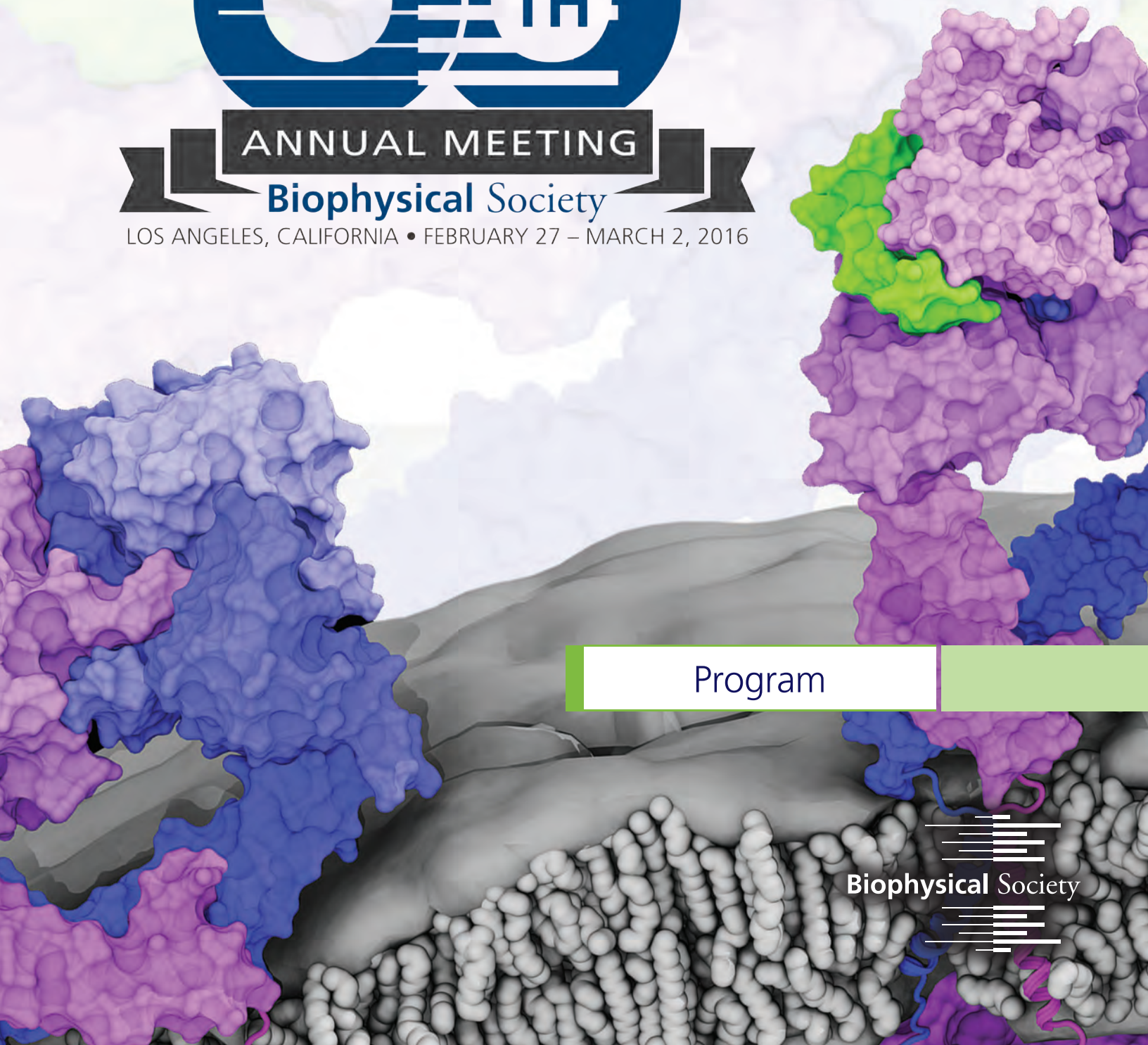
COMMUNITIES, SCIENTIFIC DISCOVERIES, AND LEARNING

60TH ANNUAL MEETING

Biophysical Society

LOS ANGELES, CALIFORNIA • FEBRUARY 27 – MARCH 2, 2016



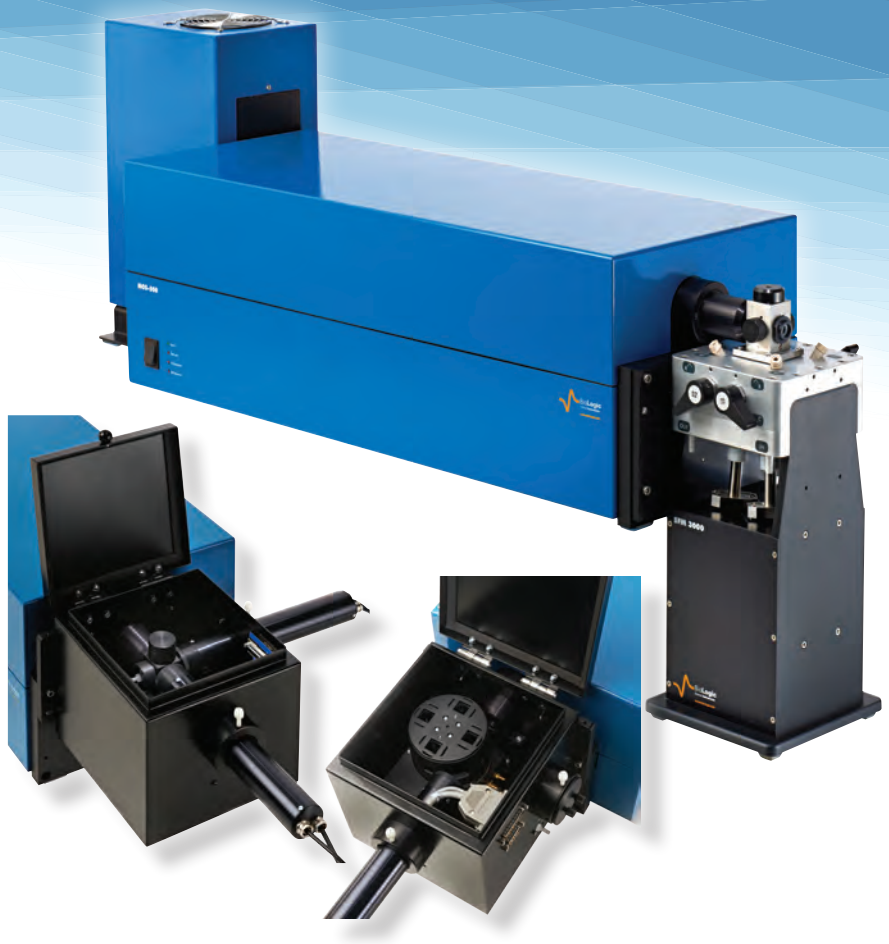
Program

Biophysical Society

MOS-500 Spectropolarimeter

The new benchmark for steady state and kinetics spectroscopy

Visit BioLogic in Booth 514



More detection modes

- Circular Dichroism
- Absorbance
- Fluorescence
- FD/CD
- EMFA Anisotropy
- Linear Dichroism

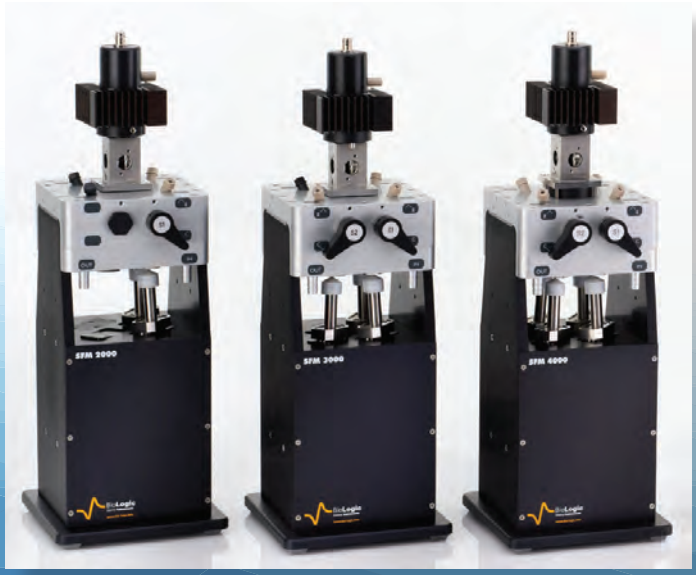
More options

- SFM-4000 series stopped flow
- Single cell Peltier T control
- Multi cell T control
- NIR-CD to 1250nm
- Optical Rotary Dispersion
- DR-CD for powder samples

More features

- 163nm-950nm
- Auto optimizing optics
- Xe and XeHg sources
- 3 stage wavelength selection
- +/- 0.1nm wavelength accuracy
- Ultra low nitrogen consumption

SFM-4000 Stopped Flow Series



Stopped Flow Mixers

- Dead time to 200us
- Low dead volume
- Mixing ratios from 1:1 to 1:100
- 2, 3, and 4 syringe
- Single, double, and triple mixing
- Asymmetric mixing
- Organic solvent compatible
- Improved sample economy
- Compatible with MOS-500, MOS-200, MOS-DAD
- *Optional: T-jump, Titrator, Quench flow, Freeze quench, and more*

BioLogic Science Instruments

www.bio-logic.info

BioLogic Science Instruments

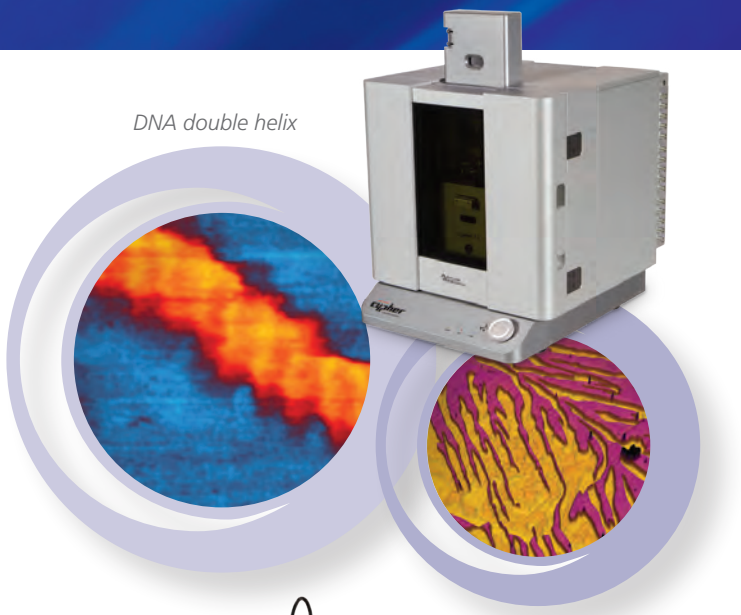
AFM
Asylum Research

There's No Other AFM Like an Asylum

Advancing biomolecular, nanoassemblies and cell biology research
Visit Booth 609 to learn more

Cypher™ AFMs

- Highest resolution and fast scanning
- Simple environmental control
- Ideal for biomolecules, lipids, DNA origami and dynamic imaging

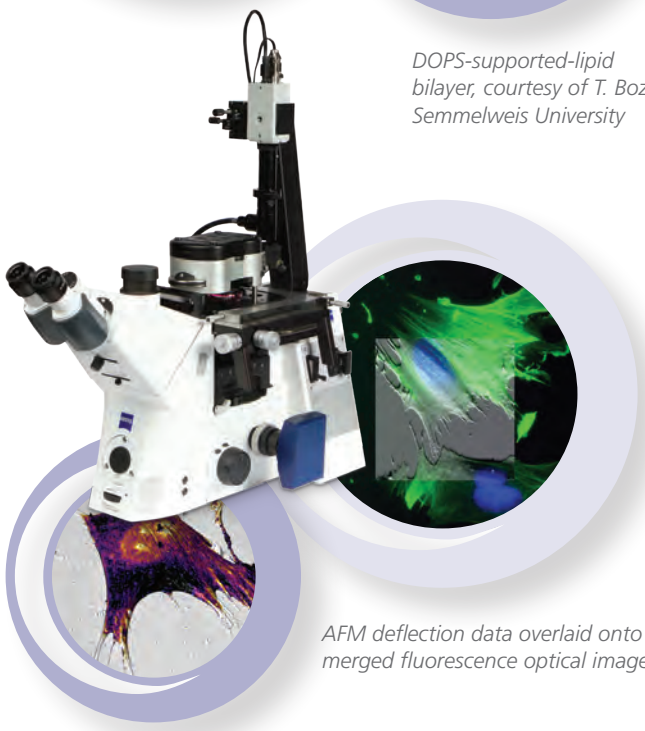


DNA double helix

DOPS-supported-lipid bilayer, courtesy of T. Bozó, Semmelweis University

MFP-3D-BIO™ AFM

- Uncompromised AFM performance on an optical microscope
- Widest range of accessories
- Ideal for biomechanics and cell imaging



AFM deflection data overlaid onto merged fluorescence optical image

Modulus map of a fibroblast cell

Join our Lunch and Learn
Room 505, Monday, 11:30-1:00
"Soft, Sticky, and Viscous: Practical Considerations for Measuring Cell Mechanics with AFM"

OXFORD INSTRUMENTS
The Business of Science®

+1 (805) 696-6466 • www.oxford-instruments.com/AFM

Biophysical Society

Thematic Meetings 2016

Engineering Approaches to Biomolecular Motors: From in vitro to in vivo

Vancouver, Canada
June 14-17, 2016

• • • •

Liposomes, Exosomes, and Virosomes: From Modeling Complex Membrane Processes to Medical Diagnostics and Drug Delivery

Ascona, Switzerland
September 11-16, 2016

• • • •

Mechanobiology of Disease

Singapore
September 27-30, 2016

Biophysical Society

BiophysicsWeek

March 7–11, 2016

Biophysics Week is a global effort aimed at encouraging connections within the biophysics community and raising awareness of the field and its impact among the general public, policy makers, students, and scientists in related fields.

Mark your calendars!

Join your peers in celebrating this special week. There will be daily activities, news, publications, blogs, fun facts, and more! Below you will find the current list of special events, but keep an eye out for new upcoming events during this unique week dedicated to you and the field of biophysics.

- The Biophysics Bunch Google Hangout
- Article Series "The State of Biophysics"
- Briefing/Luncheon on Capitol Hill
- Cryo-EM Webinar
- Female and Minority Biophysicist Articles
- Educational and Career Materials
- Biophysics Bobbi/y Around the Globe

Create a Bobbi/y

Biophysics Bobbi/y is a way to engage with other scientists as well as non-scientists to increase visibility for the field of Biophysics, highlight those who conduct research in the field, and point out the many locations across the globe where Biophysics research is conducted.

Create your Bobbi/y Online at biophysics.org/**BiophysicsWeek.**

Be a part of #BiophysicsWeek.

Celebrate this week with others around the globe!

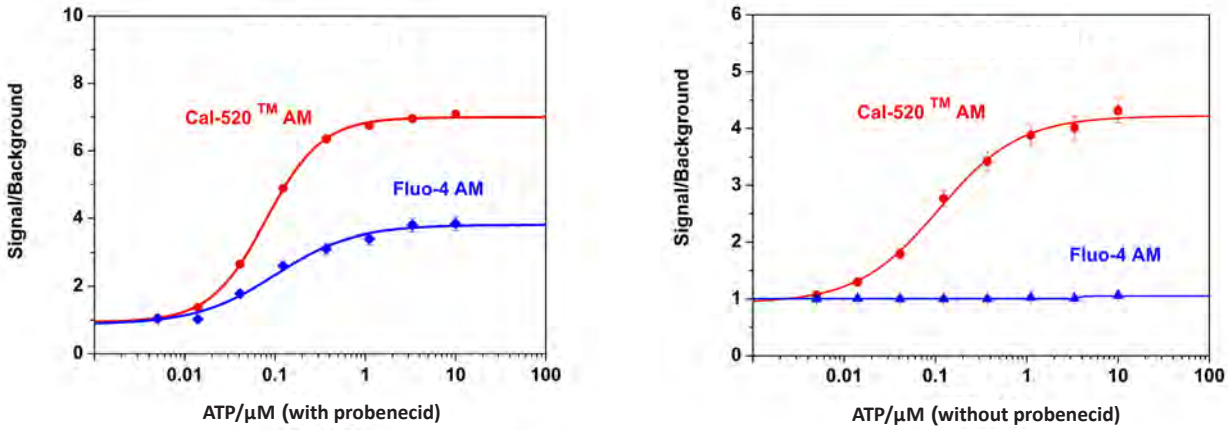
Visit biophysics.org/**BiophysicsWeek** for more information.

Cal-520™, the Best Green Ca^{2+} Indicator

Pay Less. Perform Better. Quality Guaranteed.

Calcium Dye	AAT Bioquest	Sigma†	Invitrogen†
Cal-520™ AM	$295/mg ($148/mg‡)	not available	not available
Fluo-8® AM	$245/mg ($123/mg‡)	not available	not available
Fluo-4 AM	COMING SOON	not available	$412/mg ($206/0.5 mg)
Fluo-3 AM	$145/mg ($73/mg‡)	$452/mg	$254/mg

†Prices are based on the websites of Sigma-Aldrich and Invitrogen as of December 2015 respectively, which may vary for different customers.
‡Special 50% introductory discount applied (Discount Code: DC50, valid until 12/31/2016).



ATP-stimulated calcium responses of endogenous P_2Y receptors in CHO-K1 cells incubated with Cal-520™ AM or Fluo-4 AM respectively, with or without probenecid under the same conditions.

Sensitive — *Enabling difficult Ca^{2+} assays with the highest signal/background ratio.*

Robust — *Compatible with probenecid-sensitive cell lines & challenging targets.*

Convenient — *Essentially identical spectra to those of Fluo-4 and Fluo-8®.*

Product Ordering Information

Cat #	Product Name	Size	Ex (nm)	Em (nm)	K_d (nM)
21131	Cal-520™ AM	1 mg	492	514	320
20512	Cal-590™ AM	1 mg	573	588	561
20532	Cal-630™ AM	1 mg	608	626	792
20550	Fluo-4 AM	1 mg	494	516	345
21080	Fluo-8® AM	1 mg	494	517	389

For more information about Cal-520™ calcium indicators
Call 1-800-990-8053 or visit our website www.aatbio.com

Please visit us at booth #804

AAT Bioquest®
Advancing Assay & Test Technologies

60TH ANNUAL MEETING
Biophysical Society
LOS ANGELES, CALIFORNIA • FEBRUARY 27 — MARCH 2, 2016

Table of Contents

National Lecturer

David E. Shaw

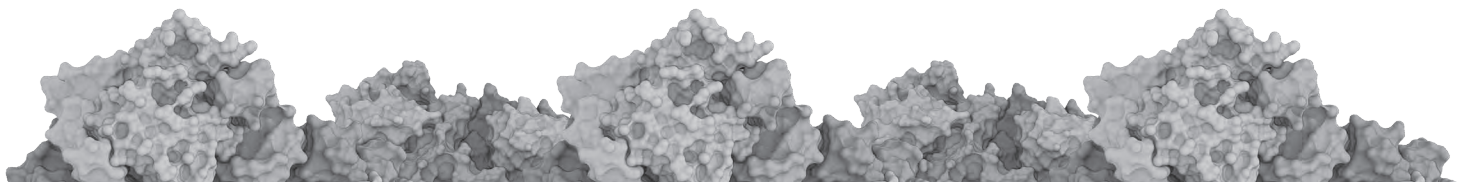
D.E. Shaw Research

Molecular Movies: Feature-Length Simulations of Protein Dynamics

Monday, February 29, 2016, 8:00 PM, Los Angeles Convention Center

About the Molecule

The image used on the cover and throughout the meeting depicts active and inactive structures of the epidermal growth factor receptor (EGFR) within its membrane environment. EGFR plays a central role in regulating cell growth and survival, and in the development of many forms of cancer.



