORT AND NEUTRALIZATION BY MICROBICIDES. **David F. Katz**, Jason A. Chen.

3313-Pos Board #B418
DERIVING EFFECTIVE FORCE AND MOMENT DUE TO PAIR-WISE INTERACTIONS IN COARSE GRAIN SIMULATIONS. **Mohammad Poursina**, Kurt S. Anderson, Jeremy Laflin.

3314-Pos Board #B419
RELATIONSHIP OF THE 2′-HYDROXYL ORIENTATION IN RNA TO WATSON-CRICK BASE PAIR OPENING. **Elizabeth Denning**, U. Deva Priyakumar, Alexander D. MacKerell Jr.

3315-Pos Board #B420
DEVELOPMENT OF THE CHARMM POLARIZABLE FORCE FIELD FOR POLYPEPTIDES BASED ON DRUDE OSCILLATORS. **Pedro E M Lopes**, Xiao Zhu, Albert Lau, Benoit Roux, Alexander D. MacKerell Jr.

3316-Pos Board #B421
NO NEW ISLET FORMATION AFTER NEONATAL ISLET FISSION. **Junghyo Jo**, German Kilimnik, Abraham Kim, Manami Hara, Vipul Periwal.

3317-Pos Board #B422
IN SILICO TITRATION OF BIOMOLECULES: EXPLICIT SOLVENT CONSTANT PH MOLECULAR DYNAMICS. **Serena Donnini**, Florian Tegeler, Gerrit Groenhof, Helmut Grubmüller.

3318-Pos Board #B423
ESTIMATING THE ORIENTATIONAL ENTROPY OF WATER AT PROTEIN INTERFACES. **Stephanus M. Fengler**, Helmut Grubmüller.

3319-Pos Board #B424
CHARGE SEPARATION AND ISOLATION IN WATER AND ICE PARTICLES ON STRONG IMPACTS. **F. Wiederschein**, E. Vöhringer-Martinez, A. Beinsen, R. Srama, S. Kempf, F. Postberg, B. Abel, H. Grubmüller.

3320-Pos Board #B425
TOWARD A UNIFIED MODEL OF MOLECULAR CROWDING: A REGRESSION APPROACH TO PREDICT EQUILIBRIA AND KINETICS OF ASSEMBLY SYSTEMS IN CROWDED ENVIRONMENTS. **Byoungkoo Lee**, Philip R. LeDuc, Russell Schwartz.

3321-Pos Board #B426
A STRUCTURALLY FLEXIBLE PROTEIN BACKBONE FOR THE MARTINI COARSE GRAINED FORCE FIELD. **Xavier Periole**, Siewert-Jan Marrink, Peter Tieleman.

3322-Pos Board #B427
MOLECULAR SIMULATIONS OF SEQUENCE-SPECIFIC ASSOCIATION OF TRANSMEMBRANE PROTEINS IN LIPID BILAYERS. **Manolis Doxastakis**, Lorant Janosi, Anupam Prakash.

3323-Pos Board #B428
LOW ORDER PHYSICAL MULTIPOLES. **Charles J. Baker**, Ramu Anandakrishnan, Alexey Onufriev.

3324-Pos Board #B429
MULTI-SCALE SIMULATIONS OF PROTEINS IN DIFFERENT SOLVENT CONDITIONS. **Dirar Homouz**, Antonios Samiotakis, Margaret Cheung.

3325-Pos Board #B430
MACROMOLECULAR CROWDING EFFECTS ON MULTIPROTEIN BINDING EQUILIBRIA: MOLECULAR SIMULATION AND THEORY. Jonathan Rosen, Young Chan Kim, **Jeetain Mittal**.

3326-Pos Board #B431
CLASSIFICATION OF PROJECTIONS IN SINGLE PARTICLE ELECTRON MICROSCOPY USING COMMON LINE SIMILARITY MEASURE. **Hstau Y. Liao**, Robert Langlois, Joachim Frank.

3327-Pos Board #B432
MONTE CARLO SIMULATIONS OF ABSOLUTE BINDING FREE ENERGY OF TARGETED NANOCARRIERS TO CELL SURFACES. **Jin Liu**, Blaine Zern, Portonovo Ayyaswamy, David Eckmann, Vladimir Muzykantov, Ravi Radhakrishnan.

Imaging and Optical Microscopy III (Boards #B433-#B458)

3328-Pos Board #B433
CHARACTERIZATION OF BINDING AFFINITY AND EPITOPE DYNAMICS OF ANTI-HIV-1 ANTIBODIES. **Meron Mengistu**, Krishanu Ray, Joseph R. Lakowicz, Anthony L. DeVico.

3329-Pos Board #B434
AN IMPROVED METHOD FOR STUDYING SINGLE PROTEINS TRAPPED IN LIPID VESICLES. **Claudiu C. Gradinaru**.

3330-Pos Board #B435
IN VIVO STRUCTURE OF THE E. COLI FTSZ-RING REVEALED BY PHOTOACTIVATED LOCALIZATION MICROSCOPY (PALM). Guo Fu, Tao Huang, Jackson Buss, **Carla Coltharp**, Zach Hensel, Jie Xiao.

3331-Pos Board #B436
ASSESSING THE CELLULAR UPTAKE PATHWAY FOR POLYLYSINE ANALOGUES USING TRIPLET LIFETIME IMAGING. **Matthias Geissbuehler**, Zuzana Kadlecova, Iwan Märki, Mattia Matasci, Dimitri Van De Ville, Harm-Anton Klok, Theo Lasser.

3332-Pos Board #B437
CORRELATIVE EFTEM, STEM AND FLUORESCENCE MICROSCOPY AS A TOOL FOR CHROMATIN BIOLOGY. **Maria A. Aronova**, Alioscka A. Sousa, Guofeng Zhang, Michael J. Kruhlak, Elissa P. Lei, Richard D. Leapman.

