

# Tuesday, February 23, 2009

## Daily Program Summary

All rooms in the Moscone Center unless noted otherwise.

7:30 AM–5:00 PM	Registration/Information	Moscone North
7:30 AM–10:00 PM	Family Room	Room 114
8:00 AM–9:00 AM	BPS Business Meeting	Room 300
8:00 AM–5:30 PM	Career Center	Room 130-131
8:00 AM–6:00 PM	Child Care	Marriott, Pacific A-C
8:00 AM–5:00 PM	Poster Viewing	Hall D
8:15 AM–10:15 AM	<b>Symposium 13</b> <b>Epigenetic Control of Gene Expression</b> <i>Aneel Aggarwal</i> , Mt. Sinai School of Medicine, Chair MOLECULAR MECHANISMS OF LYSINE METHYLATION. <i>Raymond C. Trievel</i> STRUCTURAL INSIGHTS INTO THE HISTONE SPECIFICITY OF PHD FINGERS. <i>Tatiana Kuvshinov</i> CHROMATIN MARKS: HISTONE-BINDING MODULES AND CATALYTIC MECHANISMS. <i>John Denu</i> EPIGENETIC LINK BETWEEN DNA METHYLATION AND HISTONE MODIFICATIONS. <i>Xiaodong Cheng</i>	Room 134
8:15 AM–10:15 AM	<b>Symposium 14</b> <b>TRP Channel Multimodal Gating</b> <i>Ardem Patapoutian</i> , Scripps Research Institute, Chair PROBING MECHANISMS OF TEMPERATURE SENSITIVITY OF THERMO-TRPS. <i>Ardem Patapoutian</i> THE ROLE OF TRP CHANNELS IN MECHANOSENSITIVE SOMATOSENSORY NEURONS. <i>Diana Bautista</i> HEAT AND SPICE: SETTING THE SENSITIVITY OF TRPV CHANNELS. <i>Rachelle Gaudet</i> ACTIVATION OF TRPML CHANNELS IN THE LYSOSOME. <i>Haoxing Xu</i>	Room 135
8:15 AM–10:15 AM	<b>Platform AI</b> <b>Micro &amp; Nanotechnology, Nanopores</b>	Room 303
8:15 AM–10:15 AM	<b>Platform AJ</b> <b>Protein Aggregates</b>	Room 304
8:15 AM–10:15 AM	<b>Platform AK</b> <b>Membrane Structure II</b>	Room 305
8:15 AM–10:15 AM	<b>Platform AL</b> <b>Cell Motility &amp; Mechanics</b>	Room 306
8:15 AM–10:15 AM	<b>Platform AM</b> <b>Protein-Ligand Interactions</b>	Room 307
8:15 AM–10:15 AM	<b>Platform AN</b> <b>Regulatory Networks &amp; Systems Biology</b>	Room 308
9:00 AM–10:00 AM	Subgroup Chairs Meeting	Room 125
10:00 AM–11:00 AM	<b>Career Workshop: The First Hundred Days:</b> <b>How to Keep Your Dream Job from Becoming a Nightmare</b>	Room 130-131
10:00 AM–5:00 PM	Exhibits	Hall D
10:15 AM–11:00 AM	Coffee Break	Hall D
10:45 AM–12:45 PM	<b>Symposium 15</b> <b>Awards Symposium</b> <i>Henry Lester</i> , California Institute of Technology, Society President, Chair MECHANISM OF PH GATING AND SELECTIVITY IN KCSA CHANNELS. <i>Crina Nimigean</i> . <i>Margaret Oakley Dayhoff Award</i> MECHANISMS OF PROTEIN TRANSPORT ACROSS MEMBRANES. <i>Tom A. Rapoport</i> . <i>Anatrace Membrane Protein Award</i> AN ODYSSEY THROUGH OILY WATERS. <i>James A. Hamilton</i> . <i>Avanti Award in Lipids</i> INCHING OVER HURDLES: HOW DNA HELICASES MOVE ON CROWDED LATTICES?. <i>Maria Spies</i> . <i>Margaret Oakley Dayhoff Award</i> HOW PROTEINS FOLD: MECHANISM AND PRINCIPLES. <i>S. Walter Englander</i> . <i>Founders Award</i> SINGLE MOLECULE STUDIES OF PROTEIN FOLDING. <i>Jane Clarke</i> . <i>U.S. Genomics Award for Outstanding Investigator in the Field of Single Molecule Biology</i> OF MICE, MEN, AND MICROSCOPES: WATCHING CELLS AT WORK IN AWAKE BEHAVING MICE AND HUMANS. <i>Mark J. Schmitzer</i> . <i>Michael &amp; Kate Bárány Award for Young Investigators</i>	Room 134

(Continued from previous page)

10:45 AM–12:45 PM	<b>Minisymposium 3</b> Tug of War: Molecular Motor Interactions	Room 303
10:45 AM–12:45 PM	<b>Platform AO</b> Protein Dynamics II	Room 304
10:45 AM–12:45 PM	<b>Platform AP</b> Membrane Pumps & Transporters	Room 305
10:45 AM–12:45 PM	<b>Platform AQ</b> Member-organized Session: Break on through to the other side: Comparing Membrane Permeabilizers	Room 306
10:45 AM–12:45 PM	<b>Platform AR</b> DNA Replication, Recombination, & Repair	Room 307
10:45 AM–12:45 PM	<b>Platform AS</b> Exocytosis & Endocytosis	Room 308
11:00 AM–12:30 PM	Exhibitor Presentation: Agilent Technologies	Room 123
11:30 AM–12:30 PM	Career Workshop: Interviewing for Results	Room 130-131
12:00 PM–2:00 PM	CPOW Postdoc to Faculty Q&A: Transitions Forum & Luncheon	Room 125
12:30 PM–2:00 PM	Education Committee Panel: Funding Opportunities for Faculty at Predominantly Undergraduate Institutions (PUI)	Room 132
1:00 PM–3:00 PM	Early Careers Workshop: Biosciences in India: Directions, Challenges and Opportunities	Room 124
1:30 PM–3:00 PM	Education Committee Panel: The Basics, the Discoveries and the Controversies	Room 307
1:45 PM–3:00 PM	Snack Break	Hall D
1:45 PM–3:45 PM	Poster Presentations	Hall D
4:00 PM–6:00 PM	<b>Symposium 16</b> <b>Genome Organization and Dynamics</b> <i>Michelle Wang</i> , Cornell University, Chair STOICHIOMETRY OF ACTIVE DNA REPLICATION MACHINERY WITHIN LIVING ESCHERICHIA COLI CELLS. <i>David Sherratt</i> THE GENOMIC CODE FOR NUCLEOSOME POSITIONING. <i>Jonathan Widom</i> DNA ACCESSIBILITY IN NUCLEOSOMES. <i>Michelle D. Wang</i> CHROMATIN HIGHER ORDER STRUCTURE AND REGULATION OF ITS COMPACTION. <i>Daniela Rhodes</i>	Room 134
4:00 PM–6:00 PM	<b>Symposium 17</b> <b>Membranes as Barriers in Combating Infection</b> <i>Yecheiel Shai</i> , Weizmann Institute, Israel, Chair BIOLOGICAL ROLES AND THERAPEUTICAL POTENTIAL OF CATIONIC HOST DEFENCE PEPTIDES. <i>Hans-Georg Sahl</i> MEMBRANE INTERACTIONS AND THE FORMATION OF MULTIMERIC PORES BY CYCLOTIDES. <i>David J. Craik</i> ROLE OF PEPTIDE FOLDING AND AGGREGATION IN TRIGGERING MEMBRANE PERTURBATION. <i>Anne S. Ulrich</i> THE TRANSLOCATION MECHANISM OF ARGININE RICH CELL PENETRATING PEPTIDES. <i>Angel E. Garcia</i>	Room 135
4:00 PM–6:00 PM	<b>Platform AT</b> Ligand-gated Channels	Room 303
4:00 PM–6:00 PM	<b>Platform AU</b> Biotechnology & Bioengineering	Room 304
4:00 PM–6:00 PM	<b>Platform AV</b> Microtubular Motors	Room 305
4:00 PM–6:00 PM	<b>Platform AW</b> Protein Folding & Stability	Room 306
4:00 PM–6:00 PM	<b>Platform AX</b> Membrane Fusion II	Room 307

4:00 PM–6:00 PM	<b>Platform AY</b> <b>Molecular Mechanics &amp; Force Spectroscopy</b>	<b>Room 308</b>
5:00 PM–10:00 PM	<b>Exhibits Tear Down</b>	<b>Hall D</b>
6:00 PM–10:00 PM	<b>New Council Dinner &amp; Meeting</b>	<b>Marriott, Nob Hill A/B</b>
7:30 PM–9:30 PM	<b>Workshop 4</b> <b>Membrane Zoology: Model Membranes of Increasing Complexity</b> <i>Steven Boxer</i> , Stanford University, Chair MEASUREMENTS OF REDUCTIONIST MEMBRANES THAT BEAUTIFULLY FIT PHYSICS THEORIES. <i>Sarah L. Keller</i> MEMBRANE INTERACTIONS MEDIATED BY DNA HYBRIDIZATION. <i>Steven Boxer</i> THE LANGUAGE OF SHAPE: BIOLOGICAL REACTIONS ARE DRAMATICALLY AFFECTED BY THE SHAPE OF LIPID MEMBRANES. <i>Dimitrios Stamou</i> SORTING OF PROTEINS AND LIPIDS IN MEMBRANE CURVATURE AND COMPOSITION GRADIENTS. <i>Tobias Baumgart</i> SPATIAL ORGANIZATION AND THE MECHANICS OF SIGNAL TRANSDUCTION IN CELL MEMBRANES. <i>Jay Groves</i>	<b>Room 134</b>
7:30 PM–9:30 PM	<b>Workshop 5</b> <b>Superresolution: Imaging and Probes</b> <i>Jennifer Lippincott-Schwartz</i> , NICHD, NIH, Chair PALM-BASED SUPER-RESOLUTION IMAGING AND ITS APPLICATIONS. <i>Jennifer Lippincott-Schwartz</i> IPALM: 3D OPTICAL IMAGING OF PROTEIN LOCATIONS AT THE NANOMETER LEVEL. <i>Harald Hess</i> STRUCTURED ILLUMINATION AND IMAGE INVERSION INTERFEROMETRY. <i>Rainer Heintzmann</i> EXPLORING MEMBRANE DYNAMICS BY FLUORESCENCE NANOSCOPY. <i>Christian Eggeling</i> HIGH-CONTRAST FLUORESCENCE IMAGING USING NEW OPTICAL SWITCHES AND OPTICAL LOCK-IN DETECTION IMAGING MICROSCOPY. <i>Gerard Marriott</i>	<b>Room 135</b>
8:00 PM–10:00 PM	<b>SOBLA (The Society for Latinoamerican Biophysicists)</b>	<b>Room 300</b>

# Tuesday, February 23

7:30 AM–5:00 PM, Moscone North  
**REGISTRATION/INFORMATION**

7:30 AM–10:00 PM, Room 114  
**FAMILY ROOM**

8:00 AM–9:00 AM, Room 300  
**BPS BUSINESS MEETING**

8:00 AM–5:30 PM, Room 130-131  
**CAREER CENTER**

8:00 AM–6:00 PM, Marriott, Pacific A-C  
**CHILD CARE**

8:00 AM–5:00 PM, Hall D  
**POSTER VIEWING**

8:15 AM–10:15 AM, Room 134  
**SYMPOSIUM 13**

## Epigenetic Control of Gene Expression

### Chair

*Aneel Aggarwal, Mt. Sinai School of Medicine*

2170-SYMP 8:15 AM  
MOLECULAR MECHANISMS OF LYSINE METHYLATION. **Raymond C. Trievel**, Paul Del Rizzo, Jean-Francois Couture, Lynnette M. Dirk, Bethany Strunk, Marijo Roiko, Joseph S. Brunzelle, Robert L. Houtz.

2171-SYMP 8:45 AM  
STRUCTURAL INSIGHTS INTO THE HISTONE SPECIFICITY OF PHD FINGERS. **Tatiana Kutateladze**.

2172-SYMP 9:15 AM  
CHROMATIN MARKS: HISTONE-BINDING MODULES AND CATALYTIC MECHANISMS. **John Denu**.

2173-SYMP 9:45 AM  
EPIGENETIC LINK BETWEEN DNA METHYLATION AND HISTONE MODIFICATIONS. **Xiaodong Cheng**.

8:15 AM–10:15 AM, Room 135  
**SYMPOSIUM 14**

## TRP Channel Multimodal Gating

### Chair

*Ardem Patapoutian, Scripps Research Institute*

2174-SYMP 8:15 AM  
PROBING MECHANISMS OF TEMPERATURE SENSITIVITY OF THERMO-TPRS. **Ardem Patapoutian**, Jörg Grandl.

2175-SYMP 8:45 AM  
THE ROLE OF TRP CHANNELS IN MECHANOSENSITIVE SOMATOSENSORY NEURONS. **Diana Bautista**.

2176-SYMP 9:15 AM  
HEAT AND SPICE: SETTING THE SENSITIVITY OF TRPV CHANNELS. **Rachelle Gaudet**.

2177-SYMP 9:45 AM  
ACTIVATION OF TRPML CHANNELS IN THE LYSOSOME. **Haoxing Xu**.

8:15 AM–10:15 AM Room 303

## PLATFORM AI

### Micro & Nanotechnology, Nanopores

#### Co-Chairs

*Nynke Dekker, Delft University of Technology, Netherlands  
Amit Meller, Boston University*

2178-PLAT 8:15 AM  
QUANTIZED IONIC CONDUCTANCE IN NANOPORES. **Michael Zwolak**, Johan Lagerqvist, Massimiliano Di Ventra.

2179-PLAT 8:30 AM  
BASE-BY-BASE RATCHETING OF SINGLE STRANDED DNA THROUGH A SOLID-STATE NANOPORE. **Binquan Luan**, Glenn Martyna, Gustavo Stolovitzky, Hongbo Peng, Stas Polonsky, Steve Rosnagel.

2180-PLAT 8:45 AM  
SYNTHETIC MYCOLIC ACID BILAYERS WITH APPLICATIONS IN NANOPORE SEQUENCING. **Kyle Langford**, Boyan Penkov, Ian Derrington, Jens H. Gundlach.

2181-PLAT 9:00 AM  
NOVEL NANOSCALE TUNNELING ARCHITECTURES FOR DNA ANALYSIS. **Aleksandar Ivanov**, Emanuele Instuli, Jongin Hong, Tim Albrecht, Joshua B. Edel.

2182-PLAT 9:15 AM  
A NOVEL DNA SENSING TECHNIQUE USING THE NANOPORE MSPA. **Ian M. Derrington**, Marcus D. Collins, Mikhail Pavlenok, Michael Niederweis, Jens H. Gundlach.

2183-PLAT 9:30 AM  
SINGLE MOLECULE STUDIES OF POLYADENYLIC ACID HELIX-COIL KINETICS USING NANOPORE. **Jianxun Lin**, Anatoly Kolomeisky, Amit Meller.

2184-PLAT 9:45 AM  
MEASURING DIRECT FORCES ON DSRNA IN SOLID STATE NANOPORES. **Michiel van den Hout**, Igor D. Vilfan, Susanne Hage, Serge Donkers, Aartjan te Veldhuis, Nynke H. Dekker.

2185-PLAT 10:00 AM  
A PORE-CAVITY-PORE NANODEVICE TO TRAP AND ELECTRO-OPTICALLY INVESTIGATE SINGLE MOLECULES. **Daniel Pedone**, Martin Langecker, Ulrich Rant.

8:15 AM–10:15 AM, Room 304

## PLATFORM AJ

### Protein Aggregates

#### Chair

*Philip Williamson, University of Southampton, United*

2186-PLAT 8:15 AM  
LOW RESOLUTION STRUCTURE OF A MEMBRANE-PERMEABILIZING OLIGOMER OF  $\alpha$ -SYNUCLEIN: THE BASIS FOR A HIGH-THROUGHPUT SCREENING OF COMPOUNDS AGAINST  $\alpha$ -SYNUCLEIN AGGREGATION. **Lise Giehm**, Bente Vestergaard, Cristiano Oliveira, Jan S. Pedersen, Dmitri I. Svergun, Keith Pitts, Girija Krishnamurthy, Roland Staal, Peter Reinhart, Daniel E. Otzen.

2187-PLAT 8:30 AM  
MOLECULAR INSIGHTS INTO THE ROLE OF SERUM AMYLOID-P COMPONENT IN THE STABILIZATION OF FIBRILLAR BETA-2 MICROGLOBULIN. **Garrick Taylor**, Joern M. Werner, Steve P. Wood, Philip T. F. Williamson.

2188-PLAT 8:45 AM  
THE ROLE OF SMALL OLIGOMERS ON AN AMYLOIDOGENIC FREE ENERGY LANDSCAPE. **David S. Talaga**.

2189-PLAT 9:00 AM  
AMYLOID-LIKE CROSS-BETA STRUCTURE POLYMORPHISM: AN ENERGETIC POINT OF VIEW. **Xavier Periole**, Thomas Huber, Thomas P. Sakmar, Siewert-Jan Marrink.

**2190-PLAT 9:15 AM**  
DISSECTING THE MEMBRANE DYNAMICS OF AMYLOID OLIGOMERS AT A SINGLE MOLECULE LEVEL. **Martino Calamai**, Martin Zanni, Francesco Pavone.

**2191-PLAT 9:30 AM**  
PHYSICAL PROPERTIES OF YEAST PRION PROTEINS STUDIED WITH OPTICAL TWEEZERS. **Carlos E. Castro**, Jijun Dong, Mary C. Boyce, Susan Lindquist, Matthew J. Lang.

**2192-PLAT 9:45 AM**  
PROBING THE CONFORMATIONAL ENSEMBLE OF POLYGLUTAMINE DURING THE INITIAL STAGES OF AGGREGATION. **Scott Crick**, Rohit V. Pappu.

**2193-PLAT 10:00 AM**  
CHANGING THE KINETICS OF AMYLOID BETA PLAQUES FORMATION: IMPLICATIONS FOR ALZHEIMER'S DISEASE IMMUNOTHERAPY. **Jeffy P. Jimenez**, Maj-Linda Selenica, David Morgan, John Lin, Norma A. Alcantar.

**8:15 AM–10:15 AM, Room 305**

## PLATFORM AK

### Membrane Structure II

#### Co-Chairs

*Hermann-Josef Kaiser, MPI-CBG, Germany*  
*Heiko Seeger, National Center CNR-IFM-S3, Italy*

**2194-PLAT 8:15 AM**  
PROTEIN-LIPID INTERACTIONS ARE DETERMINANTS OF SMALL AND LARGE-SCALE MEMBRANE DOMAINS. **Hermann-Josef Kaiser**, Daniel Lingwood, Ilya Levental, Kai Simons.

**2195-PLAT 8:30 AM**  
N-3 POLYUNSATURATED FATTY ACID INCORPORATES DIRECTLY INTO LIPID RAFTS TO DISRUPT DOMAIN CLUSTERING AND MHC LATERAL ORGANIZATION OF ANTIGEN PRESENTING CELLS. **Benjamin Drew Rockett**, Kristen Carraway, Saame R. Shaikh.

**2196-PLAT 8:45 AM**  
DETECTION OF DOMAIN FORMATION IN A SUBPOPULATION OF LATE ENDOSOMES BY TEMPLATED J-AGGREGATES. **Gary Mo**, Christopher M. Yip.

**2197-PLAT 9:00 AM**  
MICROPATTERNING OF PLASMA MEMBRANE PROTEINS TO ANALYZE RAFT LOCALIZATION IN LIVING CELLS. **Julian Weghuber**, Stefan Sunzenauer, Mario Brameshuber, Stefan Wieser, Lawrence Rajendran, Gerhard J. Schuetz.

**2198-PLAT 9:15 AM**  
DIFFERENTIATING LIPID PHASE DOMAINS IN CELLS USING FLUORESCENCE LIFETIME OF DII. Hari S. Muddana, Tristan Tabouillot, Homer H. Chiang, Peter J. Butler.

**2199-PLAT 9:30 AM**  
IMAGING OF MOBILE STABLE LIPID RAFTS IN THE LIVE CELL PLASMA MEMBRANE AND THEIR INVOLVEMENT IN CELLULAR SIGNALING DURING HEAT SHOCK. **Mario Brameshuber**, Julian Weghuber, Verena Ruprecht, Imre Gombos, Ibolya Horváth, László Vigh, Hannes Stockinger, Gerhard J. Schuetz.

**2200-PLAT 9:45 AM**  
CHOLESTEROL AND PHOSPHATIDYLINOSITOL 4,5-BISPHOSPHATE SYNERGISTICALLY AFFECT ENDOTHELIAL BIOMECHANICS. **Zhongkui Hong**, Paul Hampel, Marius C. Staiculescu, Irena Levitan, Gabor Forgacs.

**2201-PLAT 10:00 AM**  
KCSA REDISTRIBUTION UPON LIPID DOMAIN FORMATION IN SUPPORTED LIPID BILAYERS AND ITS FUNCTIONAL IMPLICATIONS. **Heiko M. Seeger**, Andrea Alessandrini, Paolo Facci.

**8:15 AM–10:15 AM, Room 306**

## PLATFORM AL

### Cell Motility & Mechanics

#### Co-Chairs

*Rajesh Shahapure, Scuola Internazionale Superiore di Studi Avanzati, Italy*  
*Jay Tang, Brown University*

**2202-PLAT 8:15 AM**  
MESOSCOPIC MODEL OF ACTIN-BASED PROPULSIONS. **Jie Zhu**, Alex Mogilner.

**2203-PLAT 8:30 AM**  
THE EFFECTS OF FILAMENT AGING AND ANNEALING ON A LAMELLIPODIUM UNDERGOING DISASSEMBLY BY SEVERING. **Paul J. Michalski**, Anders E. Carlsson.

**2204-PLAT 8:45 AM**  
FORCE GENERATION IN LAMELLIPODIA IS A DISCONTINUOUS PROCESS WITH NANOMETER DISCRETE FORWARD AND BACKWARD JUMPS. **Rajesh Shahapure**, Erika Ercolini, Ladan Amin, Majid Moshtagh Khorasani, Giacomo Bisson, Vincent Torre.

**2205-PLAT 9:00 AM**  
WHAT WE LEARN FROM ACTIN COMET TAILS GOING AWRY. **Hyeran Kang**, Dhananjay Tambe, David Perlmutter, Vivek Shenoy, Jay X. Tang.

**2206-PLAT 9:15 AM**  
MULTISCALE MODELING OF ERYTHROCYTE MEMBRANE: EQUILIBRIUM SHAPES AND MECHANICAL RESPONSES. **Zhangli Peng**, Qiang Zhu.

**2207-PLAT 9:30 AM**  
THREE-DIMENSIONAL FORCES EXERTED BY MIGRATING AMOEBOID CELLS. **Juan C. del Álamo**, Ruedi Meili, Baldomero Alonso-Latorre, Effie Bastounis, Richard A. Firtel, Juan C. Lasheras.

**2208-PLAT 9:45 AM**  
INTEGRIN  $\alpha 5 \beta 1$ -MEDIATES CELL INVASION THROUGH ENHANCED CONTRACTILE FORCES. **Claudia Tanja Mierke**, Benjamin Frey, Martina Fellner, Martin Herrmann, Ben Fabry.

**2209-PLAT 10:00 AM**  
MATRIX ELASTICITY AND NUCLEAR PHYSICS. **Florian Rehfeldt**, Allison Zajac, Andre Brown, Amnon Buxboim, Dennis E. Discher.

**8:15 AM–10:15 AM, Room 307**

## PLATFORM AM

### Protein-Ligand Interactions

#### Co-Chairs

*Carlos Camacho, University of Pittsburgh*  
*Xiaoxia Ge, Weill Medical College of Cornell University*

**2210-PLAT 8:15 AM**  
CONFORMATIONAL TRANSITIONS UPON LIGAND BINDING: HOLO STRUCTURE PREDICTION FROM APO CONFORMATIONS. **Daniel Seeliger**, Bert L. de Groot.

**2211-PLAT 8:30 AM**  
DESIGN AND CHARACTERIZATION OF SMALL MOLECULE INHIBITORS OF THE PICK1 PDZ DOMAIN WITH BINDING FREE ENERGY CALCULATIONS. **Irina Moreira**, Xiaoxia Ge, Kenneth L. Madsen, Ulrik Gether, Harel Weinstein.

**2212-PLAT 8:45 AM**  
COMPUTATIONAL DESIGN OF PROTEIN INTERFACES WITH RECEPTOR FLEXIBILITY. **Samy Meroueh**, Shide Liang, Liwei Li.

**2213-PLAT 9:00 AM**  
THE TWO ENANTIOMERS OF CITALOPRAM BIND TO THE HUMAN SEROTONIN TRANSPORTER IN REVERSED ORIENTATIONS. **Heidi Koldso**, Kasper Severinsen, Thuy Tien Tran, Leyla Celik, Henrik Helligsø Jensen, Ove Wiborg, Steffen Sinning, Birgit Schiøtt.

**2214-PLAT 9:15 AM**  
T CELL RECEPTOR CROSS-REACTIVITY DIRECTED BY ANTIGEN DEPENDENT TUNING OF PEPTIDE-MHC MOLECULAR FLEXIBILITY. **Brian M. Baker.**

**2215-PLAT 9:30 AM**  
MECHANICAL UNBINDING OF LEUKOCYTE FUNCTION-ASSOCIATED ANTIGEN-1 WITH ICAM-1 AND ICAM-3 COMPLEXES INVOLVES A SINGLE ENERGETIC BARRIER. **Toan M. Ngo, D. Thirumalai.**

**2216-PLAT 9:45 AM**  
PREDICTING THE INTERACTIONS BETWEEN PDZ ADAPTER DOMAINS AND DISORDERED PEPTIDES. **Weiyi Zhang, Carlos J. Camacho, Eran Eyal.**

**2217-PLAT 10:00 AM**  
STATISTICS AND PHYSICAL ORIGINS OF PK AND IONIZATION STATE CHANGES UPON PROTEIN-LIGAND BINDING. **Boris Aguliar, Ramu Anandakrishnan, Jory Z. Ruscio, Alexey V. Onufriev.**

**8:15 AM–10:15 AM, Room 308**

## PLATFORM AN

### Regulatory Networks & Systems Biology

#### Co-Chairs

*Hassan Fathallah-Shaykh, University of Alabama at Birmingham*  
*Maria McGee, Wake Forest University Medical School*

**2218-PLAT 8:15 AM**  
PROBING MULTICELLULAR DYNAMICS IN *XENOPUS LAEVIS* EMBRYONIC DEVELOPMENT THROUGH MICROFLUIDIC FEEDBACK CONTROL. **YongTae Kim, Sagar D. Joshi, Philip R. LeDuc, William C. Messner, Lance A. Davidson.**

**2219-PLAT 8:30 AM**  
CELLS RESPOND DIGITALLY TO VARIATION IN SIGNAL INTENSITY VIA STOCHASTIC ACTIVATION OF NF-KB. **Savas Tay, Jake Hughey, Tim K. Lee, Markus Covert, Stephen R. Quake.**

**2220-PLAT 8:45 AM**  
QUANTITATIVE TEST FOR MIRROR SYMMETRY RELATIONSHIP BETWEEN SISTER CELLS. **Susanne Rafelski, Jacob Schroder, Carolina Torrealba, Melanie Mueller, Xiaolei Su, Monica Guo, Wallace Marshall, Ludovic Brun, Patrick Oakes, Julie Janvore, Qicong Hu<sup>10</sup>, Jennifer Hou<sup>11</sup>.**

**2221-PLAT 9:00 AM**  
TUNING THE RANGE AND STABILITY OF MULTIPLE PHENOTYPIC STATES WITH COUPLED POSITIVE-NEGATIVE FEEDBACK LOOPS. **Maier S. Avendaño, Chad Leidy, Alexander V. Oudenaarden, Juan M. Pedraza.**

**2222-PLAT 9:15 AM**  
THE EFFECTS OF SPATIAL HETEROGENEITY AND IN VIVO CROWDING ON THE LAC GENETIC CIRCUIT. **Elijah Roberts, Andrew T. Magis, Zan Luthy-Schulten.**

**2223-PLAT 9:30 AM**  
MACROSCOPIC KINETIC EFFECT OF CELL-TO-CELL VARIATION IN BIOCHEMICAL REACTIONS. **Pan-Jun Kim, Nathan D. Price.**

**2224-PLAT 9:45 AM**  
ON POPULATION HETEROGENEITY AND COEXISTENCE OF BACTERIA AND PHAGE. **Xiao-Lun Wu, Radu Moldovan.**

**2225-PLAT 10:00 AM**  
DRIVING DNA TWEEZERS WITH AN IN VITRO TRANSCRIPTIONAL OSCILLATOR. **Eike Friedrichs, Jongmin Kim, Ralf Jungmann, Elisa Franco, Richard Murray, Erik Winfree, Friedrich C. Simmel.**

**9:00 AM–10:00 AM, Room 125**  
**SUBGROUP CHAIRS MEETING**

**10:00 AM–11:00 AM, Room 130-131**

## CAREER WORKSHOP

### The First Hundred Days: How to Keep Your Dream Job from Becoming a Nightmare

The hard work is not over once you land your “dream job.” How you conduct yourself in this first critical period – what you say, do, or don’t do – can make all the difference in your career. In this brief but intense workshop you will learn some of the critically important questions to ask and the behaviors to practice to ensure success in a new job.

**10:00 AM–5:00 PM, Hall D**  
**EXHIBITS**

**10:15 AM–11:00 AM, Hall D**  
**COFFEE BREAK**

**10:45 AM–1:05 PM, Room 134**  
**SYMPOSIUM 15**  
**Awards Symposium**

#### Chair

*Henry Lester, California Institute of Technology, Society President*

**10:45**  
MECHANISM OF PH GATING AND SELECTIVITY IN KCSA CHANNELS. **Crina Nimigean.** Margaret Oakley Dayhoff Award

**11:05**  
MECHANISMS OF PROTEIN TRANSPORT ACROSS MEMBRANES. **Tom A. Rapoport.** Anatrache Membrane Protein Award

**11:25**  
AN ODYSSEY THROUGH OILY WATERS. **James A. Hamilton.** Avanti Award in Lipids

**11:45**  
INCHING OVER HURDLES: HOW DNA HELICASES MOVE ON CROWDED LATTICES? **Maria Spies.** Margaret Oakley Dayhoff Award

**12:05**  
HOW PROTEINS FOLD: MECHANISM AND PRINCIPLES. **S. Walter Englander.** Founders Award

**12:25**  
SINGLE MOLECULE STUDIES OF PROTEIN FOLDING. **Jane Clarke.** U.S Genomics Award for Outstanding Investigator in the Field of Single Molecule Biology

**12:45**  
OF MICE, MEN, AND MICROSCOPES: WATCHING CELLS AT WORK IN AWAKE BEHAVING MICE AND HUMANS. **Mark J. Schnitzer.** Michael & Kate Bárány Award for Young Investigators

**10:45 AM–12:45 PM, Room 303**

## MINISYMPOSIUM 3

### TUG OF WAR: MOLECULAR MOTOR INTERACTIONS

#### Co-Chairs

*M. Yusuf Ali, University of Vermont*  
*Sean Sun, Johns Hopkins University*

**2226-MINISYMP 10:45 AM**  
OPPOSITE-POLARITY MOTORS ACTIVATE ONE ANOTHER TO TRIGGER CARGO TRANSPORT IN LIVE CELLS. **Vladimir Gelfand, Shabeen Ally, Adam G. Larson, Kari Barlan, Sarah E. Rice.**

**2227-MINI SYMP 11:05 AM**  
MOTOR NUMBER CONTROLS CARGO SWITCHING AT ACTIN-MICROTUBULE INTERSECTIONS *IN VITRO*. **Harry W. Schroeder III**, Henry Shuman, Erika L. F. Holzbaur, Yale E. Goldman.

**2228-MINI SYMP 11:25 AM**  
MYOSIN VA AND MYOSIN VI ENGAGE IN A "TUG OF WAR" ON ACTIN TRACKS WHILE TRANSPORTING CARGOES *IN VITRO*. **M. Yusuf Ali**, Shane R. Nelson, Guy G. Kennedy, Kathleen M. Trybus, H. Lee Sweeney, David M. Warshaw.

**2229-MINI SYMP 11:45 AM**  
COLLECTIVE BEHAVIOR OF ANTAGONISTICALLY ACTING KINESIN-1 MOTORS. **Cecile Leduc**, Nenad Pavin, Frank Jülicher, Stefan Diez.

**2230-MINI SYMP 12:05 PM**  
INTERACTIONS BETWEEN MOTOR PROTEINS CAN EXPLAIN COLLECTIVE TRANSPORT OF KINESINS. **Anatoly B. Kolomeisky**, Rahul K. Das, Michael R. Diehl, Jonathan W. Driver, Kenneth D. Jameson, Arthur R. Rogers.

**2231-MINI SYMP 12:25 PM**  
CARGO TRANSPORT BY TWO TEAMS OF MOLECULAR MOTORS. **Melanie J. I. Muller**, Florian Berger, Stefan Klumpp, Reinhard Lipowsky.

**10:45 AM–12:45 PM, Room 304**

## PLATFORM AO

### Protein Dynamics II

#### Co-Chairs

*Stephanie Perez, Texas A&M University*  
*Magnus Wolf-Watz, University of Umea, Sweden*

**2232-PLAT 10:45 AM**  
FUNCTIONAL DYNAMICS IN THE ENZYME ADENYLATE KINASE. **Magnus Wolf-Watz**.

**2233-PLAT 11:00 AM**  
MOLECULAR DETAILS OF THE APOLIPOPROTEIN E AND THE AMYLOID BETA PEPTIDE INTERACTION: ANALYSIS OF A POTENTIAL BINDING SITE RESPONSIBLE FOR APOE4 MISFOLDING. **Alex Perálvarez-Marín**, Jinghui Luo, Jean-Didier Maréchal, Sebastian Wärmländer, Astrid Gräslund.

**2234-PLAT 11:15 AM**  
STRUCTURAL DYNAMICS BY TIME-RESOLVED EPR AND TRANSIENT TIME-RESOLVED FRET: APPLICATION TO MYOSIN. **Roman V. Agafonov**, Igor V. Negrashov, Sarah E. Blakely, Margaret A. Titus, Yuri E. Nesmelov, David D. Thomas.

**2235-PLAT 11:30 AM**  
PROTEIN-EXCHANGE DYNAMICS AT GPCR MICRO-DOMAINS: A CASE STUDY WITH THE PARATHYROID HORMONE RECEPTOR. **Juan A. Ardura**, Jean-Pierre Vilardaga, Peter A. Friedman.

**2236-PLAT 11:45 AM**  
ANALYSIS OF THE CELLULOSE-CELLULASE INTERACTION. **Emal M. Alekozai**, Xiaolin Cheng, Jeremy C. Smith.

**2237-PLAT 12:00 PM**  
SINGLE MOLECULE KV2.1 CHANNEL DYNAMICS IN LIVE MAMMALIAN CELLS. **Aubrey V. Weigel**, Michael M. Tamkun, Diego Krapf.

**2238-PLAT 12:15 PM**  
ILLUMINATING DYNAMIC REGIONS ASSOCIATED WITH THE HETEROTROPIC ALLOSTERIC COMMUNICATION IN BACILLUS STEAROTHERMOPHILUS PHOSPHOFRUCTOKINASE. **Stephanie A. Perez**, Gregory D. Reinhart.

**2239-PLAT 12:30 PM**  
PROTEINS OF FUNCTIONING FLAGELLAR ROTOR TURNOVER BUT ONLY IN THE PRESENCE OF SIGNALLING PROTEINS. **Nicolas J. Delalez**, George H. Wadhams, Richard M. Berry, Judith P. Armitage, Mark C. Leake.

**10:45 AM–12:45 PM, Room 305**

## PLATFORM AP

### Membrane Pumps & Transporters

#### Co-Chairs

*Ana Nicoleta Bondar, University of California, Irvine*  
*Jose Faraldo-Gomez, Max Planck Institute of Biophysics, Germany*

**2240-PLAT 10:45 AM**  
SINGLE MOLECULE ROTATION OF F1-ATPASE FROM S.CEREVISIAE. **Bradley C. Steel**, Yamin Wang, Vijay Pagadala, Richard M. Berry, David M. Mueller.

**2241-PLAT 11:00 AM**  
MECHANISMS OF SELECTIVE SODIUM/PROTON BINDING AND COUPLED ROTATION IN F1FO ATP SYNTHASES: INSIGHTS FROM QUANTITATIVE COMPUTER SIMULATIONS. **Alexander Krahl**, Peter J. Bond, José D. Faraldo-Gómez.

**2242-PLAT 11:15 AM**  
MECHANISM OF SELECTIVE CATION BINDING TO SODIUM-COUPLED TRANSPORTERS: INSIGHTS FROM FREE ENERGY SIMULATIONS AND QM/MM SIMULATIONS. **Sergei Noskov**, Chunfeng Zhao, Lev Bogdan.

**2243-PLAT 11:30 AM**  
COMPUTATIONAL APPROACHES TO UNDERSTANDING THE MECHANISM OF TRANSPORT IN THE NA<sup>+</sup>/GALACTOSE CO-TRANSPORTER VSGLT. **Seungho Choe**, John Rosenberg, Ernest Wright, Jeff Abramson, Michael Grabe.

**2244-PLAT 11:45 AM**  
A MUTATION ASSOCIATED WITH DCM INCREASES PHOSPHOLAMBAN OLIGOMERIZATION AND DECREASES SERCA-BINDING, BUT DOES NOT CHANGE PHOSPHOLAMBAN TERTIARY STRUCTURE OR PHOSPHORYLATION BY PKA. **Zhanjia Hou**, Raffaello Verardi, Larry R. Masterson, Naomi Menards, Kim N. Ha, Alessandro Mascioni, Gianluigi Veglia, Seth L. Robia.

**2245-PLAT 12:00 PM**  
THE NA,K-ATPASE BETA1 AND BETA2 SUBUNITS ASSOCIATE WITH DIFFERENT QUALITY CONTROL PATHWAYS IN THE ER. **Olga Vagin**, Elmira Tokhtaeva, George Sachs.

**2246-PLAT 12:15 PM**  
NOT ALL ABC TRANSPORTERS ARE THE SAME: CORRELATION BETWEEN GENETIC, STRUCTURAL, AND MECHANISTIC DIVERSITY. **Oded Lewinson**, Allen T. Lee, Kaspar P. Locher, Douglas C. Rees.

**2247-PLAT 12:30 PM**  
HOW BINDING OF THE SIGNAL PEPTIDE UNLOCKS THE TRANSLOCON. **Ana Nicoleta Bondar**, Douglas J. Tobias, Stephen H. White.

**10:45 AM–12:45 PM, Room 306**

## PLATFORM AQ

### Member-organized Session

#### Break on through to the other side: Comparing Membrane Permeabilizers

#### Co-Chairs

*Jean-Marie Ruyschaert, Université Libre de Bruxelles, Belgium*  
*Heiko Heerklotz, University of Toronto, Canada*

**2248-PLAT 10:45 AM**  
SIMULATION STUDIES OF PEPTIDE INDUCED MEMBRANE PORATION AND FUSION. **Siewert J. Marrink**, Marc Fuhrmans, Durba Sengupta, Semen Yesylevskyy, Alan E. Mark.

**2249-PLAT 11:00 AM**  
CATIONIC LIPIDS: FROM MEMBRANE DESTABILIZATION TO CELL SIGNALING. **Caroline Loney**, Marc F. Lensink, Bouna-Moussa Tandia, Michel Vandenbranden, Jean-Marie Ruyschaert.

**2250-PLAT 11:15 AM**  
CATIONIC LIPID VECTORS FOR GENE DELIVERY: DISTINCT PATHWAYS OF ENDOSOMAL RELEASE. **Kai K. Ewert**, Alexandra Zidovska, Nathan Bouxsein, Rahau S. Shirazi, Heather Evans, Cyrus R. Safinya.

**2251-PLAT 11:30 AM**  
BIOPHYSICAL STUDIES OF PEPTIDES THAT TRANSLOCATE THROUGH CELL MEMBRANES: INDUCED STRUCTURES AND MEMBRANE INTERACTIONS. **Astrid Graslund**.

**2252-PLAT 11:45 AM**  
ENDOSOME ENTRAPMENT OF CPP-ON CONJUGATES: IS THERE A WAY TO OVERCOME THIS LIMITATION? **Bernard Lebleu**.

**2253-PLAT 12:00 PM**  
BREACHING THE MEMBRANE BARRIER WITH ANTIMICROBIAL AGENTS THAT CLUSTER ANIONIC LIPIDS. **Richard M. Eband**, Raquel F. Eband.

**2254-PLAT 12:15 PM**  
DIFFERENT SCENARIOS OF MEMBRANE PERMEABILIZATION BY BACTERIAL LIPOPEPTIDES. **Hiren Patel**, Mozghan Nazari, Clemens Tscheka, Katarina Edwards, Goran Karlsson, Heiko Heerklotz.

**2255-PLAT 12:30 PM**  
DISCOVERY OF TRANSDERMAL PENETRATION ENHANCERS FOR DRUG DELIVERY. **Samir Mitragotri**.

**10:45 AM–12:45 PM, Room 307**

## PLATFORM AR

### DNA Replication, Recombination, & Repair

#### Co-Chairs

*Achillefs Kapanidis, University of Oxford, United Kingdom*  
*David Rueda, Wayne State University*

**2256-PLAT 10:45 AM**  
CONFORMATIONAL CHANGES IN DNA POLYMERASE I REVEALED BY SINGLE-MOLECULE FRET. **Yusdi Santoso**, Catherine M. Joyce, Olga Potapova, Ludovic Le Reste, Johannes Hohlbein, Joseph P. Torella, Nigel D. F. Grindley, Achillefs N. Kapanidis.

**2257-PLAT 11:00 AM**  
SINGLE MOLECULE STUDIES OF EUKARYOTIC REPLISOMES IN XENOPUS EGG EXTRACTS. **Hasan Yardimci**, Anna B. Kochaniak, Satoshi Habuchi, Courtney G. Havens, Johannes C. Walter, Antoine van Oijen.

**2258-PLAT 11:15 AM**  
DNA BASE FLIPPING: NEW-FOUND INSIGHTS INTO THE DNA MISMATCH RECOGNITION PROCESS IN E. COLI MUTS. **Sean M. Law**, Michael Feig.