List of Advertisers in the 2016 Annual Meeting Program:

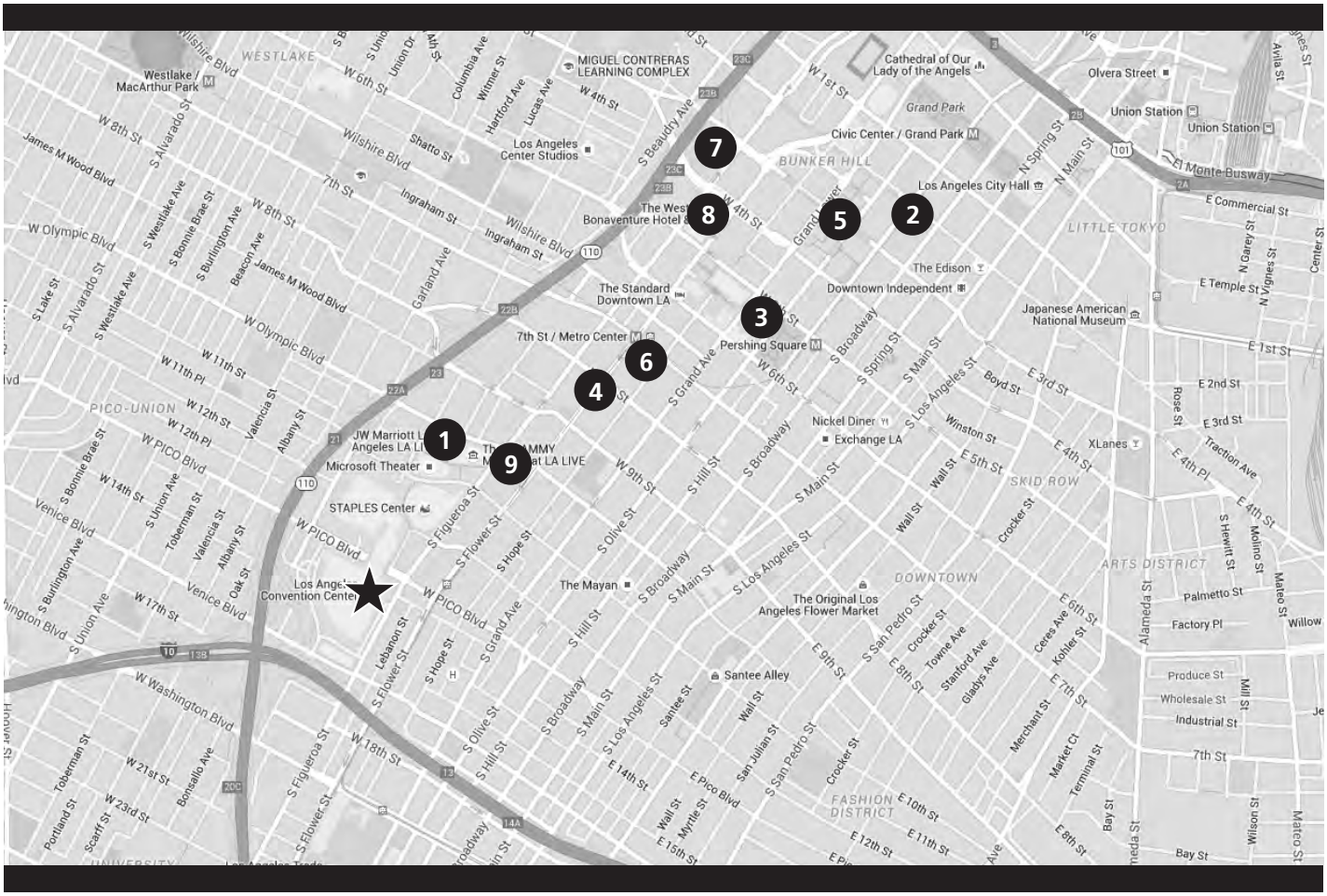
AAT Bioquest
American Physical Society
Annual Reviews
Asylum Research, an Oxford Instruments Company
Biologic USA
Elements SRL
Mad City Labs Inc
Molecular Devices LLC
Nanion Technologies GmbH
PLOS
Prior Scientific
Sutter Instruments
Thorlabs
Wiley

The Biophysical Society would like to thank the following companies for their generous support of the Annual Meeting:

AIP Publishing
Asylum Research, an Oxford Instruments Company
BioOptix
Bruker Nano Surfaces
Burroughs Wellcome Fund
Carl Zeiss Microscopy LLC
Chroma Technology
FEI
HEKA Elektronic + Multi Channel Systems
KinTek Corp
Maxcyte Inc
Molecular Devices LLC
Nanion Technologies GmbH
Renishaw Inc
Sophion together with Biolin Scientific
Sutter Instrument
The Journal of Physical Chemistry
Wyatt Technology Corporation

As of January 19, 2016

Hotel Map



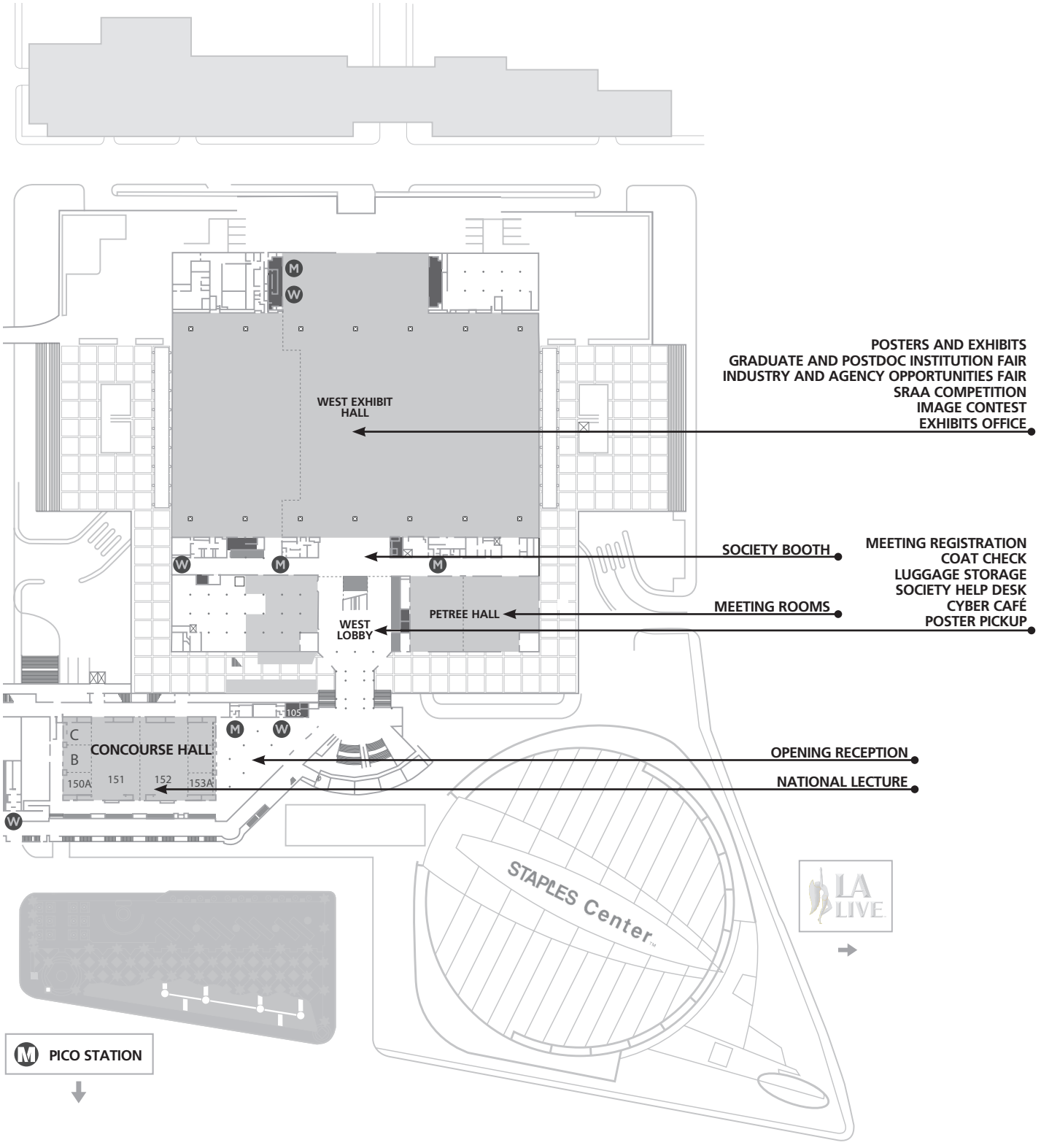
★ LOS ANGELES CONVENTION CENTER

HEADQUARTERS HOTEL

1. JW MARRIOTT HOTEL LOS ANGELES AT LA LIVE
2. KAWADA HOTEL
3. MILLENNIUM BILTMORE HOTEL
4. O HOTEL
5. OMNI LOS ANGELES HOTEL AT CALIFORNIA PLAZA
6. SHERATON LOS ANGELES DOWNTOWN
7. THE LA HOTEL DOWNTOWN
8. WESTIN BONAVENTURE HOTEL & SUITES
9. LUXE HOTEL

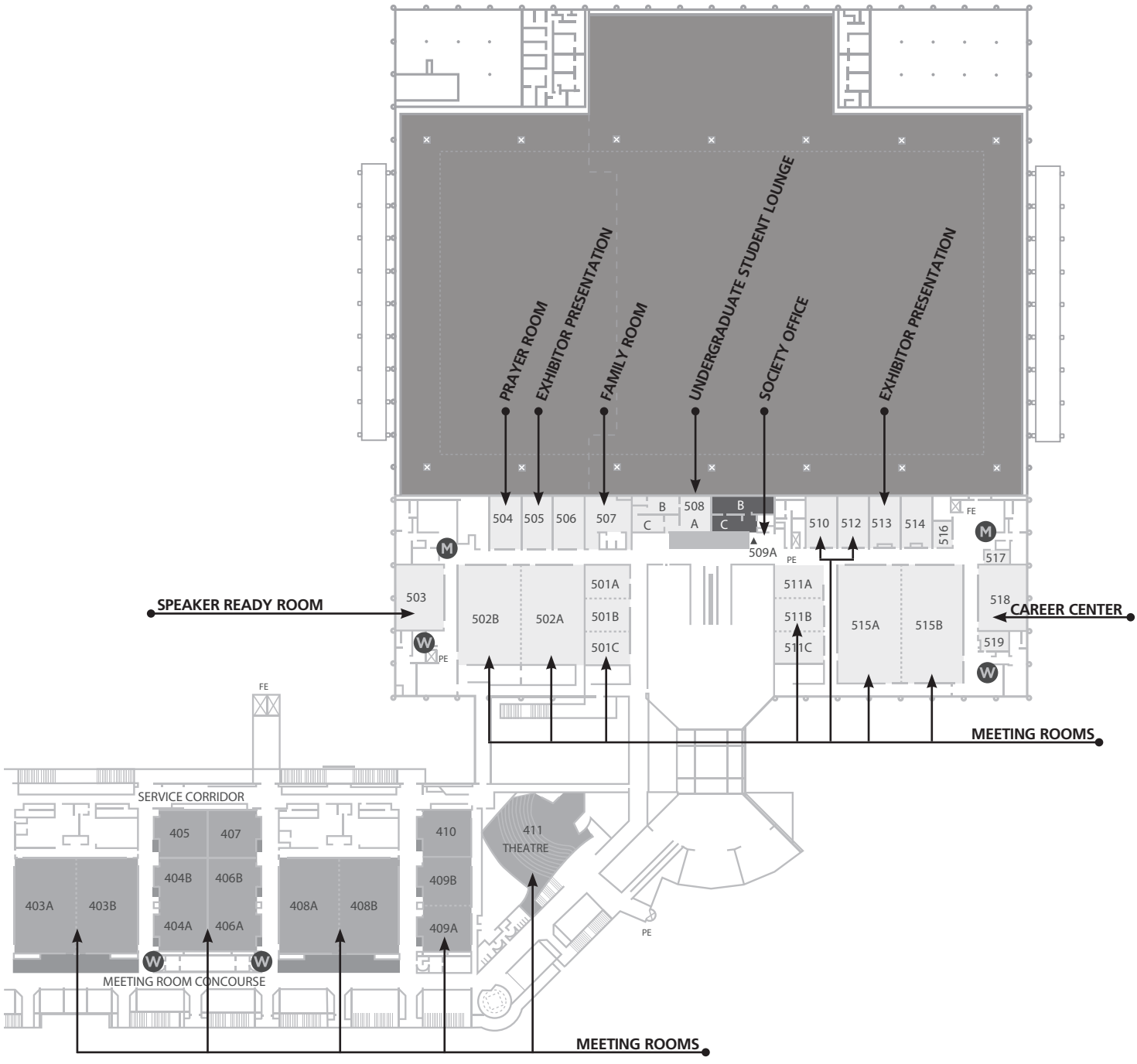
Los Angeles Convention Center Facilities

Level 1



Los Angeles Convention Center Facilities

Level 2



Biophysical Society Code of Conduct, Anti-Harassment Policy

Adopted by BPS Council November 2015

The Biophysical Society (BPS) is committed to providing an environment that encourages the free expression and exchange of scientific ideas. As a global, professional Society, the BPS is committed to the philosophy of equal opportunity and respectful treatment for all regardless of national or ethnic origin, religion or religious belief, gender, gender identity or expression, race, color, age, marital status, sexual orientation, disabilities, veteran status, or any other reason not related to scientific merit. All BPS meetings and BPS-sponsored activities promote a working environment that is free of inappropriate behavior and harassment by or toward all attendees of Society meetings and Society-sponsored activities, including scientists, students, guests, exhibitors, staff, vendors, and other suppliers.

This global policy applies to all locations and situations where BPS business is conducted and to all BPS-sponsored activities and events. This policy does not replace the specific staff policies for situations in which only staff are involved.

Reported or suspected occurrences of harassment will be promptly and thoroughly investigated. Following an investigation, BPS will immediately take any necessary and appropriate action. BPS will not permit or condone any acts of retaliation against anyone who files harassment complaints or cooperates in the investigation of same.

Definition of Harassment

The term "harassment" includes but is not limited to epithets, unwelcome slurs, jokes, or verbal, graphic or physical conduct relating to an individual's race, color, religious creed, sex, national origin, ancestry, citizenship status, age, gender or sexual orientation that denigrate or show hostility or aversion toward an individual or group.

Sexual harassment refers to unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature. Behavior and language that are welcome/ acceptable to one person may be unwelcome/offensive to another. Consequently, individuals must use discretion to ensure that their words and actions communicate respect for others. This is especially important for those in positions of authority since individuals with lower rank or status may be reluctant to express their objections or discomfort regarding unwelcome behavior. It does not refer to occasional compliments of a socially acceptable nature. It refers to behavior that is not welcome, is personally offensive, debilitates morale, and therefore, interferes with work effectiveness. The following are examples of behavior that, when unwelcome, may constitute sexual harassment: sexual flirtations, advances, or propositions; verbal comments or physical actions of a sexual nature; sexually degrading words used to describe an individual; a display of sexually suggestive objects or pictures; sexually explicit jokes; unnecessary touching.

Investigative Process

Anyone who feels harassed is encouraged to immediately inform the alleged harasser that the behavior is unwelcome. In many instances, the person is unaware that their conduct is offensive and when so advised can easily and willingly correct the conduct so that it does not reoccur. Anyone who feels harassed IS NOT required to address the person believed guilty of inappropriate treatment. If the informal discussion with the alleged harasser is unsuccessful in remedying the problem or if complainant does not feel comfortable with such an approach, he/she should contact BPS's Executive Director or the Society President, or any BPS Officer. All complaints will be promptly and thoroughly investigated. All reports of harassment or sexual harassment will be treated seriously. However, absolute confidentiality cannot be promised nor can it be assured. BPS will conduct an investigation of any complaint of harassment or sexual harassment, which may require limited disclosure of pertinent information to certain parties, including the alleged harasser. No retaliation will be taken against any employee, member, volunteer, exhibitor, or supplier because he or she reports a problem concerning possible acts of harassment. Employees, members, volunteers, exhibitors, or suppliers can raise concerns and make reports without fear of reprisal.

Investigative Procedure

Once a complaint of harassment or sexual harassment is received, BPS will begin a prompt and thorough investigation.

An impartial investigative committee, consisting of the Past-President, current President, and President-Elect will be established.

The committee will interview the complainant and review the written complaint. If no written complaint exists, one will be requested.

The committee will speak to the alleged offender and present the complaint.

The alleged offender will be given the opportunity to address the complaint, with sufficient time to respond to the evidence and bring his/her own evidence.

If the facts are in dispute, the investigative team may need to interview anyone named as witnesses.

The investigative committee may seek BPS Counsel's advice.
Once the investigation is complete, the committee will report their findings and make recommendations to the Society Officers.

Disciplinary Actions

Individuals engaging in behavior prohibited by this policy as well as those making allegations of harassment in bad faith will be subject to disciplinary action. Such actions range from a verbal warning to ejection from the meeting or activity in question without refund of registration fees and the reporting of their behavior to their employer. Repeat offenders may be subject to further disciplinary action, such as being banned from participating in future Society meetings or Society-sponsored activities. In the event that the individual is dissatisfied with the results of the investigation, he or she may appeal to the President of the Society. Any questions regarding this policy should be directed to the BPS Executive Officer or other Society Officer.

BPS Management Responsibility

Every officer, director, supervisor, and manager is responsible for ensuring that BPS provides an environment free of harassment and inappropriate behavior and that complaints are handled promptly and effectively. The BPS Society Office and Officers must inform the Society membership and all vendors and suppliers about this policy, promptly investigate allegations of harassment, take appropriate disciplinary action, and take steps to assure retaliation is prohibited.

Biophysical Society

2016 Program Committee

Vasanthi Jayaraman, University of Texas, Co-Chair
E. Michael Ostap, University of Pennsylvania, Co-Chair
Enrique De La Cruz, Yale University
Karen Fleming, Johns Hopkins University
David Piston, Washington University
Catherine Royer, Rensselaer Polytechnic Institute
Olga Boudker, Weill Cornell Medical College
Samantha Harris, University of Arizona
David Rueda, Imperial College London, United Kingdom
Antoine van Oijen, Gronigen University of Wollongong, Australia
Claudia Veigel, Ludwig Maximilians University, Germany

BPS Officers

Edward Egelman, President
Suzanne Scarlata, President-Elect
Dorothy Beckett, Past President
Paul Axelsen, Treasurer
Frances Separovic, Secretary

BPS Council

Term Ending 2016
Juliette Lecomte
Amy Lee
Antoine van Oijen
Bonnie Wallace

Term Ending 2017
Olga Boudker
Kalina Hristova
Joseph D. Puglisi
Michael Pusch

Term Ending 2018
Robert Nakamoto
Erin Sheets
Ruth Heidelberger
Gabriela Popescu

Biophysical Journal

Leslie Loew, Editor-in-Chief
Nathan Baker, Associate Editor
E. Michael Ostap, Associate Editor
David Piston, Associate Editor
Michael Pusch, Associate Editor
Brian Salzberg, Associate Editor
Tamar Schlick, Associate Editor
Stanislav Shvartsman, Associate Editor
Claudia Steinem, Associate Editor

Society Office Staff

Rosalba Kampman, Executive Officer
Dorothy Chaconas, Director of Meetings & Exhibits
Catie Curry, Editorial Assistant
Samantha Davis, Meetings Associate
Melissa DeSomma, Governance & Subgroups Coordinator
Namita Gautam, Sales & Exhibits Manager
Lindsey Kisliuk, Meetings Coordinator
Daniel McNulty, Programs & Outreach Coordinator
April Murphy, Senior Membership Coordinator
Laura Phelan, Committees & Social Media Coordinator
Harris Povich, Director of Finance & Operations
S**aran RamuShanmugam**, Director of Information Technology
Caitlin Simpson, Administrative Assistant
Beth Staehle, Director of Publications & Journal Manager
Ellen Weiss, Director of Policy & Communications
Ray Wolfe, Creative Designer & Systems Engineer
Elizabeth Vuong, Business & Marketing Director

General Information

All functions will be held in the *Los Angeles Convention Center*, unless otherwise noted.

Badges

Badges are required for admission to all scientific sessions, including Saturday subgroup symposia, poster areas, exhibits, and social functions. A guest badge for non-scientific guests can be purchased for $65 at the on-site Registration Counter located in the West Lobby. Guest registration includes admittance to the Opening Mixer on Saturday night and Reception on Monday night. It does not include admission to scientific sessions, posters, or exhibits.

Banking and Currency Exchange

Foreign currency exchange and other bank transactions can be done during regular bank business hours at the First Republic Bank, 888 S. Figueroa Street #100, Los Angeles, CA 90017.

Monday–Thursday	9:00 AM–5:00 PM
Friday	9:00 AM–6:00 PM
Saturday & Sunday	Closed

ATM is open 24 hours.

ATMs are also available in the Los Angeles Convention Center in the Concourse Corridor as well as in West Hall.

Business Center, Concourse Hall

The Los Angeles Convention Center provides a full service business center for the convenience of attendees and exhibitors. Services include photocopying, faxing, computer work stations, and printing services. Shipping is provided through UPS. The business center is located in the Concourse Hall, which joins the West Hall and South Hall. To contact the business center, call (626) 744-1333 or email rkyle@iqcopy.com.

Saturday – Wednesday	8:30 AM–5:00 PM

Career Center, Room 518

Services are available for both those seeking a position and employers with positions to fill. Please note, the career center is the only place to post job openings. Unauthorized notices placed elsewhere in the Los Angeles Convention Center will be removed.

Saturday	12:00 NOON–7:00 PM
Sunday–Tuesday	8:00 AM–5:30 PM

Certificates of Attendance

Certificates of Attendance may be obtained in person in the Society Meeting Office, in room 509A, or at the Society Help Desk located at registration in the West Lobby.

Code of Conduct

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

Please review the code of conduct (page VI) that all meeting participants must follow.

Coat Check/Luggage Storage, West Lobby

The cost is $3.00 per checked item. Please do not bring luggage to meeting rooms. If you are planning to check items, please plan to arrive early to ensure that you are not late for sessions due to long lines.

Saturday	8:30 AM–7:30 PM
Sunday–Tuesday	7:30 AM–6:30 PM
Wednesday	7:30 AM–3:30 PM

Daily Meet-up

Interested in making new acquaintances and experiencing the cuisine of Los Angeles? Meet at the Society Booth each evening, Sunday through Tuesday, at 5:30 PM where a BPS member will coordinate dinner at a local restaurant.