3333-Pos Board #B438
DOMINANT VINCULIN BINDING ANGLE IN PODOSOMES REVEALED BY HIGH RESOLUTION OPTICAL MICROSCOPY. **Susan Cox**, Marie Walde, James Monypenny, Rainer Heintzmann, Gareth Jones.

3334-Pos Board #B439
IMAGING FLUORESCENCE CROSS-CORRELATION SPECTROSCOPY AS A TOOL TO STUDY CELL-MEMBRANE ORGANIZATION. **Jagadish Sankaran**, Nirmalya Bag, Thorsten Wohland.

3335-Pos Board #B440
PROBING ORIENTATIONAL ORDER OF MHC CLASS I PROTEIN AND LIPIDS IN CELL MEMBRANES BY FLUORESCENCE POLARIZATION-RESOLVED MICROSCOPY IMAGING. **Alla Kress**, Hubert Ranchon, Patrick Ferrand, Hervé Rigneault, Sophie Brasselet, Tomasz Trombik, Hai-Tao He, Didier Marguet.

3336-Pos Board #B441
A COMBINED CONFOCAL-TOTAL INTERNAL REFLECTION FLUORESCENCE (TIRF) SINGLE-CELL MICROSCOPY INVESTIGATION OF CEACAM1 DYNAMICS. **Laura N. Poloni**, Christopher M. Yip.

3337-Pos Board #B442
FOLLOWING ACTIN FIBERS IN 3D DURING CELL MIGRATION IN COLLAGEN MATRICES. **Michelle A. Digman**, Chi-Li Chiu, Jose S. Aguilar, Enrico Gratton.

3338-Pos Board #B443
SUPER-RESOLUTION IMAGING OF CHROMOSOMAL DNA IN CELLS. **Paul D. Simonson**, Eli Rothenberg, Paul R. Selvin.

3339-Pos Board #B444
INVESTIGATION OF LYSOSOMES AS ENZYME STORAGE VESICLES USING SINGLE PARTICLE TRACKING FLUORESCENCE MICROSCOPY. **William H. Humphries IV**, Christine K. Payne.

3340-Pos Board #B445
SUPERRESOLUTION IMAGING OF INTACT MICROBIAL COMMUNITIES REVEALS MOLECULAR ARCHITECTURE OF BIOFILM DEVELOPMENT AND BACTERIAL ORGANIZATION. **Veysel Berk**, Nicholas Fong, Graham Dempsey, Omer Develioglu, Xiaowei Zhuang, Fitnat Yildiz, Steve Chu.

3341-Pos Board #B446
3D TRACKING OF SINGLE FLUORESCENT PARTICLES WITH SUB-MILLISECOND AND NANOMETER RESOLUTION. **Joerg Bewersdorf**, Manuel F. Juette.

3342-Pos Board #B447
FLUORINATED MEMBRANE POTENTIAL PROBES. **Ping Yan**, Adrian Negrean, Huibert D. Mansvelder, Leslie M. Loew.

3343-Pos Board #B448
COMBINING DNA NANOTECHNOLOGY AND FLUORESCENCE POLARIZATION MICROSCOPY TO DETERMINE THE ORIENTATION OF DNA BOUND FLUOROPHORES. **Deborah K. Fygenson**, Christoph Schneider, Hunter Banks.

3344-Pos Board #B449
3D VISUALIZATION OF MITOCHONDRIAL NETWORK AND NUCLEOIDS OF MT DNA IN INS1E AND HEPG2 CELLS AT 30 NM RESOLUTION BY BIPLANE FPALM MICROSCOPY. Andrea Dlaskova, Jitka Santorova, Michael J. Mlodzianoski, Tomas Spacek, Katarina Smolkova, Jan Tauber, Joerg Bewersdorf, **Petr Jezek**.

3345-Pos Board #B450
PHOTOACTIVATABLE HEMICYANINE CHROMOPHORES AS FLUORESCENT LABLES. **Na Liu**, Stacy Wilson, Leslie M. Loew.

3346-Pos Board #B451
NUCLEAR RECEPTOR (PXR), LIGAND AND CO-ACTIVATOR INTERACTIONS MEASURED BY TOTAL INTERNAL REFLECTION FLUORESCENCE MICROSCOPY. **Punya Navaratnarajah**, Bridgett L. Steele, Matthew R. Redinbo, Nancy L. Thompson.

3347-Pos Board #B452
MEASURING SURFACE BINDING THERMODYNAMICS AND KINETICS BY USING TOTAL INTERNAL REFLECTION WITH FLUORESCENCE CORRELATION SPECTROSCOPY: PRACTICAL CONSIDERATIONS. **Xiang Wang**, Punya Navaratnarajah, Nancy L. Thompson.

3348-Pos Board #B453
HYPERSPECTRAL RAMAN AND FLUORESCENCE MICROSCOPY OF INDIVIDUAL ALGAL CELLS FOR BIOCHEMCIAL ANALYSIS. **Aaron M. Collins**, Howland D.T. Jones, Thomas E. Beechem III, Ryan W. Davis, Qiang Hu, Anthony E. McDonald, Jerilyn A. Timlin.

3349-Pos Board #B454
ANALYZING Aβ AGGREGATES WITH HIGH RESOLUTION MICROSCOPY. **Pia Ziβmann**, Aileen Susanne Funke, Stephanie Grabowski, Stefan Marawske, Lei Wang, Markus Richert, Ralf Kühnemuth, Eva Birkmann, Claus Seidel, Dieter Willbold.

3350-Pos Board #B455
REAL-TIME HYPERSPECTRAL IMAGING OF MULTIPLE BIOSENSORS IN PANCREATIC BETA CELLS. **Amicia D. Elliott**, Liang Gao, Alessandro Ustione, Tomasz S. Tkaczyk, David W. Piston.

3351-Pos Board #B456
IN VIVO FLUORESCENCE IMAGING OF BLOOD FLOW IN MOUSE PANCREATIC ISLETS. **Kurt W. Short**, W. Steve Head, Michael McCaughey, David W. Piston.