**2259-PLAT 11:30 AM**  
DNA CONFORMATIONAL DYNAMICS IN MISMATCH RECOGNITION. **Julie Coats**, Walter H. Lang, Yuyen Lin, Cynthia T. McMurray, Ivan Rasnik.

**2260-PLAT 11:45 AM**  
THE DANCE OF CHROMOSOMES DURING DNA REPAIR. **Judith Mine-Hattab**, Rodney J. Rothstein.

**2261-PLAT 12:00 PM**  
SINGLE-MOLECULE MEASUREMENTS OF SYNTHESIS BY DNA POLYMERASE WITH BASE-PAIR RESOLUTION. **Thomas Christian**, Lou Romano, David Rueda.

**2262-PLAT 12:15 PM**  
SINGLE-DNA DETECTION OF STEPWISE DNA COMPACTION BY COHESIN SMC PROTEIN COMPLEXES. **Mingxuan Sun**, Tatsuya Nishino, John F. Marko.

**2263-PLAT 12:30 PM**  
TORSIONAL REGULATION OF HRP A-INDUCED UNWINDING OF DOUBLE STRANDED DNA. Iwijn De Vlaminck, Iztok Vidic, Marijn van Loenhout, Roland Kanaar, Joyce Lebbink, Cees Dekker.

**10:45 AM–12:45 PM, Room 308**

## PLATFORM AS

### Exocytosis & Endocytosis

#### Co-Chairs

*Michela Serresi, Scuola Normale Superiore, Italy*  
*Ronald Holz, University of Michigan*

**2264-PLAT 10:45 AM**  
LOCALIZED PLASMA MEMBRANE TOPOLOGICAL CHANGES UPON EXOCYTOSIS VISUALIZED BY POLARIZED-TIRFM. **Arun Anantharam**, Ronald W. Holz, Daniel Axelrod.

**2265-PLAT 11:00 AM**  
COMPOUND EXOCYTOSIS IN RAT BETA-CELLS TRIGGERED BY GLOBAL ELEVATION OF CYTOSOLIC CALCIUM. **Michael B. Hoppa**, Juris Galvanovskis, Matthias Braun, Jovita Karanauskaite, Patrik Rorsman.

**2266-PLAT 11:15 AM**  
EXOCYTOSIS, DEPENDENT ON CALCIUM RELEASE FROM CALCIUM STORES, IS REGULATED BY CALCIUM MICRODOMAINS. **Jiun T. Low**, Alka Shukla, Peter Thorn.

**2267-PLAT 11:30 AM**  
MOLECULAR MECHANISM OF THE SYNAPTOTAGMIN-SNARE INTERACTION IN  $Ca^{2+}$ -TRIGGERED VESICLE FUSION. **Marija Vrljic**, Pavel Strop, James A. Ernst, R. Bryan Sutton, Steven Chu, Axel T. Brunger.

**2268-PLAT 11:45 AM**  
SELECTIVE EXOCYTOSIS AND SPATIOTEMPORAL REGULATION OF PROTEIN RECYCLING AT THE PLASMA MEMBRANE. **Vladimir A. Lizunov**, Karin G. Stenkula, Samuel W. Cushman, Joshua Zimmerberg.

**2269-PLAT 12:00 PM**  
EGFR AS A TOOL FOR PROBING PRODUCTIVE ENDOCYTOSIS EVENTS WITH EPI/TIRE. **Claire E. Atkinson**, Alexa L. Mattheyses, Sanford M. Simon.

**2270-PLAT 12:15 PM**  
REAL-TIME MEASUREMENT OF ENDOSOMAL ACIDIFICATION BY A NOVEL GENETICALLY ENCODED BIOSENSOR. **Michela Serresi**.

**2271-PLAT 12:30 PM**  
INTEGRATIVE EXPERIMENTAL AND THEORETICAL APPROACH EXPOSES FUNDAMENTAL MECHANISMS OF J774 MACROPHAGE PHAGOCYTOSIS. **Jonathan Lam**, Marc Herant, Micah Dembo, Volkmar Heinrich.

**11:00 AM–12:30 PM, Room 123**

## EXHIBITOR PRESENTATION

### Agilent Technologies

**11:30 AM–12:30 PM, Room 130-131**

## CAREER WORKSHOP

### Interviewing for Results

In today's extremely competitive environment for job seekers, the successful candidate is often the one who has mastered the art of "interviewing for results." The effective use of good interviewing skills and techniques can make your interview matter and can significantly increase your chances of receiving a job offer. This session is appropriate for anyone who wishes to measurably improve their interview skills or to simply learn the basics of a proper interview.

**12:00 PM–2:00 PM, Room 125**

## CPOW

## POSTDOC TO FACULTY Q&A:

### Transitions Forum and Luncheon

CPOW is sponsoring a 'Question and Answer' luncheon designed for those postdocs finishing and actively applying for academic faculty positions. New faculty

and recently-tenured faculty in basic science and/or medical school departments will lead the discussion, as well as experienced senior level faculty who have served as chairs of departments and/or of faculty search committees. Topics for discussion will include how to prepare the curriculum vitae, the interview process, how to negotiate the job offer, and advice for new faculty as they balance research with their departmental obligations. Pre-registration was required.

**12:30 PM–2:00 PM, Room 132**

### **EDUCATION COMMITTEE PANEL** **Funding Opportunities for Faculty at** **Predominantly Undergraduate Institutions** **(PUI)**

The Education Committee is hosting a session aimed at helping PUI faculty find funding sources that will help them to establish or maintain an active and productive undergraduate research laboratory. Panel members are representatives from funding agencies who will discuss funding sources and grants that are appropriate for faculty at undergraduate institutions.

**Speakers:**

Jean Chin, NIGMS, NIH  
Kamal Shukla, National Science Foundation

**1:00 PM–3:00 PM, Room 124**

### **EARLY CAREERS WORKSHOP** **Biosciences in India: Directions,** **Challenges and Opportunities**

Bioscience research in India is growing at an unprecedented rate. This workshop highlights several opportunities created as a result of increased funding from the Indian government and international funding agencies, formation of new research institutes across the country, and attractive initiatives for new investigators and young scientists. The event will focus on questions encountered by postdocs from US and Europe looking at India for academic faculty positions. The workshop will also highlight opportunities for collaborative research with India, and should be helpful to established scientists interested in working with Indian laboratories.

The two-hour event includes presentations by Indian scientists and an interactive question session. Information about research opportunities in India is available at [www.indiabioscience.org](http://www.indiabioscience.org).

**Speakers:**

Jyotsna Dhawan, Institute for Stem Cell Biology and Regenerative Medicine  
Sudipta Maiti, Tata Institute of Fundamental Research (TIFR)  
Mrinalini Puranik, National Centre for Biological Sciences (NCBS)

**1:30 PM–3:00 PM, Room 307**

### **EDUCATION COMMITTEE PANEL** **The Basics, the Discoveries and the** **Controversies: Educational Workshop**

The pace of new discoveries frequently does not allow scientists outside of a specific field to keep up with important new developments and breakthroughs. Furthermore, one of the major difficulties for a student entering a new field is gaining a perspective on what is known, what is really known, and what are the main unknowns. The goal of this new series of educational workshops is to help the students understand the “big picture” and to facilitate the cross-talk and collaborations between the experts in different fields. This year, the workshop focuses on three topics: Biophysics of Ion Channels, Biophysics of Motility, and Biophysics of Molecular Motors. Three lectures given by leading scientists of the three fields will discuss the most important things that all biophysicists should know about each field, what the consensus ideas are and what the fights are about.

**Speakers:**

Francisco Bezanilla, University of Chicago  
Michael Sheetz, Columbia University  
Yale E. Goldman, University of Pennsylvania

**1:45 PM–3:00 PM, Hall D**  
**SNACK BREAK**

**1:45 PM–3:45 PM, Hall D**  
**POSTER PRESENTATIONS**

(For a complete listing of Tuesday Poster Presentations, see page 114). Posters will be posted all day long. Authors with odd-numbered boards will present from 1:45 PM–2:45 PM, and those with even-numbered boards will present from 2:45 PM–3:45 PM. Additional hours (day or evening) may be posted by the authors as desired. Also note, paper may be left so that visitors may request an appointment.

**3:00 PM–4:00 PM, Room 122**  
**EDUCATION COMMITTEE MEETING**

**4:00 PM–6:00 PM, Room 134**  
**SYMPOSIUM 16**  
**Genome Organization and Dynamics**

**Chair**

*Michelle Wang, Cornell University*

**3155-SYMP 4:00 PM**  
STOICHIOMETRY OF ACTIVE DNA REPLICATION MACHINERY WITHIN LIVING ESCHERICHIA COLI CELLS. **David Sherratt**, Rodrigo Reyes-Lamothe, Mark Leake.

**3156-SYMP 4:30 PM**  
THE GENOMIC CODE FOR NUCLEOSOME POSITIONING. **Jonathan Widom**.

**3157-SYMP 5:00 PM**  
DNA ACCESSIBILITY IN NUCLEOSOMES. **Michelle D. Wang**.

**3158-SYMP 5:30 PM**  
CHROMATIN HIGHER ORDER STRUCTURE AND REGULATION OF ITS COMPACTION. Sara Sandin, Andrew Routh, **Daniela Rhodes**.

**4:00 PM–6:00 PM, Room 135**  
**SYMPOSIUM 17**  
**Membranes as Barriers in**  
**Combating Infection**

**Chair**

*Yechezkel Shai, Weizmann Institute, Israel*

**3159-SYMP 4:00 PM**  
BIOLOGICAL ROLES AND THERAPEUTICAL POTENTIAL OF CATIONIC HOST DEFENCE PEPTIDES. **Hans-Georg Sahl**.

**3160-SYMP 4:30 PM**  
MEMBRANE INTERACTIONS AND THE FORMATION OF MULTIMERIC PORES BY CYCLOTIDES. **David J. Craik**, Yen-Hua Huang, Michelle L. Colgrave, Boris Martinac, Absed Keleshian, Norelle L. Daly.

**3161-SYMP 5:00 PM**  
ROLE OF PEPTIDE FOLDING AND AGGREGATION IN TRIGGERING MEMBRANE PERTURBATION. **Anne S. Ulrich**, Parvesh Wadhvani, Erik Strandberg, Sergiy Afonin, Jochen Buerck, Johannes Reichert, Marina Berditsch, Stephan Grage, Christian Mink, Sebastian Ehni, Deniz Tiltak, Pavel Mykhailiuk, Igor Komarov.

**3162-SYMP 5:30 PM**  
THE TRANSLOCATION MECHANISM OF ARGININE RICH CELL PENETRATING PEPTIDES. **Angel E. Garcia**.

4:00 PM–6:00 PM, Room 303  
**PLATFORM AT**  
**Ligand-gated Channels**

**Co-Chairs**

*Mark Mayer, NICHD, NIH*  
*Robert Oswald, Cornell University*

**3163-PLAT 4:00 PM**  
STRUCTURAL INSIGHTS INTO ALLOSTERIC MODULATION OF NMDA RECEPTORS THROUGH THE AMINO-TERMINAL DOMAIN. **Erkan Karakas**, Noriko Simorowski, Hiro Furukawa.

**3164-PLAT 4:15 PM**  
EXPLORING THE ROLE OF POSITIVE ALLOSTERIC MODULATORS IN STABILIZING THE GLUR2 LIGAND-BINDING DOMAIN DIMER. **Christopher P. Ptak**, Ahmed H. Ahmed, Michael K. Fenwick, Alexander S. Maltsev, Robert E. Oswald.

**3165-PLAT 4:30 PM**  
THE FREE ENERGIES OF LIGAND-BINDING TO THE IONOTROPIC GLUTAMATE RECEPTOR. **Albert Y. Lau**, Benoit Roux.

**3166-PLAT 4:45 PM**  
PORE ARCHITECTURE AND ION SITES OF ACID SENSING ION CHANNELS AND P2X RECEPTORS. **Eric B. Gonzales**, Toshimitsu Kawate, Eric Gouaux.

**3167-PLAT 5:00 PM**  
ENERGETICS OF ALLOSTERIC ION BINDING TO A LIGAND-GATED ION CHANNEL. **Charu Chaudhry**, Andrew J. R. Plested, Peter Schuck, Mark L. Mayer.

**3168-PLAT 5:15 PM**  
STRUCTURE AND DYNAMICS OF NICOTINIC ACETYLCHOLINE RECEPTOR AT THE CELL MEMBRANE. **Francisco J. Barrantes**.

**3169-PLAT 5:30 PM**  
STRUCTURE REARRANGEMENT OF THE PORE IN P2X RECEPTORS DURING GATING. **Mufeng Li**, Toshimitsu Kawate, Shai D. Silberberg, Kenton J. Swartz.

**3170-PLAT 5:45 PM**  
ANALYSIS OF STRUCTURAL REARRANGEMENTS DURING P2X1 RECEPTOR ACTIVATION BY VOLTAGE CLAMP FLUOROMETRY. **Stephen F. Marino**, Yogesh Bhargava, Annette Nicke, Jürgen Rettinger.

4:00 PM–6:00 PM, Room 304  
**PLATFORM AU**  
**Biotechnology & Bioengineering**

**Co-Chairs**

*Jonathan Rocheleau, University of Toronto, Canada*  
*Xiaokun Shu, University of California at San Diego*

**3171-PLAT 4:00 PM**  
PARALLEL, NON-CONTACT TRAPPING AND TRANSLATION OF YERSENIA PESTIS BACTERIA WITH OPTOELECTRONIC TWEEZERS. **Peter J. Pauzauskie**, Ted Laurence, Brett Chromy, Hsan-yin Hsu, Ming Wu.

**3172-PLAT 4:15 PM**  
A SUITABLY COMPLIANT MICROENVIRONMENT COMMITS MESENCHYMAL STEM CELLS TO DIFFERENTIATE INTO MUSCLE LIKE CELLS WHICH RESTORE MUSCULAR DEFECTS IN DYSTROPHIC MODELS. **Tathagata Chaudhuri**, Dennis E. Discher, H. Lee Sweeney.

**3173-PLAT 4:30 PM**  
SINGLE-MOLECULE DNA BIOSENSORS FOR QUANTITATIVE TRANSCRIPTION FACTOR DETECTION. **Robert Crawford**, Konstantinos Lymperopoulos, Joseph P. Torella, Mike Heilemann, Ling C. Hwang, Seamus J. Holden, Achilles Kapanidis.

**3174-PLAT 4:45 PM**  
A MICROFLUIDIC DEVICE TO MAINTAIN ISLET-ASSOCIATED ENDOTHELIAL CELLS DURING LONG-TERM TISSUE CULTURE. **Alana R. Crocker**, Jocelyne E. Verity, Jonathan V. Rocheleau.

**3175-PLAT 5:00 PM**  
ENGINEERING LIPID BILAYER PLATFORMS FOR HIGH THROUGHPUT CELL-FREE ELECTROPHYSIOLOGY. **Jason L. Poulos**, Tae-Joon Jeon, Jacob J. Schmidt.

**3176-PLAT 5:15 PM**  
TOWARDS DARK QUENCHER BASED REAL TIME DNA SEQUENCING. **Johannes Hohlbein**, Ludovic Le Reste, Olga Potapova, Catherine Joyce, Afaf H. El-Sagheer, Tom Brown, Achilles N. Kapanidis.

**3177-PLAT 5:30 PM**  
PHOTO-CONTROL OF PROTEIN ACTIVITY IN A SINGLE CELL OF A LIVE ORGANISM. **Deepak K. Sinha**, Pierre Neveu, Nathalie Gagey, Isabelle Aujard, Chouaha Benbrahim-Bouzi, Thomas Le Saux, Christine Rampon, Carole Gauron, Bernard Goetz, Sylvie Dubrulle, Laure Bally-Cuif, Michel Volovitch, David Bensimon, Ludovic Jullien, Sophie Vriz.

**3178-PLAT 5:45 PM**  
GENETICALLY ENCODED SINGLET OXYGEN GENERATOR (SOG) REQUIRING NO EXOGENOUS COFACTORS. **Xiaokun Shu**, Varda Lev-Ram, Guido M. Gaietta, Thomas J. Deerinck, Ericka B. Ramko, Michael W. Davidson, Mark H. Ellisman, Roger Y. Tsien.

4:00 PM–6:00 PM, Room 305  
**PLATFORM AV**  
**Microtubular Motors**

**Co-Chairs**

*Stefan Diez, Max Planck Institute, Germany*  
*Sunyoung Kim, LSU Health Sciences Center*

**3179-PLAT 4:00 PM**  
THE NECK LINKER DOCKING IS NOT REQUIRED FOR KINESIN-1 TO TAKE A STEP FORWARD. **Hiroshi Isojima**, Michio Tomishige.

**3180-PLAT 4:15 PM**  
POSSIBLE INTERMEDIATE STATES IN THE MICROTUBULE MINUS-END DIRECTED MOVEMENT OF THE NCD STALK. **Sirish K. Lakkaraju**, Wonmuk Hwang.

**3181-PLAT 4:30 PM**  
DIRECT MEASUREMENT OF THE FORCE-VELOCITY RELATIONSHIP FOR MULTIPLE KINESIN-1 MOTORS BY MAGNETIC TWEEZERS. **Veikko F. Geyer**, Stefan Diez.

**3182-PLAT 4:45 PM**  
A LITTLE MOTOR, A BIG SWITCHER! BIDIRECTIONAL MEMBRANE TUBE MOVEMENT DRIVEN BY COLLECTIONS OF NONPROCESSIVE MOTORS. **Paige M. Shaklee**, Line Bourel-Bonnet, Marileen Dogterom, Thomas Schmidt.

**3183-PLAT 5:00 PM**  
ATP HYDROLYSIS IN EG5 KINESIN INVOLVES A CATALYTIC TWO-WATER MECHANISM. **Courtney L. Parke**, Edward J. Wojcik, David K. Worthylake, Sunyoung Kim.

**3184-PLAT 5:15 PM**  
A COUPLING OF STRUCTURAL AND KINETIC MODELS REVEALS THE STEPPING MECHANICS OF DYNEIN. **Denis Isygankov**, Adrian W.R. Serohijos, Nikolay V. Dokholyan, Timothy C. Elston.

**3185-PLAT 5:30 PM**  
CYTOPLASMIC DYNEIN TRAVEL CUT SHORT BY A NEURODEGENERATIVE MUTATION IN ITS TAIL. **Jing Xu**, Kassandra M. Ori-McKenney, Steven P. Gross, Richard B. Vallee.

**3186-PLAT 5:45 PM**  
3D ARRANGEMENT, CONFORMATION AND ATP-INDUCED STRUCTURAL CHANGE OF INNER AND OUTER DYNEIN ARMS REVEALED BY ELECTRON CRYO-TOMOGRAPHY. **Takashi Ishikawa**, Khanh Huy Bui, Tandis Movassagh, Hitoshi Sakakibara, Kazuhiro Oiwa.

4:00 PM–6:00 PM, Room 306

## PLATFORM AW

### Protein Folding & Stability

#### Co-Chairs

*Gerhard Grobner, Umea University, Sweden*

*George Makhatadze, Rensselaer Polytechnic Institute*

**3187-PLAT** 4:00 PM  
COMPUTER SIMULATION MODELS OF PROTEIN STABILIZATION BY OSMOLYTES. **Apichart Linhananta**.

**3188-PLAT** 4:15 PM  
CITRATE BINDING STABILIZES HUMAN GAMMA-CRYSTALLIN TO SLOW UNFOLDING AND INHIBIT AGGREGATION.  
**Daniel R. Goulet**, Kelly M. Knee, Ishita Mukerji, Jonathan A. King.

**3189-PLAT** 4:30 PM  
PEPTIDE FOLDING ON PEPTIDE AMPHIPHILE MICELLES DETERMINES MICELLE STRUCTURE AND ASSEMBLY.  
**Dimitris Missirlis**, Matthew Tirrell.

**3190-PLAT** 4:45 PM  
MILLISECOND TIMESCALE, ATOMISTIC PROTEIN FOLDING SIMULATIONS YIELD A NETWORK THEORY FOR PROTEIN FOLDING. **Gregory R. Bowman**, Vijay S. Pande.

**3191-PLAT** 5:00 PM  
UNIVERSAL CONVERGENCE OF THE SPECIFIC VOLUME CHANGES OF GLOBULAR PROTEINS UPON UNFOLDING.  
**Katrina L. Schweiker**, Victoria W. Fitz, George Makhatadze.

**3192-PLAT** 5:15 PM  
IMPROVING PROTEIN STRUCTURE PREDICTION BY SMOOTHING ENERGY FUNCTIONS. **Justin L. MacCallum**, Geoffrey C. Rollins, Ken A. Dill.

**3193-PLAT** 5:30 PM  
DESERVED PROTEIN ANALYSIS: MICRO SCALE DETECTION OF SUBTLE PROTEIN STABILITY CHANGES USING A FLUORESCENT REPORTER. **David A. Chalton**, Jeremy H. Lakey.

**3194-PLAT** 5:45 PM  
INTERACTIONS BETWEEN PHOSPHOLIPID MEMBRANES AND SOD1 PROTEIN: EFFECT OF CHARGE CHANGING FALS MUTATIONS. **Roberth Byström**, Christopher Aisenbrey, Mikael Oliveberg, Gerhard Gröbner.

4:00 PM–6:00 PM, Room 307

## PLATFORM AX

### Membrane Fusion II

#### Co-Chairs

*Huey Huang, Oak Ridge National Laboratory*

*Gregory Melikian, University of Maryland*

**3195-PLAT** 4:00 PM  
DIVERSE ENVELOPED VIRUSES FAIL TO UNDERGO COMPLETE FUSION WITH THE CELL PLASMA MEMBRANE. **Kosuke Miyauchi**, Yuri Kim, Olga Latinovic, Gregory Melikian.

**3196-PLAT** 4:15 PM  
DISSEMINATING THE HIV FUSION MECHANISM: GP41 STRUCTURAL DETAILS IN MEMBRANES. **Kelly Sackett**, David P. Weliky.

**3197-PLAT** 4:30 PM  
POINT CONTACT BETWEEN MEMBRANES PRECURSORY TO FUSION. **Shuo Qian**, Lin Yang, Huey W. Huang.

**3198-PLAT** 4:45 PM  
SYNTAXIN CLUSTERING IN MEMBRANES. **David H. Murray**, Lukas K. Tamm.

**3199-PLAT** 5:00 PM

A FAST, SINGLE-VESICLE FUSION ASSAY MIMICS PHYSIOLOGICAL SNARE REQUIREMENTS. **Erdem Karatekin**, Jérôme Di Giovanni, Cécile Iborra, Jeff Coleman, Ben O'Shaughnessy, Michael Seagar, James E. Rothman.

**3200-PLAT** 5:15 PM  
ATOMIC-RESOLUTION SIMULATIONS YIELD NEW INSIGHT INTO VESICLE FUSION AND FUSION PROTEIN MECHANISMS.  
**Peter Kasson**, Erik Lindahl, Vijay Pande.

**3201-PLAT** 5:30 PM  
DOCKING IS THE RATE-LIMITING STEP IN RECONSTITUTED NEURONAL SNARE-MEDIATED LIPOSOME FUSION.  
**Elizabeth A. Smith**, James C. Weisshaar.

**3202-PLAT** 5:45 PM  
SINGLE MOLECULE CONTENT MIXING ANALYSIS OF SNARE-MEDIATED MEMBRANE FUSION. **Jiajie Diao**, Zengliu Su, Yuji Ishitsuka, Yeon-Kyun Shin, Taekjip Ha.

4:00 PM–6:00 PM, Room 308

## PLATFORM AY

### Molecular Mechanics & Force Spectroscopy

#### Co-Chairs

*Raymond Friddle, Lawrence Berkeley National Laboratory*

*Hongbin Li, University of British Columbia, Canada*

**3203-PLAT** 4:00 PM  
DOMAIN INSERTION EFFECTIVELY REGULATES THE MECHANICAL UNFOLDING HIERARCHY OF ELASTOMERIC PROTEINS: TOWARD ENGINEERING MULTIFUNCTIONAL ELASTOMERIC PROTEINS. **Hongbin Li**, Qing Peng.

**3204-PLAT** 4:15 PM  
PALEOENZYMOLOGY AT THE SINGLE-MOLECULE LEVEL: PROBING THE CHEMISTRY OF RESURRECTED ENZYMES WITH FORCE-CLAMP SPECTROSCOPY. **Raul Perez-Jimenez**, Alvaro Inglés-Prieto, Inmaculada Sanchez-Romero, Jorge Alegre-Cebollada, Pallav Kosuri, Sergi Garcia-Mañes, Eric Gaucher, Jose M. Sanchez-Ruiz, Julio M. Fernandez.

**3205-PLAT** 4:30 PM  
THE UNFOLDING BEHAVIOR OF RNASE H UNDER FORCE.  
**Jesse Dill**, Carlos Bustamante, Susan Marqusee.

**3206-PLAT** 4:45 PM  
ANALYSIS OF REVERSIBLE TWO-STATE SYSTEMS UNDER FORCE.  
**Raymond W. Friddle**, Peter Talkner, James J. De Yoreo.

**3207-PLAT** 5:00 PM  
MULTI-DIMENSIONALITY OF PROTEINS' FREE-ENERGY LANDSCAPES REVEALED BY MECHANICAL PROBES.  
**Emanuele Paci**, Zu Thur Yew, Michael Schlierf, Matthias Rief.

**3208-PLAT** 5:15 PM  
NOISE INDUCED REGULATION OF DNA LOOPS. **Joshua Milstein**, Yih-Fan Chen, Jens-Christian Meiners.

**3209-PLAT** 5:30 PM  
SINGLE MOLECULE FORCE SPECTROSCOPY OF PEPTIDE APTAMERS. **Marie-Eve Aubin-Tam**, David C. Appleyard, Valeria Garbin, Enrico Ferrari, Oluwatimilehin Fadiran, Matthew J. Lang.

**3210-PLAT** 5:45 PM  
STRENGTH OF NON-COVALENT BIOMOLECULAR INTERACTIONS PROBED AT THE MICROSECOND TIMESCALE.  
**Ozgur Sahin**, Mingdong Dong.

5:00 PM–10:00 PM, Exhibits Tear Down, Hall D

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6:00 PM–10:00 PM, Marriott, Nob Hill A/B  
**NEW COUNCIL DINNER & MEETING**

7:30 PM–9:30 PM, Room 134

**WORKSHOP 4**

**Membrane Zoology: Model Membranes of Increasing Complexity**

**Chair**

*Steven Boxer, Stanford University*

**3211-WKSHP 7:30 PM**  
MEASUREMENTS OF REDUCTIONIST MEMBRANES THAT BEAUTIFULLY FIT PHYSICS THEORIES. **Sarah L. Keller**, Aurelia R. Honerkamp-Smith.

**3212-WKSHP 7:55 PM**  
MEMBRANE INTERACTIONS MEDIATED BY DNA HYBRIDIZATION. **Steven Boxer**.

**3213-WKSHP 8:20 PM**  
THE LANGUAGE OF SHAPE: BIOLOGICAL REACTIONS ARE DRAMATICALLY AFFECTED BY THE SHAPE OF LIPID MEMBRANES. **Dimitrios Stamou**.

**3214-WKSHP 8:45 PM**  
SORTING OF PROTEINS AND LIPIDS IN MEMBRANE CURVATURE AND COMPOSITION GRADIENTS. **Tobias Baumgart**.

**3215-WKSHP 9:10 PM**  
SPATIAL ORGANIZATION AND THE MECHANICS OF SIGNAL TRANSDUCTION IN CELL MEMBRANES. **Jay Groves**.

7:30 PM–9:30 PM, Room 135

**WORKSHOP 5**

**Superresolution: Imaging & Probes**

*This workshop supported in part through a generous donation by Mad City Labs, Inc.*

**Chair**

*Jennifer Lippincott-Schwartz, NICHD, NIH*

**3216-WKSHP 7:30 PM**  
PALM-BASED SUPER-RESOLUTION IMAGING AND ITS APPLICATIONS. **Jennifer Lippincott-Schwartz**, Suliana Manley, Dylan Burnette, Jennifer Gillette, George Patterson.

**3217-WKSHP 7:55 PM**  
IPALM: 3D OPTICAL IMAGING OF PROTEIN LOCATIONS AT THE NANOMETER LEVEL. **Harald Hess**.

**3218-WKSHP 8:20 PM**  
STRUCTURED ILLUMINATION AND IMAGE INVERSION INTERFEROMETRY. Kai Wicker, Marie Walde, Enno R. Oldewurtel, Liisa Hirvonen, Ondrej Mandula, Simon Sindbert, **Rainer Heintzmann**.

**3219-WKSHP 8:45 PM**  
EXPLORING MEMBRANE DYNAMICS BY FLUORESCENCE NANOSCOPY. **Christian Eggeling**, Veronika Mueller, Christian Ringemann, Steffen J. Sahl, Marcel Leutenegger, Günter Schwarzmann, Vladimir Belov, Andreas Schönle, Stefan W. Hell.

**3220-WKSHP 9:10 PM**  
HIGH-CONTRAST FLUORESCENCE IMAGING USING NEW OPTICAL SWITCHES AND OPTICAL LOCK-IN DETECTION IMAGING MICROSCOPY. **Gerard Marriott**.

8:00 PM–10:00 PM, Room 300

**SOBLA (THE SOCIETY FOR LATINOAMERICAN BIOPHYSICISTS)**

1:45 PM–3:45 PM, Hall D  
**TUESDAY POSTER SESSIONS**

Posters should be mounted at 6:00 PM on the day preceding presentation and removed by 4:30 PM on the day of the presentation. Posters will be on view until 10:00 PM the night before presentation. Abstract 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 D.

**Authors Present**

**ODD-NUMBERED BOARDS**

1:45 PM–2:45 PM

BOARD NUMBERS

Board #B1-Board #B30  
Board #B31-Board #B48  
Board #B49-Board #B66  
Board #B67-Board #B84  
Board #B85-Board #B105  
Board #B106-Board #B126  
Board #B127-Board #B143  
Board #B144-Board #B166  
Board #B167-Board #B181  
Board #B182-Board #B205  
Board #B206-Board #B229  
Board #B230-Board #B255  
Board #B256-Board #B285  
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Board #B618-Board #B635  
Board #B636-Board #B646  
Board #B647-Board #B676  
Board #B677-Board #B705  
Board #B706-Board #B735  
Board #B736-Board #B764  
Board #B765-Board #B793  
Board #B794-Board #B823  
Board #B824-Board #B855  
Board #B856-Board #B883

**EVEN-NUMBERED BOARDS**

2:45 PM–3:45 PM

POSTER CATEGORIES

Protein Dynamics II  
Protein Folding & Stability II  
Enzymes  
Protein Structure II  
Protein Aggregates II  
Protein Structure Prediction & Drug Design  
Apoptosis  
DNA, RNA Structure & Conformation II  
RNA Folding  
Chromatin  
Membrane Physical Chemistry III  
Interfacial Protein-Lipid Interactions II  
Membrane Structure II  
Membrane Receptors & Signal Transduction II  
Endoplasmic Reticulum & Protein Trafficking  
Exocytosis & Endocytosis I  
Membrane Transporters & Exchangers I  
Auditory Systems  
Ryanodine Receptors II  
IP3 Receptors  
Voltage-gated Ca Channels I  
Voltage-gated K Channels-Gating III  
Ligand-gated Channels-Glutamate Receptors  
Cardiac Electrophysiology II  
Channel Regulation & Modulation II  
Ion Channels, Other I  
Muscle: Fiber & Molecular Mechanics & Structure III Excitation-Contraction Coupling I  
Cardiac Muscle II  
Cytoskeletal Protein Dynamics  
Bacteria & Motile Cells: Signal Transduction  
Unconventional Myosins I  
Electron & Proton Transfer  
Molecular Dynamics II  
Computational Methods II  
Imaging & Optical Microscopy III  
Fluorescence Spectroscopy  
Emerging Single Molecule Techniques II  
Molecular Mechanics & Force Spectroscopy I  
Micro & Nanotechnology, Nanopores  
Biotechnology & Bioengineering II

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

- 2272-Pos BOARD #B1**  
COLLECTIVE DYNAMICS UNDERLYING ALLOSTERIC TRANSITIONS. **Martin D. Vesper**, Bert L. de Groot.
- 2273-Pos BOARD #B2**  
DYNAMIC ANALYSIS OF PHOSPHATASE 1B WPD LOOP. **Burcu Ozkaral**, Ahmet Ozkan, Burak Alakent, Elif Ozkirimli.
- 2274-Pos BOARD #B3**  
A METHOD TO STUDY THE TIME-DEPENDENT REMODELING OF HIGH DENSITY LIPOPROTEINS BY INDIVIDUAL-PARTICLE ELECTRON CRYO-TOMOGRAPHY. **Lei Zhang**, Giorgio Cavigliolo, Michael Oda, Kerry-Anne Rye, Gang Ren.
- 2275-Pos BOARD #B4**  
STRUCTURE OF 9.6NM DISCOIDAL HIGH-DENSITY LIPOPROTEIN REVEALED BY INDIVIDUAL-PARTICLE ELECTRON TOMOGRAPHY. **Lei Zhang**, Giorgio Cavigliolo, Jianjun Wang, Kerry-Anne Rye, Michael Oda, Gang Ren.
- 2276-Pos BOARD #B5**  
MONITORING THE STRUCTURAL CHANGES OF CONJUGATED ANTIBODIES BY HIGH-RESOLUTION ELECTRON MICROSCOPY AND INDIVIDUAL-PARTICLE ELECTRON TOMOGRAPHY. **Lei Zhang**, Allan Kaspar, Gary Woodnutt, Gang Ren.
- 2277-Pos BOARD #B6**  
DETERMINING THE DYNAMIC PROTEIN STRUCTURE BY INDIVIDUAL-PARTICLE ELECTRON TOMOGRAPHY: AN INDIVIDUAL ANTIBODY STRUCTURE AT A NANOMETER RESOLUTION. **Lei Zhang**, Gang Ren.
- 2278-Pos BOARD #B7**  
STRUCTURAL DETERMINATION OF HETEROGENEOUS PROTEIN BY INDIVIDUAL-PARTICLE ELECTRON TOMOGRAPHY - COMBINATION OF ELECTRON TOMOGRAPHY AND LOCAL REFINEMENT RECONSTRUCTION METHOD FOR HIGH-RESOLUTION STRUCTURAL DETERMINATION OF EACH INDIVIDUAL PROTEIN PARTICLE. **Lei Zhang**, Gang Ren.
- 2279-Pos BOARD #B8**  
PROTEIN AGGREGATION AS A PHASE TRANSITION PROCESS. **Travis A. Hoppe**, Jian-Min Yuan.
- 2280-Pos BOARD #B9**  
A PHARMACOLOGICAL CHAPERON PREVENTING THE PARTIAL UNFOLDING OF PRION PROTEIN. **Norifumi Yamamoto**, Kazuo Kuwata.
- 2281-Pos BOARD #B10**  
VISCOSITY EFFECTS ON THE RATES OF SHORT HELICAL PEPTIDE CONFORMATIONAL DYNAMICS IN NEAT ALCOHOL SOLUTION. **Matthew A. Kubasik**.
- 2282-Pos BOARD #B11**  
ULTRAFast DYNAMICS OF THERMAL DENATURATION OF CYTOCHROME-C WITH TWO DIMENSIONAL INFRARED SPECTROSCOPY. **Jean K. Chung**, Megan C. Thielges, Sara Bowman, Kara Bren, Michael D. Fayer.
- 2283-Pos BOARD #B12**  
MOLECULAR DYNAMICS SIMULATION OF CONFORMATIONAL CHANGE IN A FATTY ACID  $\beta$ -OXIDATION MULTIZYME COMPLEX. **Tadaomi Furuta**, Tohru Terada, Akinori Kidera.
- 2284-Pos BOARD #B13**  
THE EFFECT OF OSMOLYTES ON PROTEIN DYNAMICS IN LDH-CATALYZED REACTION. **Nickolay N. Zhadin**, Robert H. Callender.
- 2285-Pos BOARD #B14**  
IDENTIFICATION OF SIGNAL TRANSMISSION PATHWAYS IN F-BOX PROTEINS USING PERTURBATION-BASED MARKOVIAN TRANSMISSION (PMT) MODEL. **Hsiao-Mei Lu**, Jie Liang.
- 2286-Pos BOARD #B15**  
STRUCTURAL BASIS FOR REGULATION SPECIFICITY IN SYK-FAMILY KINASES. **Peter J. Bond**, José D. Faraldo-Gómez.
- 2287-Pos BOARD #B16**  
METAL-BINDING RESIDUES ARE DISTINGUISHED BY THEIR LOWER MOBILITIES AND EFFICIENT SIGNAL PROPAGATION PROPERTIES. **Anindita Dutta**, Ivet Bahar.
- 2288-Pos BOARD #B17** **MINORITY BIOPHYSICISTS TRAVEL AWARDEE**  
OBTAINING FUNCTIONALLY RELEVANT PROTEIN STRUCTURAL TRANSITIONS USING A COMBINED PHYSICS/STRUCTURE-BASED COARSE-GRAINED MODEL. **Luisirene Hernandez**, Marco Cavalli, Marco Ceruso.
- 2289-Pos BOARD #B18**  
MECHANICAL RESPONSE OF THE COILED COIL. **Osman Yogurtcu**, Sean X. Sun.
- 2290-Pos BOARD #B19**  
SOLUTION DYNAMICS OF MONOCLONAL ANTIBODIES: EXPERIMENTAL AND COMPUTATIONAL APPROACH. **Ekaterine Kortkhonja**, Rely Brandman, Ilya Chorny, Julian Kissman, Tom Patapoff, Bruce Kabakoff, Ken Dill, Trevor Swartz.
- 2291-Pos BOARD #B20**  
LOW FREQUENCY MOTIONS OF A CARBOXYLESTERASE AND THEIR RELATION TO SUBSTRATE SELECTIVITY AND CATALYTIC ACTIVITY. **Xiaozhen Yu**, Monika Wierdl, Philip Potter, Randy Wadkins.
- 2292-Pos BOARD #B21**  
SOLVENT MOLECULE BONDABILITY AND EFFECT ON MECHANICAL PROTEINS TRANSITION STATE AND STABILITY - A SMD STUDY. **Georgi Z. Genchev**, Hui Lu.
- 2293-Pos BOARD #B22**  
THE BIOLOGICAL CHANNELLING OF A REACTIVE INTERMEDIATE. **Natalie E. Smith**, Alice Vrielink, Ben Corry.
- 2294-Pos BOARD #B23**  
DYNAMICS OF THE PKA C-SUBUNIT MAJOR CONFORMATIONAL STATES USING REXAMD. **Mikolaj Fajer**, Susan Taylor, J. Andrew McCammon.
- 2295-Pos BOARD #B24**  
DYNAMIC PEPTIDE FOLDING AND ASSEMBLY FOR DNA SEPARATIONS. **Vikas P. Jain**, Raymond S. Tu, Charles Maldarelli.
- 2296-Pos BOARD #B25**  
MECHANISM OF DNA RECOGNITION BY ECORV. **Mai Zahran**, Isabella Daidone, Petra Imhof, Jeremy C. Smith.
- 2297-Pos BOARD #B26**  
CONFORMATIONAL TRANSITIONS ASSOCIATED WITH DIFFERENT REDOX STATES OF DI-THIOL PAIRS. **Sam W. Fan**, Richard A. George, Naomi L. Haworth, Lina L. Feng, Jason Y. Liu, Merridee A. Wouters.
- 2298-Pos BOARD #B27**  
ELECTROSTATICS OF THE PROTEIN-WATER INTERFACE. **Dmitry V. Matyushov**.
- 2299-Pos BOARD #B28**  
MOLECULAR DYNAMICS SIMULATIONS OF ALPHA-SYNUCLEIN AT VARIOUS TEMPERATURES. **Hongyi Yang**, James C. Patterson.
- 2300-Pos BOARD #B29** **STUDEN TRAVEL AWARDEE**  
PROTEIN TRAJECTORY RECONSTRUCTION STRATEGIES FROM FRET-DERIVED DISTANCE CONSTRAINTS. **Andrej Savol**.
- 2301-Pos BOARD #B30**  
CONSERVED HYDROPHOBIC AND HYDROPHILIC BOND INTERACTION NETWORKS IN ERBB FAMILY KINASES. **Andrew J. Shih**, Shannon E. Telesco, Sung Hee Choi, Mark A. Lemmon, Ravi Radhakrishnan.

## Protein Folding & Stability II (Boards #B31-#B48)

- 2302-Pos BOARD #B31**  
RATIONAL DESIGN OF ACIDIC HUMAN FIBROBLAST GROWTH FACTOR (HFGF-1) WITH INCREASED STABILITY AND MITOGENIC ACTIVITY. **Rebecca Kerr**, D. Rajalingam, T. K. S. Kumar.
- 2303-Pos BOARD #B32**  
DESIGN OF NOVEL AFFINITY TAGS TO INCREASE RECOVERY OF RECOMBINANT PROTEINS IN THEIR SOLUBLE FORMS. **Nicholas D. Tingquist**, Anna E. Daily, T. K. S. Kumar.