Exhibits, West Hall

The Exhibit Hall features the most advanced equipment, products, services, and publications available. A list of exhibitors as of January 15, 2016 can be found beginning on page 165. Please see Addendum for those registered after January 15, 2016.

Sunday	10:00 AM–5:00 PM
Monday	10:00 AM–5:00 PM
Tuesday	10:00 AM–4:30 PM

Exhibitor Coupons

Pick up the Exhibitor Coupons at the on-site registration counters and inside the Exhibit Hall next to the push pin stations. The coupons are valid for special offers and discounts on exhibiting company's products and services.

Family Room, Room 507

The Family Room is equipped with diapers, electrical outlets for pumps, labels for breast milk, plastic bags for disposing of diapers, a small refrigerator, private areas for nursing, and a small area for rest and play.

Friday	2:00 PM–5:00 PM
Saturday	8:00 AM–7:00 PM
Sunday–Tuesday	7:30 AM–10:00 PM
Wednesday	8:00 AM–3:30 PM

First Aid, Outside Petree Hall

In case of medical emergency, dial x5133 from any house phone or 213-765-4605 from a cell phone. The First Aid Room is located outside of Petree Hall. For other minor medical needs, this room will be staffed with First Aid Administrators trained in First Aid Response during the hours below.

Saturday, February 27	8:00 AM–6:30 PM
Sunday, February 28	7:30 AM–6:30 PM
Monday, February 29	7:30 AM–9:00 PM
Tuesday, March 1	7:30 AM–6:30 PM
Wednesday, March 2	7:30 AM–9:00 PM

Hotel Telephone Numbers

JW Marriott..... 213-765-8600
Kawada Hotel 213-621-4455
Luxe Hotel..... 213-743-7658
Millennium Biltmore 213-624-1011
O Hotel..... 213-623-9904
Omni Los Angeles 213-617-3300
Sheraton Los Angeles 213-488-3500
The L.A. Hotel Downtown..... 213-617-1133
Westin Bonaventure Hotel & Suites..... 213-624-1000

Individuals Requiring Assistance

Attendees requiring special assistance during the meeting should visit the Society Meeting Office in room 509A of the Los Angeles Convention Center, or call 213-741-1151. Society staff will do their best to accommodate requests; however, we cannot ensure that special needs will be met without prior notice.

Internet Access

Wireless internet access is available free-of-charge throughout the Cafe areas of the Los Angeles Convention Center.

In addition, the Biophysical Society Cyber Cafe is located in the West Lobby outside of the Exhibit Hall. Attendees can access the internet for free on one of the available computers. Usage time is limited to 10 minutes per session when others are waiting.

Saturday	8:00 AM–7:30 PM
Sunday–Tuesday	7:30 AM–10:00 PM
Wednesday	8:00 AM–12:30 PM

Mobile App and Desktop Planner

The Biophysical Society's mobile application is available for download in the "App Store," "Google Play," and as an HTML 5 application for all other devices. You can view/create schedules, view abstracts, and interact virtually with other attendees when using the app and sync it with the desktop planner.

Parking

The Los Angeles Convention Center includes a parking facility for up to 5,600 vehicles. There are garages at the West and South Halls, as well as parking on Bond Street. The Convention Center also offers parking lot C that is off of L.A. Live Way.

Photography

Registration for the meeting implies consent to having photographs taken and to their use by officials of the Biophysical Society, or their representatives, for editorial and promotional purposes, on the Society website, social media outlets, and publications. Recordings of any kind (audio taping, videotaping, camera or cell phones) in the session rooms, Exhibit Hall, and poster areas are strictly prohibited, unless accompanied by a member of the Society staff. Any individual seen taking photographs of any session or presentation will be escorted out by security.

Poster Pickup

Posters ordered in advance through Tray Printing will be available for pick up at the Los Angeles Convention Center in the West Lobby near the Exhibit Hall during the following hours:

Saturday	3:00 PM–7:00 PM
Sunday–Tuesday	8:00 AM–4:00 PM
Wednesday	7:00 AM–9:00 AM

Poster Sessions, West Exhibit Hall

Sunday–Wednesday

The Exhibit Hall will open at 8:00 AM each morning. It will remain open for poster viewing until 10:00 PM each night, except for Tuesday, when it will close at 4:30 PM for safety purposes during exhibit tear down. Posters are arranged according to topic. Your poster board number begins with "B." On the day of presentation, authors assigned odd-numbered poster boards should present from 1:45–2:45 PM (10:30–11:30 AM on Wednesday); even-numbered posters should present from 2:45–3:45 PM, (11:30 AM–12:30 PM on Wednesday). Other hours, day or evening, may be posted by the authors as desired. Additionally, authors may leave notepaper so that visitors may request an appointment. Abstracts submitted after October 1, 2015, are scheduled each day, Sunday-Wednesday, during the regular poster sessions. These board assignments will begin with "LB."

Posters are to be removed by 5:00 PM on Sunday and Monday, and 4:30 PM on Tuesday in order to accommodate Exhibits tear down, and 3:00 PM on Wednesday. Please do not leave materials or belongings under poster boards or in the poster area. The Society is not responsible for any articles left in the poster area.

Prayer Room, Room 504

A room will be available for worship or other personal prayer.

Saturday–Tuesday	8:00 AM–10:00 PM
Wednesday	8:00 AM–3:30 PM

Raffles

Exhibitor Raffle: Want to win a Samsung Galaxy Tablet? Earn raffle entries by visiting with exhibitors Sunday, February 27, through Tuesday, March 1, to collect tickets. The more booths you visit, the more chances to win. Drop the raffle tickets at the Society Booth, in the West Lobby, by 3:00 PM Tuesday, March 1. The winner will be announced in the Exhibit Hall at 3:00 PM Tuesday afternoon—you must be present at the drawing to win. Good luck!

Wednesday Poster Session Raffle: Attend the Wednesday poster sessions in the Exhibit Hall for a chance to win a Fitbit! Drop your ticket in the ballot box in the Exhibit Hall. Winner will be announced at 12:30 PM on Wednesday in the Exhibit Hall. You must be present in the Exhibit Hall to win.

Registration Hours, West Lobby

Friday	3:00 PM–5:00 PM
Saturday	8:00 AM–6:30 PM
Sunday–Tuesday	7:30 AM–5:00 PM
Wednesday	8:00 AM–3:00 PM

Social Media

The Society staff will be updating the BPS Facebook page, Twitter feed, Instagram account, and blog with Annual Meeting information throughout the meeting. Follow us on:

Twitter: @BiophysicalSoc, use hashtag #bps16
Facebook: www.facebook.com/biophysicalsociety
Blog: biophysicalsociety.wordpress.com
Instagram: biophysicalsociety

Society Meeting Office, Room 509A

Friday	3:00 PM–5:00 PM
Saturday	8:00 AM–6:30 PM
Sunday–Tuesday	7:30 AM–5:00 PM
Wednesday	8:00 AM–3:00 PM

Speaker Ready Room, Room 503

We highly encourage all presenters in Symposia, Workshops, and Platform sessions to visit the Speaker Ready Room one day prior to their scheduled presentation time. This room will be set up for your use, and will contain several screens and data projectors to allow you the opportunity to review your material prior to your scheduled presentation time slot. All speakers must bring their own laptops. An audio/visual technician will be available during room hours to assist you in setting up your laptop with the data projector and to answer any questions. As a courtesy to other presenters, please limit your viewing time to five minutes during peak times. Audio-visual technicians will be available during the hours listed below to answer questions.

Saturday–Tuesday	8:00 AM–6:30 PM
Wednesday	8:00 AM–1:00 PM

Data projectors will be provided in all session rooms in the Los Angeles Convention Center. The data projectors will be compatible with both Windows and Mac laptops. Speakers must bring their own computers. The Society does not provide laptops for those with flash drives or other storage devices.

Transportation

Taxis

Taxis will be available from the West Lobby at the Los Angeles Convention Center.

United Taxi	323-934-6700
LA Yellow Cab	310-424-2222
Beverly Hills Cab Co	310-205-0252
LA Taxi	310-598-0665

Undergraduate Student Lounge, Room 508ABC

Sponsored by the Education Committee, this special space is reserved for undergraduate meeting attendees looking for a place to relax or catch up on coursework they may be missing while at the Annual Meeting.

Sunday–Tuesday	8:00 AM–6:00 PM
Wednesday	8:00 AM–12:00 NOON

Committee Meetings

All rooms are located in the *Los Angeles Convention Center* unless noted otherwise.

Friday, February 26

3:00 PM–4:30 PM
New Council Orientation
J.W. Marriott, Plaza III

5:00 PM–9:00 PM
Joint Council Reception, Dinner, and Meeting
J.W. Marriott, Plaza I & II

Saturday, February 27

8:30 AM–11:00 AM
Joint Council Meeting (continued)
J.W. Marriott, Plaza I & II

Sunday, February 28

8:30 AM–10:30 AM
CID Committee Meeting
Room 506

10:30 AM–12:00 PM
International Relations Committee Meeting
Room 410

12:15 PM–2:15 PM
Public Affairs Committee Meeting
Room 506

3:30 PM–5:00 PM
Early Careers Committee Meeting
Room 506

6:00 PM–10:00 PM
Biophysical Journal Editorial Board Dinner
LA City Club

Monday, February 29

8:30 AM–10:30 AM
CPOW Committee Meeting
Room 506

3:00 PM–5:00 PM
Membership Committee Meeting
Room 506

Tuesday, March 1

8:00 AM–9:00 AM
Biophysical Society Business Meeting
Room 404AB

9:00 AM–10:30 AM
Subgroup Chairs Meeting
Room 510

3:00 PM–5:00 PM
Education Committee Meeting
Room 506

6:00 PM–10:00 PM
Publications Committee Meeting
J.W. Marriott, Olympic II

Wednesday, March 2

8:00 AM–11:00 AM
New Council Meeting
Room 510

The Biophysical Society would like to thank Society members who serve on Council or Committee for their dedication and efforts.

Professional Development & Educational Sessions

The Society's committees have planned several professional development activities to take place during the Annual Meeting. Below is a schedule of all of those activities. Detailed descriptions of the sessions can be found in the daily program. In addition, a student lounge for undergraduates will be available Sunday, February 28, to Wednesday, March 2, in Room 508ABC.

Sessions in italics will be held in Career Center, Room 518.

Saturday, February 27, 2016

3:00 PM–4:00 PM	*Networking: Optimizing Your Time at BPS 2016*
4:00 PM–5:00 PM	Undergraduate Mixer and Poster Fest

One-on-One Resume and Career Counseling*
1:00 PM–2:40 PM • 4:30 PM–5:30 PM

Sunday, February 28, 2016

7:30 AM–8:30 AM	Postdoctoral Breakfast
8:00 AM–8:30 AM	*Career Q&A with Joe Tringali*
9:00 AM–10:00 AM	*Selling Yourself to the Life Sciences Industry*
10:30 AM–11:30 AM	*Leveraging Social Media for Networking and Career Advancement*
11:30 AM–1:00 PM	Undergraduate Student Pizza "Breakfast"
11:30 AM–5:00 PM	Colleges in the Community Day
12:00 NOON–1:00 PM	*Creating and Using an Effective CV/Résumé*
1:00 PM–2:30 PM	The World Outside the Lab: Many Ways to Use Your PhD Skills in Industry
1:00 PM–3:00 PM	Graduate & Postdoc Institution Fair
2:00 PM–3:30 PM	Teaching Science Like We Do Science
2:30 PM–3:30 PM	*Networking for Nerds*
2:30 PM–4:00 PM	Transparency, Reproducibility, and the Progress of Science
4:00 PM–5:00 PM	*Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)*
5:00 PM–7:00 PM	PI to PI, a Wine & Cheese Mixer

One-on-One Resume and Career Counseling*
8:30 AM–1:00 PM • 2:30 PM–6:00 PM

Monday, February 29, 2016

7:30 AM–8:30 AM	Graduate Student Breakfast
8:00 AM–8:30 AM	*Career Q&A with Joe Tringali*
10:00 AM–11:00 AM	*Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)*
11:30 AM–12:30 PM	*Leveraging Social Media for Networking and Career Advancement*
1:00 PM–3:00 PM	NSF Grant Writing Workshop
1:30 PM–3:00 PM	Biophysics 101: Forster Resonance Energy Transfer
1:30 PM–3:00 PM	Industry Panel
2:15 PM–3:45 PM	How to Get Your Scientific Paper Published
2:30 PM–3:30 PM	Speed Networking
2:30 PM–3:30 PM	*Selling Yourself to the Life Sciences Industry*
2:30PM–4:00 PM	Hiring, Firing, and Beyond: How to be an Effective Supervisor
2:30 PM–4:00 PM	The Science of Hollywood
4:00 PM–5:00 PM	*Successfully Navigating the International Job Search*

One-on-One Resume and Career Counseling*
8:30 AM–10:00 AM • 11:30 AM–12:30 PM • 2:00 PM–5:20 PM

Tuesday, March 1, 2016

8:00 AM – 8:30 AM	*Career Q&A with Joe Tringali*
9:30 AM – 10:30 AM	*Career Planning and Job Searching for Science Professionals: Academic Opportunities*
12:00 NOON–1:30 PM	Research Programs at PUIs: Finding, Establishing, and Maintaining a Program
12:00 NOON–2:00 PM	Postdoc to Faculty Q&A: Transitions Forum and Luncheon**
1:00 PM–3:00 PM	Industry and Agency Opportunities Fair
1:00 PM–3:00 PM	GMOs, Severe Weather, and Public Opinion
2:30 PM–3:30 PM	*Creating and Using an Effective CV/Résumé*
2:30 PM–4:00 PM	Postdoc to Faculty: Setting Up a Lab
3:00 PM–4:00 PM	The Committee for Inclusion and Diversity Networking Event: Resources and Opportunities

One-on-One Resume and Career Counseling*
8:00 AM–9:00 AM • 11:00 AM–1:00 PM • 4:00 PM–5:00 PM

* Slots for the one-on-one resume and career counseling sessions are available on a first-come, first-served basis and fill up quickly. You may sign up for a slot beginning at 12:00 NOON on Saturday, February 27, in the Career Center, Room 518. Please come prepared with resumes, CVs, and other appropriate materials.

** This event requires pre-registration. If space is available, individuals who have not pre-registered may attend. Please stop by the event at the beginning of the session to see if space is available.

Career Center Information

Room 518

Alaina G. Levine is an award-winning entrepreneur, science journalist, STEM careers consultant, professional speaker and corporate comedian. Her book, *Networking for Nerds*, was published by Wiley in 2015. As President of Quantum Success Solutions, she has been advising scientists and engineers about their careers for over 15 years. She has given over 600 workshops for clients in the US, Europe, Canada, & Mexico, and is the author of over 250 articles in publications like Science, Nature, World Economic Forum, Smithsonian, Scientific American & IEEE Spectrum. As a science careers journalist, Levine researches employment trends in STEM fields and delivers up-to-date information about career issues from interviews with hiring managers, decision-makers, and recruiters in myriad industries. Levine has also served as a Contributor to National Geographic and currently pens career columns for *Physics Today* and *APS News*.

Joe Tringali is a seasoned contract recruiter who has developed overall recruitment strategies for his clients and subsequently worked with internal hiring organizations to meet their staffing requirements for more than two decades. He has provided onsite service to numerous biotechnology clients, including Biogen Idec, Millennium Pharmaceuticals, Ariad Pharmaceuticals, Creative Biomolecules/Stryker, TKY/Shire and Genetics Institute/Wyeth/Pfizer. He also operates a highly ethical and successful contingency recruiting firm that serves the Boston biotechnology community. He works with several clients to help them fill difficult staffing needs in the area of Research/Development, Clinical Development and Regulatory Affairs. In addition, Tringali is an invited speaker at several annual scientific conferences and research institutes where he conducts career workshops for the attending scientific community.

Job Postings

Employers

Stop by the Career Center to post your job opening today! All attendees will have access to your job posting while at the meeting and your job will be posted on our online Job Board as well. Search resumes for a perfect fit and schedule an interview while you're onsite at the meeting.

Job Applicants

Looking for a job in biophysics? Stop by the Career Center and upload your resume for employers to view on the Job Board both onsite and online. You may also apply for posted jobs.

EDUCATION

Sunday

Shawn M. Costello, Johns Hopkins University
305-Pos, B85
A COMPUTATIONAL MODEL FOR MEMBRANE PROTEIN FLUX ACROSS THE BACTERIAL PERIPLASM.

Benjamin Drum, University of Washington
653-Pos, B433
OXIDATIVE STRESS IN MYOCARDIAL INFARCTION DISRUPTS MICROTUBULE TRAFFICKING, REDUCING TRANSIENT OUTWARD CURRENT DENSITY.

Xiao Fu, National Institute of Biomedical Imaging and Bioengineering, NIH
854-Pos, B634
BIO-AFM OF CANCER CELLS AND MULTIFUNCTIONAL THERANOSTICS.

Margaret Hauser, University of California, Berkeley
778-Pos, B558
GRAPHENE-ENABLED ELECTRON MICROSCOPY AND CORRELATED SUPER-RESOLUTION MICROSCOPY OF WET CELLS.

Marilyn E. Holt, Vanderbilt University
117-Plat
CRACKING OPEN A MOLECULAR CALCULATOR: DNA CHARGE TRANSPORT AND PRIMASE.

Zachary I. Imam, University of Texas, Austin
368-Pos, B148
STERIC PRESSURE AMONG MEMBRANE-BOUND POLYMERS OPPOSES LIPID PHASE SEPARATION.

Zeinab Jahed, University of California, Berkeley
133-Plat
MOLECULAR MECHANISMS OF MECHANOTRANSDUCTION THROUGH LINC COMPLEXES.

Agnieszka A. Kendrick, University of Colorado, Denver
737-Pos, B517
CD147 REGULATES CELL METABOLISM IN PANCREATIC CANCER VIA TARGETING OF MULTIPLE SMALL MOLECULE TRANSPORTERS TO THE CELL MEMBRANE.

Iga Kucharska, University of Virginia School of Medicine
315-Pos, B95
NMR SOLUTION STRUCTURE AND EXTRACELLULAR LOOP DYNAMICS OF THE OUTER MEMBRANE PROTEIN OPRG OF PSEUDOMONAS AERUGINOSA EXPLAIN TRANSPORT OF SMALL AMINO ACIDS.

Xubo Lin, University of Texas Medical School, Houston
370-Pos, B150
ORDER DIFFERENCES BETWEEN COEXISTING LIQUID PHASES DRIVEN BY LIPID UNSATURATION DETERMINE PHASE SEPARATION IN BIOMIMETIC MEMBRANES.

Drew Marquardt, University of Graz, Austria
96-Plat
A DEMONSTRATION OF LIPID FLIP-FLIP IN FREE-FLOATING LIPOSOMES.

Aiden M. McKenzie, James Madison University
102-Plat
ULTRAFAST LIMITS OF PHOTO-INDUCED ELECTRON TRANSFER RATES IN PPCA, A MULTI-HEME C-TYPE CYTOCHROME.

Eshan Mitra, Cornell University
449-Pos, B229
INVESTIGATING MOLECULAR MECHANISMS OF IGE-MEDIATED SIGNALING AT SUPER RESOLUTION.

Kelly O'Conner, The College of New Jersey
739-Pos, B519
MAPPING NEURONAL CONNECTIVITY USING LASER PHOTOSTIMULATION AND CALCIUM IMAGING.

Mohan R. Pradhan, Bioinformatics Institute, A*STAR, Singapore
288-Pos, B68
DYNAMICS OF AGGREGATING MUTANTS OF THE P53 DNA BINDING DOMAIN REVEAL A NOVEL "DRUGGABLE" POCKET.

Scott Rayermann, University of Washington
386-Pos, B166
INVESTIGATING LARGE SCALE LIQUID-LIQUID PHASE SEPARATION IN A BIOLOGICAL MEMBRANE.

Hannah H. Tuson, University of Michigan
832-Pos, B612
SINGLE-MOLECULE FLUORESCENCE IMAGING REVEALS THE DYNAMICS OF STARCH CATABOLISM PROTEINS IN THE HUMAN MICROBIOME BACTERIUM BACTEROIDES THETAIOTAOMICRON.

Michael P. Vigers, Montana State University
859-Pos, B639
CHARACTERIZING BIOFILM EXTRACELLULAR MATRICES WITH MECHANICAL MEASUREMENT TECHNIQUES.

Monday

David W. Baggett, University of Washington
1589-Pos, B566
RATIONAL METHODS TO PHARMACOLOGICALLY TARGET IDPS: DEVELOPING MODULATORS OF TAU AGGREGATION.

Mohammad Bonakdar, Virginia Tech
1640-Pos, B617
MONITORING LESION DEVELOPMENT DURING IRREVERSIBLE ELECTROPORATION TREATMENT USING ELECTRICAL IMPEDANCE SPECTROSCOPY.

Divya Duggal, University of North Texas Health Science Center
1457-Pos, B434
CONTRACTILE DIFFERENCES IN LEFT AND RIGHT VENTRICLES OF HEALTHY HUMAN HEARTS.