3352-Pos Board #B457
SUPERRESOLUTION OPTICAL MICROSCOPY OF ISOLATED CARDIAC MITOCHONDRIAL PROTEINS. **Harpreet Singh**, Pedro Felipe Gardeazábal Rodríguez, Rong Lu, Jean Chrisostome Bopassa, Yong Wu, Ligia Toro, Enrico Stefani.

3353-Pos Board #B458
ZERO-MODE WAVEGUIDES: A POWERFUL TOOL FOR SINGLE-MOLECULE OPTICAL STUDIES. **Zhuangxiong Huang**, Serge Donkers, Nynke H. Dekker.

Biotechnology & Bioengineering II (Boards #B459-#B482)

3354-Pos Board #B459
RECOMBINANT MG53 BINDS LIPID SIGNALS ON DAMAGED CELL MEMBRANES TO INCREASE MEMBRANE REPAIR CAPACITY. **Noah Weisleder**, Norio Takizawa, PeiHui Lin, Tao Tan, Pinjung Chen, Rosalie Yan, Xiaoli Zhao, Moonsun Hwang, Hiroshi Takeshima, Jianjie Ma.

3355-Pos Board #B460
MEASUREMENT OF PLATELET ACTIVATION WITH ANTI-P-SELECTIN COATED MAGNETIC MICROPARTICLES. **Loes van Zijp**, Arthur M. de Jong, Nona Jongmans, Thijs C. van Holten, Mark Roest, Menno W.J. Prins.

3356-Pos Board #B461
HIGHLY PARALLEL PLANAR PATCH CLAMP FOR ION CHANNEL SCREENING. **Andrea Brüggemann**, Claudia Haarmann, Cecilia Farre, Juergen Steindl, Christian Patzig, Timo Stengel, Christian Grad, Johannes Stiehler, Michael George, Niels Fertig.

3357-Pos Board #B462
PIEZOELECTRIC PLANAR PATCH CLAMP SYSTEM FOR MECHANICALLY ACTUATING ION CHANNELS. **Eric Stava**, Minrui Yu, Hyuncheol Shin, Jonathan Rodriguez, Robert H. Blick.

3358-Pos Board #B463
MULTISUCTION ELECTRODE ARRAYS TO INVESTIGATE MULTI-SENSORY INTEGRATION IN NEURAL TISSUE. **John M. Nagarah**, Pieter Laurens Baljon, Daniel A. Wagenaar.

3359-Pos Board #B464
DUAL MICROPORES IN GLASS SUBSTRATES FOR ION CHANNEL AND GAP JUNCTION RECORDING. **Brandon Bruhn**, Stefan Schuhladen, Ran An, Michael Mayer.

3360-Pos Board #B465
A DEVICE TO MEASURE LIGAND- OR VOLTAGE-GATED CHANNELS SIMULTANOUSLY IN 384 WELLS. Xin Jiang, Trisha Tutana, David Yamane, Yuri Osipchuk, Edward Verdonk, **James Costantin**.

3361-Pos Board #B466
DEVELOPMENT OF A GPCR BASED ELECTROPHYSIOLOGICAL BIOSENSOR. **Masato Suzuki**, Shigeki Kiyonaka, Tomohiro Numata, Ken Shimono, Hiroaki Oka, Yasuo Mori.

3362-Pos Board #B467
LOWERING SERIES RESISTANCE IN WHOLE-CELL PATCH CLAMP EXPERIMENTS USING THE PUSHPEN PATCH CLAMP ELECTRODE. **Samsoon Inayat**, Lawrence H. Pinto, John B. Troy.

3363-Pos Board #B468
LIMITATIONS OF EQUIVALENT CIRCUIT MODELS IN DATA-DRIVEN SIMULATION OF THE NEURON-ELECTRODE INTERFACE. **Vaibhav Thakore**, Peter Molnar, James J. Hickman.

3364-Pos Board #B469
CARDIAC EXCITATION-CONTRACTION COUPLING PROTEINS: A 3D SPATIAL ANALYSIS. **Evan I. Blumgart**, Isuru D. Jayasinghe, Michael J. O'Sullivan, Christian Soeller, Cameron G. Walker, Vijay Rajagopal.

3365-Pos Board #B470
MECHANISMS UNDERLYING PULSED INFRARED STIMULATION OF CARDIOMYOCYTES. **Gregory M. Dittami**, Kenneth W. Spitzer, Suhrud M. Rajguru, Richard A. Lasher, Robert W. Hitchcock, Richard D. Rabbitt.

3366-Pos Board #B471
MACROMOLECULAR CROWDING FACILITATES ADIPOGENIC MICROENVIRONMENTS FOR HUMAN MESENCHYMAL STEM CELLS. **Felicia C. Loe**, Krystyn Van Vliet, Michael Raghunath.

3367-Pos Board #B472
EFFECT OF PDMS NANOPATTERNED SUBSTRATES ON EMBRYONIC STEM CELLS DIFFERENTIATION INTO NEURONAL LINEAGE. **Elisa Migliorini**, Gianluca Grenci, Jelena Ban, Alessandro Pozzato, Maria Elisabetta Ruaro, Massimo Tormen, Vincent Torre, Marco Lazzarino.

3368-Pos Board #B473
WNT-CATENIN SIGNALING SYSTEM FUNCTIONS IN EMBRYOID BODIES AGGREGATED FROM HUMAN EMBRYONIC STEM CELL. **Xuehong Xu**, MengMeng Xu, Xunzhang Chen, Odell Jones, Harry Davis, Shangen Zheng, Joseph Bryant.

3369-Pos Board #B474
INTERFACING THREE-DIMENSIONAL CURVED STRUCTURES AND CELLULAR ADHESION. **Mary E. Wilson**, Nithyanand Kota, Burak O. Ozdoganlar, Yadong Wang, Donna B. Stolz, Philip R. LeDuc.

3370-Pos Board #B475
HYDRODYNAMIC TRAP FOR SINGLE CELLS AND MICRO- AND NANOPARTICLES. **Melikhan Tanyeri**, Eric M. Johnson-Chavarria, Charles M. Schroeder.