## Enzymes (Boards #B49-#B66)

- 2304-Pos BOARD #B33**  
DIRECT OBSERVATION OF VILLIN FOLDING IN A MICROFLUIDIC MIXER. **Li Zhu**, Olgica Bakajin, Lisa Lapidus.
- 2305-Pos BOARD #B34**  
MOLECULAR BASIS FOR THE SOLVATION AND RECONSTRUCTIVE DENATURATION OF PROTEINS BY DETERGENTS. **John Holyoake**, Gilbert Privé, Régis Pomès.
- 2306-Pos BOARD #B35**  
CIRCULAR DICHROISM MEASUREMENTS IN A MICROFLUIDIC SERPENTINE MIXER. **Stephen J. DeCamp**, Steven A. Waldauer, Olgica Bakajin, Lisa J. Lapidus.
- 2307-Pos BOARD #B36**  
INVESTIGATION OF COLLAGEN GLYCINE SUBSTITUTION MUTATIONS LEADING TO DISEASE IN A BACTERIA COLLAGEN SYSTEM AND COLLAGEN LIKE PEPTIDES. **Haiming Cheng**, Shayam Rashid, Zhuoxin Yu, Ayumi Yoshizumi, Barbara Brodsky.
- 2308-Pos BOARD #B37**  
UNDERSTANDING THE EFFECTIVENESS OF SYNTHETIC CROWDING AGENTS. **Amen Ismail**.
- 2309-Pos BOARD #B38**  
ANALYSIS OF THERMAL STABILITY OF PROTEIN 4.1R FERM DOMAIN. **Wataru Nunomura**, Daisuke Sasakura, Kohei Shiba, Shun-ichi Kidokoro, Yuichi Takakuwa.
- 2310-Pos BOARD #B39**  
STUDYING PROTEIN FOLDING ON THE RIBOSOME ONE MOLECULE AT A TIME. **Kambiz M. Hamadani**, Jamie H. D. Cate, Susan Marqusee.
- 2311-Pos BOARD #B40**  
SLOW DISASSEMBLY OF NEURAL-CADHERIN DIMERS. **Nagamani Vunnam**, Jon Flint, Susan Pedigo.
- 2312-Pos BOARD #B41**  
EFFECT OF OSMOLYTES ON PROTEINS. **Andrew Avery**.
- 2313-Pos BOARD #B42**  
HOW STABLE IS AN ENZYME FROM A THERMOPHILIC ORGANISM? DENATURATION STUDIES WITH THE ESTERASE FROM *PYROCOCCUS FURIOSUS* - THE ROLE OF CHARGE-CHARGE INTERACTIONS. **Nathalia V. Paz**, Sylvia M. C. Alquéres, Marcius S. Almeida, Rodrigo V. Almeida, Orlando B. Martins, Debora Foguel.
- 2314-Pos BOARD #B43**  
CYSTEINE REACTIVITY AS A PROBE OF THE PROTEOME. **Joe Swift**, Brian C. Chase, J. David Pajerowski, Diego Pantano, Hsin-Yao Tang, David W. Speicher, Dennis E. Discher.
- 2315-Pos BOARD #B44**  
NANOMECHANICS OF ANKYRIN-R REPEATS PROBED BY AFM AND SMD SIMULATIONS. **Whasil Lee**, Ming Yang, Christopher J. Schofield, Piotr E. Marszalek.
- 2316-Pos BOARD #B45**  
CATION-PI INTERACTIONS CONTRIBUTE SIGNIFICANTLY TO THE STABILITY OF FGF AND THE FGFR. **Ryan Thurman**, D. Rajalingam, T. K. S. Kumar.
- 2317-Pos BOARD #B46**  
EQUILIBRIUM POPULATION OF THE FOLDING INTERMEDIATE OF RNASE H AND ITS IMPORTANCE IN THE FOLDING TRAJECTORY. **Katelyn Connell**, Geoffrey Horner, Erik Miller.
- 2318-Pos BOARD #B47**  
SOLVATION OF HYDROPHOBIC AMINO ACID SIDE CHAINS AND PEPTIDE BACKBONE IN AQUEOUS GLYCINE BETAINE AND TRIMETHYLAMINE N-OXIDE SOLUTIONS. **Yuen Lai Shek**, Soyoung Lee, Tigran V. Chalikian.
- 2319-Pos BOARD #B48**  
SITE-SPECIFIC DETERMINATION OF CONFORMATIONAL FLEXIBILITY FROM A SIDE CHAIN PERSPECTIVE: NATIVE STATE THIOL EXCHANGE OF E. COLI RIBONUCLEASE H. **Rachel Bernstein**.

- 2320-Pos BOARD #B49**  
FUNCTIONAL EFFECTS OF N-METAL BINDING DOMAIN DELETION AND SPECIFIC MUTATIONS ON THE ATP7B (WILSON DISEASE) COPPER ATPASE. **Rajendra Pilankatta**, David Lewis, Giuseppe Inesi.
- 2321-Pos BOARD #B50**  
CHARACTERIZATION OF MEMBRANE BOUND PHOSPHOLIPASE-LIPID COMPLEX. **Radha Ranganathan**, Jasmeet Singh.
- 2322-Pos BOARD #B51 STUDENT TRAVEL AWARDEE**  
INTRODUCING PHOTOX: A NOVEL ACTIN-TARGETING MONO-ADP-RIBOSYLTRANSFERASE. **Danielle D. Visschedyk**, Alexandru A. Perieteanu, Zachari J. Turgeon, Robert J. Fieldhouse, John F. Dawson, A. Rod Merrill.
- 2323-Pos BOARD #B52**  
CELLULASE ENZYME BINDING TO PRE-TREATED BIOMASS PARTICLES USING CONFOCAL FLUORESCENCE MICROSCOPY. **Paul Zhu**, Jose Moran-Mirabal, Larry Walker, Harold Craighead.
- 2324-Pos BOARD #B53**  
FLEXIBILITY AND HYDRATION OF *CANDIDA ANTARCTICA* LIPASE B IN ORGANIC SOLVENTS. **Rasmus Wedberg**, Jens Abildskov, Günther H. Peters.
- 2325-Pos BOARD #B54**  
THE ROLE OF P-LOOP IN THE ENZYMATIC MECHANISM OF NUCLEOTIDE PYROPHOSPHATASES. **Ildiko Pecsí**, Judit E. Szabo, Beata G. Vertessy, Judit Toth.
- 2326-Pos BOARD #B55**  
MECHANISM OF DISULFIDE REDUCTION BY THE ACIDOPHILIC REDUCTASE ENZYME GILT. **Pallav Kosuri**, Bo Chen, Eunjeong Lim, Karin M. Reinisch, Peter Cresswell, Julio M. Fernandez.
- 2327-Pos BOARD #B56**  
ANISOTROPIC MECHANICAL RESPONSE OF THE ENZYME GUANYLATE KINASE PERTURBED BY THE DNA MOLECULAR SPRING. **Chiao-Yu Tseng**, Andrew Wang, Giovanni Zocchi.
- 2328-Pos BOARD #B57 STUDENT TRAVEL AWARDEE**  
CRYSTAL STRUCTURE AND FUNCTIONAL ANALYSIS OF HOMOCITRATE SYNTHASE, AN ESSENTIAL ENZYME IN LYSINE BIOSYNTHESIS. **Stacie L. Bulfer**, Erin M. Scott, Jean-Francois Couture, Lorraine Pillus, Raymond C. Trievel.
- 2329-Pos BOARD #B58**  
KINETIC CONSEQUENCES OF MUTATIONS AT AN ALLOSTERIC SITE IN ARGINASE FROM THE THERMOPHILE *BACILLUS CALDOVELOX*. **Nelson Carvajal**, David Garcia, Elena Uribe.
- 2330-Pos BOARD #B59**  
CATALYSIS MECHANISM OF AMINOPEPTIDASE FROM STREPTOMYCES GRISEUS: A QUANTUM MECHANICAL/MOLECULAR MECHANICAL ANALYSIS. **Aixiao Li**, Petra Imhof.
- 2331-Pos BOARD #B60**  
SUBSTRATE-INDUCED *EISENIA FETIDA* PROTEASE REACTIONS INVOLVE BOTH "INDUCED FIT" AND "LOCK AND KEY" MECHANISMS. **Rong Pan**, Yuan Zhou, Xue-Jing Zhang, Zi-Jian Zhang, Rongqiao He.
- 2332-Pos BOARD #B61 INTERNATIONAL TRAVEL AWARDEE**  
PECULIAR REGULATORY ROLE OF MAGNESIUM IN NUCLEOTIDE HYDROLYSIS OF DUTPASES. **Eniko Takacs**, Beata G. Vertessy, Judit Toth.
- 2333-Pos BOARD #B62**  
CONSERVATION OF ACTIVE SITE GEOMETRY IN EVOLUTION OF IRON LIPOXYGENASES: EPR STUDIES. **Albert Garreta**, Àngels Manresa, Montse Busquets, Betty J. Gaffney.
- 2334-Pos BOARD #B63**  
THE N-TERMINAL IG DOMAIN OF ENDOGLUCANASE CEL9A FROM THE THERMOACIDOPHILIC ALICYCLOBACILLUS ACIDOCALDARIUS ENHANCES PROTEIN STABILITY. **Hanbin Liu**, Jose Henrique Pereira, Paul Adams, Blake Simmons, Rajat Sapra, Ken Sale.

**2335-Pos BOARD #B64**  
FIRST-PRINCIPLES STUDY OF NON-HEME FE(II) HALOGENASE SYR2B REACTIVITY. **Heather Kulik**, Leah C. Blasiak, Nicola Marzari, Catherine L. Drennan.

**2336-Pos BOARD #B65**  
PRE-STEADY-STATE KINETIC ANALYSIS OF THE ELONGATION MODE OF DENGUE VIRUS RNA POLYMERASE DOMAIN. **Zhinan Jin**, Jerome Deval, Kenneth A. Johnson, David C. Swinney.

**2337-Pos BOARD #B66**  
STRUCTURE-GUIDED DESIGN OF NOVEL INHIBITORS OF HUMAN URIDINE PHOSPHORYLASE 1. **Samantha Castronovo**, Giuseppe Pizzorno, Tarmo P. Roosild.

## Protein Structure II (Boards #B67-#B84)

**2338-Pos BOARD #B67**  
FACTOR XA DIMERIZATION AND PROTHROMBINASE COMPLEX FORMATION ARE COMPETITIVE PROCESS ON A MEMBRANE SURFACE. **Rima Chattopadhyay**, Tilen Koklic, Rinku Majumder, Barry R. Lentz.

**2339-Pos BOARD #B68**  
SANS AND OSMOTIC STRESS APPROACH TO STUDY PROTEIN PREFERENTIAL HYDRATION AND ASSOCIATION. **Christopher B. Stanley**, Hugh M. O'Neill, Erica L. Rowe, Valerie M. Berthelie.

**2340-Pos BOARD #B69**  
UNDERSTANDING THE EFFECTS OF MOLECULAR CROWDING ON THE STRUCTURE AND STABILITY OF PROTEINS USING NMR SPECTROSCOPY. **Daniel T. Vo**, D. Rajalingham, T. K. S. Kumar.

**2341-Pos BOARD #B70**  
ANTHRAX PROTECTIVE ANTIGEN OLIGOMERIZATION REGULATES TOXIN ACTIVITY. **Alexander F. Kintzer**, Katie L. Thoren, Harry J. Sterling, Geoffrey K. Feld, Iok I. Tang, Bryan A. Krantz.

**2342-Pos BOARD #B71**  
AN ATOMIC VIEW OF FIBRIL STRUCTURE USING SOLID STATE NMR APPROACHES. **Monica S. Freitas**, Hartmut Oschkinat.

**2343-Pos BOARD #B72**  
MOLECULAR STRUCTURE OF TYPE II COLLAGEN. **Olga Antipova**.

**2344-Pos BOARD #B73**  
TANDEM REPEATS DOMAIN IN CANDIDA ALBICANS ALS ADHESINS. **Caleen B. Ramsook**, Aaron T. Frank, Henry N. Otoo, Cho Tan, Gregory Soybelman, Jason M. Rauceo, Peter N. Lipke.

**2345-Pos BOARD #B74**  
STRUCTURE-BASED MODELS FOR ALPHA-HELICAL TO BETA-HELICAL CONFORMATION CHANGE IN THE C-TERMINAL OF THE MAMMALIAN PRION PROTEIN. **Jesse P. Singh**, Daniel L. Cox, Paul C. Whitford.

**2346-Pos BOARD #B75**  
SILK FIBER MECHANICS FROM MODELS AT DIFFERENT LENGTH SCALES. **Senbo Xiao**, Murat Cetinkaya, Scott Edwards, Wolfram Stacklies, Fraulke Graeter.

**2347-Pos BOARD #B76**  
FUNCTIONAL ROLES OF A NOVEL STRUCTURAL ELEMENT INVOLVING THE  $NA^+ - \pi$  INTERACTION PRESENT IN THE CATALYTIC SITE OF T1 LIPASE REVEALED BY MOLECULAR DYNAMICS SIMULATIONS. **Yohsuke Hagiwara**, Hiroyoshi Matsumura, Masaru Tateno.

**2348-Pos BOARD #B77**  
LENGTH DEPENDENT FORCE CHARACTERISTICS OF COILED-COILS. **Sara Sadeghi**, Eldon Emberly.

**2349-Pos BOARD #B78**  
CONSTRUCTION OF A BASIS SET OF SIGNATURE POCKETS OF AN ENZYME FUNCTIONAL CLASS BY STRUCTURAL ALIGNMENT OF MULTIPLE BINDING SURFACES: METALLOENDOPEPTIDASE AND NAD BINDING PROTEINS. **Joe Dundas**.

**2350-Pos BOARD #B79**  
USING STRUCTURE RECURRENCE TO DEFINE PROTEIN DOMAINS. **Chin-Hsien Tai**, Vichetra Sam, Jean-Francois Gibrat, Peter Munson, Byungkook Lee, Jean Garnier.

**2351-Pos BOARD #B80**  
2<sup>o</sup>STRUC - THE PROTEIN SECONDARY STRUCTURE ANALYSIS SERVER. **D. P. Klose**, Robert W. Janes.

**2352-Pos BOARD #B81**  
AN AUTOMATED APPROACH TO SEGREGATE AND IDENTIFY FUNCTIONAL OR DISORDERED LOOP REGIONS IN PROTEIN STRUCTURES USING THEIR RAMACHANDRAN MAPS. **Mattaparthi V. S. Kumar**, Rajaram Swaminathan.

**2353-Pos BOARD #B82**  
ORIGINS OF THERMOPHILICITY IN ENDOGLUCANASES. **Ragothaman M. Yennamalli**, Jeffrey D. Wolt, Taner Z. Sen.

**2354-Pos BOARD #B83**  
THERMOPHILIC ADAPTATION OF PROTEIN COMPLEXES INFERRED FROM PROTEOMIC HOMOLOGY MODELING. **Igor N. Berezovsky**, Bin-Guang Ma, Alexander Goncarenco.

**2355-Pos BOARD #B84**  
PROTEIN-PROTEIN DOCKING USING A BROWNIAN DYNAMICS SIMULATIONS APPROACH. **Xuan-Yu Meng**, Hong-Xing Zhang, Mihaly Mezei, Meng Cui.

## Protein Aggregates II (Boards #B85-#B105)

**2356-Pos BOARD #B85**  
BOTH THE FORMATION AND POLYPHENOL-INDUCED DISSOCIATION OF VARIOUS AMYLOID FIBRILS ARE ACCOMPANIED BY ROS FORMATION. **Dov A. Lichtenberg**, Hila shoval, Ilya Pinchuk, Lev Weiner, Ehud Gazit.

**2357-Pos BOARD #B86**  
EPTAXIAL ASSEMBLY KINETICS OF MUTANT AMYLOID BETA 25-35 FIBRILS. **Miklos S. Kellermayer**, Andrea Horvath, Unige Murvai, Katalin Soos, Botond Penke.

**2358-Pos BOARD #B87**  
MICRO MECHANICAL PROPERTIES OF MODEL ALZHEIMER'S BETA AMYLOID FIBRILS. **Benjamin J. Soukup**, Patricia Soto.

**2359-Pos BOARD #B88**  
SURFACE EFFECTS ON MUTANT A $\beta$  AGGREGATION. **Elizabeth A. Yates**, Justin Legleiter.

**2360-Pos BOARD #B89**  
TEMPLATED LATERAL FIBRIL GROWTH, AN ALTERNATIVE MECHANISM FOR BETA-AMYLOID FIBRIL FORMATION. **Muriel Arimon**, Fausto Sanz, Ernest Giralt, Natalia Carulla.

**2361-Pos BOARD #B90**  
STRUCTURAL TRANSITIONS ASSOCIATED WITH THE ASSEMBLY DYNAMICS OF TRANSTHYRETIN AMYLOID PROTOfIBRILS. **Ricardo H. Pires**, Árpád Karsai, Maria J. Saraiva, Ana M. Damas, Miklós S. Z. Kellermayer.

**2362-Pos BOARD #B91**  
X-RAY FIBER DIFFRACTION REVEALS MAJOR STRUCTURAL DIFFERENCES BETWEEN BRAIN-DERIVED PRIONS AND RECOMBINANT PRION PROTEIN AMYLOID. **Holger Wille**, Wen Bian, Michele D. McDonald, Amy K. Kendall, David W. Colby, Lillian Bloch, Julian Ollesch, Alexander L. Borovinskiy, Fred E. Cohen, Stanley B. Prusiner, Gerald Stubbs.

**2363-Pos BOARD #B92**  
MUTANT HUNTINGTIN FRAGMENTS FORM OLIGOMERS IN A POLYGLUTAMINE LENGTH-DEPENDENT MANNER. **Justin Legleiter**, Paul J. Muchowski.

**2364-Pos BOARD #B93**  
POLYMORPHISM IN ALZHEIMER A $\beta$  AMYLOID ORGANIZATION: INSIGHT INTO A $\beta$  AGGREGATION. **Yifat Miller**, Buyong Ma, Ruth Nussinov.

**2365-Pos BOARD #B94**  
STRUCTURAL DETERMINANTS OF AMYLOID  $\mu$ -PROTEIN OLIGOMERIZATION. **Mingfeng Yang**, Robin Roychaudhuri, Atul Deshpande, Gregory M. Cole, Sally Frautschy, David B. Teplow.

**2366-Pos BOARD #B95**

A SOLID-STATE NMR STUDY REVEALS STRUCTURE AND DYNAMICS IN COPPER(II)-BINDING TO ALZHEIMER'S BETA-AMYLOID FIBRILS. **Yoshitaka Ishii**.

**2367-Pos BOARD #B96**

DETECTING THE AGGREGATION OF AMYLOID PEPTIDES BY SPIN LABEL EPR. **Maryam Hashemi Shabestari**, Irina Sepkhanova, Malte Drescher, Nico J. Meeuwenoord, Dimitri V. Filippov, Ronald Limpens, Roman I. Koning, Martina Huber.

**2368-Pos BOARD #B97**

STRUCTURAL CHARACTERIZATION OF AMYLOIDS COMPRISED OF ANCHORLESS PRION PROTEINS. **Jan Stoehr**, David Colby, Kurt Giles, Stanley B. Prusiner, Holger Wille.

**2369-Pos BOARD #B98**

OLIGOMERIZATION OF AMPHIPATHIC PEPTIDES IN A MEMBRANE STUDIED BY COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS. **Myunggi Yi**, Huan-Xiang Zhou.

**2370-Pos BOARD #B99**

CLUES FOR THE MECHANISM OF SEVI HIV ENHANCEMENT FROM STRUCTURAL STUDIES OF THE SEVI PRECURSOR PEPTIDE PAP<sub>248-286</sub> IN A MEMBRANE ENVIRONMENT BY NMR. **Ravi Prakash Reddy Nanga**, Jeffrey R. Brender, Vivekanandan Subramanian, Nataliya Popovych, Ramamoorthy Ayyalusamy.

**2371-Pos BOARD #B100**

FORMATION OF TOROIDAL PORES BY AMYLOID PROTEINS: EVIDENCE OF LIPID TRANSBILAYER EXCHANGE INDUCED BY ISLET AMYLOID POLYPEPTIDE. **Daniel W. Youngstrom**, Jeffrey R. Brender, Pieter E. S. Smith, Kevin Hartman, Ayyalusamy Ramamoorthy.

**2372-Pos BOARD #B101**

MODELING ION-PERMEABLE  $\beta$ -AMYLOID (A $\beta$ ) BARRELS IN THE LIPID BILAYER. **Hyunbum Jang**, Fernando Teran Arce, Ricardo Capone, Srinivasan Ramachandran, Ramesh Lal, Ruth Nussinov.

**2373-Pos BOARD #B102**

THE SEVI PRECURSOR PEPTIDE PAP<sub>248-286</sub>, A DRAMATIC ENHANCER OF HIV INFECTIVITY, PROMOTES LIPID AGGREGATION AND FUSION. **Jeffrey R. Brender**, Kevin Hartman, Lindsey M. Gottler, Marchello E. Cavitt, Daniel W. Youngstrom, Natalia Popovych, Matthew R. Chapman, Ayyalusamy Ramamoorthy.

**2374-Pos BOARD #B103**

FLUORESCENT PROBES OF MEMBRANE-BOUND  $\alpha$ -SYNUCLEIN: INSIGHTS INTO THE ROLE OF MEMBRANES IN AGGREGATION. **Candace Pfefferkorn**.

**2375-Pos BOARD #B104**

INTERACTION HET-S PRION / MEMBRANE TO GET A BETTER INSIGHT OF AMYLOID TOXICITY. **Sophie Lecomte**, Ha Phuong Ta, Julie Géan, Karine Berthelot, Christophe Cullin.

**2376-Pos BOARD #B105**

EFFECTS OF FATTY ACIDS AND PHOSPHOLIPIDS ON AMYLOID- $\beta$  (A $\beta$ ) PEPTIDE AGGREGATION. **Amit Kumar**, Rebakah Rice, Shiela A. Lidell, Lea C. Paslay, Sarah Morgan, Vijay Rangachari.

## Protein Structure Prediction & Drug Design (Boards #B106-#B126)

**2377-Pos BOARD #B106**

SEARCHING FOR NOVEL HIV-1 REVERSE TRANSCRIPTASE INHIBITORS: A RELAXED COMPLEX APPROACH. **Anthony Ivetic**, J. Andrew McCammon.

**2378-Pos BOARD #B107**

RECREATING THE STRUCTURE AND DYNAMICS OF ANCESTRAL PROTEINS. **Tyler Glembo**, Michael Thorpe, S. Banu Ozkan.

**2379-Pos BOARD #B108**

COMPUTATIONAL METHODS FOR MAPPING LIGAND INDUCED CONFORMATIONAL CHANGES IN GPCRS. **Supriyo Bhattacharya**, Nagarajan Vaidehi.

**2380-Pos BOARD #B109**

HOMOLOGY MODELLING AND MOLECULAR DYNAMICS SIMULATIONS OF THE TAP ABC TRANSPORTER. **Valentina Corradi**, Peter Tieleman.

**2381-Pos BOARD #B110**

HIGH-PERFORMANCE DRUG DISCOVERY: COMPUTATIONAL SCREENING BY COMBINING DOCKING AND MOLECULAR DYNAMICS SIMULATIONS. **Noriaki Okimoto**, Noriyuki Futatsugi, Hideyoshi Fuji, Atsushi Suenaga, Gentaro Morimoto, Ryoko Yanai, Yosuke Ohno, Tetsu Narumi, Makoto Taiji.

**2382-Pos BOARD #B111**

DE NOVO PROTEIN STRUCTURE PREDICTION USING FRAGMENT BASED POTENTIAL AND CONFORMATIONAL SPACE ANNEALING. **Juyong Lee**, Masaki Sasai, Chaok Seok, Jooyoung Lee.

**2383-Pos BOARD #B112**

ITERATIVE ASSEMBLY OF PROTEIN FRAGMENTS. **Geoffrey C. Rollins**, Justin L. MacCallum, Ken A. Dill.

**2384-Pos BOARD #B113**

TEMPLATE-BASED PROTEIN MODELING USING GLOBAL AND LOCAL TEMPLATES. **Junsu Ko**, Hahnbeom Park, Chaok Seok, Jooyoung Lee.

**2385-Pos BOARD #B114**

DETERMINATION OF THE PSEUDO-ATOMIC STRUCTURE OF NUCLEAR PORE COMPLEX (NPC) COMPONENTS BY SMALL ANGLE X-RAY SCATTERING (SAXS) AND COMPUTATIONAL MODELING. **Seung Joong Kim**, Jeremy Phillips, Anne Martel, Dina Schneidman, Michael Sauder, Michael P. Rout, Hiro Tsuruta, Andrej Sali.

**2386-Pos BOARD #B115**

PROTEIN STRUCTURE DETERMINATION BY MOLECULAR REPLACEMENT USING HIGH-ACCURACY PROTEIN STRUCTURE MODELING. **Keehyung Joo**, Mi-Sun Kim, Jeong Hae Han, Dong Hae Shin, Jooyoung Lee.

**2387-Pos BOARD #B116**

ROSETTAEP: DEVELOPING PROTEIN STRUCTURE PREDICTION METHODS USING SPARSE SDSL-EPR DATA. **Stephanie Hirst**, Nathan Alexander, Kristian Kaufmann, Hassane Mchaourab, Jens Meiler.

**2388-Pos BOARD #B117**

ACCURATE LOOP GENERATION OF PROTEIN STRUCTURES USING DISTANCE-GUIDED SEQUENTIAL MONTE CARLO SAMPLING METHOD. **Ke Tang**, Jinfeng Zhang, Jian Zhang, Jie Liang.

**2389-Pos BOARD #B118**

ANTAGONIST-BINDING CONFORMATION OF THE DOPAMINE D2S RECEPTOR. **Philip W. Payne**.

**2390-Pos BOARD #B119**

ALLOXAN DERIVATIVES AS INHIBITORS OF MATRIX METALLOPROTEINASE-2: THEORETICAL CALCULATIONS AND EXPERIMENTAL RESULTS. **Gianluca Lattanzi**, Ilenia Giangreco, Orazio Nicolotti, Marco Catto, Angelo Carotti.

**2391-Pos BOARD #B120**

THEORETICAL IDENTIFICATION OF STRUCTURAL ELEMENTS FOR STABILIZING A CAVITY PRESENT IN THE ENTRAILS OF THE HUMAN ARYL HYDROCARBON RECEPTOR DIOXIN BINDING DOMAIN. **Sundaram Arulmozhiraja**, Yohsuke Hagiwara, Takao Ohno, Masaru Tateno.

**2392-Pos BOARD #B121**

APPLYING THERMODYNAMICS TO FRAGMENT-BASED DRUG DEVELOPMENT. **Tomas Holguin**, Cindy Browder, Matthew Gage.

**2393-Pos BOARD #B122**

A UNIFIED PROTEIN DOCKING PROCEDURE WITH A SHAPE COMPLEMENTARITY SCREENING USING 3D ZERNIKE DESCRIPTORS. **Daisuke Kihara**, Vishwesh Venkatraman, Yifeng D. Yang, Lee Sael.

**2394-Pos BOARD #B123**

A PHYSICS-BASED ITERATIVE METHOD TO EXTRACT DISTANCE-DEPENDENT ALL-ATOM POTENTIALS FOR PROTEIN STRUCTURE PREDICTION. **Shengyou Huang**, Xiaoqin Zou.

**2394-Pos BOARD #B123**

A PHYSICS-BASED ITERATIVE METHOD TO EXTRACT DISTANCE-DEPENDENT ALL-ATOM POTENTIALS FOR PROTEIN STRUCTURE PREDICTION. **Shengyou Huang**, Xiaoqin Zou.

2395-Pos BOARD #B124 WITHDRAWN

2397-Pos BOARD #B126  
SYNTHESIS OF KYNAPCINS AND TELEPHORIC ACIDS AS PROLYL ENDOPEPTIDASE INHIBITORS OF ANTI-DEMENTIA DRUGS.  
**Yean-Jang Lee**, S. -Y. Lin.

## Apoptosis (Boards #B127-#B143)

2398-Pos BOARD #B127  
FCS STUDIES OF THE PORE FORMATION BY PROTEIN BAX IN LIPID MEMBRANES. **Olena Ivashyna**, Ana J. García-Sáez, Eric T. Christenson, Petra Schwillie, Paul H. Schlesinger.

2399-Pos BOARD #B128  
DIRECT ACTIVATORS BID & BIM FUNCTION LIKE MEMBRANE RECEPTORS FOR BAX & BCL-XL. **Eric T. Christenson**, Paul H. Schlesinger.

2400-Pos BOARD #B129  
BIOPHYSICAL INSIGHTS INTO BAX OLIGOMERIZATION AND MEMBRANE INSERTION. **Kathleen N. Nemec**, Rebecca J. Boohaker, Annette R. Khaled.

2401-Pos BOARD #B130  
BAX PORE FORMATION: FROM ACTIVATION TO OLIGOMERIZATION. **Dmitri Satsoura**, Aisah Shamas-Din, Sanjeevan Shivakumar, Norbert Kucerka, John Katsaras, Brian Leber, David W. Andrews, Cecile Fradin.

2402-Pos BOARD #B131  
CONFORMATIONS AND INTERACTIONS OF BCL-2 FAMILY PROTEINS: IMPLICATIONS FOR APOPTOSIS. **Yong Yao**, Andrey A. Bobkov, Leigh A. Plesniak, Francesca M. Marassi.

2403-Pos BOARD #B132  
MEMBRANE-TARGETED SOLUBLE FORM OF BAK UNFOLDS LIKE AN UMBRELLA UPON PORE-FORMATION. **Kyoung Joon Oh**, Kelly Foss, Pawan Singh, Matthew Park, Puja Singh.

2404-Pos BOARD #B133  
AMPHIPATHIC TAIL-ANCHORING PEPTIDE AND BH3 PEPTIDE INDUCED MITOCHONDRIAL PERMEABILIZATION AND APOPTOSIS ARE MECHANISTICALLY DISTINCT. **Jae-Kyun Ko**, Jun Peng, Kyoung-Han Choi, Zhi Zhang, Wei-Xing Zong, Noah Weisleder, Jialing Lin, Jianjie Ma.

2405-Pos BOARD #B134  
BCL-XL REGULATES ATP SYNTHASE AND SYNAPTIC EFFICIENCY. **Kambiz Alavian**, Leon Collis, Hongmei Li, Lu Zeng, Laura Bonanni, Christoph Rahner, J. Marie Hardwick, Elizabeth Jonas.

2406-Pos BOARD #B135  
EFFECT OF DIFFERENT LIPID COMPOSITIONS ON MITOCHONDRIAL OUTER MEMBRANE PERMEABILIZATION ASSISTED BY THE PRO-APOPTOTIC PROTEINS TBID AND BAX. **Aisha Shamas-Din**, Scott Bindner, Sanjeevan Shivakumar, Brian Leber, Fradin Cecile, David W. Andrews.

2407-Pos BOARD #B136  
STRUCTURE AND DYNAMICS OF AN APOPTOTIC MODEL MEMBRANE. **Beate Boulgaropoulos**, Heinz Amenitsch, Peter Laggner, Georg Pabst.

2408-Pos BOARD #B137  
THE EFFECT OF CERAMIDE ON MODEL MEMBRANES AND APOPTOTIC CELLS DETERMINED BY X-RAY SCATTERING, SOLID STATE NMR, AND FLOW CYTOMETRY. **Matthew J. Justice**, Adriana L. Rogozea, Daniela N. Petrusca, Irina Petrache, Stephen R. Wassall, Horia I. Petrache.

2409-Pos BOARD #B138  
LIPID-INDUCED UP-REGULATION OF ACYL-COA SYNTHETASE 5 PROMOTES APOPTOSIS IN HUMAN HEPATOCYTES. **Andrea Reinartz**, Christopher A. Haynes, Ruth Knuechel, Alfred H. Merrill Jr., Nikolaus Gassler.

2410-Pos BOARD #B139  
DIFFERENTIAL SUSCEPTIBILITY OF NORMAL AND TRANSFORMED HUMAN LEUKOCYTES TO HYDROLYTIC ATTACK BY SECRETORY PHOSPHOLIPASE A<sub>2</sub>. **Lynn Anderson**, Kelly Damm, Ryan Baker, Joseph Chen, Amy Hamaker, Izadora Izidoro, Eric Moss, Mikayla Orton, Kristin Papworth, Lyndee Sherman, Evan Stevens, Celestine Yeung, Jennifer Nelson, Allan M. Judd, John D. Bell.

2411-Pos BOARD #B140  
KINETIC EVALUATION OF CELL MEMBRANE HYDROLYSIS DURING APOPTOSIS BY HUMAN ISOFORMS OF SECRETORY PHOSPHOLIPASE A<sub>2</sub>. **Jennifer Nelson**, Erin Olson, Katalyn Griffith, Michael Streeter, Allan M. Judd, John D. Bell.

2412-Pos BOARD #B141  
VDAC1 CYSTEINE RESIDUES: TOPOLOGY AND FUNCTION IN CHANNEL ACTIVITY AND APOPTOSIS. **Varda Shoshan-Barmatz**, Shay Geula, Lior Aram, Nir Arbel.

2413-Pos BOARD #B142  
A VOLTAGE DEPENDENT NA<sup>+</sup> CHANNEL IS ACTIVATED DURING APOPTOSIS IN XENOPUS OOCYTES. **Ulrika H. Englund**, Jens Gertow, Fredrik Elinder.

2414-Pos BOARD #B143  
PHOTOBIO-MODULATION OF CELLULAR SIGNALLING AND APOPTOSIS INDUCTION IN HUMAN T CELLS. **Rahul P. Sinha**, Gyongyver Katona, Magdalena Mocanu, Eugen Radu, Eva Katona.

## DNA, RNA Structure & Conformation II (Boards #B144-#B166)

2415-Pos BOARD #B144  
REAL-TIME DETECTION OF CRUCIFORM EXTRUSION BY SINGLE-MOLECULE DNA NANOMANIPULATION. **Ramreddy Tippana**.

2416-Pos BOARD #B145  
A DIRECT OBSERVATION OF HIGHLY BENT AND TWISTED DNA AT THE SINGLE MOLECULE LEVEL. **Troy Lionberger**, Davide Demurtas, Todd Lillian, Julien Dorier, Noel Perkins, Andrzej Stasiak, Edgar Meyhofer.

2417-Pos BOARD #B146  
MEASUREMENT OF THE ELASTIC ENERGY OF SHARPLY BENT DS DNA. **Hao Qu**, Yong Wang, Chiao-Yu Tseng, Giovanni Zocchi.

2418-Pos BOARD #B147  
VISUALIZING AND QUANTIFYING THE ENERGY LANDSCAPE DURING DNA OVERSTRETCHING. **Peter Gross**, Niels Laurens, Lene B. Oddershede, Ulrich Bockelmann, Erwin J. G. Peterman, Gijs J. L. Wuite.

2419-Pos BOARD #B148  
TORSIONAL STUDIES OF DNA DENATURATION USING ANGULAR OPTICAL TRAPPING. **Maxim Y. Sheinin**, Scott Forth, Michelle D. Wang.

2420-Pos BOARD #B149  
THE RULE OF SEVEN REVEALED BY OBSERVING DNA ANNEALING IN A NANOCONTAINER. **Ibrahim Cisse**, Taekjip Ha.

2421-Pos BOARD #B150  
PROBING DNA SEQUENCE HETEROGENEITY THOROUGH SINGLE-MOLECULE STUDIES OF SUPERCOILING. **Jun Lin**, Omar A. Saleh.

2422-Pos BOARD #B151  
SUPERCOILING DOUBLE-STRANDED RNA. **Gary M. Skinner**, Serge P. Donkers, Jan Lipfert, Nynke H. Dekker.

2423-Pos BOARD #B152  
MECHANICAL STABILISATION OF AN ESSENTIAL SUBDOMAIN OF THE RIBOSOME. **Pierre Mangeol**, Thierry Bizebard, Mathias Springer, Marc Dreyfus, Ulrich Bockelmann.

2424-Pos BOARD #B153  
SIMULATED AND MECHANICAL UNFOLDING OF THE BEET WESTERN YELLOW VIRUS -1 FRAMESHIFT SIGNAL. **Katherine H. White**, Marek Orzechowski, Dominique Fourmy, Koen Visscher.

- 2425-Pos BOARD #B154**  
ETHANOL INDUCED SHORTENING OF DSDNA IN NANOCHANNELS. **Gregory J. Gemmen**, Walter W. Reisner, Jonas Teegenfeldt, Heiner Linke.
- 2426-Pos BOARD #B155**  
LOCAL CONFORMATION OF CONFINED DNA STUDIED USING EMISSION POLARIZATION ANISOTROPY. **Fredrik Persson**, Fredrik Westerlund, Anders Kristensen, Jonas O. Teegenfeldt.
- 2427-Pos BOARD #B156**  
STRUCTURE AND THERMODYNAMICS OF SSDNA AND DSDNA NEAR A SURFACE: A COARSE GRAINED APPROACH. **Joaquin Ambia Garrido**, Montgomery Pettitt.
- 2428-Pos BOARD #B157**  
MECHANICAL CONSTRAINTS ON CONFINED DNA. **Benoît Knecht**.
- 2429-Pos BOARD #B158**  
SELF ORGANIZATION IN DNA-LOOP-EXTRUDING ENZYMES. **Elnaz Alipour-Assiabi**, John F. Marko.
- 2430-Pos BOARD #B159**  
A GENERALIZED THEORY OF DNA CYCLIZATION AND LOOP FORMATION. **David P. Wilson**, Todd Lillian, Alexei Tkachenko, Noel C. Perkins, Jens-Christian Meiners.
- 2431-Pos BOARD #B160**  
THEORY FOR THE DNA SUPERCOILING TRANSITION IN EXTENSION-ROTATION EXPERIMENTS. **John F. Marko**, Sebastien Neukirch.
- 2432-Pos BOARD #B161**  
A THEORETICAL DESCRIPTION OF DNA PLECTONEMES UNDER TENSION. **Hergen Brutzer**, Robert Schöpflin, René Stehr, Gero Wedemann, Ralf Seidel.
- 2433-Pos BOARD #B162**  
MONTE CARLO SIMULATION OF SUPERCOILED DNA AT BUCKLING TRANSITION. **Robert Schöpflin**, Hergen Brutzer, René Stehr, Ralf Seidel, Gero Wedemann.
- 2434-Pos BOARD #B163**  
ANHARMONIC TORSIONAL STIFFNESS OF DNA REVEALED UNDER SMALL EXTERNAL TORQUES. **Alexey K. Mazur**.
- 2435-Pos BOARD #B164**  
DNA MELTING INDUCED BY TEMPERATURE AND MECHANICAL STRAIN. **B. Montgomery Pettitt**.
- 2436-Pos BOARD #B165**  
A MOLECULAR DYNAMICS STUDY OF DNA BENDING IN THE IHF-DNA COMPLEX. **Elizabeth Wheatley**, David L. Beveridge, Susan Pieniazek.
- 2437-Pos BOARD #B166**  
UNDERSTANDING PROTEIN-DNA INTERACTIONS THROUGH DYNAMICS. **Morten Källberg**, Robert Langlois, Matthew Carson, Hui Lu.
- RNA Folding (Boards #B167-#B181)**
- 2438-Pos BOARD #B167**  
PROBING THE DYNAMICS OF THE P1 HELIX WITHIN THE TETRAHYMENA GROUP I INTRON. **Xuesong Shi**.
- 2439-Pos BOARD #B168**  
ANALYSIS OF RNA HAIRPIN FOLDING BY DUAL BEAM FLUORESCENCE FLUCTUATION SPECTROSCOPY. **Artem V. Melnykov**, Alan Van Orden, Kathleen B. Hall.
- 2440-Pos BOARD #B169**  
THE ROLE OF BULGES AND HINGES IN RNA FOLDING. **Julie L. Fiore**, David J. Nesbitt.
- 2441-Pos BOARD #B170**  
SINGLE MOLECULE FRET STUDIES OF RNA TERTIARY FOLDING: ELUCIDATING THE THERMODYNAMIC AND KINETIC ROLE OF NA<sup>+</sup> CATIONS. **Erik D. Holmstrom**, Julie L. Fiore, David Nesbitt.

- 2442-Pos BOARD #B171**  
THE ROLE OF HELIX TOPOLOGY AND COUNTERION DISTRIBUTIONS IN RNA INTERACTIONS. **Suzette A. Pabit**, Li Li, Steve P. Meisburger, Jessica S. Lamb, Xiangyun Qiu, Lois Pollack.
- 2443-Pos BOARD #B172 STUDENT TRAVEL AWARDEE**  
TEMPERATURE-DEPENDENT SINGLE-MOLECULE FLUORESCENCE MEASUREMENTS OF RNA MOTIFS MELTING. **Huimin Chen**, Suzette A. Pabit, Lois Pollack, Watt W. Webb.
- 2444-Pos BOARD #B173**  
SINGLE-MOLECULE ANALYSIS OF MSS116-MEDIATED GROUP II INTRON FOLDING. **Krishanthi S. Karunatilaka**, Amanda Solem, Anna-Marie Pyle, David Rueda.
- 2445-Pos BOARD #B174**  
TIME-RESOLVED MULTIPHASE FOLDING OF BACTERIAL GROUP I RIBOZYME. **Joon Ho Roh**, Liang Guo, Duncan Kilburn, Reza Behrouzi, Robert M. Briber, Thomas Irving, Sarah A. Woodson.
- 2446-Pos BOARD #B175**  
FOLDING OF BACTERIAL GROUP I RIBOZYME IN CROWDED SOLUTIONS. **John D. Kilburn**, Joon Ho Roh, Liang Guo, Robert M. Briber, Sarah A. Woodson.
- 2447-Pos BOARD #B176**  
HEPATITIS C VIRUS (HCV) - 3'UTR : A KISSING COMPLEX DEPENDENT MOLECULAR SWITCH? **Sumangala S. Shetty**, Mihaela - Rita Mihailescu.
- 2448-Pos BOARD #B177**  
THE STATISTICAL PROPERTIES OF HUMAN UTRS COMPARED TO THAT OF RANDOM SEQUENCES. **Joshua S. Martin**, Alain Laederach.
- 2449-Pos BOARD #B178**  
ASSEMBLY MECHANISMS OF RNA PSEUDOKNOTS ARE DETERMINED BY THE STABILITIES OF THE CONSTITUENT SECONDARY STRUCTURES. **Samuel S. Cho**, D. Thirumalai.
- 2450-Pos BOARD #B179**  
MECHANICAL FOLDING KINETICS OF RNA HAIRPINS: A NEW COMPUTATIONAL APPROACH. **Song Cao**, Shi-Jie Chen.
- 2451-Pos BOARD #B180**  
FIRST-PRINCIPLES PREDICTION OF THE SEQUENCE-DEPENDENT STABILITY OF RNA HAIRPIN LOOP. **Liang Liu**, Shi-jie Chen.
- 2452-Pos BOARD #B181**  
SALT DEPENDENT FOLDING ENERGY LANDSCAPE OF RNA THREE-WAY JUNCTION. **Gengsheng Chen**, Zhi-Jie Tan, Shi-Jie Chen.

### Chromatin (Boards #B182-#B205)

- 2453-Pos BOARD #B182**  
DIFFUSION BASED LOOPING OF CHROMATIN. **Dieter W. Heermann**, Manfred Bohn.
- 2454-Pos BOARD #B183**  
PROKARYOTIC CHROMOSOME ORGANIZATION IN THE CONTEXT OF ENTROPY, CONFINEMENT AND TETHERING INTERACTIONS. **Miriam Fritsche**, Dieter W. Heermann.
- 2455-Pos BOARD #B184**  
ATOMIC FORCE MICROSCOPE IMAGING OF CHROMATIN ASSEMBLED IN *XENOPUS* LAEVIS EGG EXTRACT. **Hongxia Fu**, **Benjamin Freedman**, Chwee Teck Lim, Rebecca Heald, Jie Yan.
- 2456-Pos BOARD #B185**  
UNWRAPPING OF NUCLEOSOMES DETECTED BY TIME-LAPSE AFM. **Luda S. Shlyakhtenko**, Alexander Lushnikov, Yuri L. Lyubchenko.
- 2457-Pos BOARD #B186**  
RSC IS AN EFFICIENT NUCLEOSOME RANDOMIZER: AN AFM QUANTITATIVE STUDY ON OLIGO-NUCLEOSOMAL TEMPLATES. **Fabien Montel**, Martin Castelnovo, Hervé Menoni, Dimitar Angelov, Stefan Dimitrov, Cendrine Fivre-Moskalenko.