Andrew M. Fuchs, University of Wisconsin, Madison
1168-Pos, B145
NASCENT PROTEINS INTERACT WITH KEY REGIONS OF THE OUTER SURFACE OF THE RIBOSOME.

Leland B. Gee, University of California, Davis
1592-Pos, B569
A GATED SUBSTRATE CHANNEL REVEALED IN NITROGENASE THROUGH A COMBINED IR AND MOLECULAR DYNAMICS STUDY.

Bence Hegyi, University of California, Davis
1347-Pos, B324
CAMKII INHIBITOR KN-93 DIRECTLY BLOCKS IKR IN CARDIAC MYOCYTES.

Stephania Irwin, University of Alberta
1143-Pos, B120
INFLUENCE OF FAMILIAL PARKINSON'S DISEASE MUTATIONS ON MITOCHONDRIAL LOCALIZATION AND SECONDARY STRUCTURE OF PINK1.

Pei-I Ku, University of Utah
1072-Pos, B49
REGULATION OF ALIX DURING EXOCYTIC VESICLE RELEASE AND ASSEMBLY OF ESCRT PROTEINS ON THE PLASMA MEMBRANE.

Jayson V. Lingan, University of Rochester Medical Center
1518-Pos, B495
PERMEABILITY TRANSITION PORE CLOSURE INCREASES MITOCHONDRIAL MATURATION AND MYOCYTE DIFFERENTIATION IN THE NEONATAL HEART.

William Marsiglia, New York University
1097-Pos, B74
NMR EXPERIMENTS ON WILD-TYPE AND MUTANT FIBROBLAST GROWTH FACTOR RECEPTOR KINASES REVEAL CONFORMATIONAL DYNAMICS ASSOCIATED WITH ENZYME ACTIVATION.

Favinn A. Maynard, University of Colorado, Denver
1258-Pos, B235
MECHANISM OF STRONG MEMBRANE BINDING BY SYNAPTOTAGMIN 7 C2A DOMAIN: INSIGHT FROM MUTATION AND LIPID COMPOSITION DEPENDENCE.

Joshua Mayourian, Icahn School of Medicine at Mount Sinai
1340-Pos, B317
MODELING ELECTROPHYSIOLOGICAL INTERACTIONS BETWEEN MESENCHYMAL STEM CELLS AND CARDIOMYOCYTES FOR IMPROVED CELL DELIVERY CARDIOTHERAPEUTICS.

Keith J. Mickolajczyk, Pennsylvania State University
961-Plat
KINETICS OF NUCLEOTIDE-DEPENDENT STRUCTURAL TRANSITIONS IN THE KINESIN-1 HYDROLYSIS CYCLE.

Rami Musharrafieh, University of Arizona
1279-Pos, B256
COMPUTATIONAL AND EXPERIMENTAL STUDIES OF LIPID-PROTEIN INTERACTIONS IN BIOMEMRANE FUNCTION.

Premila Samuel, Rice University
1043-Pos, B20
AN IN VITRO INVESTIGATION OF GLOBIN FOLDING AND EXPRESSION.

Caitlin E. Scott, University of Kentucky
1039-Pos, B16
MOLECULAR DYNAMICS STUDY OF DIVALENT ION COORDINATION IN EF HAND PROTEINS.

M. de la Encarnacion Solesio Torregrosa, New York University College of Dentistry
1524-Pos, B501
CONTRIBUTION OF INORGANIC POLYPHOSPHATE TOWARDS REGULATION OF MITOCHONDRIAL FREE CALCIUM.

Cholpon Tilegenova, Texas Tech University Health Sciences Center
1370-Pos, B347
ELUCIDATION OF MOLECULAR MECHANISM UNDERLYING KCSA'S HYSTERETIC GATING BEHAVIOR.

Yan Yan, Emory University
1173-Pos, B150
HU PROTEIN AND DNA SUPERCOILING DRAMATICALLY ENHANCE LAC-REPRESSOR-MEDIATED DNA LOOPING.

Fabio C. Zegarra, University of Houston
1051-Pos, B28
THE COMBINED EFFECT OF MACROMOLECULAR CROWDING AND CHEMICAL INTERFERENCE ON THE DYNAMICS OF APOAZURIN FOLDING.

Qiangjun Zhou, Stanford University
1561-Pos, B538
MOLECULAR MECHANISM OF THE SYNAPTOTAGMIN-SNARE COMPLEX THAT IS ESSENTIAL FOR SYNCHRONOUS SYNAPTIC NEUROTRANSMITTER RELEASE.

Tuesday

Sinan Can, University of California, Berkeley
2259-Pos, B403
KINESIN'S FRONT HEAD IS GATED BY THE BACKWARD ORIENTATION OF ITS NECK LINKER.

Irem Celen, University of Delaware
1727-Plat
MULTI-SCALE SPATIO-TEMPORAL DYNAMICS OF HISTONE MODIFICATIONS.

Robert E. del Carlo, University of Nevada School of Medicine
2161-Pos, B305
POINT-MUTATIONS IN SKELETAL MUSCLE VOLTAGE-GATED SODIUM CHANNELS CONFER RESISTANCE TO TETRODOTOXIN: BUT AT A COST?

Jeevan B. Gc, Florida International University
1862-Pos, B6
INTERDOMAIN INTERACTIONS AND THE MECHANISM OF STRUCTURAL TRANSFORMATION IN RFAH.

Nnanya U. Kalu, The Catholic University of America
2094-Pos, B238
DOES LIPID COMPOSITION REGULATE ANTHRAX TOXIN UPTAKE?

Minmin Luo, Louisiana State University School of Medicine and Health Sciences Center
2266-Pos, B410
TRAPPING THE TRANSITION STATE OF KINESIN-5 PRODUCES A DIFFERENT MULTIMOTOR FORCE OUTCOME THAN INHIBITING PRODUCT RELEASE.

Bhavik Nathwani, Dana-Farber Cancer Institute
2470-Pos, B614
MULTIPLEXED MECHANOCHEMISTRY ASSAY - A TOOL FOR MULTIPLEXED SINGLE MOLECULE BOND RUPTURE FORCE STUDIES.

Piere Rodriguez-Aliaga, University of California, Berkeley
1928-Pos, B72
KEY ROLES OF TRANSLOCATING LOOPS IN THE MECHANOCHEMICAL COUPLING AND POWER PRODUCTION OF A AAA^+ PROTEASE MACHINE.

Zackary N. Scholl, Duke University
1940-Pos, B84
DIRECT OBSERVATION OF MULTIMER STABILIZATION IN THE MECHANICAL UNFOLDING PATHWAY OF A PROTEIN UNDERGOING OLIGOMERIZATION.

Agila Somasundaram, NIH
2127-Pos, B271
INVESTIGATING PROTEIN DYNAMICS AT SITES OF EXOCYTOSIS IN LIVE CELLS.

Stefjord Todolli, Rutgers University
2000-Pos, B144
LINKER HISTONES AND THE DYNAMIC CHROMATIN FIBER.

Benjamin C. Walker, Indiana University
2272-Pos, B416
CHROMOKINESINS NOD AND KID USE ALTERNATIVE NUCLEOTIDE MECHANISMS AND ONE-DIMENSIONAL DIFFUSION TO TARGET MICROTUBULE PLUS ENDS.

Osman N Yogurtcu, Johns Hopkins University
1710-Plat
GOVERNING PRINCIPLES OF MULTIPROTEIN COMPLEX FORMATION ON THE CELL MEMBRANES: AN INVESTIGATION USING SINGLE-MOLECULE RESOLUTION SPATIO-TEMPORAL STOCHASTIC COMPUTER SIMULATIONS AND ANALYTICAL CALCULATIONS.

Wednesday

Martina Audagnotto, École Polytechnique Fédérale de Lausanne
2700-Pos, B77
NEW INSIGHT INTO THE CATALYTIC AND INHIBITION MECHANISM OF THE HUMAN ACYL PROTEIN THIOESTERASE.

Emily Bilyk, Saint Joseph's University
2870-Pos, B247
DETERMINING THE CQC-MEDIATED INTERACTIONS IN THE MUCIN 1 HOMODIMER.

Shelby E. Chastain, University of South Carolina
2721-Pos, B98
MULTI-TRGET THERAPEUTIC POTENTIAL OF GREEN TEA CATECHINS AND BLACK TEA THEAFLAVINS TOWARD Aβ-INDUCED SIGNAL PATHWAYS INVOLVED IN ALZHEIMER'S DISEASE.

Maryam Hashemi Shabestari, VU University, Amsterdam
2699-Pos, B76
THE ROLE OF PHOSPHORYLATION AND ACETYLATION OF TFAM IN DNA BINDING REGULATION USING SINGLE-MOLECULE MANIPULATION AND FLUORESCENCE MICROSCOPY.

Krishna Kanti Dey, Pennsylvania State University
2694-Pos, B71
IMPULSIVE ENZYMES: A NEW FORCE IN MECHANOBIOLOGY.

Ji Hoon Kim, Johns Hopkins University
2522-Plat
MECHANOBIOLOGY IN CELL-CELL FUSION: ROLES OF MYOSIN II AND SPECTRIN IN MECHANOSENSING AND FORCE GENERATION DURING CELL-CELL FUSION.

Agata K. Krenc, University of Chicago
3043-Pos, B420
FLUORESCENCE INTERFERENCE CONTRAST MICROSCOPY (FLIC) - A NEW TOOL TO STUDY THE COLLECTIVE MOTOR DYNAMICS.

Yilai Li, University of Michigan
3192-Pos. B569
SUPER-RESOLUTION IMAGING OF DNA REPLISOME DYNAMICS IN LIVE BACILLUS SUBTILIS.

Yen-Liang Liu, University of Texas, Austin
3149-Pos, B526
DYNAMICS OF EGFR TRAFFICKING FROM MEMBRANE INTO DEEP CYTOPLASM REVEALED BY A SPATIOTEMPORALLY MULTIPLEXED 3D TRACKING MICROSCOPE.

Katarina Mackova, Slovak Academy of Sciences, Slovakia
2898-Pos, B275
POSTNATAL DEVELOPMENT OF CALCIUM SIGNALING IN RAT CARDIOMYOCYTES.

Abhishek Mandal, University of Pittsburgh
2853-Pos, B230
TO UNFOLD OR NOT TO UNFOLD? STRUCTURAL INSIGHTS OF PEROXIDASE-ACTIVE CARDIOLIPIN-BOUND CYTOCHROME C BY SOLID-STATE NMR.

Sachin R. Natesh, University of Chicago
2729-Pos, B106
Aβ FIBRILS ACT AS AQUEOUS PORES: A MOLECULAR DYNAMICS STUDY.

Kelly Njine Mouapi, University of Louisville
2706-Pos, B83
TRANSGLUTAMINASE FACTOR XIII CROSS-LINKS REACTIVE GLUTAMINES IN DISORDERED REGIONS OF FIBRINOGEN αC.

Jyotsana J. Parmar, Indian Institute of Technology, Bombay
2772-Pos, B149
NUCLEOSOME KINETICS REGULATES THE BINDING TIMESCALES OF NON-HISTONE PROTEINS TO DNA SITES.

Manmeet H. Raval, Pennsylvania State University College of Medicine
3038-Pos, B415
CHARACTERIZATION OF A UNIQUE MYOSIN IIIA DEAFNESS MUTATION WHICH ENHANCES ACTIN-SLIDING VELOCITY BUT ABOLISHES FILOPODIA TIP LOCALIZATION.

Sean L. Seyler, Arizona State University
2578-Plat
QUANTIFYING MACROMOLECULAR TRANSITION PATHS WITH PATH SIMILARITY ANALYSIS.

Orrin Shindell, University of Texas, Austin
2813-Pos, B190
DYNAMICS AND STATICS IN PHASE SEPARATING, ADHERING LIPID MEMBRANES.

Wilton T Snead, University of Texas, Austin
2835-Pos, B212
MEMBRANE FISSION BY PROTEIN CROWDING.

Matthew B. Stone, University of Michigan
2866-Pos, B243
DIRECT OBSERVATION OF ORDERED AND DISORDERED MEMBRANE DOMAINS IN B CELL PLASMA MEMBRANES USING MULTI-COLOR SUPER-RESOLUTION FLUORESCENCE MICROSCOPY AND APPLICATION TO B CELL RECEPTOR SIGNALING.

Gül H. Zerze, Lehigh University
2748-Pos, B125
DYNAMICS OF CONTACT FORMATION IN DISORDERED POLYPEPTIDES.

INCLUSION AND DIVERSITY

Sunday

Crystal R. Archer, University of Texas Health Science Center, San Antonio
526-Pos, B306
BIOCHEMICAL ANALYSIS OF THE REGULATION OF KV7 CHANNELS BY PIP2 AND CALMODULIN.

Patrick C. McCarter, University of North Carolina, Chapel Hill
734-Pos, B514
TOWARD A COMPREHENSIVE MODEL OF FEEDBACK REGULATION IN A YEAST STRESS RESPONSE PATHWAY.

Hengameh Shams, University of California, Berkeley
636-Pos, B416
MOLECULAR MECHANISM OF α-ACTININ BINDING TO F-ACTIN: EFFECT OF K255E MUTATION.

Monday

Cheavar A. Blair, University of Kentucky
1456-Pos, B433
MYOCARDIUM FROM THE LEFT AND RIGHT VENTRICLES OF HUMAN HEARTS HAVE SIMILAR MECHANICAL PROPERTIES.

Theanne N. Griffith, Northwestern University
1428-Pos, B405
IDENTIFICATION OF FUNCTIONAL DETERMINANTS OF KAINATE RECEPTOR MODULATION BY AUXILIARY PROTEIN NETO2.

Vanessa P. Nguyen, University of Tennessee, Knoxville
1256-Pos, B233
A NOVEL SOLUBLE PEPTIDE WITH PH-RESPONSIVE MEMBRANE INSERTION.

Tuesday

Syed R. Ali, University of Texas Medical Branch
2169-Pos, B313
DEFINING THE PROTEIN: PROTEIN INTERACTION INTERFACE OF FGF14:NAV1.6 COMPLEX.

Kayla M. Bell, Indiana University
2267-Pos, B411
NON-CANONICAL MICROTUBULE INTERACTION BY YEAST KINESIN-5, CIN8.

Jenny V. Le, Ohio State University
2473-Pos, B617
CHARACTERIZATION OF NUCLEOSOMES USING DNA ORIGAMI.

Melanie P. Muller, University of Illinois, Urbana Champaign
2102-Pos, B246
MOLECULAR BASIS FOR LIPID SPECIFICITY OF THE COAGULATION FACTOR X MEMBRANE-BINDING DOMAIN.

Keon Reid, Emory University
2103-Pos, B247
EXPLORING THE INSERTION MECHANISM OF SVS-1 β-HAIRPIN PEPTIDE INTO AN ANIONIC LIPID BILAYER.

Wednesday

Christina M. Chisholm, University of Massachusetts Amherst
3010-Pos, B387
ELUCIDATING THE PH DEPENDENT MECHANISM OF OMPG GATING.

Christina Garza, University of Colorado, Denver
3093-Pos, B470
COMBINED QM/MM DYNAMICS SIMULATIONS OF PROTON TRANSFER IN E. COLI CLC CHLORIDE/PROTON ANTIPORTER.

Shahidul M. Islam, Sultan Qaboos University
3178-Pos, B555
STRUCTURAL-FUNCTION STUDY OF MEMBRANE PROTEINS WITH RESTRAINED-ENSEMBLE AND DUMMY SPIN-LABEL MOLECULAR DYNAMICS SIMULATIONS.

INTERNATIONAL RELATIONS

Sunday

Silvia Acosta-Gutierrez, Cagliari University, Italy
590-Pos, B370
WATER-BASED SCREENING OF ANTIBIOTICS PERMEABILITY.

Navid Bavi, Victor Chang Cardiac Research Institute, Australia
592-Pos, B372
THE N-TERMINAL HELIX ACTS AS A DYNAMIC MEMBRANE COUPLER IN THE GATING CYCLE OF THE MECHANOSENSITIVE CHANNEL MSCL.

Iván Coto Hernández, Institute for Molecular Sciences of Orsay, France
809-Pos, B589
ADVANCES IN GATED CW STED MICROSCOPY: TOWARD A VERSATILE IMPLEMENTATION.

Zeineb Es-Salah-Lamoureux, INSERM U1087/CNRS U6291
529-Pos, B309
A MOLECULAR SUBSTRATE FOR LONG QT IN HIV PATIENTS: TAT PROTEIN REDUCES IKR IN HUMAN INDUCED PLURIPOTENT STEM CELLS-DERIVED CARDIOMYOCYTES.

Barbara Geier, University of Graz, Austria
194-Plat
STRUCTURAL CHARACTERIZATION ON ASYMMETRIC LIPID VESICLES AT SUBNANOMETER RESOLUTION.

Shiraz Haron-Khun, Sackler Medical School, Tel Aviv University, Israel
162-Plat
SK4 K^+ CHANNELS REGULATE SINOATRIAL PACEMAKER AND THEIR BLOCKADE AMELIORATE ARRHYTHMIAS IN CPVT2 PATIENT-DERIVED IPSC AND IN VIVO IN CASQ2 KNOCK-IN AND KNOCK-OUT MICE.

Dong-Hwee Kim, Korea University
496-Pos, B276
MECHANICAL REGULATION OF NUCLEAR SHAPE AND VOLUME.

Helen L. Miller, University of York, United Kingdom
818-Pos, B598
DEVELOPING A SINGLE-MOLECULE FLUORESCENCE TOOL TO QUANTIFY DNA DAMAGE.

Yoshitaka Nakayama, Victor Chang Cardiac Research Institute, Australia
477-Pos, B257
THE ROLE OF THE C-TERMINAL DOMAIN ON THE GATING PROPERTIES OF CORYNEBACTERIUM GLUTAMICUM MECHANOSENSITIVE CHANNEL MSCCG.

Ruth Norman, University of Leeds, United Kingdom
460-Pos, B240
METOPROLOL REVERSES β-ADRENERGIC REMODELING IN THE FAILING RIGHT VENTRICLE OF PULMONARY ARTERY HYPERTENSIVE (PAH) RATS.

Luca Ponzoni, International School for Advanced Studies, Italy
282-Pos, B62
SPECTRUS: A DIMENSIONALITY REDUCTION APPROACH FOR IDENTIFYING DYNAMICAL DOMAINS IN PROTEIN COMPLEXES FROM LIMITED STRUCTURAL DATASETS.

Monday

Florent Delhommel, Pasteur Institute, France
1566-Pos, B543
STRUCTURAL STUDY OF WHIRLIN, A CRUCIAL PDZ CONTAINING PROTEIN INVOLVED IN THE MECHANOTRANSDUCTION OF AUDITORY HAIR CELLS.

Peter S. Hasenhuetl, Medical University of Vienna, Austria
896-Plat
DISSECTING THE CATALYTIC CYCLE OF THE SEROTONIN TRANSPORTER.

Barbora Hoffmannova, Comenius University, Slovakia
1306-Pos, B283
LOCAL CHARACTER OF RELEASE-DEPENDENT INACTIVATION OF L-TYPE CALCIUM CURRENT.

Georg Krainer, Dresden University of Technology, Germany
972-Plat
farFRET: EXTENDING THE RANGE IN SINGLE-MOLECULE FRET EXPERIMENTS BEYOND 10 NM.

Luca Lanzano, Italian Institute of Technology, Genoa
974-Plat
APPLICATION OF THE SPLIT-FLCS METHOD TO THE DETECTION OF NANOSCALE DIFFUSION IN 3D IN LIVE CELLS.

Bernhard Lehofer, Medical University of Graz, Austria
1271-Pos, B248
STRUCTURAL EFFECTS OF HIGH HYDROSTATIC PRESSURE ON HUMAN LOW DENSITY LIPOPROTEIN REVEALED BY SMALL ANGLE X-RAY AND NEUTRON SCATTERING.

Hélène Lyrmann, Saarland University, Germany
1511-Pos, B488
MODELING IMMUNE CELL MIGRATION.

Yufuku Matsushita, University of Tokyo, Japan
1109-Pos, B86
X-RAY OBSERVATION OF NOVEL NUCLEATION FACTOR IN PROTEIN SUPERSATURATED SOLUTION.

Rashmi Panigrahi, University of Alberta, Canada
1142-Pos, B119
UNDERSTANDING STRUCTURAL AND FUNCTIONAL STABILITY OF TWO RHOMBOID PROTEASES: HIGLPG AND PSAARA.

Anam Qudrat, University of Toronto, Canada
1121-Pos, B98
MODULAR ASSEMBLY OF SYNTHETIC PROTEINS THAT SPAN THE PLASMA MEMBRANE IN MAMMALIAN CELLS.

Patrice Rassam, University of Oxford, United Kingdom
1222-Pos, B199
UNRAVELING THE OUTER MEMBRANE TRANSLOCATION MECHANISM OF A PROTEIN ANTIBIOTIC USING SINGLE-MOLECULE MICROBIOLOGY AND COMPUTATIONAL BIOPHYSICS.

Masihuz Zaman, Aligarh Muslim University, India
1095-Pos, B72
BIOPHYSICAL INSIGHT OF DNA INDUCED AGGREGATION OF STEM BROMELAIN.