3371-Pos Board #B476
A PREDICTED MECHANISM FOR BIOLOGICAL EFFECTS OF RADIO-FREQUENCY ELECTRO-MAGNETIC FIELDS: PIEZOELECTRIC RECTIFICATION. **William J. Bruno**.

3372-Pos Board #B477
PHOTOTHERMAL PORATION OF CELLS USING CARBON NANOPARTICLES. **Ling Gu**, Vijayalakshmi Varadarajan, Ali Koymen, Samarendra Mohanty.

3373-Pos Board #B478
ANALYSIS OF SINGLE CELL METABOLIC BEHAVIOR IN CONTROLLED AND HIGH THROUGHPUT MICROFLUIDIC CULTURE ARRAY. **Qiong Pan**.

3374-Pos Board #B479
MICROFLUIDIC-BASED TRAP FOR SINGLE CELL MICROMANIPULATION AND ANALYSIS. **Eric M. Johnson-Chavarria**, Utsav Agrawal, Melikhan Tanyeri, Charles M. Schroeder.

3375-Pos Board #B480
RETRIEVAL OF A METABOLITE FROM CELLS WITH POLYELECTROLYTE MICROCAPSULES. Studer Deborah, Raghavendra Palankar, Sebastian Springer, **Mathias Winterhalter**.

3376-Pos Board #B481
UV LASER PATTERNING OF VARIOUS POLYMERS FOR BIOCOMPATIBILITY CONTROL OF CHONDROCYTE ADHESION AND DIFFERENTIATION GRADE. **Marc Fahrner**, Bettina Reisinger, Sergii Yakunin, Christoph Romanin, Johannes Heitz.

3377-Pos Board #B482
ANALYZING THE MORPHOLOGY OF 3T3 FIBROBLASTS IN MICROENVIRONMENT. **Keng-hui Lin**, Wei-jung Hong, Wan-jung Lin, David Camarillo, Daniel Jones.

3378-Pos Board #B483
LOW ENERGY LASER LIGHT (632.8 NM) SUPPRESSES AMYLOID-BETA PEPTIDE-INDUCED OXIDATIVE AND INFLAMMATORY RESPONSES IN ASTROCYTES. **Xiaoguang Yang**, Sholpan Askarova, Wenwen Sheng, JK Chen, Albert Y. Sun, Grace Y. Sun, Gang Yao, James C-M Lee.

Membrane Structure III (Boards #B484-#B507)

3379-Pos Board #B484
THE EFFECTS OF LONG-CHAIN BASE METHYLATIONS ON CERAMIDE MOLECULAR PROPERTIES IN BILAYER MEMBRANES. **Terhi Maula**, Mayuko Kurita, Shou Yamaguchi, Tetsuya Yamamoto, Shigeo Katsumura, J. Peter Slotte.

3380-Pos Board #B485
PHOSPHOLIPID HEADGROUP CHARGE MODIFIES CONDENSING EFFECT OF GANGLIOSIDES ON LIPID FILMS. Karlina Kauffman, Matthew T. Davidson, **Shelli L. Frey**.

3381-Pos Board #B486
DISACCHARIDES AND MONOSACCHARIDES EXERT CONTRASTING EFFECTS ON THE LAMELLAR-HEXAGONAL PHASE TRANSITION. Thomas S. Wilhlem, Rachel R. Boerner, **Paul E. Harper**.

3382-Pos Board #B487
STEROL AFFINITY FOR GLYCOSPHINGOLIPID CONTAINING BILAYER MEMBRANES - EFFECT OF SPHINGOLIPID STRUCTURE. **Y. Jenny E. Isaksson**, Max Lönnfors, Pia-Maria Grandell, Thomas K. M. Nyholm, J. Peter Slotte.

3383-Pos Board #B488
INVESTIGATING THE MOLECULAR ORDER OF MIXURES OF POLYUNSATURATED FATTY ACIDS WITH CHOLESTEROL. **Iain M. Braithwaite**, James H. Davis.

3384-Pos Board #B489
IN SITU MONITORING OF STRUCTURAL CHANGES IN MODEL MEMBRANES UPON CHOLESTEROL DEPLETION VIA X-RAY DIFFRACTION. **Kathleen D. Cao**, Luka Pocivavsek, Niels Holten-Andersen, Stephanie A. Harmon, Mati Meron, Binhua Lin, Ka Yee C. Lee.

3385-Pos Board #B490
THE MAXIMUM SOLUBILITY OF CHOLESTEROL IN POPC/POPE LIPID MIXTURES. **Serkan Balyimez**, Soyeun Park, Juyang Huang.

3386-Pos Board #B491
ORIENTATION OF TIE-LINES IN THE PHASE DIAGRAM OF DOPC:DPPC:CHOLESTEROL MOLEL BIOMEMBRANES. Pradeep Uppamoochikkal, Stephanie Tristram-Nagle, **John F. Nagle**.

3387-Pos Board #B492
LIPID AREAS OBTAINED FROM THE SIMULTANEOUS ANALYSIS OF NEUTRON AND X-RAY SCATTERING. **Norbert Kucerka**, Mu-Ping Nieh, John Katsaras.

3388-Pos Board #B493
CARDIOLIPIN, A KEY COMPONENT TO MIMIC THE E. COLI BACTERIAL MEMBRANE IN MODEL SYSTEM MEMBRANES. **Sílvia Lopes**, Cristina Neves, Peter Eaton, Paula Gameiro.

3389-Pos Board #B494
BIOENERGETICS EXPLAINS THE STRUCTURES OF MEMBRANE LIPIDS: CHOLESTEROL, PLANT STEROLS, UNUSUAL FATTY ACID CHAINS AND POLYISOPRENES. **Thomas H. Haines**.

3390-Pos Board #B495
MATERIAL PROPERTIES OF MATRIX LIPIDS DETERMINE CONFORMATION AND INTERMOLECULAR REACTIVITY OF A DIACETYLENIC PHOSPHATIDYLCHOLINE IN THE LIPID BILAYER. Anu Puri, Hyunbum Jang, Amichai Yavlovich, Alex Haber, Athar M. Masood, Timothy D. Veenstra, Ulrich Baxa, Ruth Nussinov, **Robert Blumenthal**.