**2458-Pos BOARD #B187**  
ATP DEPENDENT NUCLEOSOME REMODELLING - MECHANISTIC INSIGHTS FROM SINGLE MOLECULE EXPERIMENTS. **Jens Michaelis**, Wolfgang Kügel, Barbara Treutlein, Josef Exler, Gernot ängst.

**2459-Pos BOARD #B188**  
ROLE OF DNA ELASTICITY AND NUCLEOSOME GEOMETRY IN HIERARCHICAL PACKAGING OF CHROMATIN. **Elena F. Koslover**, Colin Fuller, Aaron F. Straight, Andrew J. Spakowitz.

**2460-Pos BOARD #B189**  
QUANTIFICATION OF NUCLEOSOME STACKING IN SINGLE 30 NM CHROMATIN FIBERS. **Fan-Tso Chien**, Maarten Kruithof, Andrew Routh, Daniela Rhodes, John van Noort.

**2461-Pos BOARD #B190**  
DNA METHYLATION INDUCES A MORE COMPACT AND RIGID NUCLEOSOME STRUCTURE. **Sijie Wei**, JuYeon Lee, Tae-Hee Lee.

**2462-Pos BOARD #B191**  
BINDING OF THE CHD4 PHD2 FINGER TO HISTONE H3 IS MODULATED BY COVALENT MODIFICATIONS. **Catherine A. Musselman**, Robyn E. Mansfield, Adam L. Garske, Foteini Davrazou, Ann H. Kwan, Samuel S. Oliver, Heather O'Leary, John M. Denu, Joel P. Mackay, Tatiana G. Kutateladze.

**2463-Pos BOARD #B192**  
THEORETICAL MODEL OF HP1-INDUCED HETEROCHROMATIN FORMATION. **Peter J. Mulligan**, Elena F. Koslover, Andrew J. Spakowitz.

**2464-Pos BOARD #B193**  
APPLICATIONS OF VDNA FROM BASIC GEOMETRY TO CHROMATIN FOLDING. **Thomas C. Bishop**.

**2465-Pos BOARD #B194**  
REGULATION OF NUCLEOSOME CONFORMATIONAL DYNAMICS BY POST-TRANSLATIONAL HISTONE MODIFICATIONS STUDIED WITH SINGLE-PAIR FRET. **Ruth Buning**, Wiepke Koopmans, Heinz Neumann, Jason Chin, John van Noort.

**2466-Pos BOARD #B195**  
THEORETICAL MODELING OF PROTEIN ACCESSIBILITY TO THE CHROMATIN FIBER. **Elena F. Koslover**, Mario Diaz de la Rosa, Peter J. Mulligan, Andrew J. Spakowitz.

**2467-Pos BOARD #B196**  
NUCLEOSOME ORGANIZATION IS QUANTITATIVELY DESCRIBED BY STATISTICAL POSITIONING UP- AND DOWNSTREAM OF TRANSCRIPTION START SITES. **Ulrich Gerland**, Wolfram Mobius.

**2468-Pos BOARD #B197**  
DNA LOOP FORMATION IN NUCLEOSOMES. **Mithun Biswas**, Joerg Langowski, Jeremy C. Smith.

**2469-Pos BOARD #B198**  
THE THIRD LEVEL OF GENOME FUNCTIONING: CHROMATIN FOLDING. **Mariliis Tark**, Manfred Bohn, Dieter Heermann, Roel van Driel.

**2470-Pos BOARD #B199**  
THE CHROMATIN-REMODELING COMPLEX ACF FUNCTIONS AS A DIMERIC MOTOR TO SPACE NUCLEOSOMES. **Lisa R. Racki**, Geeta J. Narlikar, Roger Cooke, Nariman Naber, Thomas J. Purcell, Janet G. Yang, Yifan Cheng, Ashley Acevedo, Peretz Partensky.

**2471-Pos BOARD #B200**  
ROLE OF DNA FLUCTUATIONS IN RNA POLYMERASE TRANSLOCATION THROUGH A SINGLE NUCLEOSOME. **Bariz Sudhanshu**, Elena F. Koslover, Shirley Mihadja, Andrew J. Spakowitz.

**2472-Pos BOARD #B201**  
A MAGNETIC FORCE MICROPISTON FOR ANALYSIS OF CHROMOSOME EXPANSION AND COMPRESSIVE FORCES AND THEIR EFFECTS ON STRUCTURE AND FUNCTION. **Jay K. Fisher**, Romain Koszul, Mara Prentiss, Nancy Kleckner.

**2473-Pos BOARD #B202**  
NUCLEOSOME DYNAMICS STUDIED BY FREE SOLUTION SINGLE MOLECULE FRET. **Alexander Gansen**, Vera Böhm, Katalin Tóth, Alessandro Valeri, Suren Felekyan, Stanislas Kalinin, Claus Seidel, Jörg Langowski.

**2474-Pos BOARD #B203**  
HISTONE POST-TRANSLATIONAL MODIFICATIONS BURIED WITHIN THE NUCLEOSOME DNA-HISTONE INTERFACE FACILITATE NUCLEOSOME DISASSEMBLY. **Marek Simon**, Sarah Javaid, Alex Mooney, Mridula Manohar, Richard Fishel, Jennifer J. Ottesen, Michael G. Poirier.

**2475-Pos BOARD #B204**  
DNA-PROTAMINE TOROIDS PULL ON THEIR ATTACHMENT POINTS. **Laurence R. Brewer**, Laura Cree, Michele Corzett, Rod Balhorn.

**2476-Pos BOARD #B205**  
SINGLE MOLECULAR TORQUE MEASUREMENTS OF CHROMATIN FIBERS. **Alfredo Celedon**, Sean Sun.

## Membrane Physical Chemistry III (Boards #B206-#B229)

**2477-Pos BOARD #B206**  
LIPID MEDIATED INTERACTION OF TRANSMEMBRANE HELICES AS STUDIED BY A MESOSCOPIC MODEL. **Ayelet Benjamini**.

**2478-Pos BOARD #B207**  
THE INTERACTION OF CURCUMIN WITH PHOSPHOLIPID MODEL MEMBRANES. A STUDY USING DIFFERENTIAL SCANNING CALORIMETRY, NMR, X-RAY DIFFRACTION AND INFRARED SPECTROSCOPY. **Juan C. Gómez-Fernández**, Angel Perez-Lara, Francisco J. Aranda, Alessio Ausili, Ana deGodos, Senena Corbalan-Garcia.

**2479-Pos BOARD #B208**  
ASSESSMENT OF THE BIOPHYSICAL PARAMETERS OF PLATELET MEMBRANE IN LEUKEMIC PATIENTS. **Eugenia Kovacs**, Tudor Savopol, Viola Popov, Ema Cicarma, Horea Bumbea, Ana Maria Vladareanu.

**2480-Pos BOARD #B209 INTERNATIONAL TRAVEL AWARDEE**  
CHARACTERIZATION OF A HOMOLOGOUS SERIES OF FLUORESCENT FATTY AMINES. PHOTOPHYSICS, AQUEOUS SOLUBILITY AND BINDING TO ALBUMIN AND TO POPC BILAYERS. **Renato M. Cardoso**, Hugo L. Filipe, Winchil L. C. Vaz, Maria João Moreno.

**2481-Pos BOARD #B210 INTERNATIONAL TRAVEL AWARDEE**  
NEW METHOD FOR THE MEASUREMENT OF BINDING CONSTANTS FOR AMPHIPHILES WITH A VERY SMALL SOLUBILITY IN AQUEOUS MEDIA. **Hugo L. Filipe**, Winchil L. C. Vaz, Maria João Moreno.

**2482-Pos BOARD #B211**  
DRIVEN DYNAMIC PATTERNS OF SUPPORTED LIPID BILAYERS BY STANDING SURFACE ACOUSTIC WAVES. **Martin Hennig**, Jürgen Neumann, Achim Wixforth, Matthias Schneider, Joachim Rädler.

**2483-Pos BOARD #B212**  
DOUBLE END-GRAFTED DNA AS FORCE SENSORS FOR BIO-ADHESION SPREADING. **Yuting Sun**.

**2484-Pos BOARD #B213 STUDENT TRAVEL AWARDEE**  
HIGH THROUGHPUT GRAMICIDIN-BASED FLUORESCENCE ASSAY TO SCREEN FOR SMALL MOLECULES' BILAYER-PERTURBING POTENTIAL. **Helgi I. Ingólfsson**, Olaf S. Andersen.

**2485-Pos BOARD #B214**  
ANTIDEPRESSANTS MODIFY LIPID BILAYER PROPERTIES. **Ruchi Kapoor**, Helgi I. Ingólfsson, Roger E. Koeppe II, Olaf S. Andersen.

**2486-Pos BOARD #B215**  
THIAZOLIDINEDIONES ALTER LIPID BILAYER PROPERTIES AND NATIVE VOLTAGE-GATED SODIUM CHANNEL FUNCTION. **Radda Rusinova**, Karl F. Herold, Roger E. Koeppe II, Hugh C. Hemmings Jr., Olaf S. Andersen.

**2487-Pos BOARD #B216**  
NSAIDS ALTER BILAYER PROPERTIES BY A COMMON MECHANISM. **Subhi J. Al'Aref**, Roger E. Koeppe II, Olaf S. Andersen.

**2488-Pos BOARD #B217**  
SUPPORTED LIPID BILAYERS ON SKELETONIZED ZIRCONIUM PHOSPHONATE SURFACES FOR THE STUDY OF TRANSMEMBRANE PROTEINS. **Roxane M. Fabre**, George O. Okeyo, Daniel R. Talham.

**2489-Pos BOARD #B218**  
CRITICAL DEPENDENCE OF THE BIOPHYSICAL ACTIVITY OF PULMONARY SURFACTANT FILMS ON TEMPERATURE.  
**M. Victoria Picardi**, Jესtis Pérez Gil.

**2490-Pos BOARD #B219**  
THE EFFECT OF MEMBRANE SPANNING PEPTIDES ON LAURDAN AND DI-4-ANEPPDHQ EMISSION SPECTRA.  
**Jelena Dinic**, Henrik Biverstahl, Lena Måler, Ingela Parmryd.

**2491-Pos BOARD #B220**  
THERMODYNAMICS AND DYNAMICS OF THE FORMATION OF SPHERICAL LIPID VESICLES. **Ernesto Hernández-Zapata**, Luciano Martínez-Balbuena, Iván Santamaría-Holek.

**2492-Pos BOARD #B221**  
PERMEABILITY OF MODEL STRATUM CORNEUM LIPID MEMBRANE MEASURED USING QUARTZ CRYSTAL MICROBALANCE: NON-FICKIAN DIFFUSION AND TRANSIENT MEMBRANE SWELLING. **Eugene Pashkovski**, Efrebra Braun, Daeyeon Lee, David Weitz.

**2493-Pos BOARD #B222**  
PHOTOPHYSICAL STUDIES OF NOVEL RUTHENIUM METAL-LIGAND COMPLEXES INCORPORATED IN MODEL LIPID-MEMBRANE BILAYERS. **Ayesha Sharmin**, Laurie Franklin, Joshua C. Cochran, Reuben C. Darlington, J. B. Alexander Ross, Edward Rosenberg.

**2494-Pos BOARD #B223**  
THEORETICAL DESIGN OF MODEL NANOPARTICLES FOR TARGETED CELL-SURFACE BINDING. **Nicholas Cordella**, Shafiq Mehraeen, Andrew J. Spakowitz.

**2495-Pos BOARD #B224**  
AMPHIPHILE REGULATION OF GRAMICIDIN CHANNEL GATING. LINEAR FREE ENERGY RELATIONSHIPS DESCRIBED BY CHANGES IN BILAYER ELASTIC ENERGY. **Per J. Greisen**, Kevin Lum, Olaf S. Andersen, Jens August Lundbaek.

**2496-Pos BOARD #B225**  
THERMAL FLUCTUATIONS OF LIPID BILAYERS INVOLVING DILATION, SPLAY, TILT AND TWIST. **Max C. Watson**.

**2497-Pos BOARD #B226**  
MEASURING THE INTERFACIAL RHEOLOGICAL PROPERTIES OF LUNG SURFACTANT MONOLAYERS. **KyuHan Kim**, Siyoung Q. Choi, Siegfried Steltenkamp, Joseph A. Zasadzinski, Todd M. Squires.

**2498-Pos BOARD #B227**  
AMPHIPHILE-REGULATION OF ION CHANNEL FUNCTION BY CHANGES IN A TRANSFERABLE LIPID BILAYER SPRING CONSTANT. **Jens A. Lundbaek**, Olaf S. Andersen.

**2499-Pos BOARD #B228**  
CHARACTERIZATION OF THE BIOPHYSICAL PROPERTIES OF NOVEL SATURATED BIS(MONOACYLGLYCERO)PHOSPHATE ANALOGUES. **Philip C. Goff**, Thomas E. Frederick, Meng M. Rowland, Michael D. Best, Joanna R. Long, Gail E. Fanucci.

**2500-Pos BOARD #B229**  
ANALYSIS OF LATERAL SEGREGATION FORMED ON DNA-TETHERED LIPID MEMBRANES BY VARYING TETHER LENGTHS.  
**Minsub Chung**, Bonjun Koo, Steven G. Boxer.

## Interfacial Protein-Lipid Interactions II (Boards #B230-#B255)

**2501-Pos BOARD #B230**  
LIPID TARGETING OF SYNAPTOTAGMIN I C2 DOMAINS ON ASYMMETRIC TWO-PHASE PLANAR BILAYERS. **Chen Wan**, Volker Kiessling, Lukas K. Tamm.

**2502-Pos BOARD #B231**  
SYNAPTOTAGMIN PERTURBS LIPID STRUCTURE OF MEMBRANE BILAYERS. **Alex L. Lai**, David S. Cafiso.

**2503-Pos BOARD #B232**  
RATIOMETRIC FLUORESCENT ESIPIT PROBE CHARACTERIZES BINDING OF ALPHA-SYNUCLEIN TO MEMBRANES.  
**Volodymyr V. Shvadchak**, Dmytro A. Yushchenko, Thomas M. Jovin.

**2504-Pos BOARD #B233**  
INTERMOLECULAR AND INTRAMOLECULAR INTERACTIONS AND THEIR ROLE IN LAMIN A ACCUMULATION AT THE NUCLEAR MEMBRANE IN HUMAN AGING AND PREMATURE AGING DISEASE. **Agnieszka Kalinowski**, Siddharth Shenoy, Nikunja Kolluri, Mathias Loesche, Kris N. Dahl.

**2505-Pos BOARD #B234**  
STRUCTURE AND CHOLESTEROL BINDING PROPERTIES OF THE AMYLOID PRECURSOR PROTEIN (APP). **Charles R. Sanders**, Andrew Beel, Hak Jun Kim, Charles K. Mobley, Bing Jap, Fang Tian, James Prestegard, Paul Barrett.

**2506-Pos BOARD #B235**  
THE INTERACTION WITH  $\beta$ -AMYLOID IMPAIRS THE MECHANICAL STABILITY OF POLYMER CUSHIONED MEMBRANE. **C. Canale**, S. Dante, R. Steitz, T. Hauss, N. A. Dencher, A. Diaspro.

**2507-Pos BOARD #B236**  
THE EFFECT OF MUTANT A $\beta$  PEPTIDE AGGREGATION ON THE STABILITY OF MODEL LIPID BILAYERS. **Phillip M. Pifer**, Justin Legleiter.

**2508-Pos BOARD #B237**  
A MOLECULAR DYNAMICS STUDY OF AMYLOID- $\beta$  (1-42) PEPTIDE DIMER FORMATION ON THE SURFACE OF PHOSPHOLIPID BILAYERS. **Charles H. Davis**, Max L. Berkowitz.

**2509-Pos BOARD #B238**  
PROTECTIVE ROLE OF 17- $\beta$ -ESTRADIOL IN LDL AMYLOIDOGENESIS. **Marco De Spirito**, Tiziana Parasassi, Roberto Brunelli, Massimiliano Papi, Giuseppe Maulucci, Giulia Greco, Graziella Costa, Giampiero Mei, Fulvio Ursini, Giuseppe Arcovito.

**2510-Pos BOARD #B239**  
STUDY OF THE SPECIFIC LIPID BINDING PROPERTIES OF AN AMYLOID BETA N-TERMINAL FRAGMENT AT ENDOSOMAL PH.  
**Stephanie Ravault**, Robert Brasseur, Laurence Lins.

**2511-Pos BOARD #B240**  
REGULATION OF APOPTOSIS AT THE MITOCHONDRIAL LEVEL BY BCL-2 PROTEINS. **Marcus Wallgren**, Anders Pedersen, Marc-Antoine Sani, Gerhard Gröbner.

**2512-Pos BOARD #B241**  
MECHANISMS OF PHOSPHATIDYL SERINE (PS) RECOGNITION IN APOPTOTIC CELL CLEARANCE. **Gregory T. Tietjen**.

**2513-Pos BOARD #B242**  
KINETIC AND THERMODYNAMIC STUDIES OF PH-TRIGGERED MEMBRANE INSERTION OF DIPHTEHRIA TOXIN T-DOMAIN.  
**Alexander Kyrychenko**, Mykola V. Rodnin, Yevgen O. Posokhov, Anna Thoma, Joshua Brettmann, Alexey S. Ladokhin.

**2514-Pos BOARD #B243**  
ASSOCIATION OF THE MATRIX PROTEIN FROM RESPIRATORY SYNCYTIAL VIRUS WITH LIPID MONOLAYERS AND BILAYERS.  
**John M. Sanderson**, Helen K. McPhee, Andrew Beeby, Scott M. D. Watson.

**2515-Pos BOARD #B244**  
A ROLE FOR LIPID-PROTEIN INTERACTION IN INTEGRAL MEMBRANE PROTEIN FUNCTION. **Phedra Marius**, Philip T. Williamson.

**2516-Pos BOARD #B245**  
DO CATION-PI INTERACTIONS OCCUR IN LIPID BILAYERS BETWEEN PHOSPHATIDYLCHOLINE HEADGROUPS AND INTERFACIALLY LOCALIZED TRYPTOPHANS? **Jacques P. F. Doux**, J. Antoinette Killian.

**2517-Pos BOARD #B246**  
SINGLE TRYPTOPHAN MUTANTS OF GALLERIA MELLONELLA APOLIPOPHORIN III: BINDING INTERACTION TO LIPOPOLYSACCHARIDES. **Daisy Martinon**, Paul M. Weers.

**2518-Pos BOARD #B247**  
SIMULATIONS OF SURFACTANT AND LIPID ASSEMBLIES WITH GENERALIZED BORN IMPLICIT SOLVENT MODELS. **Jana K. Shen**, Yuhang Wang, Jason A. Wallace, Peter Koenig.

**2519-Pos BOARD #B248**  
VORONOI ANALYSIS OF LIPID SURFACE AREA IN PROTEIN-MEMBRANE SYSTEMS. **Takaharu Mori**, Fumiko Ogushi, Yuji Sugita.

**2520-Pos BOARD #B249**  
POTENTIAL OF MEAN FORCE BETWEEN IONIZABLE AMINO ACID SIDE CHAINS IN LIPID BILAYER. **Olga Yuzlenko**, Themis Lazaridis.

**2521-Pos BOARD #B250**  
WATER UNDER THE BAR. **Edward R. Lyman**, Haosheng Cui, Gregory A. Voth.

**2522-Pos BOARD #B251**  
MESOSCOPIC SIMULATIONS OF MEMBRANE PROTEIN TRAFFICKING AND SIGNAL TRANSDUCTION ACROSS MEMBRANES. **Diana Morozova**, Gernot Guigas, Matthias Weiss.

**2523-Pos BOARD #B252**  
POSITIONING OF PROTEINS IN MEMBRANES OF VARIABLE LIPID COMPOSITION. **Andrei L. Lomize**, Mikhail A. Lomize, Irina D. Pogozheva, Henry I. Mosberg.

**2524-Pos BOARD #B253**  
MODELING LIPID-MEDIATED TRANSMEMBRANE PROTEIN AGGREGATION. **Jocelyn M. Rodgers**, Stephen Whitelam, Berend Smit.

**2525-Pos BOARD #B254**  
MODELING THE MEMBRANE ROLE IN CA<sup>2+</sup>-ATPASE CATALYTIC CYCLE. **Maria Musgaard**, Jesper V. Møller, Poul Nissen, Lea Thøgersen, Birgit Schiøtt.

**2526-Pos BOARD #B255**  
MONTE-CARLO SIMULATIONS OF PEPTIDE-MEMBRANE INTERACTIONS: WEB-SERVER. **Yana Gofman**, Turkan Haliloglu, Nir Ben-Tal.

## Membrane Structure II (Boards #B256-#B285)

**2527-Pos BOARD #B256**  
PROBING THE MEMBRANE DEFORMATIONS INDUCED BY BINDING OF MEMBRANE PROTEINS: ALPHA-SYNUCLEIN AND CRAC. **Jonathan N. Sachs**, Jason D. Perlmutter, Anthony R. Braun, Eva Sevcik, Stephanie Tristram-Nagle, Elizabeth Rhoades.

**2528-Pos BOARD #B257**  
EFFECTS OF SUBPHASE ON COLLAPSE BEHAVIOR OF LUNG SURFACTANT. **Luka Pocivavsek**, Kseniya Gavrilov, Kathleen Cao, Mati Meron, Binhua Lin, Jaroslaw Majewski, Ka Yee C. Lee.

**2529-Pos BOARD #B258**  
OXYGEN DIFFUSION THROUGH LUNG SURFACTANT LAYERS. **Barbara Olmeda**, Laura Villén, Antonio Cruz, Guillermo Orellana, Jesus Perez-Gil.

**2530-Pos BOARD #B259**  
MOLECULAR ORGANIZATION OF THE TEAR FILM LIPID LAYER. **Antti Rantamäki**, Jelena Telenius, Artturi Koivuniemi, Pipsa Kulovesi, Gerald Brezesinski, Tapani Viitala, Esa Puukilainen, Mikko Ritala, Susanne Wiedmer, Ilpo Vattulainen, Juha Holopainen.

**2531-Pos BOARD #B260**  
MOLECULAR SCALE TEXTURE AND TOPOLOGICAL DEFECTS IN LIPID MEMBRANES: A NEW LIQUID CRYSTALLINE PHASE. **Erik Watkins**, Chad E. Miller, Jaroslaw Majewski, Tonya Kuhl.

**2532-Pos BOARD #B261**  
CALCULATION OF INTERLEAFLET DOMAIN COUPLING IN MIXED LIPID BILAYERS. **Gregory G. Putzel**, Mark Uline, Igal Szleifer, Michael Schick.

**2533-Pos BOARD #B262**  
ASSEMBLY OF LIPID BILAYERS IN LARGE SCAFFOLD ARRAYS. **Jesper S. Hansen**, Mark Perry, Jörg Vogel, Jesper Groth, Thomas Vissing, Jenny Ennéus, Claus H. Nielsen.

**2534-Pos BOARD #B263**  
COMPARISON OF THE EFFECTS OF CHOLESTEROL OR 3BETA-HYDROXY-5-OXO-5,6-SECOCHOLESTAN-6-AL ON THE THERMOTROPIC AND STRUCTURAL PROPERTIES OF MIXTURES OF PHOSPHATIDYLETHANOLAMINE AND PHOSPHATIDYLCHOLINE. **Ellen J. Wachtel**, Diana Bach, Richard M. Eppard, Rachel F. Eppard, Israel R. Miller.

**2535-Pos BOARD #B264**  
SELF-ASSEMBLY SIMULATIONS OF MEMBRANES CONTAINING PHOSPHOLIPID OXIDATION PRODUCTS. **Himanshu Khandelia**, Ole G. Mouritsen.

**2536-Pos BOARD #B265**  
STUDY OF THE CHOLESTEROL UMBRELLA EFFECT IN DPPC AND DOPC BILAYERS BY MOLECULAR DYNAMICS SIMULATION. **Jian Dai**, Mohammad Alwarawrah, Juyang Huang.

**2537-Pos BOARD #B266**  
FLIP-FLOP MOTIONS OF LIPID MOLECULES IN MIXED BILAYER SYSTEMS. **Fumiko Ogushi**, Reiko Ishitsuka, Toshihide Kobayashi, Yuji Sugita.

**2538-Pos BOARD #B267**  
THE EFFECT OF CHOLESTEROL ON MEMBRANE CHAIN-CHAIN PACKING. **Ming-Tao Lee**, Wei-Chin Hung.

**2539-Pos BOARD #B268**  
STEROL AFFINITY FOR BILAYER MEMBRANES IS AFFECTED BY THEIR CERAMIDE CONTENT AND THE CERAMIDE CHAIN LENGTH. **Thomas K. M. Nyholm**, Pia-Maria Grandell, Bodil Westerlund, Peter Slotte.

**2540-Pos BOARD #B269**  
IMPORTANCE OF HEAD GROUP METHYLATION ON SPHINGOMYELIN MEMBRANE PROPERTIES AND INTERACTIONS WITH CHOLESTEROL. **Anders Björkbo**, Mayuko Kurita, Thomas K.M. Nyholm, Tetsuya Yamamoto, Shigeo Katsumura, J. Peter Slotte.

**2541-Pos BOARD #B270**  
SPIN TRAPPING THE OXIDIZED PRODUCTS OF PUFA IN MODEL MEMBRANES: THE PROTECTION CONFERRED BY VITAMIN E. **Cynthia D. Wassall**, Stephen R. Wassall, William Stillwell, Marvin D. Kemple.

**2542-Pos BOARD #B271 INTERNATIONAL TRAVEL AWARDEE**  
CHOLESTEROL REPLACES CERAMIDE FROM ITS TIGHT PACKING WITH SPHINGOMYELIN. **Jon Busto**, Jesús Sot, José Requejo-Isidro, Félix Goñi, Alicia Alonso.

**2543-Pos BOARD #B272**  
MATERIAL PROPERTIES OF LIPID MEMBRANES FROM MOLECULAR DYNAMICS SIMULATIONS. **Qaiser Waheed**, Olle Edholm.

**2544-Pos BOARD #B273**  
α-TOCOPHEROL AND POLYUNSATURATED FATTY ACID MEMBRANE DOMAINS. **Justin A. Williams**, Saame Raza Shaikh, Daniel S. LoCascio, Sevgi Türker Görgülü, Heiko Heerklotz, William Stillwell, Stephen R. Wassall.

**2545-Pos BOARD #B274**  
MEMBRANE ORGANIZATION OF VITAMIN E IS SENSITIVE TO LIPID UNSATURATION. **Thad A. Harroun**, Justin A. Williams, Jeffrey Atkinson, Empu Salonen, John Katsaras, William Stillwell, Stephen R. Wassall.

**2546-Pos BOARD #B275**  
PERTURBATION OF MEMBRANE STRUCTURE BY OXYSTEROLS. **Brett N. Olsen**, Paul Schlesinger, Nathan A. Baker.

**2547-Pos BOARD #B276**  
DYNAMICS OF SEDIMENTATION AND DEFORMATION OF GUVS UNDER DIFFERENT TONICITY CONDITIONS. **Ivan A. Rey Suarez**, Guillaume Gay, Alexander Ladino, Andres Gonzalez Mancera, Chad Leidy.

**2548-Pos BOARD #B277**  
STRUCTURE AND PHASE BEHAVIOR OF CHOLESTEROL CONTAINING MEMBRANES IN THE PRESENCE OF ETHANOL. **Juan M. Vanegas**, David E. Block, Marjorie L. Longo, Roland Faller.

- 2549-Pos BOARD #B278**  
MISCIBILITY PHASE BEHAVIOR OF GUV MEMBRANES CONTAINING CHARGE: TERNARY MIXTURES OF CHOLESTEROL, PC-LIPIDS, AND PG-LIPIDS. **Matthew C. Blosser**, Jordan B. Starr, Cameron W. Turtle, Sarah L. Keller.
- 2550-Pos BOARD #B279**  
ACTIVITY AND ORDERING OF MIXED PHOSPHATIDYLETHANOLAMINE/DIHYDROCHOLESTEROL MONOLAYERS. **Kathleen D. Cao**, Luka Pocivavsek, Stephanie Harmon, Mati Meron, Binhua Lin, Ka Yee C. Lee.
- 2551-Pos BOARD #B280**  
GROUP III SECRETORY PHOSPHOLIPASE A<sub>2</sub> ENHANCES ALPHA-SECRETASE-DEPENDENT AMYLOID PRECURSOR PROTEIN PROCESSING THROUGH ALTERATIONS IN MEMBRANE FLUIDITY. **Xiaoguang Yang**, Wenwen Sheng, Grace Y. Sun, James C. -M. Lee.
- 2552-Pos BOARD #B281**  
NONLINEAR EFFECT OF SUCROSE ON LAMELLAR-HEXAGONAL PHASE TRANSITION KINETICS. **Nathan L. Meyers**, Paul E. Harper.
- 2553-Pos BOARD #B282**  
STRUCTURE OF A DOTAP LIPID BILAYER: A CONCERTED NEUTRON SCATTERING AND MOLECULAR DYNAMICS STUDY. **Harindar S. Keer**, J. Alfredo Freitas, Ella Mihailescu, Stephen H. White, Douglas J. Tobias.
- 2554-Pos BOARD #B283**  
THE EFFECT OF FATTY ACIDS WITH DIFFERENT UNSATURATIONS ON MEMBRANE FLUIDITY AND ALPHA-SECRETASE-DEPENDENT AMYLOID PRECURSOR PROTEIN PROCESSING. **Xiaoguang Yang**, Wenwen Sheng, Grace Y. Sun, James C. -M. Lee.
- 2555-Pos BOARD #B284**  
PLA<sub>2</sub> TYPE IIA INCREASES PLATELET PLASMA MEMBRANE RIGIDITY DURING COLD INDUCED ACTIVATION. **Diego A. Ramirez**, Chad Leidy.
- 2556-Pos BOARD #B285**  
NEUTRON SCATTERING AND MD SIMULATION STUDY OF DOPC AND DOPC/CHOLESTEROL BILAYERS. **Eduardo Jardon-Valedez**, J. Alfredo Freitas, Ella Mihailescu, David Worcester, Stephen H. White, Douglas J. Tobias.

## Membrane Receptors & Signal Transduction II (Boards #B286-#B311)

- 2557-Pos BOARD #B286**  
DISTRIBUTION AND DYNAMICS OF RBL IGE RECEPTORS (FC $\epsilon$ R1) QUANTITATIVELY OBSERVED ON PLANAR LIGAND-PRESENTING SURFACES. **Kathrin Spendier**, Amanda Carroll-Portillo, Keith Lidke, Bridget S. Wilson, Jerilyn A. Timlin, V. M. Kenkre, James L. Thomas.
- 2558-Pos BOARD #B287**  
MULTI-COLOR QUANTUM DOT TRACKING TO CORRELATE FC $\epsilon$ R1 AGGREGATE SIZE WITH MOBILITY. **Patrick J. Cutler**, Bridget S. Wilson, Janet M. Oliver, Keith A. Lidke, Diane S. Lidke.
- 2559-Pos BOARD #B288**  
FLUOROGEN ACTIVATING PEPTIDES FOR SINGLE MOLECULE LOCALIZATION-BASED SUPERRESOLUTION AND SINGLE PARTICLE TRACKING OF FC $\epsilon$ R1 SUBUNITS. **Samantha L. Schwartz**.
- 2560-Pos BOARD #B289**  
RECEPTOR CLUSTER SIZE AFFECTS SIGNALING IN BREAST EPITHELIAL CANCER CELLS. **Qian Xu**, Jay T. Groves.
- 2561-Pos BOARD #B290**  
PROBING MECHANICAL REGULATION OF RECEPTOR SIGNALING USING A HYBRID LIVE CELL-SUPPORTED MEMBRANE SYNAPSE. **Pradeep M. Nair**, Khalid Salaita, Debopriya Das, Joe W. Gray, Jay T. Groves.
- 2562-Pos BOARD #B291**  
FGFR1 INTERACTION WITH CO-RECEPTOR KLOTTHO-BETA AT THE PLASMA MEMBRANE. **Eunjong Yoo**, Jocelyn Lo, Christopher Yip, Jonathan V. Rocheleau.
- 2563-Pos BOARD #B292**  
CAVEOLIN-1 BOOSTS CLUSTERING OF MU ( $\mu$ ) OPIOID RECEPTORS IN THE PLASMA MEMBRANE. **Parijat Sengupta**, Susana Sanchez, Suzanne Scarlata.
- 2564-Pos BOARD #B293**  
COMBINATORIAL LIVE CELL HOMO- AND HETERO-FRET MICROSCOPY OF MEMBRANE PROTEINS. **Jocelyn R. Lo**, John Oreopoulos, Prema Patel, Eunjong Yoo, Jonathan V. Rocheleau, Scott D. Gray-Owen, Christopher M. Yip.
- 2565-Pos BOARD #B294**  
STUDYING THE NF-KB SIGNALLING PATHWAY WITH HIGH-RESOLUTION FLUORESCENCE MICROSCOPY. **Meike Heidbreder**, Darius Widera, Barbara Kaltschmidt, Christian Kaltschmidt, Mike Heilemann.
- 2566-Pos BOARD #B295**  
COMPUTATIONAL MODELLING OF THE DROSOPHILA PHOTOTRANSDUCTION CASCADE. **Konstantin Nikolic**, Joaquim Loizou, Patrick Degenaar.
- 2567-Pos BOARD #B296**  
MATHEMATICAL MODEL OF BASAL AND AGONIST-DEPENDENT GIRK CHANNEL ACTIVITY. **Daniel Yakubovich**, Shai Berlin, Nathan Dascal.
- 2568-Pos BOARD #B297**  
ELECTROPHYSIOLOGY AND LIVE FLUORESCENCE IMAGING TO MONITOR THE EFFECTS OF POTASSIUM CHANNEL BLOCKADE ON LIPOPOLYSACCHARIDE-INDUCED IMMUNE SIGNALING. **Adrian R. Boese Schiess**, Elizabeth L. Carles, Jaclyn K. Murton, Bryan Carson, Catherine Branda, Conrad D. James, Susan B. Rempe.
- 2569-Pos BOARD #B298**  
RELEASE OF ATP THROUGH HEMICHANNELS AFFECTS BASAL CILIARY ACTIVITY IN THE HUMAN AIRWAYS. **Karla Droguett**, Manuel Villalón.
- 2570-Pos BOARD #B299**  
METABOTROPIC PURINERGIC RECEPTORS IN SATELLITE GLIAL CELLS. **Daniel R. Batista**, Antonio C. Cassola.
- 2571-Pos BOARD #B300 INTERNATIONAL TRAVEL AWARDEE**  
GSK3- $\beta$  INHIBITION IS INVOLVED IN TESTOSTERONE-INDUCED CARDIAC HYPERTROPHY. **Cesar Oyarce**, Patricio Silva, Sergio Hernández, Manuel Estrada.
- 2572-Pos BOARD #B301**  
TINGLING ALKYLAMIDES FROM ECHINACEA ACTIVATE SOMATOSENSORY NEURONS. **Kristin A. Gerhold**, Diana M. Bautista.
- 2573-Pos BOARD #B302**  
INHIBITION OF CAMP-DEPENDENT PROTEIN KINASE (PKA) ACTIVATES  $\beta_2$ -ADRENERGIC RECEPTOR ( $\beta_2$ -AR) STIMULATION OF CYTOSOLIC PHOSPHOLIPASE A<sub>2</sub> (CPLA<sub>2</sub>) IN ATRIAL MYOCYTES. **Mallikarjuna R. Pabbidi**, Xiang Ji, Allen M. Samarel, Stephen L. Lipsius.
- 2574-Pos BOARD #B303**  
 $\beta_2$ -ADRENERGIC RECEPTOR ( $\beta_2$ -AR) STIMULATION OF CYTOSOLIC PHOSPHOLIPASE A<sub>2</sub> (CPLA<sub>2</sub>) IS DEPENDENT ON PKC AND IP3-MEDIATED CA<sup>2+</sup> SIGNALING IN ATRIAL MYOCYTES. **Mallikarjuna R. Pabbidi**, Xiang Ji, Allen M. Samarel, Joshua T. Maxwell, Gregory A. Mignery, Stephen L. Lipsius.
- 2575-Pos BOARD #B304**  
HOW DOES ADENOSINE ALTER SPERM MOTILITY? **Lindsey A. Burnett**, Jashvant D. Unadkat, Bertil Hille, Stephen Tilley, Donner F. Babcock.
- 2576-Pos BOARD #B305**  
NOVEL RECEPTOR-MEDIATED ENDOTHELIAL CELL CHEMOTAXIS. **Amir Shamloo**, Frank Kuhnert, Vir Choksi, Calvin Kuo, Sarah Heilshorn.
- 2577-Pos BOARD #B306**  
MOBILITY OF G PROTEINS IS HETEROGENEOUS AND POLARIZED DURING CHEMOTAXIS. **Freek van Hemert**, Milena Lazova, B. Ewa Snaar-Jagalska, Thomas Schmidt.

**2578-Pos BOARD #B307**  
PHYSICAL PROPERTIES OF FIBRINOGEN SUBSTRATES CONTROL INTEGRIN MEDIATED CELL ADHESION. **Ivan Yermolenko**, Alexander Fuhrmann, Tatiana Ugarova, Robert Ros.

**2579-Pos BOARD #B308**  
MECHANOCHEMICAL SIGNALING IN GLOMERULAR PODOCYTES. **Anna H. Klemm**, Sandra Kienle, Navid Bonakdar, Wolfgang H. Goldmann, Jose-Luis Alonso.

**2580-Pos BOARD #B309**  
A MODEL OF ATHEROSCLEROSIS PLAQUE FORMATION AND DEVELOPMENT. **Nicolas Meunier**, Julien Dambrine, Jean-Gabriel Houot, Michel Boynard, Annie Raoult.

**2581-Pos BOARD #B310**  
DETERMINATION OF SINGLE MOLECULE ERBB1 HOMODIMER LIFETIMES USING SINGLE QUANTUM DOT TRACKING AND A DIFFUSIVE HIDDEN MARKOV MODEL. **Shalini T. Low-Nam**, Keith A. Lidke, Patrick J. Cutler, Rob C. Roovers, Paul M. P. van Bergen en Henegouwen, Bridget S. Wilson, Diane S. Lidke.

**2582-Pos BOARD #B311**  
QUANTUM-DOT, MAGNETIC PARTICLE AND EXPRESSION-PROBE BASED SENSING OF ERBB PROTEIN DYNAMICS AND DEVELOPMENT OF TUMOR DIAGNOSTICS. **Donna J. Arndt-Jovin**, Atul A. Bharde, Michelle G. Botelho, Sven R. Kantelhardt, Wouter Caarls, Thomas M. Jovin.

## ENDOPLASMIC RETICULUM & PROTEIN TRAFFICKING (BOARDS #B312-#B318)

**2583-Pos BOARD #B312**  
GEOMETRIC CURVATURE SENSING OF ALPHA-HELICAL PROTEINS. **Andrew F. Loftus**, Isaac Settles, Raghuvveer Parthasarathy.

**2584-Pos BOARD #B313**  
MODULATION OF MEMBRANE RIGIDITY BY SARI, A VESICLE TRAFFICKING PROTEIN. **Raghuvveer Parthasarathy**.

**2585-Pos BOARD #B314**  
TAIL-ANCHORED MEMBRANE PROTEIN RECOGNITION BY GET3. **Agnieszka Mateja**, Anna Szlachcic, Maureen Downing, Malgorzata Dobosz, Malayalam Mariappan, Ramanujan S. Hegde, Robert J. Keenan.

**2586-Pos BOARD #B315**  
ADRENERGIC REGULATION OF THE HUMAN ETHER-A-GO-GO-RELATED GENE CHANNEL PROTEIN ABUNDANCE OCCURS AT THE SURFACE OF THE ENDOPLASMIC RETICULUM. **Jakub Sroubek**, Thomas V. McDonald.

**2587-Pos BOARD #B316**  
IDENTIFICATION OF THE ESCHERICHIA COLI SECA SOLUTION STATE DIMER ORIENTATION USING FORSTER RESONANCE ENERGY TRANSFER. **Sarah M. Auclair**, Donald B. Oliver, Ishita Mukerji.

**2588-Pos BOARD #B317**  
PROGESTERONE IMPAIRS THE TRAFFICKING AND MATURATION OF HERG POTASSIUM CHANNELS. **Zhi-Yuan Wu**, Jin-Song Bian.

**2589-Pos BOARD #B318**  
OVEREXPRESSION AND BIOPHYSICAL CHARACTERIZATION OF HUMAN INTERLEUKIN-1 ALPHA. **Natalie White**.

## Exocytosis & Endocytosis I (Boards #B319-#B333)

**2590-Pos BOARD #B319**  
ELASTIC, ELECTROSTATIC AND ELECTROKINETIC PROCESSES CONTRIBUTING TO MEMBRANE CURVATURE - MEMBRANE SHAPE AS A MEMORY ELEMENT. **Mohammad Tajparast**, Mladen Glavinovic.

**2591-Pos BOARD #B320**  
MOLECULAR MECHANISM OF MEMBRANE CONSTRICTION AND TUBULATION MEDIATED BY THE F-BAR PROTEIN PACSIN. **Qi Wang**.

**2592-Pos BOARD #B321**  
MEMBRANE PROPERTIES INFLUENCE THE MEMBRANE DEFORMATION ACTIVITY MEDIATED BY BAR DOMAIN PROTEINS. **Shih Lin Goh**, Qi Wang, Holger Sondermann.

**2593-Pos BOARD #B322**  
DIMERIC ENDOPHILIN STIMULATES SELF-ASSEMBLY AND GTPASE ACTIVITY OF DYNAMIN. **Justin A. Ross**, Barbara Barylko, Lei Wang, Hunter Banks, Joseph P. Albanesi, David M. Jameson.