Tuesday

Sabareesan Ambadi Thody, Tata Institute of Fundamental Research, India
2199-Pos, B343
THE PATHOGENIC A116V MUTATION ENHANCES THE SELECTIVE ION-CHANNEL ACTIVITY AND TOXICITY OF THE PRION PROTEIN IN LIVING CELLS.

Shruti Arya, Indian Institute of Science Education and Research, Mohali
1966-Pos, B110
WATER IN AMYLOIDOGENIC INTRINSICALLY DISORDERED PROTEINS: INTERPLAY OF CONFORMATIONAL PREFERENCE AND AMYLOID AGGREGATION.

Chaitanya A. Athale, Indian Institute of Science Education and Research, Pune
2297-Pos, B441
COLLECTIVE EFFECTS OF MOTORS AND MICROTUBULES GEOMETRY IN GLIDING ASSAYS.

Ivan Haralampiev, Humboldt University of Berlin, Germany
2396-Pos, B540
TRACKING THE SWITCH OF INFLUENZA RNA GENESIS BY A NOVEL MULTIPLEXED FISH METHOD IN SINGLE CELLS.

Vikash Kumar, York University, Canada
2482-Pos, B626
MAGNETIC FOCUSING AND HYDRODYNAMIC DEFLECTION OF MICRO-PARTICLES IN A MICRODEVICE.

Reinier Oropesa-Nuñez, Italian Institute of Technology, Genoa
2456-Pos, B600
SELECTIVE INTERACTION BETWEEN TOXIC AMYLOID OLIGOMERS AND THE CELL MEMBRANE REVEALED BY INNOVATIVE AFM APPLICATIONS.

Caterina Ricci, Marche Polytechnic University, Italy
1813-Plat
STRUCTURE AND STABILITY OF HSP60 AND GROEL IN SOLUTION.

Zhaokun Zhou, University of York, United Kingdom
2460-Pos, B604
COMBINED MAGNETO-OPTICAL TWEEZERS AND SUPER-RESOLUTION FLUORESCENCE IMAGING FOR PROBING DYNAMIC SINGLE-MOLECULE TOPOLOGY OF DNA, AND PROTEIN MACHINES THAT MANIPULATE DNA TOPOLOGY.

Wednesday

Matteo Aldeghi, University of Oxford, United Kingdom
2687-Pos, B64
PREDICTING LIGAND SELECTIVITY ACROSS BROMODOMAIN FAMILIES.

Annemie Biesemans, KU Leuven, Belgium
2553-Plat
CONTROLLING THE NANOSCOPIC CONFINEMENT OF ENZYMES INSIDE CLYA NANOPORES FOR SINGLE-PROTEIN STUDIES.

Marco Castello, Italian Institute of Technology, Genoa
3199-Pos, B576
BOOST YOUR MICROSCOPE BY EXPLORING NEW DIMENSIONS.

Tao-Hsin Chang, University of Oxford, United Kingdom
2912-Pos, B289
STRUCTURAL AND FUNCTIONAL INSIGHTS OF NORRIN MIMICS WNT FOR SIGNALLING.

Pilar Cossio, Max Planck Institute of Biophysics, Germany
3126-Pos, B503
ON ARTIFACTS IN SINGLE-MOLECULE FORCE SPECTROSCOPY.

Wei Ding, Queen Mary University of London, United Kingdom
2826-Pos, B203
ATOMISTIC AND COARSE-GRAINED MOLECULAR SIMULATIONS OF MIXED LAMELLAR/NONLAMELLAR LIPID MEMBRANES.

Bárbara Gomes, Institute of Molecular Medicine, University of Lisbon, Portugal
2566-Plat
THE MECHANISM OF HIV ENTRY INHIBITION BY 25-HYDROXYCHOLESTEROL.

Deepak K. Hansda, Indian Institute of Technology, Bombay
3046-Pos, B423
EFFECT OF BRANCHING ON FORCE-VELOCITY CURVES AND LENGTH FLUCTUATIONS OF ACTIN NETWORKS.

Rikke Holm, Aarhus University, Denmark
3101-Pos, B478
RESCUE OF NA+ AFFINITY IN ASPARTATE-928 MUTANTS OF NA+,K+-ATPASE BY SECONDARY MUTATION OF GLUTAMATE-314.

Ishutesh Jain, Indian Institute of Technology, Bombay
3045-Pos, B422
DYNAMIC INSTABILITY EMERGES FROM MICROMECHANICS AND CHEMICAL KINETICS OF MICROTUBULE PROTOFILAMENTS.

Yadira Medina Guevara, University of Sao Paulo, Brazil
2664-Pos, B41
MODELING PROTEIN- DNA INTERACTION ON GROUNDS OF QUANTUM ENTANGLEMENT.

Yury A. Nikolaev, Victor Chang Cardiac Research Institute, Australia
3015-Pos, B392
MECHANOSENSITIVITY OF TRPC6 ION CHANNEL RECONSTITUTED IN THE LIPOSOMES.

Michele Oneto, Italian Institute of Technology, Genoa
3198-Pos, B575
3D MULTICOLOR STED NANOSCOPE A SUPER-RESOLUTION APPROACH TO MAMMALIAN PHOTORECEPTOR.

SS Soumya, Indian Institute of Technology, Bombay
3082-Pos, B459
COHERENT MOTION OF MONOLAYER SHEETS UNDER ACTIVE AND PASSIVE CONFINEMENT: FROM BUILD-UP TO CONSEQUENCE.

PROFESSIONAL OPPORTUNITIES FOR WOMEN

Sunday

Jana Broecker, University of Toronto, Canada
208-Plat
ADVANCES IN IN SITU X-RAY CRYSTALLOGRAPHY OF MEMBRANE PROTEINS.

Ana M. Melo, University of Pennsylvania
197-Plat
DETERMINING A TOPOLOGICAL MODEL FOR TAU BOUND TO TUBULIN HETERODIMERS.

Rebecca J. Moen, Minnesota State University, Mankato
763-Pos, B543
DETECTING STRUCTURAL CHANGES IN MYOSIN USING BIFUNCTIONAL SPIN LABELS.

Sonia Troeira Henriques, University of Queensland, Australia
399-Pos, B179
STRUCTURE-ACTIVITY RELATIONSHIP STUDIES REVEAL THAT THE SPIDER TOXIN PROTX-II HAS UNUSUAL MEMBRANE-BINDING PROPERTIES AND INHIBITS NAV1.7 CHANNEL AT THE MEMBRANE SURFACE.

Monday

Nabanita Das, University of Colorado, Boulder
1084-Pos, B61
ACTIVATION OF TOLL-LIKE RECEPTOR 5 IMMUNE SIGNALING BY HMGB1.

Sherry S.W. Leung, Simon Fraser University, Canada
1228-Pos, B205
DEVELOPMENT OF LIPID-BASED DRUG DELIVERY SYSTEMS FOR GENE THERAPY: PHYSICOCHEMICAL CHARACTERIZATION OF CHARGED LIPID INTERACTIONS.

Sabine Lotteau, University of Leeds, United Kingdom
1319-Pos, B296
SIMVASTATIN HAS PROFOUND EFFECTS ON SARCOPLASMIC RETICULUM CA^{2+} LEAK IN SKELETAL BUT NOT CARDIAC MUSCLE: A MECHANISM FOR MYOPATHY.

Gaelle Robin, University of California, Davis
1568-Pos, B545
FRAGILE X~ASSOCIATED TREMOR~ATAXIA SYNDROME: LINKING CA^{2+} DYSREGULATION AND DNA DAMAGE RESPONSES.

Adelene Sim, Bioinformatics Institute, A*Star, Singapore
1198-Pos, B175
MODELING PROTEIN-RNA COMPLEXES.

Jinfeng Teng, University of Texas Southwestern Medical Center
1413-Pos, B390
A LIPID-EXPOSED RESIDUE AT THE START OF S4-S5 LINKER CONTROLS TRPV4 GATING.

Xiaohua Zhang, Cardiac Signaling Center of University of South Carolina, Medical University of South Carolina, and Clemson University
1291-Pos, B268
NEW TARGETED CA^{2+} PROBES REVEAL MITOCHONDRIAL CA^{2+} SIGNALING PLAYS A CRITICAL ROLE IN RAT SINOATRIAL (SA) NODAL PACING.

Tuesday

Jemma L. Gatliff, Royal Veterinary College, United Kingdom
2330-Pos, B474
REGULATION OF MITOCHONDRIAL SIGNALING AND QUALITY CONTROL BY THE 18KDA TRANSLOCATOR PROTEIN (TSPO).

Whasil Lee, Duke University
1721-Plat
INFLAMMATORY CYTOKINE IL-1α UP-REGULATES PIEZO1 AND HYPER-SENSITIZES CHONDROCYTES TO COMPRESSION.

Eri Nakatani-Webster, University of Washington
1967-Pos, B111
ILL-POSED? NOT A PROBLEM: INFERRING MECHANISMS OF ACTION FROM AMYLOID FORMATION KINETICS USING APPROXIMATE BAYESIAN COMPUTATION.

Wednesday

Sonya M. Hanson, Memorial Sloan Kettering Cancer Center
2690-Pos, B67
DISSECTING THE CONTRIBUTION OF KINASE CONFORMATIONAL REORGANIZATION ENERGIES TO INHIBITOR SELECTIVITY.

Verena Ruprecht, Institute of Science and Technology, Austria
3075-Pos, B452
ACTOMYOSIN NETWORK CONTRACTILITY TRIGGERS A STOCHASTIC TRANSFORMATION INTO HIGHLY MOTILE AMOEBOID CELLS.

Monica Sala-Rabanal, Washington University School of Medicine
2991-Pos, B368
SECRETED HUMAN CLCA1 ACTIVATES CALCIUM-DEPENDENT CHLORIDE CURRENTS THROUGH DIRECT BINDING OF ITS VWA DOMAIN WITH AN EXTRACELLULAR LOOP OF TMEM16A/ANOCTAMIN 1.

Ancillary Meetings

Society of General Physiologists Council Meeting
Saturday, February 27, 10:00 AM–1:00 PM
Room 510

Korean Biophysicists Meeting
Sunday, February 28, 5:00 PM–6:00 PM
Room 403B

Biophysics Austria Mixer
Sunday, February 28, 6:00 PM–7:00 PM
Room 404AB

SOBLA (The Society for Latinoamerican Biophysicists) Meeting
Tuesday, March 1, 8:00 PM–10:00 PM
Room 409AB

How to Navigate the BPS Annual Meeting

About the Meeting

The Biophysical Society (BPS) Annual Meeting is the largest gathering of biophysicists in the world, bringing together **more than 7,000 researchers** from **over 45 countries**. With over 200 sessions and more than 4,500 poster presentations, it can be overwhelming! Use this Guide to help you get the most from your attendance at this world famous event.

Scientific Sessions

The BPS Annual Meeting is known for its many types of sessions, often taking place concurrently. Each type has its own distinct scope, format, and speaker makeup.

Symposia
- Broad topics featuring talks by leading researchers presenting new research
- Four speakers per two-hour session
- Two-to-three held concurrently

Platforms
- More focused topics selected from among submitted abstracts held concurrently with symposia
- Eight speakers per two-hour session, including younger researchers
- Approximately six held concurrently during each symposium session

Workshops
- Technique-oriented sessions
- Four-to-eight speakers per two-hour session
- Two-to-four held concurrently on Tuesday evenings

Posters
- Most interactive and well attended scientific sessions of the meeting
- Poster presentations held Sunday–Wednesday, with no competing scientific programming
- Late abstracts are scheduled each day during the same time as abstracts submitted by the regular deadline

Subgroup Programs
- Scientific sessions held on the Saturday before the start of the Meeting
- Feature speakers presenting the latest research in biophysics subfields

National Lecture
- One-hour presentation by a world-renowned biophysicist

Professional Development

The Annual Meeting includes daily sessions and resources for the professional development of biophysicists at all stages of their careers: undergrads and grad students, early and mid-stage, and senior scientists. These sessions are held before, after, and in-between the scientific sessions.

Career Center
Open all day, includes job and resume postings, interview scheduling, CV reviews, and job-related workshops

Breakfasts
For students and postdocs to network and learn about available resources

Panel Discussions
Expert presentations on career options, guidance on career transitions, funding resources, science policy

Workshops
On publishing, teaching and science education, social media, grant writing, communication, and outreach

Exhibits
Over 200 displays of new equipment, publications, and products

Exhibitor Presentations
Hands-on demonstrations conducted by exhibiting companies of scientific products and their use

Social and Networking Events

Opening Reception
- Hors d'oeuvres and cash bar
- First-Time Attendee Drop-By for help in navigating the meeting

Daily Meet-Ups
- Local student and early career attendees available each day at the Society Booth to help you explore local restaurants and neighborhoods

Monday Evening Reception
- The place to meet, drink, eat, dance, and socialize with other meeting attendees
- Photo Booth to capture memories
- Lounge with soft music for those who prefer a more quiet atmosphere

New Member Welcome
- Opportunity to meet and socialize with new members and members of Society governance and committees

Friday, February 26, 2016

Daily Program Summary

All rooms are located in the *Los Angeles Convention Center* unless noted otherwise.

8:00 AM–5:00 PM	**Exhibitor Registration**	**West Lobby**
8:00 AM–5:00 PM	**Drug Discovery Satellite Meeting**	**Room 411**
3:00 PM–4:30 PM	**New Council Orientation**	**J.W. Marriott - Plaza III**
3:00 PM–5:00 PM	**Registration Open**	**West Lobby**
5:00 PM–9:00 PM	**Joint Council Reception, Dinner, and Meeting**	**J.W. Marriott - Plaza I & II**

Friday, February 26

Exhibitor Registration

8:00 AM–5:00 PM, WEST LOBBY

Drug Discovery Satellite Meeting XVI

8:00 AM–5:00 PM, ROOM 411

Sponsored by Axiogenesis, Sophion together with Biolin Scientific, Cellular Dynamics International, Charles River, Maxcyte Inc, Molecular Devices LLC, Nanion Technologies GmBH

Ion channels are an important class of therapeutic drug targets, and mutations in ion channel genes are found to be responsible for an increasing number of diseases. While conventional electrophysiological techniques permit the most detailed and direct study of ion channel function, they are limited due to the manual nature of the method and their low throughput. Because of this, ion channels remain an underrepresented target class for drug discovery. But the advent of automated electrophysiological systems with higher throughput has begun to revolutionize ion channel drug discovery. This symposium focuses on the emerging technology of automated electrophysiology and how it is changing the face of ion channel drug discovery. Speakers from industry and academia will discuss the development and potential of these new technologies, present experimental results obtained using these systems and discuss the impact these technologies are having on ion channel drug discovery.

Co-Chairs
Niels Fertig, Nanion Technologies GmbH
Jeff Webber, Molecular Devices LLC
Eugenia Jones, Cellular Dynamics International
Richard Kondos, Sophion – Biolin Scientific

7:30 AM REGISTRATION

8:00 AM INTRODUCTION

SESSION I
Chair, Niels Fertig

8:30 AM
WETWARE IN THE LOOP: REALTIME MODELLING USING DYNAMIC CLAMP FOR SAFETY AND DRUG DISCOVERY. **Steve Petrou**

9:00 AM
GIGASEAL AUTOMATED PATCH-CLAMP RECORDINGS OF ION CHANNEL ACTIVITY EXPRESSED IN CELL LINES AND NATIVE CELLS. **Arturo Picones**

9:30 AM
NEXT GENERATION ELECTROPHYSIOLOGY: COMPARISON OF PLATFORMS TO PROGRESS EFFICACY AND LIABILITY CAPABILITY AT ASTRAZENECA. **Matthew Bridgland-Taylor**

10:00 AM BREAK

SESSION II
Chairm, Jeff Webber

10:30 AM
OPTICAL METHODS FOR EXAMINING EXCITATION-CONTRACTION COUPLING IN IPS-DERIVED CARDIOMYOCYTES AND THEIR APPLICATION TO MEDIUM/HIGH THROUGH-PUT ASSAYS. **Godfrey Smith**

11:00 AM
IDENTIFICATION AND CHARACTERIZATION OF NOVEL NMDA RECEPTOR POSITIVE ALLOSTERIC MODULATORS (PAMS). **David Hackos**

11:30 AM
AUTOMATED ELECTROPHYSIOLOGY FOR TRANSLATIONAL CARDIAC MUSCLE. **Liudmila Polonchuk and Ken Wang**

12:00 PM LUNCH (PROVIDED)

SESSION III
Chair, Eugenia Jones

1:00 PM
THE COMBINED USE OF ION CHANNEL STUDIES AND HUMAN IPS-DERIVED CARDIAC MYOCYTES IN PRECLINICAL SAFETY ASSESSMENT. **Alison Easter**

1:30 PM
INVESTIGATION OF POTASSIUM CHANNEL FUNCTION UTLIZING HUMAN iPSC-DERIVED NEURONS. **Matthew Fuller**

2:00 PM
AUTOMATED PATCH CLAMP ASSAYS FOR STATES DEPENEDENT ION CHANNEL MODULATORS. **Rok Cerne**

2:30 PM
AUTOMATED ELECTROPHYSIOLOGY AS A PLATFORM FOR BIOPHYSICAL CHARACTERIZATION AND ION CHANNEL DRUG DISCOVERY. **Sophia Lin**

3:00 PM BREAK

SESSION IV
Chair. Richard Kondo

3:30 PM
HUMAN iPS CELL-DERIVED CARDIOMYOCYTES AS A MODEL FOR CHARACTERIZATION OF NEW LQT SYNDROM MUTATION. **Roselle Gélinas**

4:00 PM
COUPLING HIGH CAPACITY ELECRROPORATION WITH AUTOMATED PATCHY CLAMP RECORDING FOR FUNCTONAL ANNOTATION OF HUMAN ION CHANNEL VARIANTS. **Alfred George**

4:30 PM
Speaker to be announced

5:00 PM CLOSING REMARKS
Richard Kondo

New Council Orientation

3:00 PM - 4:30 PM, J.W. MARRIOTT - PLAZA III

Registration Open

3:00 PM - 5:00 PM, WEST LOBBY

Joint Council Reception, Dinner, and Meeting

5:00 PM - 9:00 PM, J.W. MARRIOTT - PLAZA I & II

Saturday, February 27, 2016

Daily Program Summary

All rooms are located in the *Los Angeles Convention Center* unless noted otherwise.