3391-Pos Board #B496
SANS INVESTIGATION OF THE RESPONSE OF DMPC-DMPG LIPID BILAYERS TO MEMBRANE-ACTIVE PEPTIDES. **Shuo Qian**, William T. Heller.

3392-Pos Board #B497 MINORITY BIOPHYSICIST TRAVEL AWARDEE
INCLUSION OF MENAQUINONE IN LIPID MEMBRANES DECREASES SUSCEPTIBILITY TO ANTIMICROBIAL PEPTIDES. **Julia Nepper**.

3393-Pos Board #B498
IN VIVO 2H NMR STUDY OF THE ACTION OF ANTIBACTERIAL AGENTS ON ESCHERICHIA COLI MEMBRANES. **Catherine Tardy-Laporte**, Alexandre A. Arnold, Isabelle Marcotte.

3394-Pos Board #B499
REGULATION OF ANTIMICROBIAL PEPTIDE ACTIVITY THROUGH LIPID CHAIN ORDER. **Diego A. Ramirez**, Daniel E. Otzen, Chad Leidy.

3395-Pos Board #B500
LIPID BILAYERS OF ESTER-MODIFIED LIPIDS. **Diana Y. Villanueva**, Joseph B. Lim, Jeffery B. Klauda.

3396-Pos Board #B501
LIPID-SOLUBLE HYDROQUINONE MODIFICATIONS INDUCED ON MEMBRANES. **Sergio S. Funari**, Vivian Rebbin, Liliana Marzorati, Claudio Di Vitta.

3397-Pos Board #B502
N-3 POLYUNSATURATED FATTY ACIDS DISRUPT MICRON AND NANOMETER SCALE NON-RAFT ORGANIZATION BY INCREASING CELL SIZE AND MINIMIZING MOLECULAR INTERACTIONS WITH SURROUNDING RAFTS. **Benjamin Drew Rockett**, Andrew Franklin, Mitchel Harris, Heather Teague, Justin Williams, Stephen R. Wassall, Andrew H. Nguyen, Benjamin L. Stottrup, Saame Raza Shaikh.

3398-Pos Board #B503
EPA AND DHA INTERACT DIFFERENTIALLY WITH CHOLESTEROL: SOLID STATE ^{2}H NMR OF PUFA-CONTAINING PHOSPHOLIPIDS IN MIXTURES WITH LIPID RAFT MOLECULES. **Justin A. Williams**, Shawn E. Batten, M. Alan McCabe, William Stillwell, Saame Raza Shaikh, Stephen R. Wassall.

3399-Pos Board #B504
ROLE OF PHOSPHOLIPID HEAD GROUPS IN SILVER NANOPARTICLES INTERACTION WITH MEMBRANES. **Ramakrishnan Parthasarathi**, S Gnanakaran.

3400-Pos Board #B505
APPLICATION OF NEUTRON DIFFRACTION FOR LOCALIZATION OF SPECIFICALLY DEUTERATED PENETRATION ENHANCERS IN ORIENTED STRATUM CORNEUM MODEL MEMBRANES. **Tanja Engelbrecht**, Thomas Hauss, Bodo Dobner, Reinhard N. Neubert.

3401-Pos Board #B506
THE EFFECTS OF SUSTAINED HYDROSTATIC PRESSURE ON HUMAN BLADDER SMOOTH MUSCLE CELLS GROWN ON POLYMER SCAFFOLDS. **Hana Hanaee Ahvaz**, Hamid Mobasheri, Mohamad Soleimani.

3402-Pos Board #B507
PULMONARY SURFACTANT MEMBRANES OF HIBERNATING GROUND SQUIRRELS POSSESS INCREASED FLUIDITY BUT ARE CAPABLE OF MAINTAINING AN ORDERED MEMBRANE STRUCTURE AT LOW TEMPERATURES. **Lakshmi N M Suri**, Lynda McCaig, Victoria Picardi, Ruud Veldhuizen, James Staples, Fred Possmayer, Jesus Perez-Gil, Sandra Orgeig.

Membrane Dynamics & Bilayer Probes II (Boards #B508-#B526)

3403-Pos Board #B508
RAFT-LIKE PHASE COEXISTENCE REVEALED BY SOLID-STATE CARBON-13 SEPARATED LOCAL FIELD MAS NMR. **Avigdor Leftin**, Klaus Beyer, Michael F. Brown.

3404-Pos Board #B509
FIRST OBSERVATION OF DYNAMICS IN LIPID MULTILAYERS USING X-RAY PHOTON CORRELATION SPECTROSCOPY (XPCS). **Yicong Ma**, Gang Chen, Curt DeCaro, Justin Berry, Mark Servantes, Lobat Tayebi, Zhang Jiang, Suresh Narayanan, Alec Sandy, Hyunjung Kim, Atul Parikh, Laurence Lurio, Sunil Sinha.

3405-Pos Board #B510
ORGANIZATION AND DYNAMICS OF CHOLESTEROL CRYSTALLINE DOMAINS USING EPR SPIN-LABELING. **Laxman Mainali**, Marija Raguz, Witold K. Subczynski.

3406-Pos Board #B511
DISCRIMINATION AND CHARACTERIZATION OF CHOLESTEROL CRYSTALLINE DOMAINS USING EPR SPIN-LABELING: APPLICATION TO LENS LIPID MEMBRANES. **Laxman Mainali**, Marija Raguz, Witold K. Subczynski.

3407-Pos Board #B512
CHOLESTEROL TRANSPORT IN MODEL LIPID MEMBRANES. **Sumit Garg**, Lionel Porcar, Paul Butler, Francisco Castro-Roman, Ursula Perez-Salas.