**2594-Pos BOARD #B323**  
VARIABILITY OF DYNAMIN AND CLATHRIN DYNAMICS IN CLATHRIN MEDIATED ENDOCYTOSIS. **Alexa L. Mattheyses**, Claire E. Atkinson, Sanford M. Simon.

**2595-Pos BOARD #B324**  
DEPHOSPHORYLATION OF DYNAMIN1 IS A CA<sup>2+</sup> SENSOR THAT TRIGGERS CLATHRIN- INDEPENDENT VESICLE RECYCLING PROCESSES IN PANCREATIC BETA CELLS. **Wen Du**, Lin Liu, Kuo Liang, Jingze Lu, Fei Li, Tao Xu, Liangyi Chen.

**2596-Pos BOARD #B325**  
ANALYSIS OF CLATHRIN SELF-ASSEMBLY BY INFRARED SPECTROSCOPY. **R. Loney**, C. Hinojos, M. Lane, F. M. Brodsky, J. W. Powell.

**2597-Pos BOARD #B326**  
INTERNALIZATION OF TWO DISTINCT RECEPTORS IN RESPONSE TO OCCUPATION WITH A BIVALENT LIGAND INCORPORATING A SINGLE STIMULUS FOR INTERNALIZATION. **Kaleeckal G. Harikumar**, Eyup Akgün, Philip S. Portoghese, Laurence J. Miller.

**2598-Pos BOARD #B327**  
VESICULAR MONOAMINE AND GLUTAMATE TRANSPORTERS SELECT DISTINCT SYNAPTIC VESICLE RECYCLING PATHWAYS. **Bibiana Onoa**, Haiyan Li, Laura A. B. Elias, Robert H. Edwards.

**2599-Pos BOARD #B328**  
UPTAKE BY HUMAN ASTROCYTES OF LIPID VESICLES MODELING THE LIPID COMPOSITION OF MYELIN. **Jose L. Alejo**, Jackson Ocampo, Natalia I. Bolaños, Chad Leidy, John M. Gonzalez.

**2600-Pos BOARD #B329**  
ATOMISTIC AND CONTINUUM MODELING OF CELLULAR UPTAKE OF NANOTUBES AND VIRUSES. **Xinghua - Shi**, Huajian - Gao.

**2601-Pos BOARD #B330**  
CYSTIC FIBROSIS TRANSMEMBRANE CONDUCTANCE REGULATOR IN MOUSE PANCREATIC BETA-CELLS. **Anna Edlund**.

**2602-Pos BOARD #B331**  
POTASSIUM ACCUMULATION DOMINATES SHORT-TERM DEPRESSION OF NEUROHYPOPHYSIAL EXCITABILITY. **Joseph L. Foley**, Martin Muschol.

**2603-Pos BOARD #B332**  
LOCKING UP THE GUARDIAN: LOOPHOLES IN THE LUNG DEFENSE PROGRAM. **Kelly Kettleison**, Meena Padha, Ivan Quesada, Pedro Verdugo.

**2604-Pos BOARD #B333**  
MASSIVE ENDOCYTOSIS ACTIVATED BY PERTURBING THE OUTER PLASMALEMMA MONOLAYER. **Michael Fine**, Marc C. Llaguno, Alp Yaradanakul, Vincenzo Lariccia, Simona Magi, Mei-Jung Lin, Donald W. Hilgemann.

## Membrane Transporters & Exchangers I (Boards #B334-#B355)

**2605-Pos BOARD #B334**  
DETERMINATION OF THE NUMBER OF MOLECULES INVOLVED IN DIFFERENT TYPES OF AMPHOTERICIN B CHANNELS. **Javier Iñiguez-Stahl**, Javier González-Damián, Iván Ortega-Blake.

**2606-Pos BOARD #B335**  
DOUBLE PACKAGED SYSTEM FOR LOCALIZED DRUG DELIVERY FOR OVARIAN CANCER. **Eva Christabel Williams**, Ryan Toomey, Norma Alcantar.

**2607-Pos BOARD #B336**  
ACID-ACTIVATION, PROTON TRANSPORT RATE SATURATION, AND PH-DEPENDENCE OF AMANTADINE BLOCK FOR INFLUENZA A M2 PROTEIN TRUNCATE (22-62). **Emily Peterson**, Myunggi Yi, Huan-Xiang Zhou, Mukesh Sharma, Timothy A. Cross, David Busath.

**2608-Pos BOARD #B337**  
CAN PASSIVE ASYMMETRIC VACANT CARRIER DISTRIBUTIONS COUNTERBALANCE ASYMMETRIC CARRIER AFFINITIES?  
**Richard J. Naftalin**.

**2609-Pos BOARD #B338**  
CHARACTERIZATION OF MUTANT HCTR1 COPPER TRANSPORTERS TRUNCATED BY PROTEOLYTIC CLEAVAGE IN THE ABSENCE OF O-LINKED GLYCOSYLATION AT THR27.  
**Ed B. Maryon**, Jack H. Kaplan.

**2610-Pos BOARD #B339**  
DEVELOPMENT OF AN *IN VIVO* MODEL TO INVESTIGATE THE ROLE OF THE HEAVY METAL EFFLUX SYSTEM SIL FROM *CUPRIAVIDUS METALLIDURANS* CH34 IN RESISTANCE TO SILVER AND COPPER IONS. **Elisabeth Ngonlong Ekendé**, Max Mergeay, Jean-Marie Ruysschaert, Guy Vandenbussche.

**2611-Pos BOARD #B340**  
EFFECTS OF VARIOUS INHIBITORS ON NITRATE UPTAKE MEDIATED BY *BACILLUS* SP. GS2. **Hee-Sung Wang**, Young-Kee Kim.

**2612-Pos BOARD #B341**  
PHYSICAL AND FUNCTIONAL COUPLING OF ELECTROGENIC  $\text{Na}^+/\text{HCO}_3^-$  COTRANSPORT AND CARBONIC ANHYDRASES IN THE MYOCARDIUM. **Alejandro Orłowski**, Veronica C. De Giusti, Ernesto, A. Aiello, Bernardo V. Alvarez.

**2613-Pos BOARD #B342**  
ROLE OF  $\text{Na}^+/\text{Ca}^{2+}$  EXCHANGER (NCX1) IN ALDOSTERONE-INDUCED CARDIAC REMODELING. **Takuya Iyoda**, Satomi Kita, Shintaro Yamamoto, Issei Komuro, Akira Nishiyama, Takahiro Iwamoto.

**2614-Pos BOARD #B343**  
SODIUM-DEPENDENT INACTIVATION OF NCX1.3: AORTIC SMOOTH MUSCLE CELLS VERSUS TRANSFECTED CHO CELLS.  
**Madalina Condrescu**, John P. Reeves.

**2615-Pos BOARD #B344**  
SCALLOP MUSCLE NA - CA EXCHANGER CAN BE ACTIVATED BY EITHER AMPK AND PK-A THROUGH PHOSPHORYLATION OF SER621 IN CBD2. **Glenn Shaw**, Dietbert Neunann, Theo Wallimann, Peter M. Hardwicke.

**2616-Pos BOARD #B345**  
CARDIAC-SPECIFIC OVEREXPRESSION OF NCX1 .1-XIP MUTANT CAUSES DILATED CARDIOMYOPATHY IN MICE. **Satomi Kita**, Takuya Iyoda, Satomi Adachi-Akahane, Haruaki Nakaya, Sachio Morimoto, Yuji Arai, Takahiro Iwamoto.

**2617-Pos BOARD #B346**  
IBOGAINE STIMULATES IONIC CURRENTS MEDIATED BY SEROTONIN TRANSPORTER. **Wei Zhang**, Zhen Tao, Joan Gesmonde, James R. Howe, Gary Rudnick.

**2618-Pos BOARD #B347**  
OVEREXPRESSION, PURIFICATION AND FUNCTIONAL CHARACTERIZATION OF THE HUMAN SEROTONIN TRANSPORTER. **Hidehito Takayama**, Shigetoshi Sugio.

**2619-Pos BOARD #B348**  
INHIBITION OF SERCA1 BY A NOVEL ANTIMALARIAL COMPOUND. **Gianluca Bartolommei**, Francesco Tadini-Buoninsegni, Sandra Gemma, Caterina Camodeca, Stefania Butini, Giuseppe Campiani, Maria Rosa Moncelli.

**2620-Pos BOARD #B349**  
ALTERNATIVE SPLICING OF EXONS ENCODING PORTIONS OF THE CARBOXY-TERMINUS OF K-CL COTRANSPORTER-4 (KCC4).  
**John A. Payne**, Shane P. Antrobus, Susanna G. Sahakyan, Christian Lytle.

**2621-Pos BOARD #B350**  
PHOSPHATIDIC ACID ASSOCIATION WITH THE BOVINE MITOCHONDRIAL ADP/ATP CARRIER. **Richard M. Eband**, Raquel F. Eband, Bob Berno, Ludovic Pelosi, Gérard Brandolin.

**2622-Pos BOARD #B351**  
FUNCTIONAL CHARACTERIZATION OF RECOMBINANT ARABIDOPSIS THALIANA MITOCHONDRIAL ADENINE NUCLEOTIDE TRANSLOCATOR 2. **Olesya Kharenko**, Jason Boyd, Michele C. Loewen.

**2623-Pos BOARD #B352**  
STRUCTURAL AND FUNCTIONAL STUDIES OF BACTERIAL TRKG POTASSIUM TRANSPORTERS. **Yu Cao**, Matthias Quick, Kanagalaghatta Rajashankar, Ming Zhou.

**2624-Pos BOARD #B353**  
STRUCTURE-FUNCTION RELATIONSHIPS OF INHIBITORS FOR THE EAAC1 AND ASCT2 AMINO ACID TRANSPORTERS.  
**Thomas Albers**, Armanda Gameiro, Taniya Thomas, Christof Grewer.

**2625-Pos BOARD #B354**  
STRUCTURE FUNCTION STUDIES OF THE PROTON COUPLED FOLATE TRANSPORTER. **Prachi Nakashe**, Phaneendra K. Duddempudi, Michael P. Blanton, Michaela Jansen.

**2626-Pos BOARD #B355**  
SUBSTRATE SPECIFICITY OF THE AMINOPHOSPHOLIPID FLIPPASE AND OTHER PHOSPHATIDYLSERINE BINDING PROTEINS. **David Daleke**.

## Auditory Systems (Boards #B356-#B366)

**2627-Pos BOARD #B356**  
SELECTIVE ACTIVATION OF VESTIBULAR HAIR CELLS BY INFRARED LIGHT. **Suhrud M. Rajguru**, Richard D. Rabbitt, Agnella Izzo Matic, Stephen M. Highstein, Claus-Peter Richter.

**2628-Pos BOARD #B357**  
ORGAN OF CORTI MICROMACHINE ENABLES HAIR BUNDLES TO DEFORM THE STIFF BASILAR MEMBRANE. **Jong-Hoon Nam**, Robert Fettiplace.

**2629-Pos BOARD #B358**  
FRICTION AND ADHESION IN THE HAIR BUNDLE'S GLYCOCALYX. **Adria C. LeBoeuf**, Deborah Yeoh-Wang, A. J. Hudspeth.

**2630-Pos BOARD #B359**  
COUPLING A SENSORY HAIR-CELL BUNDLE TO CYBER CLONES ENHANCES NONLINEAR AMPLIFICATION. **Jérémié Barral**, Kai Dierkes, Benjamin Lindner, Frank Jülicher, Pascal Martin.

**2631-Pos BOARD #B360**  
SOUND TRANSDUCTION IN THE MAMMALIAN OUTER HAIR CELLS: PRESTIN ACTIVITY IS REQUIRED FOR PROPER DEFLECTION OF THE STEREOCILIA BUNDLE. **Pierre Hakizimana**, Anders Fridberger.

**2632-Pos BOARD #B361**  
DYNAMIC STATE AND COMPRESSIVE NONLINEARITY OF COUPLED HAIR CELLS IN THE FROG SACculus. **Clark Elliott Strimbu**, Damien Ramunno-Johnson, Lea Fredrickson, Dolores Bozovic.

**2633-Pos BOARD #B362**  
AFM IMAGES OF OUTER HAIR CELLS' LATERAL PLASMA MEMBRANE: AN AUTOCORRELATION FUNCTION ANALYSIS. **Ghanshyam Sinha**, Emiliós K. Dimitriadis, Kuni H. Iwasa.

**2634-Pos BOARD #B363**  
TWO PHOTON IMAGING OF CALCIUM SIGNALLING AT THE MOUSE INNER HAIR CELL RIBBON SYNAPSE. **Jonathan F. Ashmore**, Siân Culley, Jacques Boutet de Monvel, Christine Petit, Said Safieddine.

**2635-Pos BOARD #B364**  
EXPLORING THE ELECTRICAL RESONANCE'S AFFECT ON THE MECHANICAL OSCILLATIONS OF HAIR CELLS IN THE BULLFROG SACculus. **Damien Ramunno-Johnson**, C. Elliott Strimbu, Lea Fredrickson, Albert Kao, Dolores Bozovic.

**2636-Pos BOARD #B365**  
EFFECT OF HAVING TWO IDENTICAL CHANNELS PER TIP-LINK IN HAIR BUNDLES. BORA SUL. **Kuni H. Iwasa**.

**2637-Pos BOARD #B366**  
STRUCTURAL DETERMINANTS OF CADHERIN-23 FUNCTION IN HEARING AND DEAFNESS. **Marcos M. Sotomayor**, Wilhelm Weihofen, Rachele Gaudet, David P. Corey.

## Ryanodine Receptors II (Boards #B367-#B383)

2638-Pos BOARD #B367

EMERGING OF RYANODINE RECEPTORS MEDIATED CALIUM SIGNALING SYNCHRONIZES EARLY CARDIAC CONTRACTILITY. **Serge Viatchenko-Karpinski**, Sandor Györke.

2639-Pos BOARD #B368

CALCIUM INFLUX ANALYSIS BY TIRF MICROSCOPY ON CULTURED PRIMARY MYOTUBES FROM PATIENTS WITH *RYR1* MUTATIONS. **Susan Treves**, Mirko Vukcevic, Thierry Girard, Soledad Levano, Albert Urwyler, Pierre-Yves Jeannet, Francesco Zorzato.

2640-Pos BOARD #B369

DYSREGULATION OF  $CA^{2+}$  ENTRY AND SR CALCIUM LEAK ARE RESPONSIBLE FOR ELEVATED RESTING FREE  $CA^{2+}$  IN TRIADIN-NULL MYOTUBES. **Jose M. Eltit**, Jose R. Lopez, Wei Feng, Isaac N. Pessah, P. D. Allen, Claudio F. Perez.

2641-Pos BOARD #B370

THE LEAK STATE OF THE RYR1 IS REGULATED BY RYR1/DHPR INTERACTION, CONTROLLING THE CYTOSOLIC FREE- $CA^{2+}$  CONCENTRATION AND THE SR  $CA^{2+}$  CONTENT AT REST. **Jose M. Eltit**, Hongli Li, Tadeusz F. Molinski, Isaac N. Pessah, Paul D. Allen, Jose R. Lopez.

2642-Pos BOARD #B371

INCREASED SENSITIVITY OF RYR2 TO ACTIVATION BY  $CA^{2+}$  AND CADP-RIBOSE DURING DIABETES. **Chengju Tian**, Chun-Hong Shao, Keshore Bidase.

2643-Pos BOARD #B372

EFFECTS OF DIVALENT CURRENT CARRIERS ON VOLTAGE-DEPENDENCE OF RYR2 CHANNELS. **Paula L. Diaz-Sylvester**, Maura Porta, Alma Nani, Michael Fill, Julio A. Copello.

2644-Pos BOARD #B373

MOLECULAR CLONING AND EXPRESSION OF THE RYANODINE RECEPTOR TYPE 2 (RYR2) FROM RAT CEREBRAL ARTERY SMOOTH MUSCLE. **Aditya K. Singh**, Jianxi Liu, Alejandro M. Dopico.

2645-Pos BOARD #B374

BACTERIAL EXPRESSION OF THE RYANODINE RECEPTOR PORE FORMING REGION AND A POTASSIUM CHANNEL CHIMERA. **Joanne Carney**, Leon G. D'Cruz, Alan J. Williams.

2646-Pos BOARD #B375

ENHANCED RYR1 CHANNEL ACTIVITY BY THE KNOCK-IN MOUSE THAT EXPRESSES HUMAN MALIGNANT HYPERTHERMIA MUTATION T48261. **Wei Feng**, Tianzhong Yang, Isela T. Padilla, Genaro C. Barrientos, Paul D. Allen, Isaac N. Pessah.

2647-Pos BOARD #B376

AICAR PREVENTS HEAT-INDUCED DEATH IN MICE WITH MALIGNANT HYPERTHERMIA. **Johanna T. Lanner**, Cheng Long, JianJun Xu, Mariah R. Baker, Susan L. Hamilton.

2648-Pos BOARD #B377

EFFECTS OF A Y522S-RYR1 MUTATION ON CEREBELLAR PURKINJE CELL FUNCTION. **Jason A. Santiago**, George C. Talbott, Nancy M. Lorenzon.

2649-Pos BOARD #B378

DISTINCT PROPERTIES OF CPVT MUTATIONS LOCATED IN THE CENTRAL DOMAIN OF HUMAN RYR2. **Lynda Blayney**, Michail Nomikos, Konrad Beck, Leon D'Cruz, Ewan McDonald, Julia Griffiths, F. Anthony Lai.

2650-Pos BOARD #B379

ENHANCED BETA-ADRENERGIC RESPONSE, SPONTANEOUS CALCIUM RELEASE, AND ARRHYTHMOGENIC PROPENSITY IN MICE WITH A PHOSPHOMIMETIC MUTATION OF A PKA SITE (S2030D) IN THE CARDIAC RYANODINE RECEPTOR. **Qiang Zhou**, Yijun Tang, Ruiwu Wang, S. R. Wayne Chen.

2651-Pos BOARD #B380

MICE EXPRESSING HETEROZYGOUS AND HOMOZYGOUS RYR1-T48261 MUTATION REVEAL GENDER-DEPENDENT PHENOTYPIC PENETRANCE TO MH TRIGGERING AGENTS AND ALTERED TEMPERATURE REGULATION FOLLOWING GLUCOSE CHALLENGE. **Benjamin T. Yuen**, Genaro Barrientos, Diptiman D. Bose, Tianzhong Yang, Samuel R. Goth, Paul D. Allen, Isaac N. Pessah.

2652-Pos BOARD #B381

ROLE OF OXIDATIVE STRESS, AUTOPHAGY AND APOPTOSIS IN THE I4895T RYR1 KNOCKIN MICE. **Aditya D. Joshi**, Ruirui Ji, Jianjun Xu, Cheng Long, Susan L. Hamilton.

2653-Pos BOARD #B382

DOES CENTRAL CORE DISEASE HAVE A NEURONAL COMPONENT? **Valerie De Crescenzo**, Kevin E. Fogarty, Karl D. Bellvé, Richard A. Tuft, Elena Zvaritch, David H. MacLennan, John V. Walsh.

2654-Pos BOARD #B383

FUNCTIONAL ROLE OF MITOCHONDRIAL RYANODINE RECEPTOR TYPE 1 IN THE HEART. **Sung Hyun Kang**, Sergiy M. Nadtochiy, George Porter, Gisela Beutner, Karen Bentley, Paul S. Brookes, Robert T. Dirksen, Susan L. Hamilton, Winston E. Gaum, Shey-Shing Sheu.

## IP3 Receptors (Boards #B384-#B393)

2655-Pos BOARD #B384

NOVEL INSIGHTS INTO THE ROLE OF JUNCTATE IN CALCIUM HOMEOSTASIS: IDENTIFICATION OF BINDING DOMAIN ON THE INSP3R AND CELLULAR LOCALIZATION AS DETERMINED BY TIRF MICROSCOPY. **Susan Treves**, Johanna Griesser, Clara Franzini-Armstrong, Michael X. Zhu, Francesco Zorzato.

2656-Pos BOARD #B385

VISUALIZING ALPHA HELICES IN THE TRANSMEMBRANE REGION OF IP3R1 CALCIUM RELEASE CHANNEL BY SINGLE PARTICLE ELECTRON CRYOMICROSCOPY. **Steven J. Ludtke**, Thao P. Tran, Que T. Ngo, Vera Y. Moiseenkova-Bell, Joshua T. Maxwell, Gregory A. Mignery, Wah Chiu, Irina I. Serysheva.

2657-Pos BOARD #B386

SPATIAL MODELING OF IP3 CHANNEL CLUSTERS AND CALCIUM PUFFS. **Sten Ruediger**, Jian-Wei Shuai.

2658-Pos BOARD #B387

ROLE OF AGONIST-INDEPENDENT CONFORMATIONAL TRANSITION (AICT) IN IP3 R CLUSTER BEHAVIOR. **Divya Swaminathan**, Peter Jung.

2659-Pos BOARD #B388

GLOBAL DYNAMIC CONFORMATIONAL CHANGES IN THE SUPPRESSOR DOMAIN OF IP3 RECEPTOR BY STEPWISE BINDING OF THE TWO LOBES OF CALMODULIN. **Yonghyun Song**, Sunmi Kang, Hyeji Yang, Chang Kook Suh, Sunghyuk Park.

2660-Pos BOARD #B389

AN ANALYSIS OF THE ACTIVITY OF TWO DISEASE ASSOCIATED MUTATIONS OF THE INOSITOL 1,4,5-TRISPHOSPHATE RECEPTOR TYPE-1. **Tricia Nienaber**, Matthew J. Betzenhauser, Larry E. Wagner, David I. Yule.

2661-Pos BOARD #B390

REGULATION OF INOSITOL 1,4,5 TRISPHOSPHATE RECEPTORS BY INSP3 RECEPTOR-ASSOCIATED CGMP KINASE SUBSTRATE (IRAG). **Wataru Masuda**, Matthew J. Betzenhauser, David I. Yule.

2662-Pos BOARD #B391

CAMKII-MEDIATED PHOSPHORYLATION OF INSP3R2 AT SERINE-150 RESULTS IN DECREASED CHANNEL ACTIVITY. **Joshua T. Maxwell**, A. S. Aromolaran, Gregory A. Mignery.

2663-Pos BOARD #B392

EXCITEMENT OVER AUTOMATED PATCH CLAMP: ACTION POTENTIALS FROM CARDIAC MYOCYTES. **Sonja Stoelzle**, Andrea Bruggemann, David Guinot, Alison Haythornthwaite, Michael George, Cecilia Farre, Claudia Haarmann, Ralf Kettenhofen, Niels Fertig.

2664-Pos BOARD #B393

*IN SILICO* STUDIES OF CARDIAC INOTROPY USING A NEW MODEL OF FORCE GENERATION. **Jose L. Puglisi**, Jorge A. Negroni, Donald M. Bers.

## Voltage-gated Ca Channels I (Boards #B394-#B415)

**2665-Pos BOARD #B394 STUDENT TRAVEL AWARDEE**  
MONTE CARLO SIMULATION OF FREE ENERGY COMPONENTS:  
ENERGETICS OF SELECTIVE BINDING IN A REDUCED MODEL  
OF L-TYPE CA CHANNELS. **Janhavi Giri**, Bob Eisenberg, Dirk Gillespie,  
Douglas Henderson, DezsCE Boda.

**2666-Pos BOARD #B395**  
ENERGETIC VARIATIONAL ANALYSIS *ENVARA* OF IONS IN  
CALCIUM AND SODIUM CHANNELS. **Robert S. Eisenberg**,  
Yunkyong Hyon, Chun Liu.

**2667-Pos BOARD #B396**  
3D STRUCTURE OF A RECOMBINANT DHPR EXPRESSED IN  
MOUSE. **John Szpyt**, Claudio F. Perez, Nancy Lorenzon, Ethan Norris,  
P. D. Allen, Kurt Beam, Montserrat Samso.

**2668-Pos BOARD #B397**  
CAV2.3 CALCIUM CHANNELS INACTIVATE FROM THE OPEN  
STATE WITH PARTIAL CHARGE IMMOBILIZATION AND  
ALTERED DEACTIVATION KINETIC. **Gustavo Contreras**, Alan Neely.

**2669-Pos BOARD #B398**  
ACTION POTENTIAL HYPERPOLARIZATION KINETICS ABETS  
THE MODULATION OF ALPHA1H T-TYPE CALCIUM CHANNELS  
BY KLHL1 MUTANTS LACKING THE ACTIN-BINDING DOMAIN  
(DELTA<sub>KELCH</sub>). **Kelly A. Aromolaran**, Erika S. Piedras-Renteria.

**2670-Pos BOARD #B399**  
C-TERMINAL ALTERNATIVE SPLICING MODULATES SINGLE-  
CHANNEL GATING OF CA<sub>v</sub>1.3 L-TYPE CALCIUM CHANNEL.  
**Wanchana Jangsangthong**, Jan Petran, Anamika Singh, Jörg Strissnig,  
Stefan Herzig, Alexandra Koschak.

**2671-Pos BOARD #B400**  
BOTH VOLTAGE- AND CA<sup>2+</sup>-DEPENDENT INACTIVATION OF  
CAV1.2 CA<sup>2+</sup> CHANNELS ARE SUPPRESSED IN MYOTUBES, LIKELY  
BECAUSE OF TRIAD JUNCTION PROTEINS OTHER THAN RYR1.  
**Joshua D. Ohrtman**, Kurt G. Beam, Paul D. Allen.

**2672-Pos BOARD #B401**  
ELECTROMECHANICAL COUPLING DURING THE ACTIVATION  
OF CA<sub>v</sub>1.2. **Sebastien Wall-Lacelle**, Yolaine Dodier, Alexandra Raybaud,  
Rémy Sauvé, Lucie Parent.

**2673-Pos BOARD #B402**  
ACTIVATION GATING DETERMINANTS IN SEGMENTS IS6 - IIIS6  
OF CAV1.2. **Stanislav Beyl**, Annette Hohaus, Eugen Timin, Steffen Hering.

**2674-Pos BOARD #B403**  
EFFECTS OF ALANINE SUBSTITUTIONS FOR HIGHLY-  
CONSERVED PHENYLALANINES IN THE SKELETAL MUSCLE L-  
TYPE CALCIUM CHANNEL. **Roger A. Bannister**, Ong Moua,  
Joshua D. Ohrtman, Chris A. Ahern, Kurt G. Beam.

**2675-Pos BOARD #B404**  
DISTINCTIVE INACTIVATION DEFECTS OF DIFFERING MUTANT  
CALCIUM CHANNELS UNDERLYING TIMOTHY SYNDROME.  
**Ivy E. Dick**, David Yue.

**2676-Pos BOARD #B405**  
DIMINISHED DIHYDROPYRIDINE BLOCK OF TIMOTHY  
SYNDROME CAV1.2 CHANNELS INDEPENDENT FROM  
MUTATION-ALTERED OPEN STATE INACTIVATION. **David Malito**.

**2677-Pos BOARD #B406**  
RARE MISSENSE MUTATIONS IN THE CALCIUM CHANNEL  $\beta$ 2  
SUBUNIT OF AUTISTIC PATIENTS. **Alexandra F. Breitenkamp**,  
Robert Daniel Nass, Judith Sinzig, Peter Nürnberg, Stefan Herzig.

**2678-Pos BOARD #B407**  
EFFECT OF PREGABALIN ON SYNAPTIC TRANSMISSION IN RAT  
DORSAL HORN GANGLION AND DORSAL HORN CO-CULTURES.  
**Janek Hendrich**, Annette C. Dolphin.

**2679-Pos BOARD #B408**  
THE CARDIAC  $\alpha_{1C}$  SUBUNIT IS DOWN REGULATED BY  
PHARMACOLOGICAL PRECONDITIONING. **German Gonzalez**,  
Daniel Zaldivar, Elba Carrillo, Maria C. Garcia, Jorge A. Sanchez.

**2680-Pos BOARD #B409**  
VOLTAGE-DEPENDENT KAPPA OPIOID MODULATION OF  
CALCIUM CURRENTS ELICITED BY ACTION POTENTIAL  
WAVEFORMS IN NEUROHYPOPHYSIAL TERMINALS.  
**Cristina M. Velázquez-Marrero**, Héctor G. Marrero, José R. Lemos.

**2681-Pos BOARD #B410**  
SELECTIVE INHIBITION OF T-TYPE CALCIUM CHANNELS BY  
ENDOGENOUS LIPOAMINO ACIDS. **Philippe Lory**,  
Guillaume Barbara, Joel Nargeot, Emmanuel Bourinet, Abdelkrim Alloui,  
Alain Eschalier, Jean Chemin.

**2682-Pos BOARD #B411**  
CHRONIC ALCOHOL CONSUMPTION BLUNTS  $\beta$ -ADRENERGIC  
RESPONSIVENESS IN LEFT VENTRICULAR CARDIOMYOCYTES.  
**Krista N. Blackwell**, Dennis J. Rozanski, Dominique C. Renard-Rooney,  
Andrew P. Thomas.

**2683-Pos BOARD #B412**  
CHARACTERIZATION OF THE CALMODULIN-BINDING SITE IN  
THE N TERMINUS OF CAV1.2. **Adva Benmocha**, Lior Almagor,  
Shimrit Oz, Joel A. Hirsch, Nathan Dascal.

**2684-Pos BOARD #B413**  
THE L-TYPE CALCIUM CHANNEL C-TERMINUS IS A MOBILE  
DOMAIN THAT COMPETES WITH CALMODULIN MODULATION  
OF CALCIUM CURRENT. **Shawn M. Crump**, Miranda J. Byse,  
Douglas A. Andres, Jonathan Satin.

**2685-Pos BOARD #B414**  
CALMODULIN RELEASE FROM THE IQ DOMAIN OF CAV1.3  
CHANNELS DURING CALCIUM DEPENDENT INACTIVATION?  
**Hojjat Bazzazi**, Manu Ben Johnny, David T. Yue.

**2686-Pos BOARD #B415**  
STRUCTURAL AND FUNCTIONAL COMPARISON BETWEEN THE  
EFFECTS OF CABP1 AND CALMODULIN ON THE VOLTAGE-  
GATED CALCIUM CHANNEL CAV1.2. **Felix Findeisen**, Daniel L. Minor.

## Voltage-gated K Channels-Gating III (Boards #B416-#B435)

**2687-Pos BOARD #B416**  
*IN-SILICO* ACTIVATION AND DEACTIVATION OF THE PORE  
DOMAINS OF VOLTAGE- AND LIGAND-GATED ION CHANNELS.  
**Daniel Garden**, Iva Bruhova, Boris Zhorov.

**2688-Pos BOARD #B417**  
ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS OF THE K<sup>+</sup>  
CHANNEL CHIMERA KV1.2/KV2.1. **Alessandro Grottesi**, Paola Imbrici,  
Giovanni Chillemi, Mauro Pessia.

**2689-Pos BOARD #B418**  
MICROSECOND SIMULATIONS INDICATE  $3_{10}$  HELIX  
TRANSITION FACILITATES TRANSLATION OF THE S4 SEGMENT  
OF KV1.2 AND SUGGEST A HYDROPHOBIC GATING BARRIER.  
**Erik Lindahl**, Christine Schwaiger, Pär Bjelkmar.

**2690-Pos BOARD #B419**  
STRUCTURAL TRANSITION FROM ALPHA- TO  $3_{10}$ -HELIX  
REDUCES THE FREE ENERGY REQUIRED FOR S4 TRANSLATION  
IN KV1.2/2.1 VOLTAGE SENSORS, AND F233 APPEARS TO  
RESPONSIBLE FOR THE GATING BARRIER. **Christine S. Schwaiger**,  
Pär Bjelkmar, Berk Hess, Erik Lindahl.

**2691-Pos BOARD #B420**  
EFFECT OF ALTERED ION OCCUPANCY ON PERMEATION AND  
INACTIVATION GATING IN K<sup>+</sup> CHANNEL. **Sudha Chakrapani**,  
Vishwanath Jogini, Eduardo Perozo.

**2692-Pos BOARD #B421**  
EXPERIMENTAL CONSTRAINTS FOR THE RESTING STRUCTURE  
OF THE SHAKER VOLTAGE SENSOR DOMAIN DERIVED FROM  
ENGINEERED HIGH AND LOW AFFINITY ZN<sup>2+</sup> BINDING SITES.  
**Meng-chin A. Lin**, Jui-Yi Hsieh, Diane M. Papazian.

**2693-Pos BOARD #B422**  
REFINEMENT AND VALIDATION OF ATOMIC MODELS OF THE  
KV1.2 POTASSIUM CHANNEL THROUGH MOLECULAR  
DYNAMICS AND GATING CHARGE CALCULATIONS.  
**Fatemeh Khalili-Araghi**, Vishwanath Jogini, Vladimir Yarov-Yarovoy,  
Emad Tajkhorshid, Benoit Roux, Klaus Schulten.

**2694-Pos BOARD #B423**  
PATHWAY CALCULATION OF THE CONFORMATIONAL TRANSITION OF THE VOLTAGE SENSOR DOMAIN IN THE KV1.2 CHANNEL. **Luca Maragliano**, Fatemeh Khalili-Araghi, Emad Tajkhorshid, Klaus Schulten, Benoit Roux.

**2695-Pos BOARD #B424**  
3D GEOMETRIC MONTE CARLO FITTING OF LRET DATA. **Homer Clark Hyde**, Walter Sandtner, Janice Robertson, Alper Dagcan, Benoit Roux, Francisco Bezanilla, Ana M. Correa.

**2696-Pos BOARD #B425**  
STABILIZATION OF THE RELAXED STATE OF THE VOLTAGE SENSING DOMAIN OF SHAKER. **Carlos A. Villalba-Galea**, Ludivine Frezza, Francisco Bezanilla.

**2697-Pos BOARD #B426**  
BIOPHYSICAL PROPERTIES OF THREE OMEGA GAPS ALONG THE VOLTAGE SENSOR S4 OF SHAKER POTASSIUM CHANNEL. **Tamer M. Gamal El-Din**, Hansjakob Heldstab, Claudia Lehmann, Nikolaus G. Greeff.

**2698-Pos BOARD #B427**  
ON-OFF CONDITIONS FOR THE OMEGA CURRENTS CAUSED BY 3 GAPS ALONG S4 IN SHAKER K-CHANNEL. **Nikolaus G. Greeff**, Claudia Lehmann, Hansjakob Heldstab, Tamer M. Gamal El-Din.

**2699-Pos BOARD #B428**  
PORE DILATION IN C-TYPE INACTIVATION OF POTASSIUM CHANNELS. **Toshinori Hoshi**, Wonpil Im, Clay M. Armstrong.

**2700-Pos BOARD #B429**  
TIME AND VOLTAGE-DEPENDENT SLOWING IN THE OFF GATING CURRENTS FROM KV3.1. **Ivan Kopljär**, Alain J. Labro, Tessa de Block, Dirk J. Snyders.

**2701-Pos BOARD #B430**  
MOLECULAR DETERMINANTS OF THE SLOW OFF-GATING COMPONENT IN SHAKER K<sup>+</sup> CHANNELS. **Zarah Batulan**, Georges A. Haddad, Rikard Blunck.

**2702-Pos BOARD #B431**  
BIOCHEMICAL AND FUNCTIONAL CONVERSION OF KCHIP4A INTO KCHIP1 FOR MODULATION OF KV4 INACTIVATION. **Ping Liang**, Hao Chen, KeWei Wang.

**2703-Pos BOARD #B432**  
STRUCTURAL DETERMINANTS OF CLOSED-STATE INACTIVATION STUDIED WITH CHANNEL CHIMERAS. **Jan Barghaan**, Jessica Wollberg, Robert Bähring.

**2704-Pos BOARD #B433**  
DIFFERENTIAL INTEGRATION OF DPLP PROTEIN VARIANTS REGULATES INACTIVATION KINETICS OF NEURONAL A-TYPE CURRENT. **Henry H. Jerng**, Paul J. Pfaffinger.

**2705-Pos BOARD #B434**  
PYRIDINE NUCLEOTIDE DEPENDENCE OF KV BETA - INDUCED KV INACTIVATION; ROLE OF KV ALPHA C-TERMINUS. **Oleg A. Barski**, Xiao-Ping Li, Aruni Bhatnagar, Srinivas M. Tipparaju.

**2706-Pos BOARD #B435**  
DEPENDENCE OF EPENDENCE 6 $\beta$ -ACETOXYL-7 $\alpha$ -HYDROXYROYLEANONE BLOCK OF Kv1.2 CHANNELS ON C-TYPE INACTIVATION. **Yuk-Man Leung**, Kar-Lok Wong, Chia-Huei Lin, Chia-Chia Chao, Chun-Hsiao Chou, Li-Yun Chang, Shao-Wei Chen, Tzu-Hung Cheng and Yue-Hsiung Kuo.

## Ligand-gated Channels-Glutamate Receptors (Boards #B436-#B449)

**2707-Pos BOARD #B436**  
TARP MODULATION OF AMPA RECEPTOR PHARMACOLOGY: POLYAMINE BLOCK AND COMPETITIVE ANTAGONISM. **David MacLean**, Derek Bowie.

**2708-Pos BOARD #B437**  
CRYSTAL STRUCTURE OF KA2-SUBTYPE IONOTROPIC GLUTAMATE RECEPTOR AMINO TERMINAL DOMAIN. **Janesh Kumar**, Mark L. Mayer.

**2709-Pos BOARD #B438**  
A COMPARATIVE MOLECULAR DYNAMICS SIMULATION STUDY OF THE AMINO TERMINAL DOMAIN OF IONOTROPIC GLUTAMATE RECEPTORS. **Ranjit Vijayan**, Philip C. Biggin.

**2710-Pos BOARD #B439**  
STRUCTURALLY VARIABLE REGIONS OF THE LIGAND-BINDING DOMAIN OF IONOTROPIC GLUTAMATE RECEPTORS LINK DYNAMICS AND FUNCTIONAL PROPERTIES. **Rodney E. Versace**, Marco Ceruso.

**2711-Pos BOARD #B440**  
THEORETICAL INVESTIGATION OF STRUCTURE AND GATING MECHANISMS IN GLUTAMATE RECEPTOR ION CHANNELS. **Michael J. Yonkunas**, Maria Kurnikova.

**2712-Pos BOARD #B441**  
REARRANGEMENTS AT THE HETERODIMER INTERFACE ARE INTEGRAL TO NMDA RECEPTOR ACTIVATION. **William F. Borschel**, Gabriela K. Popescu.

**2713-Pos BOARD #B442**  
ACTIVATION OF RECOMBINANT RAT GLUN1/GLUN2D NMDA RECEPTORS. **Katie M. Vance**, Kasper B. Hansen, Kevin K. Ogden, Stephen F. Traynelis.

**2714-Pos BOARD #B443**  
EFFECT OF *LURCHER* MOTIF MUTATIONS ON NMDA RECEPTOR KINETICS. **Swetha Murthy**, Gabriela K. Popescu.

**2715-Pos BOARD #B444**  
GLUTAMATE IS A PARTIAL AGONIST AT GLUN2A CONTAINING NMDA RECEPTORS. **Cassandra Kussius**, Gabriela K. Popescu.

**2716-Pos BOARD #B445**  
SUBUNIT-SPECIFIC ACTIVATION OF NMDA RECEPTORS. **Kasper B. Hansen**, Pieter Burger, Katie M. Vance, James P. Snyder, Rasmus P. Clausen, Stephen F. Traynelis.

**2717-Pos BOARD #B446**  
GATING EFFECTS OF A SINGLE-RESIDUE SUBSTITUTION IN THE PORE OF NMDA RECEPTORS. **Stacy A. Amico-Ruvio**, Thomas P. Smith, Gabriela K. Popescu.

**2718-Pos BOARD #B447**  
DEVELOPMENT OF AMPA RECEPTOR APTAMERS. **Zhen Huang**, Jae Seon Park, Weimin Pei, Yan Han, Sabarinath Jayaseelan, Li Niu.

**2719-Pos BOARD #B448**  
A FUNCTIONAL PROBE OF LIGAND BINDING AND AGONIST EFFICACY IN IONOTROPIC GLUTAMATE RECEPTORS. **Margaret W. Thompson**, Kathryn A. McMenimen, Henry A. Lester, Dennis A. Dougherty.

**2720-Pos BOARD #B449**  
MODAL BEHAVIOR OF IGLUR3 AMPA-RECEPTOR-CHANNELS IN CELL ATTACHED RECORDINGS. **Kinning Poon**.

## Cardiac Electrophysiology II (Boards #B450-#B477)

**2721-Pos BOARD #B450**  
LIGHT-INDUCED DEPolarIZATION TO STIMULATE CARDIOMYOCYTES WITH HIGH SPATIO-TEMPORAL RESOLUTION AND TO MODULATE THEIR DIFFERENTIATION *IN VITRO*. **Tobias Bruegmann**, Bernd K. Fleischmann, Philipp Sasse.

**2722-Pos BOARD #B451**  
DIFFERENTIAL CONDITIONS FOR EAD AND TRIGGERED ACTIVITY IN CARDIOMYOCYTES DERIVED FROM TRANSGENIC LQT1 AND LQT2 RABBITS. **Gong-Xin Liu**, Gideon Koren.

**2723-Pos BOARD #B452**  
ACCELERATED HEART RATE IN PREGNANT MICE IS NOT ATTRIBUTABLE TO RESPONSES TO SYMPATHETIC STIMULATION. **Gracia El Gebeily**, Laurine Marger, Céline Fiset.

**2724-Pos BOARD #B453**  
EFFECT OF REGIONAL MITOCHONDRIAL UNCOUPLING ON ELECTRICAL PROPAGATION IN CARDIAC CELL MONOLAYERS. **Soroosh Solhjoo**, M. Roselle Abraham, Brian O'Rourke.

**2725-Pos BOARD #B454**  
ELECTRICAL BEHAVIOR AT THE TRANSVERSE-AXIAL TUBULAR MEMBRANE OF HYPERTROPHIC CARDIOMYOCYTES *IN SITU*.  
**Wen Tao**, Jianjian Shi, Lei Wei, Michael Rubart.

**2726-Pos BOARD #B455**  
UNRAVELING OF A NOVEL CATION CURRENT IN CARDIAC MYOCYTES USING FENAMATES. **Regina Macianskiene**, Asfree Gwanyanya, Johan Vereecke, Kanigula Mubagwa.

**2727-Pos BOARD #B456**  
REDUCTIONS IN VENTRICULAR  $Ca^{2+}$  CURRENT OCCUR INDEPENDENTLY OF CARDIAC REMODELLING IN TRANSGENIC MICE WITH CARDIAC SPECIFIC OVEREXPRESSION OF THE HUMAN TYPE 1 ANGIOTENSIN II RECEPTOR. **Katy Rivard**, Sophie Mathieu, Mona Nemer, Céline Fiset.