8:00 AM–6:30 PM	Registration/Exhibitor Registration	West Lobby
8:30 AM–11:00 AM	Joint Council Meeting	J.W. Marriott - Plaza I & II
9:00 AM–7:00 PM	Mechanobiology Subgroup	Room 403B
9:00 AM–7:00 PM	Bioenergetics Subgroup	Room 403A
9:15 AM–1:45 PM	Molecular Biophysics Subgroup	Room 502A
10:00 AM–1:00 PM	Society of General Physiologists Council Meeting	Room 510
10:00 AM–6:30 PM	Intrinsically Disordered Proteins Subgroup	Room 515A
10:45 AM–6:45 PM	Biopolymers in vivo Subgroup	Room 501ABC
12:00 PM–6:00 PM	Nanoscale Biophysics Subgroup	Room 515B
1:00 PM–5:00 PM	Membrane Structure and Assembly Subgroup	Petree Hall D
1:00 PM–5:00 PM	Biological Fluorescence Subgroup	Room 502B
1:00 PM–6:00 PM	Membrane Biophysics Subgroup	Petree Hall C
1:00 PM–6:15 PM	Motility Subgroup	Room 408A
1:00 PM–6:30 PM	Exocytosis & Endocytosis Subgroup	Room 511ABC
1:30 PM–4:45 PM	Permeation & Transport Subgroup	Room 408B
3:00 PM–4:00 PM	Career Center Workshop Networking: Optimizing Your Time at BPS 2016	Room 518
3:00 PM–5:00 PM	Bioengineering Subgroup	Room 409AB
4:00 PM–5:00 PM	Undergraduate Mixer and Poster Fest	West Lobby Entrance
5:00 PM–7:00 PM	Opening Mixer	Concourse Foyer
5:00 PM–7:00 PM	First-Time Attendee Drop By	West Lobby Entrance
6:00 PM–10:00 PM	Poster Viewing	West Hall
6:30 PM–7:30 PM	CID/CPOW/Education Travel Awardee Reception	Room 404AB
7:00 PM–9:00 PM	Cryo-EM Subgroup	Room 411

Saturday, February 27

Registration/Exhibitor Registration Open

8:00 AM - 6:30 PM, WEST LOBBY

Joint Council Meeting

8:30 AM - 11:00 AM, J.W. MARRIOTT - PLAZA I & II

Mechanobiology Subgroup

9:00 AM - 7:00 PM, ROOM 403B

Subgroup Chair
G.V. Shivashankar, MBI, National University of Singapore

1-SUBG 9:00 AM
MECHANICAL ACTION OF BAR-DOMAIN PROTEINS ON FLUID MEMBRANES. **Patricia Bassereau**, Coline Prévost, Mijo Simunovic, Andrew Callan-Jones

2-SUBG 9:30 AM
ACTOMYOSIN DEPENDENT CLUSTERING AND SEGREGATION OF CELL SURFACE MOLECULES AT MULTIPLE SCALES. **Madan Rao**

10:00 AM INVITED SHORT TALK
CYTOSKELETAL DYNAMICS AND MECHANOSENSING IN IMMUNE CELLS. **Arpita Upadhyaya**

10:15 AM STUDENT TALK CHOSEN FROM POSTER ABSTRACT

10:30 AM COFFEE BREAK

3-SUBG 11:00 AM
REGULATION OF ACTOMYOSIN CONTRACTILITY IN NON-MUSCLE CELLS. Zhenhuan Guo, Wei Yung Ding, **Ronen Zaidel-Bar**

4-SUBG 11:30 AM
JUNCTIONAL TENSION, MECHANOSENSING AND EPITHELIAL HOMEOSTASIS. **Alpha Yap**, Rashmi Priya, Magdalene Michael, Guillermo Gomez

12:00 PM INVITED SHORT TALK

12:15 PM STUDENT TALK CHOSEN FROM POSTER ABSTRACT

12:30 PM LUNCH

5-SUBG 2:00 PM
CHROMOSOMES AS MECHANICAL OBJECTS: COMMONALITIES FROM BACTERIA TO MAMMALIAN CELLS. **Nancy E. Kleckner**

6-SUBG 2:30 PM
MECHANICS OF GENOME INTEGRITY. **Marco Foiani**

3:00 PM POSTDOC TALK CHOSEN FROM POSTER ABSTRACTS
RESOLVING AND TARGETING THE MECHANOBIOME OF PANCREATIC DUCTAL ADENOCARCINOMA. **Alexandra Surcel**, Qingfeng Zhu, Eric Schiffhauer, Robert Anders, Douglas Robinson

3:30 PM POSTDOC TALK CHOSEN FROM POSTER ABSTRACTS

3:45 PM COFFEE BREAK

7-SUBG 4:15 PM
TISSUE MECHANICS AND DISEASE MODELS. **Valerie Weaver**

8-SUBG 4:45 PM
HOW MECHANICAL FORCES REGULATE THE STRUCTURAL POLARIZATION OF THE NUCLEAR LAMINA. **Viola Vogel**

5:15 PM POSTDOC TALK CHOSEN FROM POSTER ABSTRACTS

5:30 PM INVITED SHORT TALK

5:45 PM GENERAL DISCUSSION

7:00 PM SUBGROUP DINNER

Bioenergetics Subgroup

9:00 AM - 7:00 PM, ROOM 403A

Subgroup Chairs
György Hajnóczky, Thomas Jefferson University
Jan Hoek, Thomas Jefferson University

MORNING SYMPOSIUM: MAMMALIAN MITOCHONDRIA: ONTOGENY AND PHYLOGENY

9:00 AM INTRODUCTIONS

NO ABSTRACT 9:10 AM
INVITED SATURDAY SUBGROUP SPEAKER. **Douglas Wallace**

NO ABSTRACT 9:40 AM
CONTROL OF MITOCHONDRIAL BIOGENESIS AND METABOLISM. **Richard Scarpulla**

NO ABSTRACT 10:10 AM
MITOCHONDRIAL FUNCTION AND REGULATION DURING STEM CELL DIFFERENTIATION. **Michael Teitell**

10:40 AM COFFEE BREAK

9-SUBG 11:00 AM
MITOCHONDRIAL FUNCTION DURING AND REGULATION OF CARDIAC DEVELOPMENT. **George A. Porter, Jr.**

NO ABSTRACT 11:30 AM
ABROGATION OF PARKIN-MEDIATED MITOPHAGY DISRUPTS PERINATAL MITOCHONDRIAL MATURATION. **Moshi Song**

AFTERNOON SYMPOSIUM: SUB-DIFFRACTION RESOLUTION OF MITOCHONDRIAL STRUCTURE AND MOLECULAR LANDSCAPE

1:45 PM PRESENTATION OF YOUNG BIOENERGETICIST AWARD AND INTRODUCTIONS

NO ABSTRACT 2:10 PM
SUPER-RESOLUTION MICROSCOPY OF MITOCHONDRIA. **Stefan Jakobs**

NO ABSTRACT 2:40 PM
MUSCLE MITOCHONDRIA DISTRIBUTION IN THE ANIMAL KINGDOM. **Clara Franzini-Armstrong**

NO ABSTRACT 3:10 PM
THE MITOCHONDRIAL RETICULUM IN SKELETAL AND CARDIAC MUSCLE. **Robert S. Balaban**

3:40 PM COFFEE BREAK

NO ABSTRACT 4:00 PM
TRANS-MITOCHONDRIAL COORDINATION OF CRISTAE AT REGULATED MEMBRANE JUNCTIONS. **Martin Picard**

NO ABSTRACT 4:30 PM
STRUCTURE AND MECHANISM OF THE MITOCHONDRIAL ATP SYNTHASE BY ELECTRON CRYO-MICROSCOPY. **Werner Kuhlbrandt**

5:00 PM GENERAL DISCUSSION & BUSINESS MEETING

7:00 PM SUBGROUP DINNER

Molecular Biophysics Subgroup

9:15 AM - 1:45 PM, ROOM 502A

Subgroup Chair
Justin Benesch, University of Oxford, United Kingdom

NEW METHODS FOR STUDYING THE STRUCTURAL DYNAMICS OF MACROMOLECULES

9:15 AM **OPENING REMARKS**

NO ABSTRACT **9:20 AM**
STRUCTURE, DYNAMICS, AND FREE ENERGY LANDSCAPES BY NMR. **Dorothee Kern**

NO ABSTRACT **10:05 AM**
TIME-RESOLVED X-RAY CRYSTALLOGRAPHY. **Arwen Pearson**

NO ABSTRACT **10:35 AM**
HIGH-SPEED SCATTERING FOR VISUALIZING NANOMETRIC PROTEIN COMPLEXES. **Philipp Kukura**

NO ABSTRACT **11:05 AM**
ASSEMBLING MACROMOLECULAR COMPLEXES WITH EVOLUTIONARY-BASED INTEGRATIVE MODELING. **Matteo Dal Peraro**

11:35 AM **COFFEE BREAK AND SUBGROUP BUSINESS MEETING**

10-SUBG **12:05 PM**
CHARTING CELLULAR LANDSCAPES IN MOLECULAR DETAIL BY IN SITU CRYO-ELECTRON TOMOGRAPHY. **Jürgen Plitzko**, Julia Mahamid, Benjamin D. Engel, Sahradha Albert, Miroslava Schaffer, Jan Arnold, Yoshiyuki Fukuda, Radostin Danev, Wolfgang Baumeister

NO ABSTRACT **12:35 AM**
NEW MICROFLUIDIC APPROACHES FOR STUDYING THE SELF-ASSEMBLY AND MISASSEMBLY OF PROTEINS. **Tuomas Knowles**

NO ABSTRACT **1:05 PM**
DYNAMICS OF VIRAL STRUCTURES - FROM MASS SPECTROMETRY TO X-RAY FREE-ELECTRON LASERS. **Charlotte Uetrecht**

1:35 PM **CLOSE**

Society of General Physiologists Council Meeting

10:00 AM - 1:00 PM, ROOM 510

Intrinsically Disordered Proteins Subgroup

10:00 AM - 6:30 PM, ROOM 515A

Subgroup Chair
Elizabeth Rhoades, Yale University

10:00 AM **BUSINESS MEETING**

12:30 PM **OPENING REMARKS AND INTRODUCTION OF KEYNOTE SPEAKER 1**

11-SUBG **12:35 PM**
INTRINSICALLY DISORDERED PROTEINS IN NEURODEGENERATION. **Markus Zweckstetter**

12-SUBG **1:20 PM**
BALANCING ORDER AND DISORDER IN NEURODEGENERATION AND NEUROTRANSMISSION. **David Eliezer**

13-SUBG **1:45 PM**
ATOMIC-RESOLUTION IN-CELL NMR ANALYSIS OF ALPHA-SYNUCLEIN IN MAMMALIAN CELLS REVEALS DISORDERED MONOMER. **Phil Selenko**

2:10 PM **SHORT TALKS BY POSTDOCTORAL AWARDEES**
PHASE SEPERATION OF DISORDERED PROTEINS INTO LIQUID DROPLETS WITH TUNABLE PROPERTIES. **Shana Elbaum-Garfinkle**.

A GOLDILOCKS PREDICAMENT FOR VON WILLEBRAND FACTOR MEDIATED PLATELET ADHESION. **Alexander Tischer (SEE LATE ABSTRACTS)**

14-SUBG **2:40 PM**
STRUCTURE AND DYNAMICS OF INTRINSICALLY DISORDERED PROTEINS FROM A PHYSICS-BASED MODEL. **Jeetain Mittal**

15-SUBG **3:05 PM**
DISCOVERY AND CHARACTERISATION OF NOVEL FUNCTIONAL MODULES IN INTRINSICALLY DISORDERED REGIONS. **Norman Davey**

3:30 PM **COFFEE BREAK**

16-SUBG **3:50 PM**
SIMULTANEOUS TUNING OF ACTIVATION AND REPRESSION IN INTRINSIC DISORDER-MEDIATED ALLOSTERY. **Vincent J. Hilser**

17-SUBG **4:15 PM**
DISORDERED CDK SUBSTRATES ACT AS MULTI-INPUT SIGNAL PROCESSORS TO CONTROL THE KEY DECISION POINTS IN THE CELL CYCLE. **Mart Loog**

18-SUBG **4:40 PM**
SLOW INTERNAL DYNAMICS AND STRUCTURAL PROPERTIES OF IDPS OF THE CT FAMILY: COMPARING AMYLOID AND NON-AMYLOID VARIANTS. **Sara M. Vaiana**

19-SUBG **5:05 PM**
STRUCTURAL AND FUNCTIONAL ANALYSES OF IDPS BY HIGH-SPEED AFM IMAGING. **Toshio Ando**, Noriyuki Kodera

5:30 PM **INTRODUCTION OF KEYNOTE SPEAKER 2**

20-SUBG **5:35 PM**
SEQUENCE CONSTRAINTS ON FOLDING AND BINDING. **Susan Marqusee**

6:20 PM **CLOSING REMARKS**

Biopolymers in vivo Subgroup

10:45 AM – 6:45 PM, ROOM 501ABC

Subgroup Chair
Martin Gruebele, University of Illinois at Urbana Champaign

TRANSLATION DYNAMICS AND NASCENT PROTEOME BEHAVIOR

10:45 AM **BUSINESS MEETING**

11:45 AM **LUNCH BREAK**

1:15 PM **INTRODUCTION BY THE PROGRAM CO-CHAIRS, CHRISTIAN KAISER AND ED O'BRIEN**

21-SUBG **1:20 PM**
MONITORING TRANSLATION IN SPACE AND TIME WITH RIBOSOME PROFILING. **Jonathan Weissman**

NO ABSTRACT **1:50 PM**
PROBING DIMENSIONALITY BEYOND THE LINEAR SEQUENCE OF MRNA. **Zoya Ignatova**

22-SUBG **2:20 PM**
LOW ENERGY BARRIERS AND A DYNAMIC CONTACT NETWORK BETWEEN RIBOSOMAL SUBUNITS ENABLE RAPID TRNA TRANSLOCATION. Lars V. Bock, Christian Blau, Andrea C. Vaiana, **Helmut Grubmuller**

NO ABSTRACT **2:50 PM**
DYNAMICS OF TRANSLATION. **Joseph Puglisi**

3:20 PM **COFFEE BREAK**

3:50 PM **NO ABSTRACT**
ACCURATE DECISION MAKING AT THE RIBOSOME DURING PROTEIN BIOGENESIS. **Shu-ou Shan**

23-SUBG **4:20 PM**
REGULATION OF SEC-FACILITATED PROTEIN TRANSLOCATION AND MEMBRANE INTEGRATION. **Thomas Miller**

24-SUBG **4:50 PM**
COTRANSLATIONAL PROTEIN FOLDING. **Gunnar von Heijne**

5:20 PM **TALK CHOSEN FROM SUBMITTED POSTER ABSTRACTS**
CHAPERONE-MEDIATED MECHANICAL PROTEIN FOLDING AT THE SINGLE MOLECULE LEVEL. **Judit Perales-Calvo**

25-SUBG **5:35 PM**
SOME CELL BEHAVIOR IS ENCODED IN PROTEOME PHYSICS. **Ken Dill**

6:05 PM **CONCLUDING REMARKS**

6:45 PM **DINNER**

Nanoscale Biophysics Subgroup

12:00 PM - 6:00 PM, ROOM 515B

Subgroup Chair
Bianxiao Cui, Stanford University

26-SUBG **12:00 PM**
NANOSCOPE STUDY OF CHROMATIN STRUCTURE AND PROCESS IN MAMMALIAN CELLS. **Yujie Sun**

NO ABSTRACT **12:30 PM**
IN SITU RNA PROFILING IN SINGLE CELLS BY FISH SCALYS. **Long Cai**

NO ABSTRACT **1:00 PM**
ILLUMINATING BIOLOGY AT THE NANOSCALE WITH SINGLE-MOLECULE AND SUPER-RESOLUTION MICROSCOPY. **Xiaowei Zhuang**

NO ABSTRACT **1:30 PM**
3D MULTI-RESOLUTION IMAGING OF NANOSCALE DYNAMICS IN CELLULAR MILIEU. **Haw Yang**

27-SUBG **2:00 PM**
CAPTURING THE DYNAMIC, HETEROGENEOUS RESPONSE OF MICROBES TO THEIR ENVIRONMENT IN THE HUMAN MICROBIOME. **Julie Biteen**

2:30 PM **BREAK**

3:00 PM **STUDENT/POSTDOC SHORT TALKS**

28-SUBG **4:00 PM**
CONVERGING AND CORRELATIVE TECHNOLOGIES FOR OPTICAL NANOSCOPY. **Alberto Diaspro**, Paolo Bianchini, Claudio Canale, Francesca Cella Zanacchi, Marta Duocastella, Luca Lanzanò, Nirmal Mazumder, Colin Sheppard, Giuseppe Vicidomini

29-SUBG **4:30 PM**
SEEING SINGLE MOLECULES, FROM EARLY SPECTROSCOPY IN SOLIDS, TO SUPER-RESOLUTION MICROSCOPY, TO 3D DYNAMICS OF BIOMOLECULES IN CELLS. **W.E. Moerner**

5:00 PM **SUBGROUP BUSINESS MEETING**

6:00 PM **SUBGROUP DINNER**

Membrane Structure and Assembly Subgroup

1:00 PM - 5:00 PM, PETREE HALL D

Subgroup Chair
Anne Kenworthy, Vanderbilt University

TRANSLATION DYNAMICS AND NASCENT PROTEOME BEHAVIOR

30-SUBG **1:00 PM**
MEMBRANE DOMAINS ON THE SUB-NANOMETER SCALE. **Georg Pabst**

31-SUBG **1:35 PM**
USING GLYCOSPHINGOLIPIDS TO BUILD ENDOCYTIC PITS IN CLATHRIN-INDEPENDENT ENDOCYTOSIS. **Ludger Johannes**

NO ABSTRACT **2:10 PM**
MEMBRANE CURVATURE REGULATION BY PERIPHERAL PROTEINS. **Tobias Baumgart**

2:45 PM **BREAK**

32-SUBG **3:10 PM**
STRUCTURE AND MECHANISMS OF ACTIONS OF CURVATURE-INDUCING VIRAL MEMBRANE PROTEINS FROM SOLID-STATE NMR. **Mei Hong**

NO ABSTRACT **3:45 PM**
TRANSLOCON-GUIDED INSERTION OF TRANSMEMBRANE HELICES: CARTOONS VS. REALITY. **Stephen H. White**

33-SUBG **4:20 PM** **THOMPSON AWARD LECTURE**
THE VERSATILE BETA-BARREL GIVES UP SECRETS OF THE MEMBRANE. **Karen G. Fleming**

5:00 PM **BUSINESS MEETING**

Biological Fluorescence Subgroup

1:00 PM - 5:00 PM, ROOM 502B

Subgroup Chair
Marcia Levitus, Arizona State University

34-SUBG **1:00 PM**
SINGLE-MOLECULE FLUORESCENCE STUDIES OF NUCLEIC-ACID TRANSACTIONS IN LIVING BACTERIA. **Achilles Kapanidis**

35-SUBG **1:30 PM**
SPATIO-TEMPORAL DYNAMICS AND METABOLIC ALTERATIONS OF P53 UPON DNA DAMAGE. **Michelle A.** Digman, Swathi Bagilthaya

36-SUBG **2:00 PM**
IMAGING THE EARLY EVENTS IN MEMBRANE RECEPTOR SIGNALING. **Diane S. Lidke**

37-SUBG **2:30 PM**
FROM SINGLE-MOLECULE SPECTROSCOPY TO SUPER-RESOLUTION MICROSCOPY: SUPER-RESOLUTION OPTICAL FLUCTUATION IMAGING AND METAL-INDUCED ENERGY TRANSFER. **Joerg Enderlein**

3:00 PM **BREAK & BUSINESS MEETING**

38-SUBG **3:20 PM**
NEW ISOMORPHIC FLUORESCENT NUCLEOSIDES AND NUCLEOTIDES AS BIOPHYSICAL TOOLS. **Yitzhak Tor**

39-SUBG **3:50 PM**
PROBING SINGLE-MOLECULE ION CHANNEL CONFORMATIONAL DYNAMICS IN LIVING CELLS. **H. Peter Lu**

4:20 PM **YOUNG FLUORESCENCE INVESTIGATOR AWARD & LECTURE**

4:40 PM **GREGORIO WEBER AWARD & LECTURE**

5:00 PM **ADJOURNMENT**

Membrane Biophysics Subgroup

1:00 PM - 6:00 PM, PETREE HALL C

Subgroup Chair
Alessio Accardi, Weill Cornell Medical College

UNUSUAL MECHANISMS IN MEMBRANE TRANSPORT

1:00 PM **OPENING REMARKS**

NO ABSTRACT **1:05 PM**
TMEM16/ANOCTAMINS FLIRTING WITH LIPIDS. **H C. Hartzell**

40-SUBG **1:35 PM**
ENGINEERING OF A LIGHT-GATED POTASSIUM CHANNEL. **Anna Moroni**, Laura Alberio, Edoardo Romano, Solei Cermenati, Monica Beltrame, Gerhard Thiel

41-SUBG **2:05 PM**
REGULATION OF GATING OF TRPM2 CHANNELS BY NUCLEOTIDES, CA^{2+}, AND PHOSPHOLIPIDS. **László Csanády**, Balázs Tóth, Iordan Iordanov, Beáta Töröcsik

NO ABSTRACT **2:35 PM**
MASS SPECTROMETRY OF MEMBRANE PROTEINS - THE LIPID CONNECTION. **Kallol Gupta**

3:05 PM **SUBGROUP BUSINESS MEETING AND COFFEE BREAK**

NO ABSTRACT **3:40 PM**
STRUCTURE AND INSIGHTS INTO THE FUNCTION OF THE BESTROPHIN CALCIUM-ACTIVATED CHLORIDE CHANNEL. **Stephen B. Long**

42-SUBG **4:10 PM**
CRYSTAL STRUCTURES OF A DOUBLE-BARRELLED FLUORIDE CHANNEL. **Randy Stockbridge**, Ludmila Kolmakova-Partensky, Tania Shane, Akiko Koide, Shohei Koide, Christopher Miller, Simon Newstead

43-SUBG **4:40 PM**
HOW TO FILL A SYNAPTIC VESICLE WITH NEUROTRANSMITTERS? TRANSPORT MECHANISMS AND ION BALANCE. **Reinhard Jahn**

5:10 PM **CONCLUSION**

6:00 PM **COLE AWARD TALK AND DINNER: AWARDEE RODERICK MACKINNON**

Motility Subgroup

1:00 PM - 6:15 PM, ROOM 408A

Subgroup Chairs
Arne Gennerich, Albert Einstein College of Medicine
Charles Sindelar, Yale University

1:00 PM **OPENING REMARKS**

44-SUBG **1:05 PM**
SINGLE-MOLECULE INSIGHT INTO THE ACTIVATION OF HUMAN DYNEIN BY ADAPTER PROTEINS. **Vladislav Belyy**, Max A. Schlager, Armando E. Reimer, Andrew P. Carter, Ahmet Yildiz

45-SUBG **1:20 PM**
MECHANO-CHEMICAL MODEL FOR THE MECHANISM OF DIRECTED PROCESSIVE MOTILITY OF CYTOPLASMIC DYNEIN. **Andreja Šarlah**, Andrej Vilfan

46-SUBG **1:35 PM**
MODELING COORDINATED KINETICS IN LARGE GROUPS OF MUSCLE MYOSIN MOTORS. **Lennart Hilbert**

47-SUBG **1:50 PM**
HIGH-SPEED NANOMETRIC TRACKING OF MYOSIN 5 WITH INTERFEROMETRIC SCATTERING MICROSCOPY. **Joanna Andrecka**

2:05 PM **BREAK**

NO ABSTRACT **2:20 PM**
TRANSPORT BY MEMBRANE-ANCHORED KINESIN MOTORS. **Stefan Diez**

48-SUBG **2:45 PM**
MAPS AND MOTORS COOPERATE TO FORM THE PARAXIAL MICROTUBULE CYTOSKELETON IN DIFFERENTIATING MUSCLE CELLS. **Anne Straube**