3408-Pos Board #B513
UNIQUE CHOLESTEROL TRANSPORT BEHAVIOR IN PHOSPHOSERINE VESICLES: A SMALL ANGLE NEUTRON SCATTERING STUDY. **Sumit Garg**, Lionel Porcar, Paul Butler, Ursula Perez-Salas.

3409-Pos Board #B514
FLUOROGENIC-ANTIOXIDANTS: NOVEL PROBES FOR VISUALIZING REACTIVE OXYGEN SPECIES IN THE LIPID MEMBRANES OF LIVE CELLS. Katerina Krumova, **Gonzalo Cosa**.

3410-Pos Board #B515
RELATIONSHIPS BETWEEN BILAYER PHASE AND EQUILIBRATION RATES OF PATMAN AND LAURDAN. **Hannabeth A. Franchino**, John D. Bell.

3411-Pos Board #B516
FLUORESCENT CORRELATION SPECTROSCOPY AND RASTER IMAGE CORRELATION SPECTROSCOPY AS A TOOL TO MEASURE DIFFUSION IN THE HUMAN EPIDERMIS. **Jonathan Brewer**, Maria Bloksgaard, Jakub Kubiak, Luis Bagatolli.

3412-Pos Board #B517
CONCENTRATION DEPENDENT MEMBRANE ANCHOR COLOCALIZATION STUDY BY FLUORESCENCE CROSS-CORRELATION SPECTROSCOPY IN LIVE CELLS. **Sara B. Triffo**, Hector H. Huang, Adam W. Smith, Jay T. Groves.

3413-Pos Board #B518
DYNAMICS OF RED BLOOD CELLS AND VESICLES IN MICROCHANNELS OF OSCILLATING WIDTH. **Thomas Franke**, Susanne Braunmueller, Schmid Lothar.

3414-Pos Board #B519
MODULATION OF THE SOLID-ORDERED/LIQUID-DISORDERED MELTING TEMPERATURE IN STAPHYLOCOCCUS AUREUS DURING BIOFILM FORMATION. **Hector J. Ocampo Ariza**, Johanna Chavez, Maria F. Contreras, Natalia Rodriguez, Catalina Arevalo, Chad Leidy.

3415-Pos Board #B520
OUTER MEMBRANE PROTEIN DYNAMICS IN E.COLI. **Joseph Goose**, Mark S. P. Sansom.

3416-Pos Board #B521
INFLUENCE OF BORNA DISEASE VIRUS MATRIX PROTEIN ON MODEL MEMBRANES INVESTIGATED BY MOLECULAR DYNAMICS SIMULATIONS. **Bjoern E. S. Olausson**, Alexander Vogel.

3417-Pos Board #B522
DYNAMICS OF MULTICOMPONENT LIPID MEMBRANES AT LONG LENGTH AND TIME SCALES: DOMAIN GROWTH, RHEOLOGY, AND SCALING LAWS. **Brian A. Camley**, Frank L.H. Brown.

3418-Pos Board #B523
PEPTIDE TRANSFER ENERGETICS FROM DIRECT WATER-TO-MEMBRANE PARTITIONING SIMULATIONS. **Martin B. Ulmschneider**.

3419-Pos Board #B524
ASSESSING PERTURBATIONS OF A FLUORESCENT LIPID IN A DPPC BILAYER WITH MOLECULAR DYNAMICS. **David Ackerman**, Jonathan Amazon, Fred Heberle, Gerald Feigenson.

3420-Pos Board #B525
SELF-DISTRIBUTION OF DYE AND ISOFLURANE IN THE DPPC BILAYER. Brock Cardon, Eric Melonakos, **Neil Brasfield**, IlHeon Ha, John D. Bell, David D. Busath.

3421-Pos Board #B526
A COMPUTATIONAL STUDY OF GEL NUCLEATION IN LIPID BILAYER. **Zun-Jing Wang**, Markus Deserno.

Membrane Fusion II (Boards #B527-#B545)

3422-Pos Board #B527
MECHANISMS OF ENTRY OF VACCINIA VIRUS INTO CELLS STUDIED BY PHOTOSENSITIZED LABELING. **Mathias Viard**, Bernard Moss, Robert Blumenthal.

3423-Pos Board #B528
SHALLOW BOOMERANG-SHAPED INFLUENZA HEMAGGLUTININ G13A MUTANT STRUCTURE PROMOTES LEAKY MEMBRANE FUSION. **Alex Liqi Lai**, Lukas K. Tamm.

3424-Pos Board #B529
STRUCTURE AND FUNCTION OF THE FUSION LOOP FROM EBOLAVIRUS GP2. **Sonia M. Gregory**, Erisa Harada, Binyong Liang, Sue Delos, Judith M. White, Lukas K. Tamm.

3425-Pos Board #B530
ASSOCIATION OF TRANSMEMBRANE HELICES IN VIRAL FUSION PEPTIDES SUGGESTS A PROTEIN-CENTRIC MECHANISM OF MEMBRANE FUSION. **Giacomo Fiorin**, Jason E. Donald, Yao Zhang, Vincenzo Carnevale, David R. Slochower, Feng Gai, Michael L. Klein, William F. DeGrado.

3426-Pos Board #B531
HIGH-RESOLUTION SECONDARY AND TERTIARY STRUCTURE OF THE MEMBRANE-ASSOCIATED HIV FUSION PEPTIDE BY ITSELF AND IN LARGE GP41 ECTODOMAIN CONSTRUCTS: CORRELATION BETWEEN BETA SHEET REGISTRY, MEMBRANE INSERTION AND PERTURBATION, AND FUSION CATALYSIS. Scott D. Schmick, Erica P. Vogel, Kaitlin M. Young, **David P. Weliky**.

3427-Pos Board #B532
INDIVIDUAL VESICLE-VESICLE AND VESICLE-PLANAR BILAYER FUSION EVENTS MEDIATED BY DNA. **Bettina van Lengerich**, Bob J. Rawle, Poul Martin Bendix, Minsub Chung, Steven G. Boxer.