**2728-Pos BOARD #B457**  
SPHINGOSINE-1-PHOSPHATE REGULATES VOLUME-SENSITIVE CHLORIDE CURRENT IN VENTRICULAR MYOCYTES BY MEANS OF ROS. **Frank J. Raucci Jr.**, Clive M. Baumgarten.

**2729-Pos BOARD #B458**  
MODELING THE DYNAMIC CURRENTS RECORDED UNDER ACTION POTENTIAL-CLAMP IN CARDIAC MYOCYTES.  
**Leighton T. Izu**, Tamas Banyasz, Ye Chen-Izu.

**2730-Pos BOARD #B459**  
THE ROLE OF KINESIN I AND A SMALL GTPASE IN THE FORWARD TRAFFICKING OF KV1.5 CHANNELS. **Yvonne Cheng**, Alireza D. Zadeh, Hongjian Xu, Nathan C. Wong, Zhuren Wang, Charitha Goonasekara, David F. Steele, David Fedida.

**2731-Pos BOARD #B460**  
THE CYTOPATCH INSTRUMENT: THE NEW AUTOMATED PATCH CLAMP STANDARD IN A COMPARATIVE STUDY TO THE MANUAL PATCH CLAMP TECHNIQUE REGARDING THE HIGH DATA QUALITY AND FLEXIBILITY IN ASSAY DESIGN. **Olaf Scheel**, Gesa Rascher-Eggstein, Thomas Knott.

**2732-Pos BOARD #B461**  
KCNH2 CHANNEL ACTIVATORS INCREASE  $I_{Kr}$  IN HL-1 CARDIOMYOCYTES AND MAY PREVENT THE OCCURRENCE OF TORSADES DE POINTES IN LONG QT SYNDROME. **Kenshi Hayashi**, Yuichiro Sakamoto, Hidekazu Ino, Noboru Fujino, Katsuharu Uchiyama, Eiichi Masuta, Toshihiko Tsubokawa, Akihiko Muramoto, Junichiro Yokawa, Yasutaka Kurata, Haruhiro Higashida, Masakazu Yamagishi.

**2733-Pos BOARD #B462**  
COMMUNITY EFFECT TO THE EXTERNAL ELECTRICAL STIMULATION ON CARDIOMYOCYTES BY USING *ON-CHIP* MEA SYSTEM. **Yuki Tomoe**, Tomoyuki Kaneko, Fumimasa Nomura, Kenji Yasuda.

**2734-Pos BOARD #B463**  
COMMUNITY EFFECT ON DRUG SENSITIVITY OF CARDIOMYOCYTES CONTROLLED SPATIAL PATTERNS BY USING *ON-CHIP* MEA SYSTEM. **Sachie Ohhara**, Fumimasa Nomura, Tomoyuki Kaneko, Kenji Yasuda.

**2735-Pos BOARD #B464**  
MITOCHONDRIAL REACTIVE OXYGEN SPECIES CONTROL METABOLIC OSCILLATIONS IN CARDIOMYOCYTES AT NEAR-ANOXIA. **Vladimir Ganitkevich**, Violeta Mattea, Klaus Benndorf.

**2736-Pos BOARD #B465**  
A NEW MATHEMATICAL CARDIAC CELL MODEL FOR THE ELUCIDATION OF THE MECHANISMS OF REPERFUSION ARRHYTHMOGENESIS. **Byron N. Roberts**, David J. Christini.

**2737-Pos BOARD #B466**  
UNDERSTANDING PRO-ARRHYTHMIC EFFECTS OF DRUGS USING COMPUTATIONAL MODELS AND PARAMETER SENSITIVITY ANALYSIS. **Amrita X. Sarkar**, Kathleen McGovern, Eric A. Sobie.

**2738-Pos BOARD #B467**  
PROPERTIES OF TIME DOMAIN VS. FREQUENCY DOMAIN METHODS USED IN ATRIAL FIBRILLATION. **Krzysztof R. Grz' da**, Sami F. Noujaim, Omer Berenfeld, José Jalife.

**2739-Pos BOARD #B468**  
GENDER AND REGIONAL DIFFERENCES IN  $I_{CaL}$  DISTRIBUTION IN ADULT RABBIT RIGHT VENTRICLE INFLUENCE ACTION POTENTIAL DURATION AND THE PROPENSITY FOR EADS IN A MODEL OF LONG QT SYNDROME TYPE 2. **Cassandra M. Doinoff**, Zane M. Kalik, Moriah E. Wright, Jozsi Z. Jalics, Carl Sims.

**2740-Pos BOARD #B469**  
THE INTER-DEPENDENCY OF LOCAL MYOCARDIAL METABOLISM AND EPICARDIAL ELECTRICAL ACTIVITY DURING ACUTE ISCHEMIA AND REPERFUSION. **Huda Asfour**, Luther M. Swift, Alta Berger, Ara Arutunyan, Narine Sarvazyan, Matthew W. Kay.

**2741-Pos BOARD #B470**  
THE TRANSIENT OUTWARD CURRENT ITO PROMOTES EARLY AFTERDEPOLARIZATIONS. **Yuanfang Xie**, Zhenghang Zhao, James N. Weiss, Zhilin Qu, Lai-Hua Xie.

**2742-Pos BOARD #B471**  
POTASSIUM CHANNELS IN FETAL HUMAN CARDIOMYOCYTES COMPARED TO RAT AND RABBIT. **Johan Brask**, Christian Danielsson, Christer Sylvén, Fedrik Elinder.

**2743-Pos BOARD #B472**  
ACTION POTENTIAL DURATION MODULATION BY ACTIVATION SEQUENCE IN RAT VS. PIG MYOCARDIUM.  
**Richard D. Walton**, Ed White, Olivier Bernus.

**2744-Pos BOARD #B473**  
PRESSURE PUFF INDUCED CALCIUM SIGNALS IN VOLTAGE CLAMPED CARDIOMYOCYTES. **Brooke Damon**, Lars Cleemann, Martin Morad.

**2745-Pos BOARD #B474**  
REGULATION OF THE TRANSIENT OUTWARD POTASSIUM CURRENT  $I_{TOF}$  IN CARDIAC HYPERTROPHY BY SPHINGOSINE-1-PHOSPHATE SIGNALING. **Brian K. Panama**, Desiree Latour, Lorrie Kirshenbaum, Steffen-Sebastian Bolz, Peter H. Backx.

**2746-Pos BOARD #B475**  
USING FLUORESCENCE OPTICAL MAPPING TO INVESTIGATE THE ELECTROPHYSIOLOGICAL EFFECTS OF THIENOPYRIDINES AT THE TISSUE LEVEL ON GUINEA PIG PAPILLARY MUSCLE DURING SHOCK INDUCED POTENTIAL CHANGES. **Dieter Platzer**, Brigitte Pelzmann, Klaus Zorn-Pauly.

**2747-Pos BOARD #B476**  
DO MOUSE EPICARDIAL ACTION POTENTIALS PRESENT PHASE 2? **Marcela Ferreira**, Azade Petrosky, Dmitro Korneyev, Ariel L. Escobar.

**2748-Pos BOARD #B477**  
ACTIONS OF ATP ON GUINEA-PIG SA NODE. **Derek A. Terrar**, Paul Mattick, Stevan Rakovic.

## Channel Regulation & Modulation II (Boards #B478-#B497)

**2749-Pos BOARD #B478**  
MUTATIONS IN EXTRACELLULAR DOMAINS REVERSE  $Zn^{2+}$  ACTIVATION OF HUMAN EPITHELIAL  $Na^{+}$  CHANNELS.  
**Jingxin Chen**, Katie L. Winarski, Shaohu Sheng.

**2750-Pos BOARD #B479**  
POLYCYSTIN-2 CONTAINS AN UNPAIRED EF-HAND MOTIF WHICH MAY SERVE AS A  $Ca^{2+}$ -SENSITIVE REGULATOR OF POLYCYSTIN-2 CHANNEL ACTIVITY. **Andjelka Celic**, Edward T. Petri, Michael E. Hodsdon, Titus J. Boggon, Barbara E. Ehrlich.

**2751-Pos BOARD #B480**  
NEW CHANNELS IN THE OUTER MITOCHONDRIAL MEMBRANE. **Vivien Krüger**, Michael Meinecke, Lars Becker, Chris Meisinger, Nikolaus Pfanner, Richard Wagner.

**2752-Pos BOARD #B481**  
EVIDENCE FOR LATERAL BUDDING AND VOLTAGE DEPENDENCE OF A PROTEO-LIPID CHANNEL. **Debra Datskovskiy**, Meenu N. Perera, Megan Miles, Toan Nguyen, Marco Colombini.

**2753-Pos BOARD #B482**

A KINETIC MODEL OF ION CHANNEL ELECTROPHYSIOLOGY: INCORPORATING BILAYER-MEDIATED EFFECTS OF AGONISTS AND ANESTHETICS ON PROTEIN CONFORMATIONAL TRANSITIONS. **Robert S. Cantor**, Kathryn S. Twyman, Daniel J. Albershardt.

**2754-Pos BOARD #B483**

KCHIP2 STABILIZES KV4 PROTEIN EXPRESSION AND CELL SURFACE RETENTION TO CONTROL CARDIAC ITO CHANNEL DENSITIES. **Nicholas C. Foeger**, Céline Marionneau, Jeanne M. Nerbonne.

**2755-Pos BOARD #B484**

THE NA<sup>+</sup>-ACTIVATED POTASSIUM CHANNEL SLACK SHARES A SIMILAR NA<sup>+</sup> COORDINATION SITE WITH KIR3 CHANNELS. **Zhe Zhang**, Avia Rosenhouse-Dantsker, Qiongyao Tang, Sergei Noskov, Diomedes E. Logothetis.

**2756-Pos BOARD #B485**

OXIDATION OF K<sup>+</sup> CHANNELS LEADS TO PROGRESSIVE DECLINE IN SENSORY FUNCTION DURING AGEING. **Federico Sesti**, Shi-qing Cai.

**2757-Pos BOARD #B486**

REGULATION OF THE CARDIAC I<sub>Ks</sub> CHANNEL COMPLEX BY UBIQUITYLATION AND DE-UBIQUITYLATION. **Katarzyna Krzystanek**, Morten Grønnet, Søren Peter Olesen, Hugues Abriel, Thomas Jespersen.

**2758-Pos BOARD #B487**

MECHANISM FOR STRICT REGULATION OF CERTAIN K<sup>+</sup> CHANNELS BY SMALL, FAST CHANGES IN CELL VOLUME. **Maria de los Angeles Tejada**, Kathleen Stolpe, Sofia Hammami, Niels J. Willumsen, Asser N. Poulsen, Dan A. Klaerke.

**2759-Pos BOARD #B488**

FLUORINATED GENERAL ANESTHETICS MODULATE KV1.3 POTASSIUM CHANNELS AND INTERACT WITH  $\beta$ -AMYLOID PEPTIDE: IS THERE A LINK? **Maria I. Lioudyno**, Michael T. Alkire, Virginia Liu, Philip R. Dennison, Charles G. Glabe, James E. Hall.

**2760-Pos BOARD #B489**

MODULATION OF PLANT SLOW VACUOLAR (SV) CHANNEL BY FLAVONOID NARINGENIN. **Paul Vijay K. Gutla**, Armando Carpaneto, Alex Costa, Fiorella Lo Schiavo, Franco Gambale.

**2761-Pos BOARD #B490**

EFFECTS OF CANNABINOIDS ON ION CHANNELS OF PANCREATIC BETA CELLS. **Charles E. Spivak**, Máire E. Doyle.

**2762-Pos BOARD #B491**

EFFECTS OF SMALL MOLECULE KV1.3 AND K(CA)3.1 INHIBITORS ON TEM-CELL PROLIFERATION. **Tobias Dreker**, Svetlana Hamm, Stefan Tasler.

**2763-Pos BOARD #B492**

EFFECTS OF PKC ON CLOSED-STATE INACTIVATION IN KV4.3 ISOFORMS. **Chang Xie**, Vladimir E. Bondarenko, Harold C. Strauss, Michael J. Morales.

**2764-Pos BOARD #B493**

CA<sup>2+</sup>-DEPENDENT PKC FACILITATES VOLTAGE-DEPENDENT ACTIVATION OF IKs THROUGH PHOSPHORYLATION OF AN ISOFORM SPECIFIC SITE ON THE KCNE1 SUBUNIT. **Jin O-Uchi**, Elena Fujiwara, Alessandra Matavel, Coeli M. Lopes.

**2765-Pos BOARD #B494**

ANCILLARY SUBUNITS REGULATE PKC MEDIATED EFFECTS ON CLOSED-STATE INACTIVATION OF KV4.3. **Chang Xie**, Michael J. Morales.

**2766-Pos BOARD #B495**

REGULATION OF NALCN SODIUM LEAK CHANNEL BY UNC79 AND UNC80. **Dejian Ren**, Boxun Xu, Qi Zhang, Haikun Wang, Manabu Nakayama.

**2767-Pos BOARD #B496**

ONE SUMO IS SUFFICIENT TO SILENCE THE DIMERIC BACKGROUND POTASSIUM CHANNEL K2P1. **Leigh D. Plant**, Leandro Zúñiga, Sonia Olikara, Steve A. N. Goldstein.

**2768-Pos BOARD #B497**

IDENTIFICATION OF K<sub>v</sub> SUBUNITS UNDERLYING THE DELAYED RECTIFIER K<sup>+</sup> CURRENT (I<sub>Kr</sub>) IN SMALL CULTURED DRG NEURONS. **Elke Bocksteins**, Gerda Van de Vijver, Tine Bruyins, Pierre-Paul Van Bogaert, Dirk J. Snyders.

**Ion Channels, Other I (Boards #B498-#B522)****2769-Pos BOARD #B498**

TUBULIN-BINDING DRUGS THIOPOLCHICOSIDE AND TAXOL PERMEABILIZE LIPID BILAYER MEMBRANES BY FORMING ION CHANNELS. **Md. Ashrafuzzaman**, M. Duszyk, J. Tuszynski.

**2770-Pos BOARD #B499**

TOWARDS SIMULTANEOUS SINGLE CHANNEL CURRENT AND FLUORESCENCE RECORDINGS IN PLANAR LIPID BILAYER. **Hugo McGuire**, Rikard Blunck.

**2771-Pos BOARD #B500**

FUNCTIONAL INCORPORATION OF KCSA INTO TETHERED LIPID BILAYER MEMBRANES. **Haw-Zan Goh**, Matteo Broccio, Sidd Shenoy, Frank Heinrich, Joseph A Mindell, Mathias Lösche.

**2772-Pos BOARD #B501**

ENERGETIC COUPLING BETWEEN AMINO ACIDS IN THE PH-SENSING REGION OF THE KCSA CHANNEL. **Ameer N. Thompson**, Crina M. Nimigea.

**2773-Pos BOARD #B502**

MEMBRANE TRAFFICKING CONTROLS K2P1/TWIK1 CHANNEL EXPRESSION AT THE CELL SURFACE. **Sylvain F. Feliciangeli**, Said Bendahhou, Magalie P. Tardy, Guillaume Sandoz, Franck C. Chatelain, Markus Reichold, Richard Warth, Jacques Barhanin, Florian Lesage.

**2774-Pos BOARD #B503**

HELIX C REGULATES SURFACE EXPRESSION OF KCNQ2 (KV7.2) CHANNELS. **Juncal Fernandez Orth**, Paloma Aivar, Meritxell Roura i Ferrer, Juan Camilo Gómez Posada, Teresa Zamalloa, Alessandro Alaimo, Pilar Areso, Alvaro Villarreal Muñoz.

**2775-Pos BOARD #B504**

LACK OF CLINICALLY IMPORTANT HERG CHANNEL BLOCK BY THE ANTIPSYCHOTICS TIAPRIDE AND SULPIRIDE. **So-Young Lee**, Hee-Kyung Hong, Su-Hyun Jo.

**2776-Pos BOARD #B505**

BIOLOGICALLY CLOSED ELECTRICAL CIRCUITS AND VOLTAGE GATED ION CHANNELS IN PLANTS. **Alexander G. Volkov**, Justin C. Foster, Talitha A. Ashby, Vladislav S. Markin.

**2777-Pos BOARD #B506**

ISOFORM- AND SPECIES-SPECIFIC PROTEOLYSIS OF CARDIAC PACEMAKER CHANNELS. **Jianying Huang**, Han-Gang Yu.

**2778-Pos BOARD #B507**

MOOD STABILIZERS ACTIVATE TREK-1, BUT NOT TREK-2. **Eun-Jin Kim**, Jae-Yong Park, Seong-Hong Hong, Dawon Kang, Jaehee Han.

**2779-Pos BOARD #B508**

COLOR SHIFTED CHANNELRHODOPSINS- TOWARDS RED LIGHT OPTOGENETICS. **Franziska Schneider**, Matthias Prigge, Satoshi Tsunoda, Peter Hegemann.

**2780-Pos BOARD #B509**

BIFUNCTIONAL PROPERTIES OF CHANNELRHODOPSIN 2. **Katrin Feldbauer**, Dirk Zimmermann, Verena Pintschovius, Julia Spitz, Christian Bamann, Ernst Bamberg.

**2781-Pos BOARD #B510**

P2R IN EOSINOPHILS AND POSSIBLE ROLE IN MIGRATION. **Anael V. P. Alberto**, Robson Xavier Faria, Marco Aurélio Martins, Luiz Anastacio Alves.

**2782-Pos BOARD #B511**

THE FIRST TRANSMEMBRANE DOMAIN OF A DROSOPHILA INNEXIN IS LOOSELY PACKED. **Adam DePriest**.

**2783-Pos BOARD #B512**

TEMPERATURE DEPENDENCE OF PROTON PERMEATION THROUGH A VOLTAGE-GATED PROTON CHANNEL IN MICROGLIA. **Miyuki Kuno**, Hiroyuki Ando, Hirokazu Morihata, Hiromu Sakai, Hiroyuki Mori, Shigetoshi Oiki.

**2784-Pos BOARD #B513**  
MEMBRANE TOPOLOGY OF S4 OF THE MOUSE VOLTAGE-GATED PROTON CHANNEL. **Souhei Sakata**, Tatsuki Kurokawa, Morten Nørholm, Masahiro Takagi, Yoshifumi Okochi, Gunnar von Heijne, Yasushi Okamura.

**2785-Pos BOARD #B514**  
PHARMACOLOGICAL RELEVANT AMANTADINE BINDING SITE IS IN THE PORE OF INFLUENZA A VIRUS M2 PROTON CHANNEL. **Chunlong Ma**, Yuki Ohigashi, Xianghong Jing, Robert A. Lamb, Lawrence H. Pinto.

**2786-Pos BOARD #B515**  
RYANODINE RECEPTORS CONTROL CYTOSOLIC CALCIUM ELEVATION FOLLOWING ACTIVATION OF STORE-OPERATED CALCIUM ENTRY IN ACTIVATED BUT NOT RESTING HUMAN T LYMPHOCYTES. **Pratima Thakur**, Sepehr Dadsetan, Alla F. Fomina.

**2787-Pos BOARD #B516**  
INCORPORATION OF RYR2 AND OTHER ION CHANNELS INTO NANOPORE BASED PLANAR LIPID BILAYERS FOR LOW NOISE SINGLE CHANNEL RECORDINGS. **Prithwish Pal**, Geoffrey A. Barrall, Ariel L. Escobar, Melissa A. Poquette, Patricio Velez, Andrew D. Hibbs.

**2788-Pos BOARD #B517**  
THE INTRACELLULAR LOOP OF ORAI1 PLAYS A CENTRAL ROLE IN FAST INACTIVATION OF CRAC CHANNELS. **Sonal Srikanth**, Hea-Jin Jung, Bernard Ribalet, Yousang Gwack.

**2789-Pos BOARD #B518**  
A HIGH THROUGHPUT MICROFLUIDIC APPROACH ENABLES FAST EXCHANGE OF SOLUTIONS AND LIGAND GATED ION CHANNEL RECORDING FROM CELL ENSEMBLES. **Juliette Johnson**, Nianzhen Li, Qin Chen, Ian Spencer, Cristian Ionescu-Zanetti, Jeff Jensen.

**2790-Pos BOARD #B519**  
COMPONENTS OF *E. COLI* ENERGY-TRANSDUCING COMPLEXES, EXBB AND TOLQ, DISPLAY ION CHANNELS. **Stanislav D. Zakharov**, Herve Celia, Kirill A. Datsenko, Monica Santamaria, Julian Whitelegge, Roland Lloubes, William A. Cramer.

**2791-Pos BOARD #B520**  
PHASES, TRANSPORT, AND DIELECTRIC PROPERTIES OF WATER CONFINED IN NANOSCALE CHANNELS. **Robert J. Mashl**, Eric Jakobsson.

**2792-Pos BOARD #B521 INTERNATIONAL TRAVEL AWARDEE**  
COMPUTATIONAL EVALUATION OF NANOPORE CONDUCTIVITY IN ELECTROPORATION. **Malgorzata Kotulaska**, Witold Dyrka.

**2793-Pos BOARD #B522**  
DETERMINANT OF CATION BLOCKING BEHAVIOR IN AQUAPORIN-1. **Hui Li**.

## Muscle: Fiber & Molecular Mechanics & Structure III (Boards #B523-#B544)

**2794-Pos BOARD #B523 STUDENT TRAVEL AWARDEE**  
LOOP 1'S ROLE IN A NOVEL STEP ON THE ADP RELEASE PATHWAY OF SMOOTH MUSCLE. **Justin Decarreau**, Lynn Chrin, Chris Berger.

**2795-Pos BOARD #B524**  
A KINETIC STEP INVOLVING LOOP 1 IN SMOOTH MUSCLE MAY DICTATE ISOFORM SPECIFIC DIFFERENCES IN ADP RELEASE. **Justin Decarreau**, Lynn Chrin, Chris L. Berger.

**2796-Pos BOARD #B525**  
MUTANT ANALYSIS AND COMPUTATIONAL ANALYSIS OF THE ESSENTIAL LIGHT CHAIN AND REGULATORY LIGHT CHAIN INTERACTIONS WITH RESPECT TO REGULATION OF SMOOTH MUSCLE MYOSIN. **Shaowei Ni**, Feng Hong, Michael S. Carter, Josh E. Baker, Kevin C. Facemyer, Christine R. Cremo.

**2797-Pos BOARD #B526**  
MODULATION OF ACTIN-MYOSIN INTERACTION BY N-TERMINAL UNIQUE DOMAIN OF MYOROD OF MOLLUSCAN CATCH MUSCLE. **Oleg S. Matusovsky**, Galina G. Matusovskaya, Apolinary Sobieszek, Nikolay S. Shelud'ko.

**2798-Pos BOARD #B527**  
SMOOTH MUSCLE TROPOMYOSIN FORMS SEMI-RIGID END TO END POLYMERS. **Duncan Sousa**, Anthony Cammarato, Jason-Pingcheng Li, Xiaochuan Li, William Lehman.

**2799-Pos BOARD #B528**  
AIRWAY SMOOTH MUSCLE DYNAMICS ARE GOVERNED BY THE IMPOSED RATE OF STRAIN. **Guillaume Lenormand**, Madavi Oliver, Srboljub M. Mijailovich, James P. Butler, Jeffrey J. Fredberg.

**2800-Pos BOARD #B529**  
ROLE OF NONLINEAR SERIAL ELASTICITY ON AIRWAY SMOOTH MUSCLE CONTRACTION. **Srboljub M. Mijailovich**.

**2801-Pos BOARD #B530**  
STRUCTURAL DYNAMICS OF THE DYSTROPHIN-ACTIN AND UTROPHIN-ACTIN COMPLEXES. **Ava Y. Lin**, Ewa Prochniewicz, Davin Henderson, James Ervasti, David D. Thomas.

**2802-Pos BOARD #B531**  
CONGENITAL CONTRACTURE SYNDROME CAUSED BY MUTATION IN EMBRYONIC MYOSIN HEAVY CHAIN CHARACTERIZED BY SIGNIFICANT CHANGES IN ADULT MUSCLE CONTRACTILITY. **Alice W. Ward**, Anita E. Beck, Michael J. Bamshad, Michael Regnier.

**2803-Pos BOARD #B532**  
THE FAST SKELETAL TROPONIN ACTIVATOR, CK-1909178 REDUCES MUSCLE FATIGUE IN A MODEL OF PERIPHERAL ARTERY DISEASE *IN SITU*. **Aaron Hinken**, Lena Driscoll, Ken Lee, Jim J. Hartman, David Marquez, Richard Hansen, Alex Muci, Bradley Morgan, Fady Malik, Alan J. Russell.

**2804-Pos BOARD #B533**  
TRANSGENIC REPLACEMENT OF THE MYOSIN S2/HMM HINGE ALTERS THE ROD'S NANO-MECHANICAL PROPERTIES AND AFFECTS SARCOMERIC ORGANIZATION. **Anthony Cammarato**, Xiaochuan Li, Mary C. Reedy, Chi Lee, Pingcheng Li, William Lehman, Sanford I. Bernstein.

**2805-Pos BOARD #B534**  
FUNCTIONAL CONSEQUENCES OF LARGE1 OVEREXPRESSION IN TWO DISTINCT FORMS OF MUSCULAR DYSTROPHY. **Erik P. Rader**, Tobias Willer, Blake A. Eyberg, Sally J. Prouty, Kevin P. Campbell.

**2806-Pos BOARD #B535**  
ALTERATIONS TO CARDIAC MUSCLE FUNCTION AND SARCOMERIC PROTEINS FOLLOWING MYOCARDIAL INFARCTION. **Benjamin S. Avner**, Krystyna M. Shioura, Sarah B. Scruggs, D. Lawrence Helseth, Paul H. Goldspink, R. John Solaro.

**2807-Pos BOARD #B536**  
AUTOMATED IMAGE ANALYSIS OF ELECTRON MICROGRAPHS OF STRUCTURALLY COMPROMISED STRIATED MUSCLE. **Jessica I. Houtz**, P. Christopher Hatfield, Kenneth S. Campbell, Karyn A. Esser.

**2808-Pos BOARD #B537**  
MYOSIN-BASED INCLUSION BODY MYOPATHY TYPE 3 DECREASES MUSCLE POWER GENERATION AND KINETICS. **Mia M. Corcione**, Cuiping Zhao, William A. Kronert, Sanford I. Bernstein, Douglas M. Swank.

**2809-Pos BOARD #B538**  
TITIN ISOFORM SIZE IS NOT CORRELATED WITH THIN FILAMENT LENGTH IN RAT SKELETAL MUSCLE. **Jonathan M. Pleitner**, Marion L. Greaser.

**2810-Pos BOARD #B539**  
CONFORMATION OF A-BAND TITIN. **Larissa Tskhovrebova**, Matt Walker, Günter Grossmann, Nasir Khan, Andrew Baron, John Trinick.

**2811-Pos BOARD #B540**  
EFFECT OF EXCISION OF TITIN'S PEVK EXONS 219-225 ON SKELETAL MUSCLE STRUCTURE AND FUNCTION. **Bryan D. Hudson**, Charles S. Chung, Tomotaro Granzier-Nakajima, Nathan E. Cromer, Danielle Buck, Michael Gotthardt, Henk Granzier.

**2812-Pos BOARD #B541**  
DEVELOPMENTALLY REGULATED DIFFERENTIAL SPLICING OF THE LARGE SARCOMERIC PROTEINS TITIN AND NEBULIN. **Danielle Buck**, Adam Hoying, Bryan Hudson, Coen Ottenheijm, Henk Granzier.

**2813-Pos BOARD #B542**  
MYBP-C SLOW: A NOVEL PHOSPHOPROTEIN OF SKELETAL MUSCLES. **Maegen A. Ackermann**, Aikaterini Kontrogianni-Konstantopoulos.

**2814-Pos BOARD #B543**  
A C-TERMINAL TRUNCATION OF FLIGHTIN SLOWS ACTOMYOSIN CYCLING, ELEVATES PASSIVE TENSION, AND DECREASES POWER OUTPUT IN DROSOPHILA FLIGHT MUSCLE FIBERS. **Bertrand C. W. Tanner**, Mark S. Miller, Becky M. Miller, Panagiotis Lekkas, David W. Maughan, Jim O. Vigoreaux.

**2815-Pos BOARD #B544**  
INTERMEDIATE FILAMENT AND ECM MECHANICS DEDUCED FROM DESMIN KNOCKOUT MUSCLES. **Gretchen A. Meyer**, Andrew D. McCulloch, Samuel R. Ward, Richard L. Lieber.

## Excitation-Contraction Coupling I (Boards #B545-#B574)

**2816-Pos BOARD #B545**  
INHIBITION OF CALSEQUESTRIN PHOSPHORYLATION LEADS TO ITS TRAFFICKING FROM ROUGH ENDOPLASMIC RETICULUM. **Timothy P. McFarland**, Steven E. Cala.

**2817-Pos BOARD #B546**  
CARDIAC HYPERTROPHY CAUSES NEWLY-SYNTHESED CALSEQUESTRIN TO REMAIN AROUND THE NUCLEUS IN ROUGH ENDOPLASMIC RETICULUM. **Steven E. Cala**, Sony Jacob, Naama Sleiman, Hani Sabbah.

**2818-Pos BOARD #B547**  
EFFECT OF AZUMOLENE ON RYR1-DEPENDENT STORE OPERATED CALCIUM ENTRY IN RYR1-EXPRESSING, NON EXCITABLE CELLS. **Balazs Lukacs**, Daniela Requena, Sutanu Samanta, Jerome Parness.

**2819-Pos BOARD #B548**  
IMPACT OF CALSEQUESTRIN ON THE SR CALCIUM CONCENTRATION IN SKELETAL MUSCLES FIBERS MONITORED WITH A GENETICALLY ENCODED FRET BASED INDICATOR. **Carlo Reggiani**, Marta Canato, Michele Scorzeto, Marta Giacomello, Feliciano Protasi, Ger J. M. Stienen.

**2820-Pos BOARD #B549**  
INITIAL CHARACTERIZATION OF CASQ1/CASQ2 KNOCKOUT (DOUBLE CASQ-NULL) MICE. **Cecilia Paolini**, Marco Quarta, Marco Dainese, Mirta Tomasi, Marta Canato, Alessandra Nori, Bjorn C. Knollmann, Paul D. Allen, Carlo Reggiani, Feliciano Protasi.

**2821-Pos BOARD #B550**  
REFRACTORINESS OF SARCOPLASMIC RETICULUM CALCIUM RELEASE IN CARDIAC MUSCLE DUE TO CALSEQUESTRIN. **Oleksiy Gryshchenko**, Dmytro Kryshchal, Bjorn C. Knollmann.

**2822-Pos BOARD #B551**  
EFFECT OF TRIADIN ON RETROGRADE AND ORTHOGRADE SIGNALING BETWEEN RYR1 AND DHPR IN CULTURED MYOTUBES. **Jose M. Eltit**, Hongli Li, Paul D. Allen, Claudio F. Perez.

**2823-Pos BOARD #B552**  
ALTERING SKELETAL MUSCLE EC COUPLING BY ABLATING THE SARCOPLASMIC RETICULUM PROTEIN JP45 AFFECTS BOTH METABOLISM AND MUSCLE PERFORMANCE IN OLD MICE. **Oswaldo Delbono**, Zhong-Min Wang, Jackson Taylor, Maria Laura Messi, Susan Treves, M Nishi, H. Takeshima, Francesco Zorzato.

**2824-Pos BOARD #B553**  
CHARACTERIZATION OF CALUMENIN-RYR2 INTERACTION IN MURINE HEART. **Sanjaya K. Sahoo**, Taeyong Kim, Do Han Kim.

**2825-Pos BOARD #B554**  
PROGRESSIVE TRIAD-MITOCHONDRIA UN-COUPLING IN AGING. **Alessandra D'Incecco**, Marco Dainese, Feliciano Protasi, Simona Boncompagni.

**2826-Pos BOARD #B555**  
KNOCKDOWN OF TRIC-B FROM *TRIC-A*<sup>-/-</sup> MICE ALTERS INTRACELLULAR CA<sup>2+</sup> SIGNALING IN SKELETAL AND CARDIAC MUSCLES. **Ki Ho Park**, Xiaoli Zhao, Daiju Yamazaki, Samantha Pitt, Andoria Tjondrokoesoemo, Shinji Komazaki, Jae-Kyun Ko, Pei-Hui Lin, Marco Brotto, Rebecca Sitsapesan, Noah Weisleder, Hiroshi Takeshima, Jianjie Ma.

**2827-Pos BOARD #B556**  
LOCAL CA<sup>2+</sup> RELEASES ENABLE RAPID HEART RATES IN DEVELOPING CARDIOMYOCYTES. **Topi Korhonen**, Risto Rapila, Veli-Pekka Ronkainen, Pasi Tavi.

**2828-Pos BOARD #B557 STUDENT TRAVEL AWARDEE**  
CA<sup>2+</sup> TRANSIENTS AND MYOSIN HEAVY CHAIN (MHC) COMPOSITION IN MURINE ENZYMATICALLY DISSOCIATED FIBERS. **Juan C. Calderón**, Pura Bolaños, Carlo Caputo.

**2829-Pos BOARD #B558**  
EFFECTS OF  $\gamma$ -KETOALDEHYDES ON CA<sup>2+</sup> CURRENT INDUCED SR CA<sup>2+</sup> RELEASE IN VENTRICULAR MYOCYTES. **Hyun Seok Hwang**, Oleksiy Gryshchenko, Sean S. Davies, Bjorn C. Knollmann.

**2830-Pos BOARD #B559**  
CAMKII PHOSPHORYLATION OF RYRS: A MECHANISTIC MATHEMATICAL MODEL. **Yasmin L. Hashambhoy**, Raimond L. Winslow, Joseph L. Greenstein.

**2831-Pos BOARD #B560**  
MULTI-IMAGE COLOCALIZATION APPLIED TO THE STRUCTURE OF THE CARDIOMYOCYTE. **David R. Scriven**, Patrick A. Fletcher, Sangita Sequeira, Julianne Busby, Edwin D. Moore.

**2832-Pos BOARD #B561**  
REDOX MODIFICATIONS OF CA<sup>2+</sup>-RELEASE EVENTS IN CARDIOMYOCYTES. **Mohammed Fanchaouy**, Krisztina Pocsai, Natalia Shirokova, Ernst Niggli.

**2833-Pos BOARD #B562**  
THE RYANODINE RECEPTOR (RYR) CARRIES ITS OWN COUNTER-ION CURRENT IN RABBIT PERMEABILIZED MYOCYTES. **Tao Guo**, Dirk Gillespie, Michael Fill.

**2834-Pos BOARD #B563**  
ALTERED MITOCHONDRIAL ENERGETICS AND INCREASED ROS GENERATION ACT SYNERGISTICALLY TO DAMPEN  $\beta$ -ADRENERGIC STIMULATED CONTRACTILITY IN THE DIABETIC HEART. **Carlo G. Tocchetti**, Sonia Cortassa, Brian S. Stanley, Brian O'Rourke, Fadi G. Akar, Nazareno Paolucci, Miguel A. Aon.

**2835-Pos BOARD #B564**  
 $\beta$ -ADRENERGIC STIMULATION AND SR CA<sup>2+</sup> LEAK IN CARDIOMYOCYTES. **Jakob Ogrodnik**, Daniel Gutierrez, Ernst Niggli.

**2836-Pos BOARD #B565**  
IMPAIRED CA<sup>2+</sup> RELEASE SYNCHRONIZATION IN RYR2-S2808A MOUSE CARDIOMYOCYTES DURING  $\beta$ -ADRENERGIC STIMULATION. **Nina D. Ullrich**, Ernst Niggli.

**2837-Pos BOARD #B566**  
RYANODINE RECEPTORS OUTSIDE OF COUPLONS ARE INVOLVED IN EXCITATION-CONTRACTION COUPLING IN RABBIT VENTRICULAR MYOCYTES. **Natalia S. Torres**, Eleonora Savio-Galimberti, Joshua I. Goldhaber, Christian Soeller, John H. B. Bridge, Frank B. Sachse.

**2838-Pos BOARD #B567**  
REMODELLING OF CALCIUM HANDLING, ION CURRENTS AND CONTRACTION IN RAC1 OVEREXPRESSING MOUSE VENTRICLE. **Peter Lipp**, Martin Oberhofer, Qinghai Tian, Jue Wang, Karin Hammer, Jan Reil, Hans-Ruprecht Neuberger, Lars Kaestner.

**2839-Pos BOARD #B568**  
MESENCHYMAL STEM CELL CONDITIONED TYRODE IS A POTENT ACTIVATOR OF AKT IN CARDIOMYOCYTES. **Dan Bare**, Iurii Semenov, Kathrin Banach.

**2840-Pos BOARD #B569**  
RAC1-INDUCED REMODELLING IS DIFFERENT IN THE LEFT AND RIGHT ATRIUM OF RACET MICE. **Peter Lipp**, Martin Oberhofer, Qinghai Tian, Jue Wang, Karin Hammer, Jan Reil, Hans-Ruprecht Neuberger, Lars Kaestner.

**2841-Pos BOARD #B570**  
INCREASED SUSCEPTIBILITY TO VENTRICULAR ARRHYTHMIAS RELATES TO DIASTOLIC CA<sup>2+</sup> LEAK IN RATS WITH METABOLIC SYNDROME. **Morten A. Høydal**, Anne B. Johnsen, Marcia Alvez, Guri Kaurstad, Natale Rolim, Ulrik Wisløff.

**2842-Pos BOARD #B571**  
EFFECTS OF MEMBRANE CALCIUM FLUX LOCALIZATIONS AND REALISTIC T-TUBULE GEOMETRY ON CARDIAC EXCITATION-CONTRACTION COUPLING. **Yuhui Cheng**, Zeyun Yu, Masahiko Hoshijima, Michael Holst, Andrew McCulloch, Andrew McCammon, Anushka Michailova.

**2843-Pos BOARD #B572**  
THE GENERATION OF A NOVEL ANIMAL MODEL OF INDUCIBLE HYPERTROPHY: OVEREXPRESSION OF NCX1 IN THE MURINE HEART USING THE DOXYCYCLINE-DEPENDENT PROMOTER. **Yuki Katanosaka**, Keiichiro Iwasaki, Satoshi Mohri, Keiji Naruse.

**2844-Pos BOARD #B573**  
THE ROLE OF SOLUBLE GUANYLATE CYCLASE IN SEPSIS-INDUCED CARDIOMYOPATHY IN MICE. **Ion A. Hobai**, Eric Weiss, Antonis Armoundas, Emmanuel Buys, Peter Brouckaert, Wilson S. Colucci.

**2845-Pos BOARD #B574**  
EFFECT OF TRAINING INDUCES CHANGES IN HEART, CAMKII DEPENDENT OR NOT? **Guri Kaurstad**, Marcia N. Alves, Natale Rolim, Trine Skoglund, Helene Wisløff, Morten A. Høydal, Tomas O. Stølen, Ulrik Wisløff.

## Cardiac Muscle II (Boards #B575-#B593)

**2846-Pos BOARD #B575**  
INCREASED CA<sup>2+</sup> SENSITIVITY AND LENGTH DEPENDENT ACTIVATION IN A MOUSE MODEL WITH INCREASED TITIN-BASED STIFFNESS. **Eun-Jeong Lee**, Carlos Hidalgo, Michael Gotthardt, Henk Granzier.

**2847-Pos BOARD #B576**  
EXCISION OF TITIN'S CARDIAC PEVK SPRING ELEMENT ABOLISHES PKC $\alpha$ -INDUCED INCREASES IN MYOCARDIAL STIFFNESS. **Carlos G. Hidalgo**, Bryan D. Hudson, Michael Gotthardt, Henk L. Granzier.

**2848-Pos BOARD #B577**  
THE N2B ELEMENT OF CARDIAC TITIN GREATLY REDUCES ENERGY LOSS DURING LOADING CYCLES OF THE HEART. **Joshua Nedrud**, Michael Gotthardt, Henk Granzier.

**2849-Pos BOARD #B578**  
SINGLE MOLECULE ANALYSIS OF PKC PHOSPHORYLATION OF TITIN'S PEVK DOMAIN. **Brian Anderson**, Julius Bogolomovas, Siegfried Labeit, Henk Granzier.

**2850-Pos BOARD #B579**  
PASSIVE STRESS IN MYOFIBRILS FROM CARDIOMYOPATHIC HAMSTERS. **Audree McKenzie**, Walter Herzog.

**2851-Pos BOARD #B580**  
IMPORTANCE OF TITIN BASED VISCOSITY IN CARDIAC FUNCTION: AN INTEGRATIVE STUDY ON PEVK-ACTIN INTERACTIONS. **Charles S. Chung**, Methajit Methawasin, Joseph Popper, O. Lynne Nelson, Michael Gotthardt, Henk L. Granzier.

**2852-Pos BOARD #B581**  
TITIN ISOFORMS AND TITIN-BASED STIFFNESS IN DIASTOLIC HEART FAILURE. **Judith Krysiak**, Lars S. Maier, Burkert M. Pieske, Margaret M. Redfield, Wolfgang A. Linke.

**2853-Pos BOARD #B582**  
CHARACTERIZATION OF A MUTANT RAT MODEL WITH ALTERED TITIN ISOFORM EXPRESSION. **Wei Guo**, Jonathan M. Pleitner, Kurt W. Saupé, Timothy A. Hacker, Marion L. Greaser.

**2854-Pos BOARD #B583**  
BINDING OF THE N-TERMINAL FRAGMENT C0-C2 OF CARDIAC MYBP-C TO CARDIAC F-ACTIN. **Robert W. Kensler**, Justin F. Shaffer, Samantha P. Harris.

**2855-Pos BOARD #B584**  
INCORPORATION OF THE A31P CARDIAC MYOSIN BINDING PROTEIN C MISSENSE MUTATION INTO FELINE CARDIAC SARCOMERES. **Kristina L. Bezold**, Elaine Hoye, Justin Shaffer, Aldrin Gomes, Mark Kittleson, Samantha Harris.

**2856-Pos BOARD #B585**  
FORCE, CA-SENSITIVITY AND CONTRACTILE EFFICIENCY IN HUMAN MYOCARDIUM EXPRESSING A TRUNCATED CARDIAC MYOSIN BINDING PROTEIN-C. **Peter J. Griffiths**, Henrik Isackson, Charles S. Redwood, Hugh Watkins, Christopher C. Ashley.