49-SUBG **3:10 PM**
SYNTHETIC MANIPULATION AND ANALYSES OF TRANSPORT AND CYTOSKELETAL REGULATORY SYSTEMS. **Michael Diehl**

3:35 PM **BUSINESS MEETING AND BREAK**

50-SUBG **4:05 PM**
STRUCTURAL AND FUNCTIONAL ADAPTATIONS IN KINESIN MOTORS. **Hernando Sosa**, Chandrima Chatterjee, Mathieu Benoit, Juan Daniel Diaz Valencia, Vania DePaoli, Ana B. Asenjo

51-SUBG **4:30 PM**
CRYO-EM REVEALS HOW DYNEIN BINDS DYNACTIN AND CARGO. **Andrew P. Carter**, Linas Urnavicius, Kai Zhang, Helen Foster

4:55 PM **BREAK**

52-SUBG **5:20 PM**
ON THE MOLECULAR BASIS OF MONOGENIC HUMAN HYPERTROPHIC AND DILATED CARDIOMYOPATHIES. **James Spudich**, Suman Nag, Shirley Sutton, Saswata Sarkar, Rebecca Taylor, Darshan Trivedi, Chao Liu, Arjun Adhikari, Kathleen Ruppel

6:15 PM **CLOSING REMARKS**

Exocytosis & Endocytosis Subgroup

1:00 PM - 6:30 PM, ROOM 511ABC

Subgroup Chair
Jürgen Klingauf, Institute of Medical Physics and Biophysics, Germany

1:00 PM **STUDENT TALKS SELECTED FROM POSTERS**

NO ABSTRACT **1:55 PM**
IMAGING THE NANOMETER-SCALE STRUCTURE OF ENDOCYTOSIS. **Justin Taraska**

2:25 PM **COFFEE BREAK**

NO ABSTRACT **2:40 PM**
CAPTURING THE SEQUENTIAL STEPS OF DYNAMIN-MEDIATED FISSION BY CRYO-EM. **Jenny Hinshaw**

NO ABSTRACT **3:20 PM**
NEW INSIGHTS INTO CA^{2+} SENSOR FUNCTION AND FUSION PORE STRUCTURE. **Edwin R. Chapman**

4:00 PM **COFFEE BREAK**

53-SUBG **4:15 PM** **KATZ AWARD LECTURE**
AN ELEGANT FISSION MACHINE. **Sandra L. Schmid**

5:30 PM **BUSINESS MEETING**

6:30 PM **RECEPTION AND SUBGROUP DINNER**

Permeation & Transport Subgroup

1:30 PM - 4:45 PM, ROOM 408B

Subgroup Chair
Emad Tajkhorshid, University of Illinois at Urbana-Champaign

54-SUBG **1:30 PM**
MECHANISMS OF GATING AND MODULATION IN PENTAMERIC LIGAND GATED CHANNELS. **Sudha Chakrapani**

55-Subg 2:00 pm
THE MOLECULAR DYNAMICS OF ION CHANNEL PERMEATION, SELECTIVITY AND GATING. **Bert L. de Groot.**, David Koepfer, Chen Song, Tim Gruene, George M. Sheldrick, Ulrich Zachariae

56-Subg 2:30 pm
STRUCTURAL INTERPRETATION OF THE ALTERNATING ACCESS MECHANISM OF GLUCOSE TRANSPORTERS GLUTS. **Nieng Yan**

3:00 pm BREAK

57-Subg 3:15 pm
SMOLUCHOWSKI EQUATION APPROACH IN CHANNEL-FACILITATED TRANSPORT PROBLEMS: COUNTER-INTUITIVE ANALYTICAL RESULTS AND SUPPORTING EXPERIMENTS. **Sergey M. Bezrukov**

58-Subg 3:45 pm
NANOPHARMACOLOGICAL FORCE SENSING REVEALS TWO LIGAND BINDING SITES IN MONOAMINE TRANSPORTERS. Rong Zhu, Alexander Heilinger, Amy H. Newman, Michael Freissmuth, Harald H. Sitte, **Peter Hinterdorfer**

4:15 pm BUSINESS MEETING

Career Center Workshop
Networking: Optimizing Your Time at BPS 2016

3:00 pm - 4:00 pm, Room 518

You surely have heard that networking is a key component of the successful job search. The term itself often conjures up negative thoughts and reactions to the uninitiated, sometimes to the point of paralysis. Professional conferences (such as BPS 2016) provide endless networking opportunities. If, however, your perception of networking means tackling someone at the coffee station while thrusting your CV in his/her hands, you may want to stop in on this session. The practice of networking has become so much easier with the advent of the internet. We will discuss what you hope to get out of your presence at the meeting, how to set objectives beforehand, and how to meet those objective once you arrive (while minimizing anxiety).

Bioengineering Subgroup

3:00 pm - 5:00 pm, Room 409AB

Program Chairs
Jonathan Rocheleau, University of Toronto
Chris Yip, University of Toronto

No Abstract 3:00 pm
THE STATE OF BIOENGINEERING RESEARCH AND LINKAGES WITH BIOPHYSICS. **Christopher M. Yip**

3:30 pm STATESMEN TALK

4:00 pm BREAK

4:15 pm TRAINEE TALK

4:30 pm TRAINEE TALK

4:45 pm BUSINESS MEETING

Undergraduate Mixer and Poster Fest

4:00 pm - 5:00 pm, West Lobby Entrance

A social and scientific mixer for all undergraduate students attending the meeting. Meet other undergraduates and learn about their research projects. Pre-registered undergraduates listed as coauthors on posters are welcome to practice their poster presentation in a less formal setting, even if they are not listed as the presenting author. For undergrads who will be presenting during the standard scientific sessions, this mixer provides an additional opportunity to hone presentation skills. Organized by the Education Committee.

Opening Mixer

5:00 pm - 7:00 pm, Concourse Foyer

All registered attendees are welcome to attend this cash bar and light refreshments reception.

First-Time Attendee Drop By

5:00 pm - 7:00 pm, West Lobby Entrance

Is this your first time attending a Biophysical Society Annual Meeting? Wondering what to do first? Feeling overwhelmed? Wondering how to get the most out of your time? Drop by the First-Time Attendee event on Saturday evening during the Opening Mixer to learn how to navigate the meeting. Society staff and Committee Members will be on hand to answer your questions about the meeting and help you gain the most from your time.

Poster Viewing

6:00 pm - 10:00 pm, West Hall

CID/CPOW/Education Travel Awardee Reception

6:30 pm - 7:30 pm, Room 404AB

During this reception, students, postdocs, and early and mid-career scientists will be honored and presented with their travel awards by the chairs of the Education, Inclusion and Diversity, and Professional Opportunities for Women Committees.

Cryo-EM Subgroup

7:00 pm - 9:00 pm, Room 411

Program Chairs
Edward Egelman, University of Virginia
Da-Neng Wang, New York University
Bridget Carragher, New York Structural Biology Center
Yifan Cheng, University of California, San Francisco
Irina Serysheva, University of Texas Medical School
David Stokes, New York University

59-Subg 7:00 pm
MICROED: THREE DIMENSIONAL ELECTRON DIFFRACTION OF MICROSCOPIC CRYSTALS. **Tamir Gonen**

60-Subg 7:20 pm
1D SELF-ASSEMBLY OF PEPTIDES AND LIPIDS INTO RIBBONS AND NANOTUBES. **Dganit Danino**, Luba Kolik

61-Subg 7:40 pm
STRUCTURE OF THE ACRABZ-TOLC MULTIDRUG EFFLUX PUMP IN A DRUG-BOUND STATE. **Zhao Wang**, Dijun Du, Guizhen Fan, Irina I. Serysheva, Ben F. Luisi, Wah Chiu

62-Subg 8:00 pm
SINGLE-PARTICLE CRYO-EM STUDIES OF A 200-KDA MAGNESIUM ION CHANNEL REVEAL LARGE STRUCTURAL CHANGES UPON GATING. **Doreen Matthies**, Olivier Dalmas, Mario J. Borgnia, Pawel K. Dominik, Alan Merk, Prashant Rao, Bharat G. Reddy, Shahidul Islam, Alberto Bartesaghi, Eduardo Perozo, Sriram Subramaniam

63-Subg 8:20 pm
IF GEL AND MASS SPEC DON'T HELP, USE CRYO-EM TO CHARACTERISE YOUR SPECIMEN. **Alexey Amunts**

64-Subg 8:40 pm
HIGH-RESOLUTION CRYO-EM STRUCTURES OF TRPV1 REVEAL STRUCTURAL BASIS OF LIGAND BINDING AND CHANNEL GATING. **Yuan Gao**, Erhu Cao, David Julius, Yifan Cheng

9:00 pm BUSINESS MEETING

Sunday, February 28, 2016

Daily Program Summary

All rooms are located in the *Baltimore Convention Center* unless noted otherwise.

7:30 AM–8:30 AM	**Postdoctoral Breakfast**	**Room 404AB**
7:30 AM–5:00 PM	**Registration/Exhibitor Registration**	**West Lobby**
8:00 AM–10:00 PM	**Poster Viewing**	**West Hall**
8:15 AM–10:15 AM	**Symposium: Synthetic Biology** **Chair:** *Pamela Silver, Harvard University* TRIGGER WAVES IN MITOSIS AND APOPTOSIS. *James Ferrell* FEEDBACK CONTROL OF MAMMALIAN CELL DIFFERENTIATION. *Mary N. Teruel* COMMUNICATION AND COLLABORATION IN SYNTHETIC MICROBIAL CONSORTIA. *Cynthia H. Collins* DESIGNING WITH BIOLOGY. *Pamela Silver*	**Petree Hall C**
8:15 AM–10:15 AM	**Symposium: Pentameric Ligand-gated Ion Channels** **Chair:** *Cynthia Czajkowski, University of Wisconsin-Madison* PROBING CHANNEL STRUCTURE, DYNAMICS, AND FUNCTION. *Pei Tang* CHARGE SELECTIVITY IN PLGICS: AN ASPECT OF CHANNEL FUNCTION THAT REMAINS ELUSIVE EVEN WHEN MULTIPLE STRUCTURES ARE KNOWN. *Claudio Grosman* INSIGHTS INTO INTRACELLULAR DOMAINS OF PENTAMERIC LIGAND-GATED ION CHANNELS. *Michaela Jansen* DETECTING LIGAND-INDUCED MOTIONS IN PENTAMERIC LIGAND-GATED ION CHANNELS. *Cynthia Czajkowski*	**Petree Hall D**
8:15 AM–10:15 AM	**Platform: Alternative Protein Conformations and Function**	**Room 502A**
8:15 AM–10:15 AM	**Platform: Skeletal Muscle Mechanics, Structure, and Regulation**	**Room 502B**
8:15 AM–10:15 AM	**Platform: Optical Microscopy and Super-Resolution Imaging I**	**Room 515A**
8:15 AM–10:15 AM	**Platform: Membrane Physical Chemistry I**	**Room 515B**
8:15 AM–10:15 AM	**Platform: Bioenergetics and Mitochondrial Signaling**	**Room 501ABC**
8:15 AM–10:15 AM	**Platform: DNA Replication and Transcription**	**Room 511ABC**
8:30 AM–10:30 AM	**CID Committee Meeting**	**Room 506**
9:00 AM–10:00 AM	**Career Center Workshop** **Selling Yourself to the Life Sciences Industry**	**Room 518**
10:00 AM–5:00 PM	**Exhibits**	**West Hall**
10:15 AM–11:00 AM	**Coffee Break**	**West Hall**
10:30 AM–11:30 AM	**Career Center Workshop** **Leveraging Social Media for Networking and Career Advancement**	**Room 518**
10:30 AM–12:00 PM	**Exhibitor Presentation: Carl Zeiss Microscopy LLC** **Technology Innovations: ZEISS LSM 880 Confocal with Airyscan and ZEISS Lightsheet Z.1**	**Room 513**
10:30 AM–12:00 PM	**International Relations Committee Meeting**	**Room 410**

10:45 AM–12:45 PM	**Symposium: New and Notable** **Co-Chairs:** *Vasanthi Jayaraman, University of Texas Health Science Center, and E. Michael Ostap, University of Pennsylvania* STRUCTURE OF A TRPV2 ION CHANNEL, *Seok-Yong Lee* CRYO-EM STRUCTURE OF A MICRONUTRIENT TRANSPORTER WITH UNUSAUL ARCHITECTURE. *Filippo Mancia* STRUCTURAL DYNAMICS OF K CHANNEL GATING REVEALED BY SINGLE MOLECULE FRET. *Colin Nichols* THE MOTIONS AND INTERACTIONS IN MISMATCH REPAIR TAGET SEARCH DYNAMICS ARE REVEALED BY LIVE-CELL SINGLE-MOLECULE MICROSCOPY. *Julie Biteen* INTEGRATIVE STRUCTURAL BIOLOGY OF TETRAHYMENA TELOMERASE. *Juli Feigon* INTRINSICALLY DISORDERED PROTEINS AS PHYSICAL DRIVERS OF MEMBRANE TRAFFIC. *Jeanne C. Stachowiak* FLOPPY BUT NOT SLOPPY: DECODING PLASTICITY IN THE DARK PROTEOME OF THE NUCLEAR TRANSPORT MACHINERY. *Edward Lemke*	**Petree Hall C**
10:45 AM–12:45 PM	**Symposium: Computational and Experimental Approaches to Protein Design** **Chair:** *Rama Ranganathan, University of Texas, Southwestern* MAPPING CONSTRAINTS ON PROTEIN EVOLUTION. *Jesse Bloom* UNCOVERING AND REPROGRAMMING G PROTEIN COUPLED RECEPTOR SIGNALING. *Patrick Barth* DESIGNING PEPTIDE INHIBITORS OF ANTI-APOPTOTIC BCL-2 FAMILY PROTEINS. *Amy E. Keating* PROTEIN MECHANICS: THE LINK BETWEEN STRUCTURE AND FUNCTION. *Rama Ranganathan*	**Petree Hall D**
10:45 AM–12:45 PM	**Platform: Cryo-Electron Microscopy**	**Room 502A**
10:45 AM–12:45 PM	**Platform: Cell Mechanics, Mechanosensing, and Motility I**	**Room 502B**
10:45 AM–12:45 PM	**Platform: TRP Channels**	**Room 515A**
10:45 AM–12:45 PM	**Platform: Protein Assembly and Function**	**Room 515B**
10:45 AM–12:45 PM	**Platform: Membrane Active Peptides and Toxins**	**Room 501ABC**
10:45 AM–12:45 PM	**Platform: Cardiac Smooth and Skeletal Muscle Electrophysiology**	**Room 511ABC**
11:30 AM–1:00 PM	**Undergraduate Student Pizza "Breakfast"**	**Room 406AB**
11:30 AM–5:00 PM	**Colleges in the Community Day**	**Room 406AB**
12:00 PM–1:00 PM	**International Travel Awardee Luncheon**	**Room 404AB**
12:00 PM–1:00 PM	**Career Center Workshop** **Creating and Using an Effective CV/Résumé**	**Room 518**
12:15 PM–2:15 PM	**Public Affairs Committee Meeting**	**Room 506**
1:00 PM–2:30 PM	**The World Outside the Lab: Many Ways to Use Your PhD Skills in Industry**	**Room 403A**
1:00 PM–3:00 PM	**Graduate & Postdoc Institution Fair**	**West Hall**
1:45 PM–3:00 PM	**Snack Break**	**West Hall**
1:45 PM–3:45 PM	**Poster Presentations and Late Posters**	**West Hall**
2:00 PM–3:30 PM	**Teaching Science Like We Do Science**	**Room 408A**
2:30 PM–3:30 PM	**Career Center Workshop** **Networking for Nerds**	**Room 518**
2:30 PM–4:00 PM	**Transparency, Reproducibility, and the Progress of Science**	**Room 411**
3:30 PM–5:00 PM	**Early Careers Committee Meeting**	**Room 506**
4:00 PM–5:00 PM	**Career Center Workshop** **Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)**	**Room 518**
4:00 PM–6:00 PM	**Symposium: Signaling Complexes and Dynamics** **Chair:** *Hao Wu, Harvard Medical School* STRUCTURAL ELUCIDATION OF INNATE IMMUNITY. *Hao Wu* MECHANISM OF JAK2 ACTIVATION BY THE ARCHETYPE CLASS I CYTOKINE RECEPTOR, THE GROWTH HORMONE RECEPTOR. *Andrew J. Brooks* MECHANISM AND FUNCTIONS OF PLATELET MECHANOSENSING. *Renhao Li* CONFORMATIONAL PLASTICITY AND DRUGGABILITY OF MEMBRANE-BOUND K-RAS. *Alemayehu A. Gorfe*	**Petree Hall C**

4:00 PM–6:00 PM	**Symposium: Structure and Motion of Cilia and Flagella** **Chair:** *Jonathan Howard, Yale University* CRYO-ELECTRON TOMOGRAPHY PROVIDES A NEW WINDOW INTO CILIARY STRUCTURE AND FUNCTION. *Daniela Nicastro* STRUCTURAL GENETICS OF CILIA/FLAGELLA. *Masahide Kikkawa* MOTOR COORDINATION UNDERLYING THE FLAGELLAR BEAT IN CHLAMYDOMONAS. *Jonathon Howard* SYNCHRONIZATION OF EUKARYOTIC FLAGELLA. *Raymond E. Goldstein*	**Petree Hall D**
4:00 PM–6:00 PM	**Symposium: DNA Nanostructures for Biophysics** **Chair:** *William Shih, Harvard University* DNA NANOSTRUCTURES AS BUILDING BLOCKS FOR MOLECULAR BIOPHYSICS AND FUTURE THERAPEUTICS. *William Shih* CREATING PROGRAMMABLE DISORDER IN DNA ORIGAMI ARRAYS WITH COMBINATORIAL PATTERNS. *Lulu Qian* DNA ORIGAMI FOR NANOPORES: DESIGN, DEVELOPMENTS, AND CHALLENGES. *Ulrich F. Keyser* NANOSCALE CONSTRUCTION AND IMAGING WITH DNA. *Peng Yin*	**Room 502A**
4:00 PM–6:00 PM	**Platform: Voltage-gated Channels (Na and Ca)**	**Room 502B**
4:00 PM–6:00 PM	**Platform: Membrane Structure**	**Room 515A**
4:00 PM–6:00 PM	**Platform: Intrinsically Disordered Proteins (IDP) and Aggregates I**	**Room 515B**
4:00 PM–6:00 PM	**Platform: Membrane Protein Structure and Folding I**	**Room 501ABC**
4:00 PM–6:00 PM	**Platform: Biomaterials and Biosurfaces**	**Room 511ABC**
5:00 PM–6:00 PM	**Korean Biophysicists Meeting**	**Room 403B**
5:00 PM–7:00 PM	**PI to PI, a Wine & Cheese Mixer**	**Room 406AB**
5:30 PM–7:00 PM	**Exhibitor Presentation: HEKA Elektronic + Multi Channel Systems** **PATCHMASTER and PatchServer: Solutions for Patch Clamp**	**Room 505**
6:00 PM–7:00 PM	**Biophysics Austria Mixer**	**Room 404AB**
6:00 PM–9:00 PM	**Student Research Achievement Award (SRAA) Poster Competition**	**West Hall**

Sunday, February 28

Postdoctoral Breakfast

7:30 AM - 8:30 AM, ROOM 404AB

Supported by the Burroughs Wellcome Fund

This breakfast presents an opportunity for postdoctoral members of the Society to meet and discuss the issues they face in their current career stage. Members of the Early Careers Committee will be available to answer questions about how the Committee serves postdocs in the biophysical community. Limited to the first 100 attendees.