3428-Pos Board #B533
DNA-MACHINERY FOR DELIVERING MEMBRANE PROTEINS INTO FREE STANDING LIPID BILAYERS. **Minsub Chung**, Poul Martin Bendix, Namdoo Kim, Steven G. Boxer.

3429-Pos Board #B534
INTERACTION FORCES BETWEEN MODEL MYELIN MEMBRANES. **Xavier Banquy**, Kai Kristianson, Dong Woog Lee, Joan Boggs, Cynthia Husted, Younjin Min, Joe Zasadzinski, Jacob Israelachvili.

3430-Pos Board #B535
THE ACCELERATED LATE ADSORPTION OF PULMONARY SURFACTANT. **Ryan W. Loney**, Shankar B. Rananavare, Stephen B. Hall.

3431-Pos Board #B536
DIHYDROSPHINGOMYELIN IMPAIRS HIV-1 INFECTION BY RIGIDIFYING LIQUID-ORDERED MEMBRANE DOMAINS. Catarina R. Vieira, Jose M. Munoz-Olaya, Jesús Sot, Sonia Jiménez-Baranda, Nuria Izquierdo-Useros, José-Luis Abad, Beatriz Apellániz, Rafael Delgado, Javier Martínez-Picado, Alicia Alonso, Josefina Casas, José L. Nieva, Gemma Fabriás, **Félix M. Goñi**.

3432-Pos Board #B537
CHOLESTEROL AND LOW TEMPERATURE ENHANCE FUSION OF VESICLES TO A PLANAR BILAYER. **David E. Lee**, Matthew G. Lew, Reed A. Doxey, Dixon J. Woodbury.

3433-Pos Board #B538
CHOLESTEROL AS A MODULATOR OF THE HIV-1 GP41 FUSION DOMAIN'S FUNCTION. **Andrey Ivankin**, David Gidalevitz.

3434-Pos Board #B539
DESTABILIZATION OF HIGHLY RIGID BILAYERS ENRICHED IN CHOLESTEROL BY THE MEMBRANE-PROXIMAL EXTERNAL REGION OF HIV-1 GP41. Beatriz Apellaniz, Andrey Ivankin, David Gidalevitz, **Jose L. Nieva**.

3435-Pos Board #B540
ENTRY PATHWAYS OF AN AVIAN VIRUS INTO CELLS EXPRESSING TRANSMEMBRANE AND GPI-ANCHORED RECEPTOR ISOFORMS. Naveen Jha, Erik Martin, Olga Latinovic, Mariana Marin, Gennadiy Novitskiy, Kosuke Miyauchi, **Gregory Melikian**.

3436-Pos Board #B541
TRANS-MEMBRANE DOMAIN OF HIV GP41 INTERACTS WITH THE EXTERNALLY ADDED GP41 FUSION PEPTIDE: TMD-FP COMPLEX INHIBITS MODEL MEMBRANE FUSION. **Hirak Chakraborty**, David G. Klapper, Barry R. Lentz.

3437-Pos Board #B542
BOTH FUSION PEPTIDE AND TRANS-MEMBRANE DOMAIN OF HIV GP41 INDIVIDUALLY REDUCE THE ACTIVATION BARRIERS FOR THE FUSION PROCESS. **Hirak Chakraborty**, David G. Klapper, Barry R. Lentz.

3438-Pos Board #B543
THE TRANS-MEMBRANE DOMAIN OF THE SNARE FUSION PROTEIN SYNTAXIN (SX) ENHANCES THE RATE OF INTERMEDIATE FORMATION. **Suzanne E. Lynch**, Michael J. Bruno, Barry R. Lentz.

3439-Pos Board #B544
ROLE OF ANIONIC LIPIDS ON PEG-MEDIATED MODEL MEMBRANE FUSION. **Pradip K. Tarafdar**, Hirak Chakraborty, Barry R. Lentz.

3440-Pos Board #B545
SNARE-MEDIATED FUSION BETWEEN HIGHLY CURVED AND UN-CURVED MEMBRANES. **Michael J. Bruno**, Barry R. Lentz.

Interfacial Protein-Lipid Interactions II (Boards #B546-#B572)

3441-Pos Board #B546
USING TYROSINE TO ANCHOR A TRANSMEMBRANE PEPTIDE. **Nicholas J. Gleason**, Denise V. Greathouse, Roger E. Koeppe II.

3442-Pos Board #B547
COMPARISON OF PROLINE SUBSTITUTIONS AT POSITIONS 8 AND 10 IN WALP19. **Joseph M. Courtney**, Vitaly V. Vostrikov, James F. Hinton, Roger E. Koeppe II.

3443-Pos Board #B548
INFLUENCE OF GLYCINE SUBSTITUTIONS ON DESIGNED PROLINE-CONTAINING TRANSMEMBRANE PEPTIDES. **Christopher D. DuVall**, Vitaly V. Vostrikov, Denise V. Greathouse, Roger E. Koeppe II.

3444-Pos Board #B549
HELIX-HELIX INTERACTIONS IN PHOSPHOLIPID MODEL MEMBRANES AS A FUNCTION OF ACYL CHAIN UNSATURATION. **Bo Wang**, Scott E. Feller.

3445-Pos Board #B550
RIP PULCHELLIN ISOFORMS: BIOMEMBRANE MODELS SHOWING DIFFERENT INTOXICATION MECHANISMS BETWEEN THEM. Thatyane Morimoto Nobre, Ana Paula Ulian Araujo, Rosangela Itri, **Leila M. Beltramini**.

3446-Pos Board #B551
A PUTATIVE ROLE FOR LIPID-PROTEIN INTERACTIONS IN THE LOCALISATION OF GLYCOSYLTRANSFERASES WITHIN THE CELL? Phedra Marius, Daniel A. Holdbrook, Syma Khalid, **Philip T.F. Williamson**.

3447-Pos Board #B552
THE INTERMEMBRANE CERAMIDE TRANSPORT CATALYZED BY CERT IS SENSITIVE TO THE LIPID ENVIRONMENT. **Peter Mattjus**, Jessica Tuuf, Matti Kjellberg, Julian G. Molotkovsky, Kentaro Hanada.