**2857-Pos BOARD #B586**  
REGULATION OF CONTRACTION BY PKA PHOSPHORYLATION OF MYOSIN BINDING PROTEIN C AND TROPONIN I IN MURINE SKINNED MYOCARDIUM. **Peter P. Chen**, Jitandrakumar R. Patel, Jeffrey W. Walker, Richard L. Moss.

**2858-Pos BOARD #B587**  
ENDOTHELIN AS A REGULATOR OF PHOSPHORYLATION OF CMYBP-C. **Saul Winegrad**.

**2859-Pos BOARD #B588**  
COMPARATIVE EFFECTS OF THE PROLINE-ALANINE RICH REGIONS OF HUMAN AND MURINE CARDIAC MYOSIN BINDING PROTEIN-C. **Justin F. Shaffer**, Peony Wong, Kristina L. Bezold, Samantha P. Harris.

**2860-Pos BOARD #B589**  
SINGLE SARCOMERE IMAGING BY QUANTUM DOTS (QDOTS) IN THE HEART. **Takako Terui**, Seine Shintani, Shin'ichi Ishiwata, Satoshi Kurihara, Norio Fukuda.

**2861-Pos BOARD #B590**  
SINGLE SARCOMERE IMAGING IN CARDIOMYOCYTES WITH QUANTUM DOTS (QDOTS): PHYSIOLOGICAL SIGNIFICANCE OF SPOC IN CARDIAC BEAT. **Norio Fukuda**, Takahiro Serizawa, Seine Shintani, Takako Terui, Shin'ichi Ishiwata, Satoshi Kurihara.

**2862-Pos BOARD #B591**  
MODELING OF VISCOELASTIC PROPERTIES OF ISOLATED MYOCARDIAL TISSUE SAMPLES AT DIFFERENT LEVELS: CARDIOMYOCYTES AND TRABECULAE. **Leonid Smoluk**, Yuri Protsenko.

**2863-Pos BOARD #B592**  
RADIAL FORCE AND LATTICE SPACING WITH MULTI-SPRING CROSSBRIDGE MODELS. **C. David Williams**, Michael Regnier, Thomas L. Daniel.

**2864-Pos BOARD #B593**  
SARCOMERE VELOCITY REGULATES THE CROSS-BRIDGE CYCLING RATE IN CARDIAC MUSCLE: A NOVEL THEORY FOR THE MUSCLE MOLECULAR MOTOR. **Amir Landesberg**, Moran Yadid.

## Cytoskeletal Protein Dynamics (Boards #B594-#B612)

**2865-Pos BOARD #B594**  
ESCHERICHIA COLI SINGLE FTSZ DYNAMIC RINGS: GROWING, CYCLIZATION, OPENING, REANNEALING AND DEPOLYMERIZATION. **Pablo Mateos-Gil**, Alfonso Paez, Ines Hörger, Pedro Tarazona, Jesus Mingorance, Germán Rivas, Marisela Vélez.

**2866-Pos BOARD #B595**  
THE MECHANISM OF E-RING FORMATION DURING MIN OSCILLATIONS. **Martin Loose**, Elisabeth Fischer-Friedrich, Karsten Kruse, Petra Schwillie.

**2867-Pos BOARD #B596**  
KINETIC ANALYSIS OF ACTIN DENDRITIC NUCLEATION FROM A PHYSICIST'S STANDPOINT. **Pavel Kraikivski**, Boris M. Slepchenko.

**2868-Pos BOARD #B597**  
SIMULATION REVEALS FUNDAMENTAL BEHAVIOR OF THE ACTIN FILAMENT AND ARP2/3 BRANCH JUNCTION.  
**Jim Pfaendtner**, Gregory A. Voth.

**2869-Pos BOARD #B598**  
TOWARD DE NOVO RECAPITULATION OF CYTOSKELETON DYNAMICS WITH DNA NANOTUBES. **Rizal F. Hariadi**, Bernard Yurke, Erik Winfree.

**2870-Pos BOARD #B599**  
STIFF-FILAMENT MICRORHEOLOGY. **Felix Zörgiebel**, Marcel Bremerich, Frederick C. MacKintosh, Christoph F. Schmidt.

**2871-Pos BOARD #B600**  
QUANTITATIVE INVESTIGATION OF INDIVIDUAL CONTRACTILE ACTIN BUNDLES *IN VITRO*. **Todd Thoresen**, Margaret Gardel.

**2872-Pos BOARD #B601**  
MECHANICAL PERTURBATION OF IMMUNOLOGICAL SYNAPSE AND CORTICAL ACTIN FLOW IN T CELLS. **Cheng-han Yu**, Boryana Manz, Jay T. Groves.

**2873-Pos BOARD #B602**  
A COMPARISON OF POLYMER BLOCKING AGENTS IN THE *IN VITRO* MOTILITY ASSAY. **Kirsten N. Miller-Jaster**, William H. Guilford.

**2874-Pos BOARD #B603**  
OBSERVATION OF MICROINJECTED FLUORESCENT MYOSIN IN CONTRACTILE SMOOTH MUSCLE CELLS. **Katherine McDonald**, Renaud Leguillette.

**2875-Pos BOARD #B604**  
DYNAMICS AND RHEOLOGY OF TRANSIENTLY CROSSLINKED CYTOSKELETAL NETWORKS. **Martin Depken**, Chase P. Broedersz, Fred C. MacKintosh.

**2876-Pos BOARD #B605**  
TO DETERMINE THE STRUCTURE OF VIMENTIN HEAD DOMAIN USING SDSL-EPR APPROACH. **Atya Aziz**, John F. Hess, Madhu S. Budamagunta, John C. Voss, Paul G. FitzGerald.

**2877-Pos BOARD #B606**  
TUNING OF NEUROFILAMENT HYDROGEL NETWORK FEATURES - A SYNCHROTRON X-RAY SCATTERING STUDY OF SALT DEPENDENT NETWORK RESPONSE. **Joanna Deek**, Roy Beck, Jayna B. Jones, Cyrus R. Saffinya.

**2878-Pos BOARD #B607**  
ANALYSIS OF SINGLE INTEGRIN BEHAVIOR IN LIVING CELLS. **Pakorn Kanchanawong**, Jennifer H. Hou, Allison L. Zajac, Francois Aguet, Michael W. Davidson, Gaudenz Danuser, Khuloud Jaqaman, Clare M. Waterman.

**2879-Pos BOARD #B608**  
DIRECT OBSERVATION OF FIBER DYNAMICS IN FIBRIN NETWORKS UNDER SHEAR. **Louise Jawerth**, Stefan Münster, David A. Weitz.

**2880-Pos BOARD #B609**  
NON-LINEAR MECHANICAL PROPERTIES OF COLLAGEN NETWORKS DURING CYCLIC LOADING. **Stefan Münster**, Louise M. Jawerth, Chase Broedersz, David A. Weitz, Ben Fabry.

**2881-Pos BOARD #B610**  
DIRECT DETECTION OF TENSION RECOVERY AFTER LOCAL STRETCHING OF CELL SURFACE. **Takahiro W. Nakayama**, Shin-ichi Machida, Ichiro Harada, Hiroshi Sekiguchi, Rehana Afrin, Atsushi Ikai.

**2882-Pos BOARD #B611**  
PROBING THE MICRHEOLOGY OF MESENCHYMAL STEM CELL MIGRATION TO TUMORS. **Daniel McGrail**, Michelle Dawson.

**2883-Pos BOARD #B612**  
TOWARD MAGNETIC CONTROL OF CELL POLARITY. **Mathieu Coppey**, Fred Etoc, Domenik Lisse, Yohanns Bellaiche, Jacob Piehler, Maxime Dahan.

## Bacteria & Motile Cells: Signal Transduction (Boards #B613-#B617)

**2884-Pos BOARD #B613**  
GENERATING ALTERNATING BIDIRECTIONAL GRADIENT FIELDS FOR DYNAMIC MEASUREMENTS OF CHEMOTACTIC RESPONSE. **Boern Meier**, Alejandro Zielinski, Christoph Weber, Delphine Arcizet, Simon Youssef, Thomas Franosch, Joachim O. Rädler, Doris Heinrich.

**2885-Pos BOARD #B614**  
THE RESPONSE OF SINGLE E. COLI CELLS TO CHANGES IN EXTERNAL OSMOLARITY. **Teuta Pilizota**, Yi Deng, Joshua W. Shaevitz.

**2886-Pos BOARD #B615**  
NCK FUNCTION IN TYROSINE KINASE SIGNALING TO THE ACTIN CYTOSKELETON. **Jonathon A. Ditlev**, Sofya Borinskaya, Gonzalo M. Rivera, Nathaniel M. Vacanti, Igor L. Novak, Leslie M. Loew, Bruce J. Mayer.

**2887-Pos BOARD #B616**  
PROBING THE PROTEIN-PROTEIN SIGNALING MECHANISM IN INTACT ARCHAEAL CELLS USING TIME-RESOLVED FTIR DIFFERENCE SPECTROSCOPY. **Vladislav B. Bergo**, Erica C. Saint Clair, Elena N. Spudich, John L. Spudich, Kenneth J. Rothschild.

**2888-Pos BOARD #B617**  
CRYSTAL STRUCTURE AND MUTATIONAL ANALYSIS OF THE PERIPLASMIC FLAGELLAR PROTEIN FLGA. **Hideyuki Matsumami**, Fadel A. Samatey, Shigehiro Nagashima, Katsumi Imada, Keiichi Namba.

## Unconventional Myosins I (Boards #B618-#B635)

**2889-Pos BOARD #B618**  
CYMOBASE - THE REFERENCE DATABASE FOR CYTOSKELETAL AND MOTOR PROTEINS. **Bjoern Hammesfahr**, Florian Odronitz, Martin Kollmar.

**2890-Pos BOARD #B619**  
REGULATION OF MYOSIN MOTILITY BY D-LOOP OF ACTIN. **Hiroaki Kubota**, Sergey V. Mikhailenko, Shin'ichi Ishiwata.

**2891-Pos BOARD #B620**  
SPONTANEOUS OSCILLATIONS OF A MINIMAL ACTO-MYOSIN SYSTEM UNDER ELASTIC LOADING. **Pierre-Yves Plaçais**, Martial Balland, Thomas Guérin, Jean-François Joanny, Pascal Martin.

**2892-Pos BOARD #B621**  
KINETIC CHARACTERIZATION OF NON-MUSCLE MYOSIN IIB SINGLE-HEADED HEAVY MEROMYOSIN ON SINGLE MOLECULE LEVEL WITH OPTICAL TWEEZERS. **Attila Nagy**, Yasuharu Takagi, Earl E. Homsher, Davin K. T. Hong, Mihaly Kovacs, James Sellers.

**2893-Pos BOARD #B622**  
MYOSIN-1 FUNCTION EXTENDS TO MICROTUBULE-DEPENDENT PROCESSES. **Tim Scholz**, Agrani Rump, Petra Uta, Maike Hinrichs, Claudia Thiel, Georgios Tsiavaltaris.

**2894-Pos BOARD #B623**  
MYO1E BINDS ANIONIC PHOSPHOLIPIDS WITH HIGH AFFINITY. **Elizabeth A. Feeser**, E. Michael Ostap.

**2895-Pos BOARD #B624**  
CONTROL OF MYOSIN-I FORCE SENSING BY ALTERNATIVE SPLICING. **Joseph M. Laakso**, John Lewis, Henry Shuman, E. Michael Ostap.

**2896-Pos BOARD #B625**  
MYOSIN-I DEPENDENT MEMBRANE-CYTOSKELETON ADHESION AS A REGULATOR OF CELL SURFACE MORPHOLOGY. **Rajalakshmi Nambiar**, Matthew J. Tyska.

**2897-Pos BOARD #B626**  
KINETICS OF MYOSIN-I-MEMBRANE DETACHMENT UNDER LOAD. **Serapion Pyrpappoulos**, Henry Shuman, E. Michael Ostap.

**2898-Pos BOARD #B627**  
KINETICS AND THERMODYNAMICS OF NUCLEOTIDE BINDING POCKET OPENING/CLOSING IN MYOSIN V MONITORED WITH FRET. **Darshan Trivedi**, Christopher M. Yengo.

**2899-Pos BOARD #B628**  
COUPLING THE ACTIN BINDING CLEFT AND NUCLEOTIDE BINDING POCKET IN MYOSIN V. **Darshan V. Trivedi**, Charles David, Donald J. Jacobs, Christopher M. Yengo.

**2900-Pos BOARD #B629**  
INTERACTION OF A CLASS V MYOSIN FROM BUDDING YEAST WITH ITS ADAPTER PROTEIN. **Elena B. Kremmentsova**, Alex R. Hodges, Carol S. Bookwalter, Kathleen M. Trybus.

**2901-Pos BOARD #B630**  
THE MECHANICAL PROPERTIES OF A SINGLE MYOSIN V MOTOR DOMAIN DURING GAIT MOTION. **Keisuke Fujita**, Mitsuhiro Iwaki, Atsuko H. Iwane, Toshio Yanagida.

**2902-Pos BOARD #B631**  
RECONSTITUTING A NATIVE ACTIN TRACK FOR MYOSIN V TRANSPORT. **Alex R. Hodges**, Carol S. Bookwalter, Patricia M. Fagnant, Elena B. Kremmentsova, Kathleen M. Trybus.

**2903-Pos BOARD #B632**  
LIPOSOMES AS MODEL CARGO FOR MYOSIN VA. **Shane Nelson**, Kathy Trybus, David Warshaw.

**2904-Pos BOARD #B633**  
MYOSIN VA CARGO TRANSPORT ON ACTIN BUNDLES. **Samantha Beck Previs**, Carol S. Bookwalter, Kathleen M. Trybus, David M. Warshaw.

**2905-Pos BOARD #B634**  
FLEXIBILITY OF STEPPING MANNER OF MYOSIN V AND X PROGRESSIVE MOVEMENT ON 2D ACTIN STRUCTURES. **Daniel Huck**, Jim Sellers, Takeshi Sakamoto.

**2906-Pos BOARD #B635**  
MECHANICAL AND KINETIC PROPERTIES OF A MYOSIN 5-SAH CHIMERA. **Peter J. Knight**, Thomas G. Baboolal, Takeshi Sakamoto, Eva Forgacs, Howard D. White, Scott M. Jackson, Yasuharu Takagi, Rachel E. Farrow, Justin E. Molloy, James R. Sellers, Michelle Peckham.

### Electron & Proton Transfer (Boards #B636-#B646)

**2907-Pos BOARD #B636**  
FUNCTIONAL AND PROTEIN PROCESSING INSIGHTS FROM A TRUNCATION MUTATION IN SUBUNIT III OF CYTOCHROME C OXIDASE FROM *RHODOBACTER SPHAEROIDES*. **Teresa L. Cvetkov**, Alagammai Kaliappan, Saba Qureshi, Lawrence J. Prochaska.

**2908-Pos BOARD #B637**  
DETECTION OF A PROTON-DEPENDENT ELECTRON TRANSFER FROM  $Cu_A$  TO HEME A OF CYTOCHROME C OXIDASE MUTANT S44E USING RUTHENIUM PHOTOEXCITATION. **Lois M. Geren**, Denise Mills, Shujuan Xu, Carrie Hiser, Shelagh Ferguson-Miller, Bill Durham, Francis Millett.

**2909-Pos BOARD #B638**  
EXCITON INTERACTIONS BETWEEN HEMES  $B_N$  AND  $B_P$  IN THE CYTOCHROME  $B_6F$  COMPLEX. **S. Saif Hasan**, Stanislav D. Zakharov, Eiki Yamashita, H. Bohme\*, William A. Cramer.

**2910-Pos BOARD #B639**  
DO TYROSINE PHENOLIC GROUPS CONTRIBUTE TO THE ALKALINE TRANSITION IN THE REDOX POTENTIAL OF CYTOCHROME F? **Nicole Richardson**, Dan J. Davis.

**2911-Pos BOARD #B640**  
CHARACTERIZATION OF THE SECONDARY QUINONE (QB) BINDING POCKET IN PHOTOSYNTHETIC REACTION CENTERS USING PULSED EPR SPECTROSCOPY. **Erik W. Martin**, Sergei Dikanov, Colin Wraight.

**2912-Pos BOARD #B641**  
INVESTIGATIONS OF QA BINDING POCKET MUTATIONS IN *RHODOBACTER SPHAEROIDES* REACTION CENTERS USING ESEEM AND HYSOCORE. **Erik W. Martin**, Sergei Dikanov, Colin A. Wraight.

**2913-Pos BOARD #B642**  
STRUCTURAL DESIGN, ASSEMBLY AND ENGINEERING OF OXIDOREDUCTASES ENGAGED IN ENERGY CONVERSION. **Bohdana M. Discher**, Gregory R. Wiedman, Paul A. O'Brien, Sarah E. Chobot, Sanjini U. Nanayakkara, Kendra M. Kathan, Dawn A. Bonnell, P. Leslie Dutton.

**2914-Pos BOARD #B643**  
INITIAL CHARACTERIZATION OF A NEW CLASS OF 2FE-2S PROTEINS FROM THE PLANT *ARABIDOPSIS THALIANA*. **Andrea Conlan**, Mark L. Paddock, Ohad Yogev, Yael Harir, Ron Mittler, Patricia Jennings, Rachel Nechushtai.

**2915-Pos BOARD #B644**  
TIME-RESOLVED THERMODYNAMICS OF INTER-MOLECULAR ELECTRON TRANSFER BETWEEN WATER-SOLUBLE ANIONIC FREE-BASE PORPHYRINS AND UBIQUINONE. **William A. Maza**, Randy W. Larsen.

**2916-Pos BOARD #B645**  
STRUCTURAL AND ELECTRONIC INSIGHTS INTO TRYPTOPHAN RADICALS IN PROTEINS. **Judy E. Kim**, Hannah S. Shafaat, Brian S. Leigh, Michael J. Tauber.

**2917-Pos BOARD #B646**  
MICROBIAL NANOWIRE ELECTRONIC STRUCTURE PROBED BY SCANNING TUNNELING MICROSCOPY. **Joshua P. Veazey**, Sanela Lampa-Pastirk, Gemma Reguera, Stuart H. Tessmer.

### Molecular Dynamics II (Boards #B647-#B676)

**2918-Pos BOARD #B647**  
A STUDY OF LIPID TRANSFERABILITY OF A BOTTOM-UP IMPLICIT SOLVENT COARSE-GRAINED MODEL FOR BILAYER MEMBRANES. **Zun-Jing Wang**, Markus Deserno.

**2919-Pos BOARD #B648**  
AN NMR DATA BASE FOR SIMULATIONS OF MEMBRANE DYNAMICS. **Avigdor Leftin**, Michael F. Brown.

**2920-Pos BOARD #B649**  
GRAPHICAL CAUSAL MODELING OF PROTEIN STRUCTURAL AND DYNAMICAL FEATURES. **Kate A. Stafford**, Arthur G. Palmer, III.

**2921-Pos BOARD #B650**  
AUTOMATED AND OPTIMIZED EMBEDDING OF PROTEINS INTO MEMBRANES FOR MOLECULAR DYNAMICS SIMULATIONS USING GRIFFIN. **René Staritzbichler**, Lucy R. Forrest, José D. Faraldo-Gómez.

**2922-Pos BOARD #B651**  
DETECTION OF FUNCTIONAL MODES IN PROTEIN DYNAMICS. **Jochen S. Hub**, David Van der Spoel, Bert L. de Groot.

**2923-Pos BOARD #B652**  
COMPUTATIONAL INSIGHTS INTO RETINAL DYNAMICS IN RHODOPSIN. **Blake Mertz**, Scott E. Feller, Michael F. Brown.

**2924-Pos BOARD #B653**  
TOWARDS A COMPUTATIONAL MODEL OF LIGNOCELLULOSE: MOLECULAR SIMULATION OF LIGNIN. **Loukas Petridis**, Jeremy C. Smith.

**2925-Pos BOARD #B654**  
MOLECULAR SIMULATIONS OF DODECYL-D-MALTOSE MICELLES IN WATER: INFLUENCE OF THE HEADGROUP CONFORMATION AND THE FORCE FIELD PARAMETERS. **Stéphane Abel**, François Yves Dupradeau, E. Prabhu Rahman, Alexander D. Mackerell Jr, Marchi Massimo.

**2926-Pos BOARD #B655**  
DYNAMICS IN TETHERED PARTICLE MOTION: INTERPRETING THE OBSERVATIONS. **Sanneke Brinkers**, Heidelinde R. C. Dietrich, Jurriaan J. Mes, Sjoerd Stallinga, Bernd Rieger.

- 2927-Pos BOARD #B656**  
MD-BASED METHOD FOR COMPUTING CONFIGURATION INTEGRALS PROVIDES ABILITY TO TEST FORCE FIELDS.  
**Gevorg Grigoryan.**
- 2928-Pos BOARD #B657**  
MOLECULAR DYNAMICS SIMULATIONS OF THE AAA PROTEIN P97. **Jeff Wereszczynski**, James Andrew McCammon.
- 2929-Pos BOARD #B658 WITHDRAWN**
- 2930-Pos BOARD #B659**  
MOLECULAR MECHANISMS HOW MERCURY INHIBITS WATER PERMEATION OF AQUAPORIN-1: UNDERSTANDING BY MOLECULAR DYNAMICS SIMULATION. **Yoshinori Hirano**, Noriaki Okimoto, Kenji Yasuoka, Makoto Taiji, Makoto Suematsu, Masato Yasui.
- 2931-Pos BOARD #B660**  
MOLECULAR DYNAMICS STUDIES OF THE ERK2 TYROSINE KINASE. **Daniel Barr**, Arjan van der Vaart.
- 2932-Pos BOARD #B661**  
THE EFFECT OF GENETIC MUTATIONS ON STRUCTURAL AND MECHANICAL PROPERTIES OF COLLAGEN: MOLECULAR DYNAMICS SIMULATIONS. **Ashley E. Marlowe**, Yaroslava G. Yingling.
- 2933-Pos BOARD #B662**  
MECHANISM OF GLYCAN RECEPTOR RECOGNITION AND SPECIFICITY SWITCH FOR AVIAN, SWINE AND HUMAN ADAPTED INFLUENZA VIRUS HEMAGGLUTININS: A MOLECULAR DYNAMICS PERSPECTIVE. **Dong Xu**, E. Irene Newhouse, Phineus R. L Markwick, Rommie E. Amaro, Hsing C. Pao, Kevin J. Wu, Maqsudul Alam, J. Andrew McCammon, Wilfred W. Li.
- 2934-Pos BOARD #B663**  
STUDY OF INTERACTIONS BETWEEN NEURON-SPECIFIC ENOLASE AND B-TYPE PHOSPHOGLYCERATE MUTASE WITH MOLECULAR DYNAMICS SIMULATIONS. **Davit Hakobyan**, Karen Nazaryan.
- 2935-Pos BOARD #B664**  
RECOGNITION AND SIGNALING IN DNA MISMATCH REPAIR: INTERDOMAIN COMMUNICATION IN T. AQUATICUS MUTS PROTEINS. **Susan N. Pieniazek**, Moitrayee Bhattacharyya, Saraswathi Vishveshwara, Manju Hingorani, David L. Beveridge.
- 2936-Pos BOARD #B665**  
OVINE PRION POLYMORPHISMS INVESTIGATED BY THREADING TO A MODEL LEFT HANDED BETA HELICAL STRUCTURE USING MOLECULAR DYNAMICS SIMULATION. **Jamie F. Romnes**, Daniel L. Cox, Rajiv R. P. Singh.
- 2937-Pos BOARD #B666**  
THE FUNCTIONAL ROLE OF MEMBRANE BOUND PROTEINASE 3. **Torben Broemstrup**, Nathalie Reuter.
- 2938-Pos BOARD #B667**  
CHARACTERIZATION OF ELECTRON DENSITY PROFILES AND AREA PER LIPID FROM MD SIMULATION OF LARGE UNDULATING BILAYERS. **Anthony R. Braun**, Olle Edholm, Erik G. Brandt, John F. Nagle, Jonathan N. Sachs.
- 2939-Pos BOARD #B668**  
A COARSE GRAINED MOLECULAR DYNAMICS STUDY OF THE FORMATION AND STRUCTURE OF BICELLES. **Johan F. Kraft**, Kresten Bertelsen, Niels Christian Nielsen, Lea Thøgersen, Birgit Schiøtt.
- 2940-Pos BOARD #B669**  
COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS OF PEGYLATED LIPIDS. **Hwankyoo Lee**, Richard W. Pastor.
- 2941-Pos BOARD #B670**  
IMPROVING INTERNAL PEPTIDE DYNAMICS IN THE COARSE-GRAINED MARTINI MODEL: APPLICATION TO AMYLOID PEPTIDES. **Mikyung Seo**, Peter Tieleman.
- 2942-Pos BOARD #B671**  
BIOPHYSICS OF TRANSMEMBRANE PORES - INTERACTIONS BY COARSE-GRAINED MOLECULAR DYNAMICS SIMULATION. **Jochen W. Klingelhoefer**, Timothy Carpenter, Daniel L. Parton, Mark S. P. Sansom.
- 2943-Pos BOARD #B672**  
HYBRID SIMULATIONS: ATOMISTIC PEPTIDES IN COARSE GRAINED SOLVENT. **Andrzej J. Rzepiela**, Martti Louhivuori, Siewert Jan Marrink.
- 2944-Pos BOARD #B673**  
DISCRETE MOLECULAR DYNAMICS AS A TOOL TO TEST SOLUBLE PROTEIN MODELS. **Sijung Yun**, H. Robert Guy.
- 2945-Pos BOARD #B674**  
DETERMINING THE MOLECULAR BASIS OF DISEASE IN SINGLE NUCLEOTIDE POLYMORPHISM VARIANTS USING WAVELET ANALYSIS. **Noah C. Benson**, Valerie Daggett.
- 2946-Pos BOARD #B675**  
BROWNIAN DYNAMICS SIMULATION OF FCS MEASUREMENTS ON SINGLE FLUOROPHORE-LABELED SUPERHELICAL DNA. **Jan Krieger**, Tomasz Wocjan, Oleg Krichevsky, Jörg Langowski.
- 2947-Pos BOARD #B676**  
INVESTIGATION OF FLUORESCENT DYE-DNA INTERACTIONS USING MULTIDIMENSIONAL ADAPTIVE UMBRELLA SAMPLING SIMULATIONS. **Justin M. Spiriti**, Arjan van der Vaart.

## Computational Methods II (Boards #B677-#B705)

- 2948-Pos BOARD #B677**  
ANALYSIS OF SPATIO-TEMPORAL DYNAMICS BY ARTIFICIAL AND REAL FRAP DATA. **Juliane Mai**.
- 2949-Pos BOARD #B678**  
IN SILICO INVESTIGATION OF THE MOLECULAR EFFECTS CAUSED BY MISSENSE MUTATIONS IN SPERMINE SYNTHASE GENE ASSOCIATED WITH HUMAN MENTAL RETARDATION. **Zhang Zhe**, Teng Shaolei, Emil Alexov.
- 2950-Pos BOARD #B679**  
NMR STRUCTURE DETERMINATION BY CONFORMATIONAL SPACE ANNEALING. **Jinhyuk Lee**, Jinwoo Lee, Jooyoung Lee.
- 2951-Pos BOARD #B680**  
LIBRARY-BASED MONTE CARLO AS A CONVENIENT PLATFORM FOR VARIABLE-RESOLUTION PROTEIN MODELS. **Artem B. Mamonov**, Daniel M. Zuckerman.
- 2952-Pos BOARD #B681**  
EFFICIENT EQUILIBRIUM SAMPLING OF ALL-ATOM PEPTIDES USING LIBRARY-BASED MONTE CARLO. **Ying Ding**, Artem B. Mamonov, Daniel M. Zuckerman.
- 2953-Pos BOARD #B682**  
ELASTIC AND MORPHOLOGICAL PROPERTIES OF POROUS BIOMATERIALS. **Sebastian Kapfer**, Susan Sporer, Stephen T. Hyde, Klaus Mecke, Gerd E. Schroeder-Turk.
- 2954-Pos BOARD #B683**  
OPTIMAL SELECTION OF EPR DISTANCE RESTRAINTS FOR GLOBAL FOLDING OF PROTEIN STRUCTURE. **Kelli Kazmier**, Nathan S. Alexander, Jens Meiler, Hassane S. Mchaourab.
- 2955-Pos BOARD #B684**  
SIMULAIID: A SIMULATION FACILITATOR AND ANALYSIS PROGRAM. **Mihaly Mezei**.
- 2956-Pos BOARD #B685**  
DEVELOPMENT AND APPLICATIONS OF A NOVEL QM/MM HYBRID MOLECULAR DYNAMICS CALCULATION SYSTEM ON HIGHLY PARALLEL SUPERCOMPUTER SYSTEMS. **Masaru Tateno**, Yohsuke Hagiwara, Jiyoung Kang.
- 2957-Pos BOARD #B686**  
RAPID AND ACCURATE BINDING FREE ENERGY PREDICTION FOR INHIBITOR-BOUND HIV-1 ENZYMES. **Peter V. Coveney**, David W. Wright, S. Kashif Sadiq.
- 2958-Pos BOARD #B687**  
BIASED MOTION AND MOLECULAR MOTOR PROPERTIES OF MOLECULAR SPIDERS. Laleh Samii, Martin J. Zuckermann, Gerhard A. Blab, Heiner Linke, Nancy R. Forde.

**2959-Pos BOARD #B688**  
 MAPPING CO DIFFUSION PATHS IN MYOGLOBIN WITH THE SINGLE SWEEP METHOD. **Luca Maragliano**, Grazia Cottone, Giovanni Ciccotti, Eric Vanden-Eijnden.

**2960-Pos BOARD #B689**  
 UNDERSTANDING AND OPTIMIZING THE PERFORMANCE OF EXTENDED ENSEMBLE ALGORITHMS. **Hugh Nymeyer**, David R. Arthur.

**2961-Pos BOARD #B690**  
 SAMPLING PATH ENSEMBLES USING THE ONSAGER-MACHLUP ACTION WITH REPLICA EXCHANGE. **Hiroshi Fujisaki**, Akinori Kidera, Motoyuki Shiga.

**2962-Pos BOARD #B691 STUDENT TRAVEL AWARDEE**  
 MODELING FLUORESCENTLY TAGGED DNA AND RNA OLIGONUCLEOTIDES FOR DIRECT COMPARISON TO FLUORESCENCE-DETECTED RESONANCE ENERGY TRANSFER (FRET) EXPERIMENTS. **Amy L. Speelman**, Arcelia S. Ortega, David A. Paul, Bryan A. Leland, Brent P. Krueger.

**2963-Pos BOARD #B692**  
 THREE-BODY EXPANSION AND GENERALIZED DYNAMIC FRAGMENTATION IMPROVE THE FRAGMENT MOLECULAR ORBITAL-BASED MOLECULAR DYNAMICS (FMO-MD), AN *AB INITIO* MD METHOD. **Yuto Komeiji**, Yuji Mochizuki, Tatsuya Nakano.

**2964-Pos BOARD #B693**  
 COARSE GRAINED SIMULATIONS OF A SMALL PEPTIDE: EFFECTS OF FINITE DAMPING AND HYDRODYNAMIC INTERACTIONS. **Uwe Winter**, Tihamer Geyer.

**2965-Pos BOARD #B694**  
 STATISTICS OF SINGLE-MOLECULAR KINETIC TRANSITIONS WITH APPLICATION TO A-N SWITCHING OF A PRE-UNFOLDING GFP. **Hanbing Lin**, Jian-min Yuan.

**2966-Pos BOARD #B695**  
 A COARSE-GRAINED MODEL BASED ON MORSE POTENTIAL FOR WATER AND N-ALKANES. **See-Wing Chiu**, H. Larry Scott, Eric Jakobsson.

**2967-Pos BOARD #B696**  
 OPTIMIZING THE STATE IDENTITIES IN MARKOV MODELS OF MACROSCOPIC ION CHANNEL ACTIVITY. **Carrie A. Williams**, Andrew Jenkins.

**2968-Pos BOARD #B697**  
 PARAMETER REFINEMENT, OPTIMIZATION, AND EXTENSION OF THE ABSINTH IMPLICIT SOLVATION MODEL. **Nicholas J. Lyle**, Rohit V. Pappu.

**2969-Pos BOARD #B698**  
 BIOMOLECULAR COARSE-GRAINED SIMULATION PROGRAM CAFEMOL. **Hiroo Kenzaki**, Nobuyasu Koga, Shinji Fujiwara, Naoto Hori, Ryo Kanada, Kei-ichi Okazaki, Xin-Qiu Yao, Wenfei Li, Shoji Takada.

**2970-Pos BOARD #B699**  
 MULTI-SCALE, INTEGRATIVE MODEL DEVELOPMENT USING HIGH-PERFORMANCE COMPUTER ARCHITECTURES. **Laura A. Doyle**, Joseph L. Greenstein, Raimond L. Winslow.

**2971-Pos BOARD #B700**  
 FINITE ELEMENT MODELING OF CELL-MATRIX ADHESIVE INTERACTION. **Martin Y. Chiang**.

**2972-Pos BOARD #B701 INTERNATIONAL TRAVEL AWARDEE**  
 A SEARCH FOR ENERGY MINIMIZED SEQUENCES OF PROTEINS. **Anupam Nath Jha**, G. K. Ananthasuresh, Saraswathi Vishveshwara.

**2973-Pos BOARD #B702**  
 SIMPLIFIED THEORY FOR DNA MELTING MAPS. **Tobias Ambjörnsson**, Bo Söderberg, Jonas O. Tegenfeldt.

**2974-Pos BOARD #B703**  
 TESTING A HYBRID SOLVATION MODEL WITH A TRANSITION LAYER VIA MOLECULAR DYNAMICS SIMULATION. **Wei Song**, Peihua Qin, Yuchun Lin, Andriy Baumketner, Wei Cai, Donald Jacobs.

**2975-Pos BOARD #B704**  
 DATA-DRIVEN ANALYSIS OF CELL MOTILITY ON NANOSTRUCTURED SURFACES. **Cristian Gradinaru**, Joanna M. Lopacinska, Kristian Molhave, Henrik Flyvbjerg.

**2976-Pos BOARD #B705**  
 DEVELOPMENT AND APPLICATION OF NON-ADDITIVE FORCE FIELDS FOR MOLECULAR SIMULATIONS OF LIPID BILAYERS AND INTEGRAL MEMBRANE PROTEINS. **Sandeep Patel**.

## Imaging & Optical Microscopy III (Boards #B706-#B735)

**2977-Pos BOARD #B706**  
 IN SITU MEASUREMENTS OF OLIGOMERIZATION STATE OF NBCE1-A IN RAT KIDNEYS VIA SPATIAL FLUORESCENCE INTENSITY FLUCTUATION ANALYSIS. **Mikhail Sergeev**, Antoine G. Godin, Liyo Kao, Natalia Abuladze, Ira Kurtz, Paul W. Wiseman.

**2978-Pos BOARD #B707**  
 ASSESSING THE MUTAGENICITY POTENTIAL OF MULTIPHOTON EXCITATION DURING IMAGING OF INTRINSIC FLUORESCENCE FROM CELLS AND TISSUES. **Johanna M. Dela Cruz**, Jesse D. McMullen, Rebecca M. Williams, Warren R. Zipfel.

**2979-Pos BOARD #B708**  
 OPTICAL ANALYSIS OF CALCIUM CHANNELS AT THE FIRST AUDITORY SYNAPSE. **Thomas Frank**, Nikolai M. Chapochnikov, Andreas Neef, Tobias Moser.

**2980-Pos BOARD #B709**  
 REACTIVE OXYGEN SPECIES AS ESSENTIAL MEDIATORS OF CELL ADHESION AND MIGRATION. **Giuseppe Maulucci**, Giovambattista Pani, Valentina Labate, Marina Mele, Emiliano Panieri, Massimiliano Papi, Tommaso Galeotti, Giuseppe Arcovito, Marco De Spirito.

**2981-Pos BOARD #B710**  
 REAL TIME IMAGING OF ENDOGENOUS MRNAS DURING STRESS. **Junwei Zhang**, Kohki Okabe, Tokio Tani, Takashi Funatsu.

**2982-Pos BOARD #B711**  
 IMAGING DOPAMINE AND SEROTONIN IN LIVE NEURONS WITH MULTI-PHOTON EXCITED ULTRAVIOLET AUTO-FLUORESCENCE. **Arkarup Bandyopadhyay**, Suman Nag, Manoj Kumar, Shyamala Mani, Sudipta Maiti.

**2983-Pos BOARD #B712 STUDENT TRAVEL AWARDEE**  
 LATE ENDOSOMAL DEGRADATION OF LOW-DENSITY LIPOPROTEIN PROBED WITH MULTI-COLOR SINGLE PARTICLE TRACKING FLUORESCENCE MICROSCOPY. **William H. Humphries IV**, Christine K. Payne.

**2984-Pos BOARD #B713**  
 HOTSPOTS OF GPI-ANCHORED PROTEINS AND INTEGRIN NANOCCLUSERS FUNCTION AS NUCLEATION SITES FOR CELL ADHESION. **Thomas S. van Zanten**, Alessandra Cambi, Ben Joosten, Carl G. Figdor, Maria F. Garcia-Parajo.

**2985-Pos BOARD #B714**  
 IMAGING  $\alpha$ -CELL CALCIUM DYNAMICS. **Sylvain J. Le Marchand**, David W. Piston.

**2986-Pos BOARD #B715**  
 DNA STABILIZES FLUORESCENT FEW-ATOM SILVER CLUSTERS WITH UNIQUE PHOTOPHYSICAL PROPERTIES. **Patrick R. O'Neill**, Kevin Young, Lourdes Velazquez, Rameen Hassanzadeh, Elisabeth G. Gwinn, Deborah Kuchnir Fygenon.

**2987-Pos BOARD #B716**  
 MULTIPHOTON MICROSCOPY OF ENTIRE INTACT MOUSE ORGANS. **Sonia Parra**, Joseph Zinter, Michael Levene.

**2988-Pos BOARD #B717**  
 THE ROLE OF THE PROTEIN MATRIX IN GFP CHROMOPHORE BIOSYNTHESIS: A MOLECULAR DYNAMICS STUDY. **Riccardo Nifosi**, Umberto Terranova.

**2989-Pos BOARD #B718**  
 METABOLISM-EXCITATION COUPLING IN A MODEL OF  $K_{ATP}$  CHANNEL NEONATAL DIABETES MELLITUS.  
**Richard K. P. Benninger**, Maria S. Remedi, Alessandro Ustione, W. Steven Head, Colin G. Nichols, David W. Piston.

**2990-Pos BOARD #B719**  
 ATP GRADIENT ACROSS THE INNERMITOCHONDRIAL MEMBRANE. **Hiromi Imamura**, Hiroyuki Noji.

**2991-Pos BOARD #B720**  
 ALPHA HEMOLYSIN INDUCES AN INCREASE OF ERYTHROCYTES CALCIUM: A FLUORESCENCE LIFETIME IMAGING MICROSCOPE STUDY. **Susana Sanchez**, Laura Bakás, Enrico Gratton, Vanesa Herlax.

**2992-Pos BOARD #B721**  
 MEASURING DIFFUSION COEFFICIENTS IN CONFINED SYSTEMS VIA MULTI-PHOTON FLUORESCENCE RECOVERY AFTER PHOTOBLEACHING. **Kelley D. Sullivan**, Edward B. Brown.

**2993-Pos BOARD #B722**  
 MICROPRISMS FOR IN VIVO MULTIPHOTON MICROSCOPY OF MOUSE CORTEX. **Michael J. Levene**, Thomas Chia.

**2994-Pos BOARD #B723**  
 STRUCTURED ILLUMINATION MICROSCOPY IN 2-D WITH IMAGE RESTORATION. **Walter A. Carrington**.

**2995-Pos BOARD #B724**  
 DUAL-CHANNEL SINGLE-MOLECULE IMAGING OF PRNA ON PH129 DNA-PACKAGING MOTOR. **Hui Zhang**, Dan Shu, Roman Petrenko, Taejin Lee, Feng Xiao, Jarek Meller, Peixuan Guo.

**2996-Pos BOARD #B725**  
 HIGH-RESOLUTION INTRACELLULAR VISCOSITY MEASUREMENTS USING TIME-DEPENDENT FLUORESCENCE ANISOTROPY. **Patrick Moyer**, Wes Parker.

**2997-Pos BOARD #B726**  
 GOODBYE TO FOERSTER CONSTANT RO: FRET IMAGING BY KF/KT. **Thomas M. Jovin**, Elizabeth A. Jares-Erijman.

**2998-Pos BOARD #B727**  
 MONITORING CHANGES IN BACTERIORHODOPSIN CONFORMATION USING FLUORESCENCE LIFETIME FRET WITH A MAXIMUM LIKELIHOOD ESTIMATOR. **Margarita A. Stapountzi**.

**2999-Pos BOARD #B728**  
 EXPLOITING THE RISE TIME OF ACCEPTOR FLUORESCENCE BY FRET-FLIM IN LIVING CELLS. **Jan Willem Borst**, Sergey Laptinok, Ivo van Stokkum, Antonie Visser, Herbert van Amerongen.

**3000-Pos BOARD #B729**  
 MACROPHAGES CREATE A LYSOSOMAL SYNAPSE TO DIGEST AGGREGATED LIPOPROTEINS. **Abigail S. Haka**, Inna Grosheva, Ethan Chiang, Adina R. Buxbaum, Barbara A. Baird, Lynda M. Pierini, Frederick R. Maxfield.

**3001-Pos BOARD #B730**  
 BROAD-BEAM FLUCTUATION SPECTROSCOPY FOR NON-FLOW CYTOMETRY AND CLINICAL DIAGNOSTICS. **Eben Olson**, Richard Torres, Michael Levene.

**3002-Pos BOARD #B731**  
 MOBILITY ANALYSIS IN LIVING YEAST USING 4PI CFM. **Martin Kahms**, Jana Hüve, Anton Arkhipov, Reiner Peters.

**3003-Pos BOARD #B732**  
 SCANNING LASER IMAGE CORRELATION (SLIC) MEASUREMENTS IN ZEBRA FISH LARVAE. **Molly J. Rossow**, William W. Mantulin, Enrico Gratton.

**3004-Pos BOARD #B733**  
 FLUORESCENT LIFETIME IMAGING OF LIGNIN IN THE PLANT CELL WALL. **Andreia M. Smith**, Prajakta Pradhan, Dominique Loque, Catherine I. Lacayo, Micheal Thelen, Joshua Heazlewood.