3448-Pos Board #B553
MEMBRANE THICKNESS DEPENDENCE OF NON-MAMMALIAN PRESTINS. Chisako Izumi, Jonathan E. Bird, **Kuni H. Iwasa**.

3449-Pos Board #B554
A SYSTEMATIC APPROACH TOWARDS ELUCIDATION OF THE MODE OF ACTION OF A BACTERIAL THERMOSENSOR. **Joost Ballering**, Larisa E. Cybulski, Diego de Mendoza, J. Antoinette Killian.

3450-Pos Board #B555 INTERNATIONAL TRAVEL AWARDEE
THERMOSENSOR DESK MEASURES MEMBRANE THICKNESS. **Larisa E. Cybulski**, Mariana Martin, Diego de Mendoza.

3451-Pos Board #B556 INTERNATIONAL TRAVEL AWARDEE
MODULATION OF THE ACTIVITY OF AN INTEGRAL MEMBRANE PROTEIN BY PHOSPHOLIPIDS IN MIXED MICELLES. **Martin M. Dodes Traian**, Diego I. Cattoni, Valeria Levi, F. Luis González-Flecha.

3452-Pos Board #B557
SMALL-ANGLE NEUTRON SCATTERING REVEALS COLICIN N INSERTS INTO CLEFTS ON THE OUTSIDE OF THE OMPF TRIMER. **Christopher L. Johnson**, Luke A. Clifton, Alexandra Solovyova, Phil Callow, Kevin L. Weiss, Helen Ridley, Anton P. le Brun, Stephen A. Holt, Jeremy H. Lakey.

3453-Pos Board #B558
ANALYSIS OF GLYCOPROTEIN INTERACTIONS WITH MULTICHANNEL MEMBRANES. Luis A. Palacio, Pat DeMoss, **Horia I. Petrache**.

3454-Pos Board #B559
DO SPHINGOLIPIDS CONTROL VIRAL MEMBRANE PROTEIN ACTIVITY? **John M. Sanderson**, James A. Freeth, Helen K. McPhee, Harriette E. Foster.

3455-Pos Board #B560
ON THE TREATMENT OF DYNAMICS DURING COMBINED ^{2}H GALA AND $^{15}N/^{1}H$ PISEMA ANALYSIS OF TRANSMEMBRANE PEPTIDE TILT USING SOLID-STATE NMR DATA. **Vitaly V. Vostrikov**, Christopher V. Grant, Stanley J. Opella, Roger E. Koeppe II.

3456-Pos Board #B561
CHARACTERIZATION OF CHAIN ORDER OF AN ACYLATED-LACTOFERRICIN PEPTIDE BY SOLID-STATE NMR SPECTROSCOPY AND ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS. **Denise V. Greathouse**, Tod D. Romo, Alan Grossfield.

3457-Pos Board #B562
HOW TRANSMEMBRANE MODEL PEPTIDES AFFECT LIPID HEAD GROUP ORIENTATION: AN APPLICATION OF 14N NMR. **Jacques P. F. Doux**, Benjamin A. Hall, J. Antoinette Killian.

3458-Pos Board #B563 STUDENT TRAVEL AWARDEE
ROLE OF N-MYRISTOYLATION OF CAMP-DEPENDENT PROTEIN KINASE A IN RECOGNITION AND PHOSPHORYLATION OF MEMBRANE-BOUND SUBSTRATES. **Ece C. Gaffarogullari**, Emily E. Metcalfe, Larry R. Masterson, Nate Traaseth, Dan Mullen, Musa M. Musa, Erica Balatri, Mark Distefano, Gianluigi Veglia.

3459-Pos Board #B564
DOMAIN-FORMATION IN QUATERNARY LIPID MIXTURES. **Markus Schwiering**, Antje Brack, Heinz Decker, Nadja Hellmann.

3460-Pos Board #B565
UNRAVELING N-BAR DOMAIN INITIATED MEMBRANE REMODELING. **Edward R. Lyman**, Haosheng Cui, Gregory A. Voth.

3461-Pos Board #B566
SEGREGATION OF NEGATIVELY CHARGED PHOSPHOLIPIDS BY THE POLYCATIONIC AND FARNESYLATED MEMBRANE ANCHOR OF KRAS. **Alemayehu A. Gorfe**.

3462-Pos Board #B567
SPONTANEOUS BINDING OF MEMBRANE-ANCHORING PROTEINS CAPTURED WITH A HIGHLY MOBILE MEMBRANE-MIMETIC MODEL. **Y Zenmei Ohkubo**, Taras V. Pogorelov, Mark J. Arcario, Emad Tajkhorshid.

3463-Pos Board #B568
THE FUKUTIN TRANSMEMBRANE DOMAIN: CAPTURING THE COMPLEXITY OF THE GOLGI APPARATUS MEMBRANE VIA MULTISCALE MD SIMULATIONS. **Daniel A. Holdbrook**, Thomas J. Piggot, Phedra Marius, Philip T.F. Williamson, Syma Khalid.

3464-Pos Board #B569
HIGH-RESOLUTION, SOLVENT-FREE COARSE-GRAINED MODEL FOR PROTEIN-LIPID INTERACTIONS. **Tristan Bereau**, Zun-Jing Wang, Markus Deserno.

3465-Pos Board #B570
THE ROLE OF DOMAINS AND PROTEINS IN THE FUNCTION OF LUNG SURFACTANT. **Svetlana Baoukina**, D. Peter Tieleman.

3466-Pos Board #B571
MULTI-SCALE MOLECULAR DYNAMICS SIMULATIONS OF A MEMBRANE PROTEIN STABILIZING POLYMER. **Jason D. Perlmutter**, Jonathan N. Sachs.

3467-Pos Board #B572
MOLECULAR SIMULATION STUDY OF PRION PEPTIDE SELF-AGGREGATION IN THE PRESENCE OF LIPID MEMBRANES. **Ana Nikolic**, Régis Pomès.