**3005-Pos BOARD #B734**  
 USING HIGH RESOLUTION PHOTOEMISSION ELECTRON MICROSCOPY TO QUANTIFY THE ABSORPTION PROPERTIES OF HUMAN EUMEALNIN AND PHEOMELANIN. **John Simon**, Dana Peles.

**3006-Pos BOARD #B735**  
 CORRELATIVE TEM/FISH IMAGING OF MICROBIAL COMMUNITIES. **Bernhard Knierim**, Paul Wilmes, Rick I. Webb, Kent McDonald, Luis Comolli, Birgit Luef, Kenneth H. Downing, Jill Banfield, Phil Hugenholtz, Jan Liphardt, Manfred Auer.

## Fluorescence Spectroscopy (Boards #B736-#B764)

**3007-Pos BOARD #B736**  
 EXPLOITING THE ENVIRONMENTAL SENSITIVITY OF FLUORESCENT PROTEINS ALLOWS UNAMBIGUOUS DISCRIMINATION OF GENETICALLY IDENTICAL LABELS. **Ryan W. Davis**, Howland D. T. Jones, Elizabeth L. Carles, Michael B. Sinclair, Susan L. Rempe.

**3008-Pos BOARD #B737**  
 ACCURATE COLOR TUNING OF FIREFLY CHROMOPHORE BY MODULATION OF LOCAL POLARIZATION ELECTROSTATIC FIELDS. **Duanjun Cai**.

**3009-Pos BOARD #B738**  
 SEQUENCE-DEPENDENT ENHANCEMENT OF CY3 FLUORESCENCE ON DNA. **Billie J. Harvey**, Perez Claudia, Marcia Levitus.

**3010-Pos BOARD #B739**  
 DETERMINATION OF FLUOROPHORE ORIENTATION AND ENERGY TRANSFER FROM MD SIMULATIONS. **Evelyne Deplazes**, Ben Corry, Dylan Jayatilaka.

**3011-Pos BOARD #B740**  
 FRETTING ABOUT FRET: BREAKDOWN OF THE IDEAL DIPOLE APPROXIMATION. **Aurora Munoz-Losa**, Carles Curutcher, Lydia R. Hartsell, Brent P. Krueger, Benedetta Mennucci.

**3012-Pos BOARD #B741**  
 THE FIRST ALL-NUCLEOBASE ANALOG FRET PAIR. **Søren Preus**, Karl Börjesson, Kristine Kilså, Afaf H. El-Sagheer, Tom Brown, Bo Albinsson, L. Marcus Wilhelmsson.

**3013-Pos BOARD #B742**  
 A FLUORESCENT INDICATOR MONITORS IN VIVO ACETYL-TRANSFERASE ACTIVITY. **Fernanda Ricci**, Daniele Arosio, Fabio Beltram.

**3014-Pos BOARD #B743**  
 QUENCHING OF ALEXA DYES BY AMINO ACIDS. **Syed S. Ahsan**, Huimin Chen, Mitk'El B. Santiago-Berrios, Hector D. Abruna, Watt W. Webb.

**3015-Pos BOARD #B744**  
 <!---STARTFRAGMENT -->NANOMETALS AND QUANTUM DOTS AS OPTICAL MARKERS IN BIOPHYSICS. **Geoffrey F. Strouse**, Tim Logan, Steven Hira.

**3016-Pos BOARD #B745**  
 UNDERSTANDING WAVELENGTH DEPENDENCE OF TRYPTOPHAN FLUORESCENCE DECAYS. **Chia-Pin Pan**, Pedro L. Muñío, Mary D. Barkley, Patrik R. Callis.

**3017-Pos BOARD #B746**  
 THE LIGHT CONDUCTION IN AN ANTENNA OF A PHYCOBILISOME. **Jose R. Sepulveda-Ugarte**, Maximiliano Figueroa, José Martínez-Oyanedel, Marta C. Bunster.

**3018-Pos BOARD #B747 MINORITY BIOPHYSICISTS TRAVEL AWARDEE**  
 PRESSURE EFFECTS ON THE SOLVENT DENATURATION OF NADH PROBED USING FLUORESCENCE SPECTROSCOPY. **Lauren A. Regueyra**, Erik J. Alquist, Joshua Jasensky, M. Junaid Farooqi, Paul Urayama.

**3019-Pos BOARD #B748**  
 PHOTOINDUCED-ELECTRON TRANSFER BETWEEN GUANINE BASES AND SILVER NANOCCLUSERS ENABLES INCREASED SHELF LIFE. **Hsin-Chih T. Yeh**, Jaswinder Sharma, Jennifer S. Martinez, James H. Werner.

**3020-Pos BOARD #B749**  
SPECTROSCOPIC CHARACTERIZATION OF DEPOLARIZATION VIA FRET IN A BFP-GFP BONT/A ASSAY. **Justin A. Ross**, Nicholas G. James, Marcella A. Gilmore, Dudley Williams, Lance E. Steward, Roger Aoki, David M. Jameson.

**3021-Pos BOARD #B750**  
A MICROFLUIDIC CYTOMETER FOR HIGH-THROUGHPUT AND QUANTITATIVE SINGLE CELL RED FLUORESCENT PROTEIN PHOTOBLEACHING. **Jennifer L. Lubbeck**, Kevin M. Dean, Ralph Jimenez, Amy E. Palmer.

**3022-Pos BOARD #B751**  
APPLICATIONS OF PULSED INTERLEAVED EXCITATION IN LIVE CELL EXPERIMENTS. **Matthias Hoeller**, Gregor Heiss, Kristina Griessmeier, Brian Slaughter, Katja Straesser, Christian Wahl-Schott, Don C. Lamb.

**3023-Pos BOARD #B752**  
INTERPRETING FRET IN COMPLEX GEOMETRIES. **Ben Corry**, Evelyne Deplazes, Dylan Jayatilaka.

**3024-Pos BOARD #B753**  
STUDYING FLUORESCENT PROTEINS IN LIVING CELLS: AN APPLICATION FOR SEGMENTED FLUORESCENCE CORRELATION SPECTROSCOPY. **Evan T. Spiegel**, P. Lee, L. Toth, W. R. Zipfel.

**3025-Pos BOARD #B754**  
IRREGULAR EXCESS ENERGY TRANSFER OBSERVED WITH A CERULEAN DONOR AND MULTIPLE VENUS FRET ACCEPTORS. **Tuan A. Nguyen**, Srinagesh V. Koushik, Paul S. Blank, Steven S. Vogel.

**3026-Pos BOARD #B755**  
FLUORESCENCE FLUCTUATION SPECTROSCOPY IN THE PRESENCE OF HYDRODYNAMIC FLOW TO DETERMINE PROTEIN STOICHIOMETRY AT ULTRA LOW CONCENTRATIONS. **Jolene L. Johnson**, Joachim Mueller, Yan Chen, Bin Wu.

**3027-Pos BOARD #B756**  
CHARACTERIZATION OF CONJUGATED PROTEIN BY MOLECULAR BRIGHTNESS AND MASS SPECTROMETRY. **Joseph Paul Skinner**, Lianli Chi, Qiaoqiao Ruan, Sergey Y. Tetin.

**3028-Pos BOARD #B757**  
COMBINED OPTICAL TWEEZERS AND FLUORESCENCE MICROSCOPY FOR SINGLE MOLECULE EXPERIMENTS. **Kalle Hanhijärvi**, Heikki Ojala, Anders E. Wallin, Gabija Ziedaite, Dennis Bamford, Edward Hægström.

**3029-Pos BOARD #B758**  
HYPERSPECTRAL LINE SCANNING MICROSCOPY FOR HIGH-SPEED MULTICOLOR QUANTUM DOT TRACKING. **Michael D. Malik**, Patrick Cutler, Michael Sinclair, Diane Lidke, Keith A. Lidke.

**3030-Pos BOARD #B759**  
A TIME RESOLVED FLUORESCENCE SPECTROMETER WITH SUB-MILLISECOND DATA ACQUISITION TIME. **Joseph Muretta**, Igor Negrashov, David Kast, Roman Agafonov, Piyali Guhathakurta, Ewa Prochniewicz, Yuri Nesmelov, Greg Gillispie, David D. Thomas.

**3031-Pos BOARD #B760**  
DUAL-FOCUS CONFOCAL MICROSCOPY FOR FLOW AND BRIGHTNESS MEASUREMENTS. **Tyler J. Arbour**, Anastasia Loman, Ingo Gregor, Jörg Enderlein.

**3032-Pos BOARD #B761**  
DUAL-FOCUS FLUORESCENCE CORRELATION SPECTROSCOPY: MEASURING TRANSLATIONAL AND ROTATIONAL DIFFUSION OF BIOMOLECULES. **Joerg Enderlein**, Anastasia Loman, Iris von der Hocht, Claus Bernhard Mueller, Qui Van, Ingo Gregor, Sebastian Springer.

**3033-Pos BOARD #B762**  
SPATIO-TEMPORAL CONTROL IN MULTIPHOTON FLUORESCENCE LASER-SCANNING MICROSCOPY. **Debabrata Goswami**, Arijit Kumar De.

**3034-Pos BOARD #B763**  
LIFETIME RESOLVED FLUORESCENCE FLUCTUATION SPECTROSCOPY. **Peng Guo**, Neil Anthony, Keith M. Berland.

**3035-Pos BOARD #B764**  
MEASURING MOLECULAR MOBILITY WITH FLUORESCENCE ANISOTROPY MACRO IMAGING. **Claudia Y. Lee**, Andrew Zepfel, LeeAnn Allen, Sean Gallagher.

## Emerging Single Molecule Techniques II (Boards #B765-#B793)

**3036-Pos BOARD #B765**  
EXTENDING THE NANO-POSITIONING SYSTEM (NPS). **Adam Muschielok**, Joanna Andrecka, Barbara Treutlein, Jens Michaelis.

**3037-Pos BOARD #B766**  
SINGLE MOLECULE TRACKING INSIDE INDIVIDUAL LIVING BACTERIAL CELLS. **Brian P. English**, Arash Sanamrad, Vasili Haurlyliuk, Nynke Dekker, Johan Elf.

**3038-Pos BOARD #B767**  
DEVELOPMENT OF A PLASMONIC NANOPARTICLE-BASED ASSAY TO OBSERVE NANOSCALE BIOLOGICAL DYNAMIC INTERACTIONS. **Diane M. Wiener**, Troy A. Lionberger, Edgar Meyhöfer.

**3039-Pos BOARD #B768**  
ADVANCED MULTIDIMENSIONAL OPTICS TO INVESTIGATE BIOLOGICAL COMPLEXITY AT THE SINGLE MOLECULE LEVEL IN LIVING, FUNCTIONAL CELLS. **Oliver Harriman**, Mark Leake.

**3040-Pos BOARD #B769**  
DETECTION OF RARE INTERACTION EVENTS VIA COMBINED PHOTOBLEACHING AND SINGLE MOLECULE MICROSCOPY. **Verena Ruprecht**, Stefan Wieser, Mario Brameshuber, Gerhard J. Schütz.

**3041-Pos BOARD #B770**  
SINGLE MOLECULE CHEMICAL REACTIONS WITHIN FEMTOLITER VOLUME CONTAINERS. **Jason R. Case**.

**3042-Pos BOARD #B771**  
USING PNA AND LNA AS HANDLES FOR TETHERING SINGLE DNA MOLECULES. **John P. Berezney**, Omar A. Saleh.

**3043-Pos BOARD #B772**  
PRECISION FORCE SPECTROSCOPY OF BACTERIORHODOPSIN. **Gavin M. King**, Allison B. Churnside, Thomas T. Perkins.

**3044-Pos BOARD #B773**  
FAST MILLISECOND IMAGING OF SINGLE FLUORESCENT PROTEIN MOLECULES USING A SIMPLE "SLIMFIELD" OPTICAL TRICK. **Michael Plank**, Mark C. Leake.

**3045-Pos BOARD #B774**  
ZERO MODE WAVEGUIDES: A POWERFUL TOOL FOR SINGLE MOLECULE OPTICAL STUDIES. **Zhuangxiong Huang**, Serge Donkers, Nynke H. Dekker.

**3046-Pos BOARD #B775**  
COMPARISON OF THREE-DIMENSIONAL IMAGING CONFIGURATIONS FOR HIGH RESOLUTION MICROSCOPY MEASUREMENTS. **Jerry Chao**, Sripad Ram, E. Sally Ward, Raimund J. Ober.

**3047-Pos BOARD #B776**  
INVESTIGATING STRUCTURAL HETEROGENEITY IN DIMERS OF AMYLOID- $\beta$  PEPTIDE. **Robin K. Lammi**, Chelsea Russell, Abigail Bradner.

**3048-Pos BOARD #B777**  
HIGH DENSITY SINGLE PARTICLE TRACKING USING BAYESIAN MULTI-FLUOROPHORE FITTING THROUGH VERTICES. **Fang Huang**, Keith A. Lidke.

**3049-Pos BOARD #B778**  
DYNAMICAL OBSERVATIONS OF BROWNIAN MOTIONS ON SINGLE PROTEIN MOLECULES USING DIFFRACTED ELECTRON TRACKING (DET). **Yuji C. Sasaki**, Hiroshi Sekiguchi, Akihiro Ohsaki, Yasuhisa Hirohata, Akira Ishikawa.

**3050-Pos BOARD #B779**  
SINGLE-IMAGE MEASUREMENTS OF MONOCHROMATIC SUBDIFFRACTION DIMOLECULAR SEPARATIONS. **Shawn H. DeCenzo**, Michael C. DeSantis, Y. M. Wang.

**3051-Pos BOARD #B780**  
SINGLE MOLECULE STUDIES OF PROTEIN SURFACE ADSORPTION KINETICS. **Shannon Kian G. Zareh**, Y. M. Wang.

**3052-Pos BOARD #B781**  
DE-NOISING SINGLE MOLECULE FRET TRAJECTORIES USING WAVELENT AND BAYESIAN TECHNIQUES. **Christy F. Landes**, J. Nick Taylor, Dmitrii E. Makarov.

**3053-Pos BOARD #B782**  
SINGLE-MOLECULE TRACKING OF NANOROBOTS ON PSEUDO-ONE-DIMENSIONAL DNA ORIGAMI TRACKS. **Nicole Michelotti**, Anthony J. Manzo, Alex Johnson-Buck, Kyle Lund, Jeanette Nangreave, Nadine Dabby, Steven Taylor, Renjun Pei, Milan N. Stojanovic, Erik Winfree, Hao Yan, Nils G. Walter.

**3054-Pos BOARD #B783**  
DIRECT OBSERVATION AND ANALYSIS OF 3D DIFFUSING FLUORESCENT PROTEINS IN SOLUTION USING SINGLE IMAGE MEASUREMENTS. **Shannon Kian G. Zareh**, Michael C. DeSantis, Y. M. Wang.

**3055-Pos BOARD #B784**  
TOWARDS SUB-NANOMETER RESOLUTION OPTICAL TWEEZERS. **Anders E. Wallin**, Antti Rahikkala, Heikki Ojala, Kalle Hanhijärvi, Edward Hægström.

**3056-Pos BOARD #B785**  
REAL-TIME SUPER-RESOLUTION TRACKING OF SINGLE DEOXYRIBOZYME BASED MOLECULAR ROBOTS. **Anthony J. Manzo**, Chamaree de Silva, Nicole Michelotti, Alexander Johnson-Buck, Steven K. Taylor, Renjun Pei, Kyle Lund, Jeanette Nangreave, Hao Yan, Milan N. Stojanovic, Nils G. Walter.

**3057-Pos BOARD #B786**  
SINGLE-MOLECULE DYNAMICS OF CONFORMATIONAL INTERCHANGE IN CALMODULIN. **Carey K. Johnson**, E. Shane Price, Mihailo Backovic, John P. Ralston.

**3058-Pos BOARD #B787**  
CHARACTERIZATION OF SINGLE MOLECULE PROTEIN INDUCED FLUORESCENCE ENHANCEMENT (PIFE) AS AN ALTERNATIVE TO SMFRET. **Helen Hwang**, Sua Myong.

**3059-Pos BOARD #B788**  
APPLICATION OF SHOTGUN DNA MAPPING TO YEAST GENOMIC DNA SHOTGUN CLONES. **Anthony Salvagno**, Lawrence Herskowitz, Andy Maloney, Kelly Trujillo, Linh Le, Steve Koch.

**3060-Pos BOARD #B789**  
SEPARATING STATIC AND DYNAMIC HETEROGENEITY IN SINGLE-MOLECULE FRET EXPERIMENTS WITH BURST VARIANCE ANALYSIS (BVA). **Joseph P. Torella**, Yusdi Santoso, Seamus J. Holden, Johannes Hohlbein, Catherine M. Joyce, Olga Potapova, Nigel D. F. Grindley, Achillefs N. Kapanidis.

**3061-Pos BOARD #B790**  
VISUALIZING THE 1D DIFFUSION OF EUKARYOTIC DNA REPAIR FACTORS ALONG A CHROMATIN LATTICE. **Jason Gorman**, Aaron Plys, Mari-Liis Visnapuu, Eric Alani, Eric Greene.

**3062-Pos BOARD #B791**  
ANTIVIRAL SIGNALING MEDIATED BY RIG-I TRANSLOCATION ACTIVITY. **Sua Myong**.

**3063-Pos BOARD #B792**  
FOLLOWING THE MOTIONS OF A DNA HELICASE ON DNA IN REAL TIME. **Sanford H. Leuba**, Syam P. Anand, Matthew Fagerburg, Grant Schauer, Karen Thickett, Saleem Khan.

**3064-Pos BOARD #B793**  
QUANTUM DOT PROBES FOR SINGLE-MOLECULE ROTATION OF CELL SURFACE PROTEINS. **Peter W. Winter**, Deborah A. Roess, B. George Barisas.

## Molecular Mechanics & Force Spectroscopy I (Boards #B794-#B823)

**3065-Pos BOARD #B794**  
IDENTIFICATION OF INFRARED SPECTRUM FROM HUMAN BIO-ENERGETIC CAMPUS. **Aurelian Udristoiu**.

**3066-Pos BOARD #B795**  
SOLVENT EFFECT ON THE UNFOLDING FORCE OF A SINGLE HYDROPHOBIC POLYMER. **Isaac T. S. Li**, Matthew Paige, Gilbert C. Walker.

**3067-Pos BOARD #B796**  
ACTIVE STOCHASTIC MICRORHEOLOGY USING OPTICAL TWEEZERS. **Hyungsuk Lee**, Carlos E. Castro, Yongdae Shin, Roger D. Kamm, Matthew J. Lang.

**3068-Pos BOARD #B797 STUDENT TRAVEL AWARDEE**  
A SINGLE MOLECULE FORCE SPECTROSCOPY STUDY OF THE BINDING INTERACTION BETWEEN INSULIN AND G-QUADRUPLEX DNA. **Susanna Lynch**, Rachel Battershell, Jordan Scott, Dejian Zhou, Kumar Sinniah.

**3069-Pos BOARD #B798**  
A SINGLE MOLECULE STUDY OF GUANINE QUADRUPLEX DNA. **Kumar Sinniah**, Susanna Lynch, Heather Baker, Sarah G. Byker, Dejian Zhou.

**3070-Pos BOARD #B799**  
MECHANICS OF LIPID BILAYERS OF HIGH CURVATURE. **Sai Li**, Frederic Eghiaian, Iwan A. T. Schaap.

**3071-Pos BOARD #B800**  
PROBING THE MECHANICAL PROPERTIES OF SINGLE SCLEROPROTEINS WITH OPTICAL TWEEZERS. **Benjamin P. B. Downing**, Astrid van der Horst, Ming Miao, Fred W. Keeley, Nancy R. Forde.

**3072-Pos BOARD #B801**  
ELASTIC BEHAVIOR OF SSDNA IN SALTY SOLUTIONS. **Dustin McIntosh**, Omar A. Saleh.

**3073-Pos BOARD #B802**  
MECHANICAL UNFOLDING OF CARDIAC MYOSIN BINDING PROTEIN-C BY ATOMIC FORCE MICROSCOPY. **Árpád Karsai**, Robert W. Kensler, Miklós Kellermayer, Samantha P. Harris.

**3074-Pos BOARD #B803**  
ACTIVE FORCE CLAMP CONTROL OF OPTICAL TWEEZERS. **Heikki Ojala**, Kalle Hanhijärvi, Anders E. Wallin, Gabija Ziedaite, Dennis Bamford, Edward Hægström.

**3075-Pos BOARD #B804**  
PROTEIN-DNA INTERACTIONS STUDIES USING MAGNETIC TWEEZERS. **Matthew J. Wiggins**, Nynke Dekker.

**3076-Pos BOARD #B805**  
SINGLE-MOLECULE ATOMIC-FORCE SPECTROSCOPY CAPTURES A NOVEL CLASS OF MOLECULAR NANOSPRINGS WITH ROBUST STEPWISE REFOLDING PROPERTIES. **Minkyu Kim**, Khadar Abdi, Gwangrog Lee, Mahir Rabbi, Whasil Lee, Ming Yang, Christopher J. Schofield, Vann Bennett, Piotr E. Marszalek.

**3077-Pos BOARD #B806**  
HIGH FORCE ELASTIC PROFILES OF SINGLE AND DOUBLE STRANDED POLYNUCLEOTIDES PROBED WITH AFM FORCE SPECTROSCOPY. **Mahir Rabbi**, Michal Sarna, Laura Manson, Yong Jiang, Piotr E. Marszalek.

**3078-Pos BOARD #B807**  
ADHESION MECHANISMS OF THE MUSSEL FOOT PROTEINS MFP-1 AND MFP-3. **Travers Anderson**, Jacob Israelachvili.

**3079-Pos BOARD #B808**  
MOTOR-SUBSTRATE INTERACTIONS IN A RING ATPASE. **Ariel Kaplan**, K. Aathavan, Adam Politzer, Jeffrey Moffitt, Yann R. Chemla, Shelley Grimes, Paul J. Jardine, Dwight L. Anderson, Carlos J. Bustamante.

**3080-Pos BOARD #B809**  
MAPPING MICRO-MECHANICAL AND MICRO-STRUCTURAL CHANGES IN THE AGEING AORTA. **Graham K. Helen**, Riaz Akhtar, Constantinus Kridiotis, Brian Derby, Andrew W. Trafford, Michael J. Sherratt.

**3081-Pos BOARD #B810**  
INTEGRATING DYNAMIC FORCE SPECTROSCOPY AND SURFACE PLASMON RESONANCE TO DEFINE THE ENERGY LANDSCAPE FOR INTEGRIN:LIGAND BINDING. **Samrat Dutta**, Martin Guthold, Roy R. Hantgan.

**3082-Pos BOARD #B811**  
STRESSED AND COMPRESSED MOLECULAR BONDS REVEALED IN FOOTPRINTS OF ROLLING NEUTROPHILS USING TOTAL INTERNAL REFLECTION FLUORESCENCE MICROSCOPY.  
**Prithu Sundd**, Edgar Gutierrez, Maria Pospieszalska, Alexander Groisman, Klaus Ley.

**3083-Pos BOARD #B812**  
KINETICS OF DNA FORCE-INDUCED MELTING.  
**Micah J. McCauley**, Leila Shokri, Ioulia Rouzina, Mark C. Williams.

**3084-Pos BOARD #B813**  
MODULATING THE MECHANICAL STABILITY OF EXTRACELLULAR MATRIX PROTEIN TENASCIN-C IN A CONTROLLED AND REVERSIBLE FASHION. **Shulin Zhuang**, Qing Peng, Yi Cao, Hongbin Li.

**3085-Pos BOARD #B814**  
EFFECTS OF SOLUTION CHEMISTRY ON FIBRIN NANOMECHANICS. **Laurel E. Averett**, Oleg V. Gorkun, Mark H. Schoenfish.

**3086-Pos BOARD #B815**  
A ROTOR DRIVEN BY THE TORQUE STORED IN BRAIDED DNA MOLECULES. **Mónica Fernández-Sierra**, Violeta Delgado-Martí, Edwin Quiñones.

**3087-Pos BOARD #B816**  
INVESTIGATING THE INTERACTION BETWEEN FOLIC ACID AND FOLATE BINDING PROTEIN AT THE SINGLE MOLECULE LEVEL. **L. Devon Triplett**, Daniel Q. McNerny, J. Gabriel Grodzicki, Kumar Sinniah, Mark M. Banaszak Holl, Bradford G. Orr.

**3088-Pos BOARD #B817**  
ISOPEPTIDE BONDS BLOCK THE MECHANICAL EXTENSION OF PILINS IN GRAM-POSITIVE BACTERIA. **Jorge Alegre-Cebollada**, Carmen L. Badilla, Julio M. Fernandez.

**3089-Pos BOARD #B818**  
MULTI-SCALE MODELING OF FORCE PROPAGATION IN PROTEINS UNDER MECHANICAL STRESS. **Scott A. Edwards**, Wolfram Stacklies, Frauke Graeter.

**3090-Pos BOARD #B819**  
MEASURING ADHESION FORCES BETWEEN INFLUENZA VIRUS AND LIVING CELLS. **Christian Sieben**, Anna Wozniak, Rong Zhu, Christian Rankl, Peter Hinterdorfer, Andreas Herrmann.

**3091-Pos BOARD #B820**  
FUSION OF BIOMIMETIC 'STEALTH' PROBES INTO LIPID BILAYER CORES. **Ben Almquist**, Nicholas Melosh.

**3092-Pos BOARD #B821**  
EFFECT OF CELL MECHANICS ON THE TRANSIENT FORCE RESPONSE OF A MOLECULAR BOND AND THE DERIVED KINETIC OFF-RATE. **Vijay K. Gupta**, Charles D. Egleton.

**3093-Pos BOARD #B822**  
DOES CALCIUM INTERACT WITH TITIN'S IMMUNOGLOBULIN DOMAIN IN CARDIAC MUSCLE? **Mike DuVall**.

**3094-Pos BOARD #B823**  
SINGLE-MOLECULE KINETICS UNDER FORCE: PROBING PROTEIN FOLDING AND ENZYMAIC ACTIVITY WITH OPTICAL TWEEZERS. **Wesley P. Wong**.

## Micro & Nanotechnology, Nanopores (Boards #B824-#B855)

**3095-Pos BOARD #B824**  
NANOPORES AS BIOSENSORS: DNA SEQUENCING AND CHIRAL DISCRIMINATION. **Andrew T. Guy**, Peter J. Bond, Syma Khalid.

**3096-Pos BOARD #B825**  
MODELING OF IONIC CURRENTS IN A SEMICONDUCTOR NANOPORE. **Alexey Nikolaev**, Maria Gracheva.

**3097-Pos BOARD #B826**  
FACILITATED POLYPEPTIDE TRANSLOCATION THROUGH A PROTEIN PORE. **Robert Bilkwem**, Aaron J. Wolfe, Mohammad M. Mohammad, Xiangjun Xing, Liviu Movileanu.

**3098-Pos BOARD #B827**  
SOLID-STATE NANOPORE TRANSLOCATION OF IDEALIZED HELICAL REPEAT PROTEINS. **Bradley Ledden**, Aitziber Lopez Cortajarena, Lynne Regan, David Talaga, Jiali Li.

**3099-Pos BOARD #B828**  
QUARTZ NANOPORE MEMBRANES FOR LOW NOISE MEASUREMENTS OF ION CHANNEL CONDUCTANCE. **Geoffrey A. Barrall**, Ryan C. Dunnam, Michael A. Krupka, Andrew D. Hibbs.

**3100-Pos BOARD #B829**  
CONTROL OF SALT REJECTION BY SURFACE CHARGE PATTERNING IN CONICAL POLYMER NANOPORES. **Eric B. Kalman**, Ivan Vlasiouk, Olivier Sudre, Zuzanna S. Siwy.

**3101-Pos BOARD #B830**  
FABRICATION OF METALLISED SOLID-STATE NANOPORES USING ELECTRODEPOSITION WITH IONIC CURRENT FEEDBACK. **Mariam Ayub**, Jongin Hong, Tim Albrecht, Joshua B. Edel.

**3102-Pos BOARD #B831**  
LIPID BILAYERS IN NANOPORES TO VARY THEIR DIAMETER, CHARACTERIZE AMYLOID- $\beta$  AGGREGATES AND MONITOR THE ACTIVITY OF MEMBRANE-ACTIVE ENZYMES. **Erik C. Yusko**, Jay Johnson, Yazan Billeh, Sheereen Majd, Ryan Rollings, Jiali Li, Jerry Yang, Michael Mayer.

**3103-Pos BOARD #B832**  
NANOPORE-BASED SEQUENCE-SPECIFIC DETECTION OF DUPLEX DNA FOR GENOMIC PROFILING. **Alon Singer**, Meni Wanunu, Will Morrison, Heiko Kuhn, Maxim Frank-Kamenetskii, Amit Meller.

**3104-Pos BOARD #B833**  
DISCRIMINATING BASES BY STRETCHING DOUBLE-STRANDED DNA IN A NANOPORE. **Deqiang Wang**, Winston Timp, Ji Wook Shim, Utkur Mirsaidov, Jeff Comer, Aleksei Aksimentiev, Gregory Timp.

**3105-Pos BOARD #B834**  
SINGLE STRANDED DNA TRANSLOCATION IN SMALL SOLID STATE NANOPORES. **Ryan Rollings**, Daniel Fologea, Dennis Tita, Jiali Li.

**3106-Pos BOARD #B835**  
TOWARDS ULTRA-FAST DNA SEQUENCING USING NANOPORES AND PARALLEL OPTICAL READOUT. **Ben McNally**, Alon Singer, Yingjie Sun, Zhiliang Yu, Ruby dela Torre, Amit Meller.

**3107-Pos BOARD #B836**  
REVEALING PROGRAMMABLE ION-EXCHANGE IN A G-QUADRUPLEX USING THE NANOPORE DETECTOR. **Ji Wook Shim**, Qiulin Tan, Li-Qun Gu.

**3108-Pos BOARD #B837**  
A NOVEL SINGLE MOLECULAR SIGNATURE FOR DISCRIMINATING DNA UNZIPPING IN A NANOPORE. **Yong Wang**, Qiulin Tan, Li-Qun Gu.

**3109-Pos BOARD #B838**  
SENSING AND ACTUATION WITH A NATIVE GP10 NANOPORE. **David Wendell**.

**3110-Pos BOARD #B839**  
EPIGENETIC ANALYSIS OF CHROMATIN IN NANOCHANNELS. **Diana E. Streng**, Shuang F. Lim, Robert Riehn.

**3111-Pos BOARD #B840**  
PROLONGED EXCURSION OF A SINGLE PROTEIN INTO A SYNTHETIC NANOPORE. **David J. Niedzwiecki**, Liviu Movileanu.

**3112-Pos BOARD #B841**  
SINGLE NUCLEOTIDE DISCRIMINATION IN SINGLE STRANDED DNA IMMOBILIZED WITHIN BIOLOGICAL NANOPORE MSPA. **Elizabeth A. Manrao**, Marcus D. Collins, Ian M. Derrington, Kyle W. Langford, Mikhail Pavlenok, Michael Niederweis, Jens H. Gundlach.

**3113-Pos BOARD #B842**  
HYDROPHOBIC GATING IN SYNTHETIC NANOPORES. **Matthew Pevarnik**, Matthew Davenport, John Brailsford, Kenneth Shea, Zuzanna Siwy.

**3114-Pos BOARD #B843**  
ION CHANNELS IN NANOSCALE APOLIPOPROTEIN BOUND BILAYERS. **Sourabh Banerjee**, Crina M. Nimigeau.

**3115-Pos BOARD #B844**  
NANOPORE TRANSLOCATION EXPERIMENTS IN MICROEMULSION DROPLETS. **Stephan Renner**, Sandra Geltinger, Friedrich C. Simmel.

**3116-Pos BOARD #B845**  
STUDYING VOLTAGE DEPENDENT NOISE IN POLYMER AND SOLID STATE NANOPORES. **Matthew Powell**, Ivan Vlassioug, Sonia Letant, Zuzanna Siwy.

**3117-Pos BOARD #B846**  
SLOWING DNA TRANSLOCATION THROUGH NANOPORES USING ORGANIC SALT SOLUTIONS. **Xiyun Guan**, Ranulu Samantha S. de Zoysa, Dilani A. Jayawardha, Qitao Zhao, Daniel W. Armstrong.

**3118-Pos BOARD #B847**  
ELECTROPHYSIOLOGICAL METHOD FOR QUANTIFICATION OF THE NUMBER OF PHI29 DNA PACKAGING NANOPORE IN PLANAR BILAYER MEMBRANE. **Peng Jing**, Anne P. Vonderheide, Fazin Haque, Carlo Montemagno, Peixuan Guo.

**3119-Pos BOARD #B848**  
ULTRATHIN NANOPORES FOR NUCLEIC ACID ANALYSIS. **Meni Wanunu**, Marija Drndic.

**3120-Pos BOARD #B849**  
SINGLE CHANNEL SENSING OF DSDNA USING THE MEMBRANE-ADAPTED NANOPORE OF PHI29 DNA PACKAGING MOTOR. **Peixuan Guo**.

**3121-Pos BOARD #B850**  
FINGERPRINTING OF DNA AND RNA USING THE CHANNELS OF BACTERIOPHAGE PHI29 DNA PACKAGING MOTOR. **Farzin Haque**, Peng Jing, Jia Geng, Chris Stites, Peixuan Guo.

**3122-Pos BOARD #B851**  
INHIBITION OF THE VOLTAGE-GATED SODIUM CURRENT AND OPENING OF NANOPORES BY ULTRA-SHORT ELECTRIC PULSES. **Vasyl Nesin**, Andrei Pakhomov.

**3123-Pos BOARD #B852**  
RECTIFICATION OF A MODIFIED NANOFUIDIC DIODE DEPENDENT ON THE PH. **Gael Nguyen**, Zuzanna Siwy.

**3124-Pos BOARD #B853**  
LIGHT-INDUCED PERMEABILITY CHANGES IN LIPOSOMES CONTAINING PHOTO-POLYMERIZABLE PHOSPHOLIPIDS. **Amichai Yavlovich**, Alok Singh, Hyunbum Jang, Ruth Nussinov, Anu Puri, Robert Blumenthal.

**3125-Pos BOARD #B854**  
LABEL-FREE IMMUNOASSAY BASED ON FUNCTIONALIZED NANOPIPETTE PROBES. **Paolo Actis**, Olufisayo Jejelowo, Nader Pourmand.

**3126-Pos BOARD #B855**  
THE NANO-SCALE SECRET OF BIOLOGICAL SECRETION FOR ADHESION. **Mingjun Zhang**.

## Biotechnology & Bioengineering II (Boards #B856-#B883)

**3127-Pos BOARD #B856**  
A NOVEL APPROACH FOR EFFICIENT PHOTOSYNTHETIC HYDROGEN PRODUCTION. **Nathan Nelson**.

**3128-Pos BOARD #B857**  
CHARACTERIZATION OF NEW AND IMPROVED FLUORESCENT PROTEINS AND THEIR APPLICATIONS. **Robielyn Ilagan**, Hung-Teh Kao, David Gruber, Elizabeth Rhoades, Lynne Regan.

**3129-Pos BOARD #B858**  
OPTIMIZING FUNCTIONALITY OF ION CHANNEL BIOSENSING USING STOCHASTIC RESONANCE. **Eric Stava**, Minrui Yu, Hyun Cheol Shin, Abhishek Bhat, Si Young Choi, Robert H. Blick.

**3130-Pos BOARD #B859**  
SIMULTANEOUS RECORDINGS OF LIGAND-GATED ION CHANNELS USING A 384 PLANAR PATCH CLAMP SUBSTRATE. **Edward Verdonk**, Trishia Tutana, Xin Jiang, David Yamane, Yuri Osipchuk, James Costantin.

**3131-Pos BOARD #B860**  
PLANAR PATCH-CLAMP ELECTRODES FOR SINGLE CELL AND NEURAL NETWORK STUDIES. **John M. Nagarah**, Daniel A. Wagenaar, James R. Heath.

**3132-Pos BOARD #B861**  
A TWO-CHANNEL PATCH-CLAMP SYSTEM ON A CHIP. **Pujitha Weerakoon**, Eugenio Culurciello, Joseph Santos-Sacchi, Youshan Yang, Frederick Sigworth.

**3133-Pos BOARD #B862**  
EFFECTS OF CONTINUOUS ELECTRICAL FIELD STIMULATION AND HYPERTROPHIC STIMULATION ON MICROPATTERNED CARDIAC MYOCYTES. **Peng Zhang**, Michelle King, Nandan Nath, Celinda Kofron, Diane Hoffman-Kim, Ulrike Mende.

**3134-Pos BOARD #B863**  
EPITHELIAL COATING MECHANISMS BY SEMI-SOLID MATERIALS: APPLICATION TO MICROBICIDE GELS. **Andrew J. Szeri**, Su Chan Park, Savas Tasoglu, Stephane Verguet, Alex Gorham, Yajing Gao, David F. Katz.

**3135-Pos BOARD #B864**  
MUSSEL-INSPIRED SELF-HEALING HYDROGELS. **Niels Holten-Andersen**, Bruce P. Lee, Phillip B. Messersmith, J. H. Waite, Ka Yee C. Lee.

**3136-Pos BOARD #B865**  
HYDROGEL FOR *IN SITU* ENCAPSULATION OF MULTIPLE BLACK LIPID MEMBRANES. **Sania N. Ibragimova**, Karin B. Stibius, Piotr P. Szewczykowski, Mark Perry, Henrik Bohr, Claus H. Nielsen.

**3137-Pos BOARD #B866**  
FABRICATING 3D ORDERED CELL CULTURE MATRIX BY MICROFLUIDIC DEVICE. **Keng-hui Lin**, A-jay Lin, Ching-yin Lin, Wan-jung Lin.

**3138-Pos BOARD #B867 MINORITY BIOPHYSICISTS TRAVEL AWARDEE**  
AFFINITY BAITS AND THE INTERIOR ENVIRONMENT OF HYDROGEL PARTICLES. **Mrinalini Ramanan**, Alexis Patanarut, Tiffany Ha, Anirudh Mohan, Barney Bishop.

**3139-Pos BOARD #B868**  
UV LASER PATTERNING FOR BIOCOMPATIBILITY CONTROL OF POLYSTYRENE. **Marc Fahrner**, Sergii Yakunin, Irene Frischauf, Julia Zirsch, Henryk Fiedorowicz, Andrzej Bartnik, Christoph Romanin, Johannes Heitz.

**3140-Pos BOARD #B869**  
A MICROFLUIDIC DEVICE FOR GENERATING TITRATION CURVES OF BIOMOLECULAR INTERACTIONS. **Steven Bates**.

**3141-Pos BOARD #B870**  
USING MAGNETIC FLUIDS AS A VERSATILE METHOD FOR MANIPULATING AND SORTING UNLABELED NONMAGNETIC PARTICLES IN A FLOW. **Efraim Feinstein**, Pierre Striehl, Joseph Shivers, Mara Prentiss.

**3142-Pos BOARD #B871**  
DETECTION AND LOCALIZATION OF SPECIFIC SEQUENCES ON SINGLE MICROFLUIDICALLY TRAPPED DNA MOLECULES USING PNA PROBES. **Hagar Zohar**, Susan J. Muller.

**3143-Pos BOARD #B872**  
SUPPRESSING NON-SPECIFIC INTERACTIONS BETWEEN SOLID SURFACES USED FOR SINGLE-MOLECULE FORCE MEASUREMENTS. **Srigokul Upadhyayula**, Noah Johnson, Stephen Bishop, Sharad Gupta, Valentine I. Vullev.

**3144-Pos BOARD #B873**  
EXCITATION OF MICROTUBULES USING A DOUBLE SLIT ULTRASOUND DEVICE. **Abdorrezza Samarbakhsh**, Jack A. Tuszynski.

**3145-Pos BOARD #B874**  
TARGETED OPTIMIZATION OF A MOLECULAR MOTOR FOR CONTROLLING MOVEMENT IN BIOHYBRID DEVICES. **Mamta Amrute-Nayak**, Ralph P. Diensthuber, Walter Steffen, Daniela Kathmann, Falk K. Hartmann, Roman Fedorov, Claus Urbanke, Dietmar J. Manstein, Bernhard Brenner, Georgios Tsiavalariis.

**3146-Pos BOARD #B875**  
IMMOBILIZATION AND INCORPORATION OF ANTIGENIC PEPTIDE P17-1 FROM HIV-1 P17 PROTEIN IN NANOSTRUCTURED FILMS. **Lais Petri**, Marystela Ferreira, Marli L. Moraes.

**3147-Pos BOARD #B876**  
ENGINEERING HAMLET-LIKE PROTEINS. **Inmaculada Sanchez-Romero**, Asuncion Delgado-Delgado, Laura Lopez-Jimenez, Javier Oliver Pozo, Jose M. Sanchez-Ruiz.

**3148-Pos BOARD #B877**  
HIGH THROUGHPUT METHODS FOR BIOPHYSICAL CHARACTERIZATION OF MONOCLONAL ANTIBODIES. **Vladimir I. Razinkov**.

**3149-Pos BOARD #B878**  
ASYMMETRIC GIANT UNILAMELLAR VESICLES. **Peichi C. Hu**, Noah Malmstadt.

**3150-Pos BOARD #B879**  
DESIGN CONCEPTS FOR A BIOCUSHION TO COMFORT LIPID MEMBRANES. **Malgorzata Maria Hermanowska**, Agnieszka Gorska, Jonas Borch, Adam C. Simonsen, Beate Kloesgen.

**3151-Pos BOARD #B880**  
ANALYSIS OF LIPID COMPOSITIONAL CHANGES DURING ALCOHOLIC FERMENTATION IN INDUSTRIAL YEAST STRAINS WITH VARYING ETHANOL TOLERANCE. **Clark M. Henderson**, David E. Block, Marjorie L. Longo.

**3152-Pos BOARD #B881**  
AUTOMATED LIPID BILAYER FORMATION USING A PDMS GASKET. **You-Hyo Baek**, Joongjin Park, Jason L. Poulos, Jacob J. Schmidt, Tae-Joon Jeon.

**3153-Pos BOARD #B882**  
FABRICATING A NEW STABILIZED LIPID-BASED PLATFORM FOR HANDLING AND PRESENTING GPCRS. **Yasaman Dayani**, Noah Malmstadt.

**3154-Pos BOARD #B883**  
IN VITRO ENHANCEMENT OF COLLAGEN DEPOSITION IN FULLY BIOLOGICAL BIOPRINTED CONSTRUCTS. **Francoise S. Marga**, Troy Young, Gabor Forgacs.