Registration/Exhibitor Registration

7:30 AM - 5:00 PM, WEST LOBBY

Poster Viewing

8:00 AM - 10:00 PM, WEST HALL

Symposium
Synthetic Biology

8:15 AM - 10:15 AM, PETREE HALL C

Chair
Pamela Silver, Harvard University

NO ABSTRACT **8:15 AM**
TRIGGER WAVES IN MITOSIS AND APOPTOSIS. **James Ferrell**

65-SYMP **8:45 AM**
FEEDBACK CONTROL OF MAMMALIAN CELL DIFFERENTIATION. **Mary N. Teruel**

66-SYMP **9:15 AM**
COMMUNICATION AND COLLABORATION IN SYNTHETIC MICROBIAL CONSORTIA. **Cynthia H. Collins**

NO ABSTRACT **9:45 AM**
DESIGNING WITH BIOLOGY. **Pamela Silver**

Symposium
Pentameric Ligand-gated Ion Channels

8:15 AM - 10:15 AM, PETREE HALL D

Chair
Cynthia Czajkowski, University of Wisconsin-Madison

NO ABSTRACT **8:15 AM**
PROBING CHANNEL STRUCTURE, DYNAMICS, AND FUNCTION. **Pei Tang**

67-SYMP **8:45 AM**
CHARGE SELECTIVITY IN PLGICS: AN ASPECT OF CHANNEL FUNCTION THAT REMAINS ELUSIVE EVEN WHEN MULTIPLE STRUCTURES ARE KNOWN. **Claudio Grosman**

68-SYMP **9:15 AM**
INSIGHTS INTO INTRACELLULAR DOMAINS OF PENTAMERIC LIGAND-GATED ION CHANNELS. **Michaela Jansen**

69-SYMP **9:45 AM**
DETECTING LIGAND-INDUCED MOTIONS IN PENTAMERIC LIGAND-GATED ION CHANNELS. **Cynthia Czajkowski**

Platform
Alternative Protein Conformations and Function

8:15 AM - 10:15 AM, ROOM 502A

Co-Chairs
Albert Lau, Johns Hopkins University
Nagarajan Vaidehi, Beckman Research Institute of City of Hope

70-PLAT **8:15 AM**
SEEING THE UNSEEN: SAMPLING THE EXCITED STATE OF T4 LYSOZYME L99A WITH SIMULATIONS ON THE ANTON SUPERCOMPUTER. **Jamie Schiffer**, Roxana Sida, Dariana Arciniega, Robert Malmstrom, Victoria Feher, Rommie Amaro

71-PLAT **8:30 AM**
COMPUTATIONAL AND EXPERIMENTAL STUDIES OF A PROKARYOTIC GLUTAMATE RECEPTOR. **John Belcher**, Albert Lau

72-PLAT **8:45 AM**
SIMULATING THE FUNCTION OF SODIUM/PROTON ANTIPORTERS. **Raphael Alhadeff**, Arieh Warshel

73-PLAT **9:00 AM**
MODULATING CONFORMATIONAL STATES IN THE GLUTAMATE TRANSPORTER HOMOLOGUE GLTPH USING PROTECTIVE OSMOLYTES. **Sara Blankenship**, Jessica Sarver, David Cafiso

74-PLAT **9:15 AM**
ATOMIC LEVEL INSIGHTS INTO THE ACTIVATION MECHANISM OF NEUROTENSIN RECEPTOR 1. **Supriyo Bhattacharya**, Reinhard Grisshammer, Nagarajan Vaidehi

75-PLAT **9:30 AM**
DYNAMIC SAMPLING OF MULTIPLE CONFORMATIONS IN FIMH MODULATES BACTERIAL ADHESION. **Vasilios Kalas**, Jerome S. Pinkner, Alex S. Holehouse, Hao Zhang, Michael L. Gross, Rohit V. Pappu, Scott J. Hultgren

76-PLAT **9:45 AM**
INVESTIGATION OF THE PH INDUCED CONFORMATIONAL REARRANGEMENT OF INFLUENZA HEMAGGLUTININ. **Xingcheng Lin**, Jeffrey K. Noel, Nathanial R. Eddy, Jianpeng Ma, José N. Onuchic

77-PLAT **10:00 AM**
ATOMIC STRUCTURE OF A NON-ENVELOPED DSRNA VIRUS REVEALS PH SENSING FOR CELL ENTRY. **Xing Zhang**

Platform
Skeletal Muscle Mechanics, Structure, and Regulation

8:15 AM - 10:15 AM, ROOM 502B

Co-Chairs
Sanford Bernstein, San Diego State University
Raul Perez-Jimenez, CIC nanoGUNE, Spain

78-PLAT **8:15 AM**
THE FORCE PRODUCING ADP STATE OF MYOSIN BOUND TO ACTIN. **Rasmus R. Schroeder**, Sarah F. Wulf, Virginie Ropars, Setsuko Fujita-Becker, Marco Oster, Goetz Hofhaus, Leonardo G. Trabuco, Olena Pylypenko, H. Lee Sweeney, Anne Houdusse

79-PLAT **8:30 AM**
RIBBONS, NOT SUBFILAMENTS. **Michael K. Reedy**, Robert J. Perz-Edwards

80-PLAT 8:45 AM
STRESS-SENSING MOBILIZES MYOSIN MOTORS IN THE THICK FILAMENTS OF RESTING MUSCLE. Massimo Reconditi, Elisabetta Brunello, Marco Caremani, Luca Fusi, Marco Linari, Theyencheri Narayanan, Gabriella Piazzesi, Malcom Irving, **Vincenzo Lombardi**

81-PLAT 9:00 AM
SKELETAL MUSCLE DEFICIENCIES IN HOMOZYGOUS FAST-SKELETAL MYOSIN BINDING PROTEIN-C MUTANT MICE. **Brian L. Lin**, Suresh Govindan, Sakthivel Sadayappan

82-PLAT 9:15 AM
MECHANOCHEMICAL EVOLUTION OF THE GIANT MUSCLE PROTEIN TITIN AS INFERRED FROM ANCIENT PROTEINS. **Raul Perez-Jimenez**, Aitor Manteca, David De Sancho, Elías Herrero-Galán, Jorge Alegre Cebollada

83-PLAT 9:30 AM
THE MUSCLE MECHANICAL BASIS OF FREEMAN-SHELDON SYNDROME. **Kaylyn M. Bell**, William A. Kronert, Yiming Guo, Deepti Rao, Alice Huang, Sanford I. Bernstein, Douglas M. Swank

84-PLAT 9:45 AM
STRUCTURAL AND FUNCTIONAL IMPACTS OF NOVEL MUTATIONS IN SLOW SKELETAL MUSCLE TROPONIN T FOUND IN NON-AMISH TNNT1 NEMALINE MYOPATHIES. **Chinthaka K. Amarasinghe**, Jian-Ping Jin

85-PLAT 10:00 AM
MOLECULAR MECHANISM OF NOVEL DELETIONS IN TPM3 THAT CAUSE A HYPERCONTRACTILE PHENOTYPE WITH CONGENITAL MUSCLE STIFFNESS. **Steven Marston**, Maria Papadaki, Massimiliano Memo, Andrew Messer, Sandra Donkervoort, Carsten Bonneman, Kristen Nowak, Royston Ong, Elyshia McNamara

Platform
Optical Microscopy and Super-Resolution Imaging I

8:15 AM - 10:15 AM, ROOM 515A

Co-Chairs
Jingyi Fei, University of Chicago
Enrico Gratton, University of California, Irvine

86-PLAT 8:15 AM
CONNECTIVITY MAP OF THE CELL INTERIOR. **Enrico Gratton**, Carmine Di Rienzo, Francesco Cardarelli, Per Niklas Hedde

87-PLAT 8:30 AM
SIMULTANEOUS HIGH-SPEED TRACKING OF MULTIPLE SINGLE-MOLECULES REVEALS FUNCTIONAL INTERACTIONS IN LIVING CELLS. **Brian P. English**, Robert H. Singer

88-PLAT 8:45 AM
INVESTIGATING MOLECULAR CROWDING WITHIN NUCLEAR PORES USING POLARIZATION PALM (P-PALM). Guo Fu, Anton Zilman, **Siegfried Musser**

89-PLAT 9:00 AM
UNRAVELLING 3D CARGO TRANSPORT DYNAMICS AT THE MICROTUBULE NETWORK. **Ione Verdeny Vilanova**, Fabian Wehnekamp, Nitin Mohan, Ángel Sandoval Álvarez, Joe Borbely, Jason Otterstrom, Don Lamb, Melike Lakadamyali

90-PLAT 9:15 AM
NON-RANDOM COMPOSITIONAL ORGANIZATION OF NUCLEAR SPECKLES. **Jingyi Fei**, Mahdieh Jadaliha, Isaac Li, Boyang Hua, Kannanganattu V. Prasanth, Taekjip Ha

91-PLAT 9:30 AM
ACCURATE HIGH SPEED IMAGING OF SINGLE PROTEIN DIFFUSION WITHIN THE LIVE CELL MEMBRANE. **Richard W. Taylor**, Vahid Sandoghdar

92-PLAT 9:45 AM
FLUORESCENCE DENSITY MAPPING: EXTENDING THE POSSIBILITIES OF TIRFM TO STUDY PM-ER JUNCTIONS. **Michael Poteser**, Elisabeth Pritz, Gerd Leitinger, Klaus Groschner

93-PLAT 10:00 AM
NONCONTACT MAPPING OF INTRACELLULAR ELASTICITY VIA BRILLOUIN MICROSCOPY. **Giuliano Scarcelli**

Platform
Membrane Physical Chemistry I

8:15 AM - 10:15 AM, ROOM 515B

Co-Chairs
Aurelia Honerkamp-Smith, University of Cambridge, United Kingdom
Drew Marquardt, University of Graz, Austria

94-PLAT 8:15 AM
KINETICS OF REGISTRATION, ANTIREGISTRATION, AND FLIP-FLOP IN PHASE-SEPARATING BILAYERS. John J. Williamson, **Peter Olmsted**

95-PLAT 8:30 AM
ATOMIC RECOMBINATION IN NANOSIMS AS A METHOD TO MEASURE NANOMETER-SCALE INTERMOLECULAR DISTANCES IN LIPID BILAYERS. **Frank R. Moss**, Steven G. Boxer

96-PLAT 8:45 AM **EDUCATION TRAVEL AWARDEE**
A DEMONSTRATION OF LIPID FLIP-FLIP IN FREE-FLOATING LIPOSOMES. **Drew Marquardt**, Barbara Geier, Frederick A. Heberle, Milka Doktorova, John Katsaras, Georg Pabst

97-PLAT 9:00 AM
HOW THE STRUCTURAL ASPECTS OF CHOLESTEROL MEDIATE LIPID FLIP-FLOP. **John S. Allhusen**, Dylan R. Kimball, John C. Conboy

98-PLAT 9:15 AM
CONFIGURABLE LIPID MEMBRANE GRADIENTS QUANTIFY DIFFUSION, PHASE SEPARATIONS AND BINDING DENSITIES. **Katherine N. Liu**, Chen-Min S. Hung, Michael A. Swift, Kristen A. Muñoz, Jose L. Cortez, Babak Sanii

99-PLAT 9:30 AM
A MICROFLUIDIC PLATFORM TO PRODUCE AND MANIPULATE LIPOSOMES - TOWARDS SYNTHETIC CELLS ON CHIP. **Siddharth Deshpande**, Yaron Caspi, Anthony Birnie, Cees Dekker

100-PLAT 9:45 AM
FLUID FLOW AS A STRATEGY FOR SORTING AND LOCALIZATION OF MEMBRANE PROTEINS. **Aurelia R. Honerkamp-Smith**, Rita E. Monson, Ross F. Waller, Raymond E. Goldstein

101-PLAT 10:00 AM
REMODELING OF GAMETE MEMBRANE DURING MAMMALIAN FERTILIZATION. **Benjamin Ravaux**, Christine Gourier

Platform
Bioenergetics and Mitochondrial Signaling

8:15 AM - 10:15 AM, ROOM 501ABC

Co-Chairs
Peter Adams, University of Leeds, United Kingdom
Tatiana Rostovtseva, NIH

102-PLAT 8:15 AM **EDUCATION TRAVEL AWARDEE**
ULTRAFAST LIMITS OF PHOTO-INDUCED ELECTRON TRANSFER RATES IN PPCA, A MULTI-HEME C-TYPE CYTOCHROME. **Aidan M. McKenzie**

103-PLAT 8:30 AM
INFRARED SPECTROSCOPIC AND ELECTROCHEMICAL APPROACHES FOR THE STUDY OF THE REACTION MECHANISM OF IMMOBILIZED MEMBRANE PROTEINS FROM THE RESPIRATORY CHAIN. Melin Frederic, Sebastien Kriegel, Thomas Meyer, **Petra Hellwig**

104-PLAT 8:45 AM
THEORETICAL INVESTIGATION INTO THE COLOR-TUNING MECHANISM OF PROTEORHODOPSIN. **Choongkeun Lee**, Blake Mertz

105-PLAT 9:00 AM
REDESIGNING PHOTOSYNTHETIC MEMBRANES: DEVELOPMENT OF BIO-INSPIRED PHOTONIC NANOMATERIALS. **Peter G. Adams**, Cvetelin Vasilev, Aaron M. Collins, Gabriel A. Montaño, C. Neil Hunter, Matthew P. Johnson

106-PLAT 9:15 AM
ENGINEERED AAA+ PROTEASES REVEAL MECHANISMS OF DEGRADATION AT THE MITOCHONDRIAL INNER MEMBRANE. Hui Shi, Anthony J. Rampello, Bojian Ding, **Steven E. Glynn**

107-PLAT 9:30 AM
ER CALCIUM RELEASE IS TUNED BY MITOCHONDRIAL REDOX NANODOMAINS. **David M. Booth**, Balázs Enyedi, Miklós Geiszt, Péter Várnai, György Hajnóczky

108-PLAT 9:45 AM
UNEXPECTED MODIFICATIONS OF CYSTEINES IN VDAC3: INDICATION THAT VDAC3 MAY SIGNAL THE MITOCHONDRIAL INTERMEMBRANE REDOX STATE. Simona Reina, Vanessa Checchetto, Rosaria Saletti, Ankit Gupta, Deepti Chaturvedi, Carlo Guardiani, Francesca Guarino, Mariano Andrea Scorciapino, Andrea Magrì, Salvatore Foti, Matteo Ceccarelli, Angela A. Messina, Radhakrishnan Mahalakshmi, Ildiko Szabo, **Vito De Pinto**

109-PLAT 10:00 AM
MEMBRANE LIPID COMPOSITION REGULATES ALPHA-SYNUCLEIN BLOCKAGE OF AND TRANSLOCATION THROUGH THE MITOCHONDRIAL VOLTAGE-DEPENDENT ANION CHANNEL. Daniel Jacobs, David P. Hoogerheide, Amandine Rovini, Philip A. Gurnev, Sergey M. Bezrukov, **Tatiana K. Rostovtseva**

Platform
DNA Replication and Transcription
8:15 AM - 10:15 AM, ROOM 511ABC

Co-Chairs
Juli Feigon, University of California, Los Angeles
Kenneth Johnson, University of Texas at Austin

110-PLAT 8:15 AM
RATE-LIMITING PYROPHOSPHATE RELEASE BY HIV REVERSE TRANSCRIPTASE AND ITS EFFECT ON ENZYME SPECIFICITY. **An Li**, Kenneth Johnson

111-PLAT 8:30 AM
A HYBRID METHODS APPROACH TO DETERMINE THE STRUCTURE OF TETRAHYMENA TELOMERASE. **Juli Feigon**

112-PLAT 8:45 AM
TWO-STAGE SYNAPSIS OF DNA ENDS DURING NON-HOMOLOGOUS END JOINING. **Thomas G.W. Graham**, Johannes C. Walter, Joseph J. Loparo

113-PLAT 9:00 AM
REAL-TIME OBSERVATION OF THE INITIATION OF RNA POLYMERASE II TRANSCRIPTION. **Furqan M. Fazal**, Cong A. Meng, Kenji Murakami, Roger D. Kornberg, Steven M. Block

114-PLAT 9:15 AM
SINGLE-MOLECULE IMAGING OF TRANSCRIPTION, CHROMOSOME ORGANIZATION, AND DNA REPAIR IN LIVE BACTERIA. **Mathew Stracy**, Christian Lesterlin, Stephan Uphoff, Pawel Zawadzki, Achillefs N. Kapanidis

115-PLAT 9:30 AM
E. COLI RNA POLYMERASE PAUSES DURING INITIAL TRANSCRIPTION. **David LV Bauer**, Diego Duchi, Achillefs N. Kapanidis

116-PLAT 9:45 AM
SINGLE-PROBE FLUORESCENCE IN SITU HYBRIDIZATION (FISH) IN BUDDING YEAST. **Gable M. Wadsworth**, Harold Kim

117-PLAT 10:00 AM **EDUCATION TRAVEL AWARDEE**
CRACKING OPEN A MOLECULAR CALCULATOR: DNA CHARGE TRANSPORT AND PRIMASE. **Marilyn E. Holt**, Elizabeth O'Brien, Lauren Salay, Matthew Thompson, Aaron Ehlinger, Jacqueline Barton, Walter Chazin

CID Committee Meeting
8:30 AM - 10:30 AM, ROOM 506

Career Center Workshop
Selling Yourself to the Life Sciences Industry
9:00 AM - 10:00 AM, ROOM 518

The industrial employer is looking for a different set of skills and attitudes than either the academic or government employer. Learn what the pharmaceutical/biotechnology industries want to hear from potential employees and why. Learn how to develop and best position your marketing message in order to improve the chances of a successful industrial job search.

Exhibits
10:00 AM - 5:00 PM, WEST HALL

Coffee Break
10:15 AM - 11:00 AM, WEST HALL

Career Center Workshop
Leveraging Social Media for Networking and Career Advancement
10:30 AM - 11:30 AM, ROOM 518

More and more recruiters, job decision-makers and hiring managers are using the web to find and research potential candidates. How can you make sure that you are not only found, but are ahead of the pack? In this session, we will discuss how decision-makers use LinkedIn and Facebook, and how you can use LinkedIn to establish yourself as a leader in your field, enhance your research reputation, and seek out and take advantage of innovative opportunities. We will demonstrate how to create a winning LinkedIn profile, and how to use its multitude of features (such as joining and commenting in groups) to generate solid leads for your career.

Exhibitor Presentation
Carl Zeiss Microscopy LLC
10:30 AM - 12:00 PM, ROOM 513

Technology Innovations: ZEISS LSM 880 Confocal with Airyscan and ZEISS Lightsheet Z.1
These microscopes from ZEISS address both ends of the spectrum of samples, live high speed imaging with superresolution and high speed imaging of large live and fixed tissues. Learn how ZEISS LSM 880 with Airyscan maintains the mantra that each photon of emission light is precious, while expanding the triangle of sensitivity, resolution and speed of acquisition.

ZEISS LSM 880 with Airyscan allows you to use multicolor samples with any label and get image quality like you have never seen before. With Airyscan you are always able to select the optimal acquisition strategy for your sample: Simply decide whether you want to gain 1.7x higher

resolution in all three dimensions – resulting in a 5x smaller confocal volume. Or push the sensitivity beyond the limits of all conventional confocal microscopes; or use the increase in signal-to-noise ratio to speed up your image acquisition.
Traditionally, deeply imaging into intact tissue typically requires multi-photon excitation to penetrate deeper than near the surface of a tissue. Using a "clearing" method to remove the light obstructing opaque molecules from a tissue has been another technique for deep imaging. Techniques such as SCALE, CLARITY, ClearT, SeeDB, CUBIC and others have allowed researchers to image deeper than a millimeter into cleared animal model brains and organs.

ZEISS Lightsheet Z.1 features high speed image acquisition and greatly reduced photo damage making imaging of live developmental samples and fixed and cleared tissues easier than ever before. Come learn about using the innovative ZEISS Lightsheet Z.1 microscope for imaging of fixed and cleared tissues.
Speakers
Joseph Huff, Product Marking Manager, Laser Scanning and Superresolution Microscopy, Carl Zeiss Microscopy LLC
Scott Olenych, Product Marketing Manager, Imaging Products, Carl Zeiss Microscopy LLC

International Relations Committee Meeting

10:30 AM - 12:00 PM, ROOM 410

Symposium
New and Notable

10:45 AM - 12:45 PM, PETREE HALL C

Co-Chairs
Vasanthi Jayaraman, University of Texas Health Science Center, and
E. Michael Ostap, University of Pennsylvania

NO ABSTRACT 10:45 AM
STRUCTURE OF A TRPV2 ION CHANNEL, **Seok-Yong Lee**
NO ABSTRACT 11:02 AM
CRYO-EM STRUCTURE OF A MICRONUTRIENT TRANSPORTER WITH UNUSAUL ARCHITECTURE. **Filippo Mancia**
NO ABSTRACT 11:19 AM
STRUCTURAL DYNAMICS OF K CHANNEL GATING REVEALED BY SINGLE MOLECULE FRET. **Colin Nichols**
NO ABSTRACT 11:36 AM
THE MOTIONS AND INTERACTIONS IN MISMATCH REPAIR TAGET SEARCH DYNAMICS ARE REVEALED BY LIVE-CELL SINGLE-MOLECULE MICROSCOPY. **Julie Biteen**
NO ABSTRACT 11:53 AM
INTEGRATIVE STRUCTURAL BIOLOGY OF TETRAHYMENA TELOMERASE. **Juli Feigon**
NO ABSTRACT 12:10 AM
INTRINSICALLY DISORDERED PROTEINS AS PHYSICAL DRIVERS OF MEMBRANE TRAFFIC. **Jeanne C. Stachowiak**
NO ABSTRACT 12:27 PM
FLOPPY BUT NOT SLOPPY: DECODING PLASTICITY IN THE DARK PROTEOME OF THE NUCLEAR TRANSPORT MACHINERY. **Edward Lemke**

Symposium
Computational and Experimental Approaches to Protein Design

10:45 AM - 12:45 PM, PETREE HALL D

Chair
Rama Ranganathan, University of Texas, Southwestern

118-SYMP 10:45 AM
MAPPING CONSTRAINTS ON PROTEIN EVOLUTION. **Jesse Bloom**

119-SYMP 11:15 AM
UNCOVERING AND REPROGRAMMING G PROTEIN COUPLED RECEPTOR SIGNALING. **Patrick Barth**

120-SYMP 11:45 AM
DESIGNING PEPTIDE INHIBITORS OF ANTI-APOPTOTIC BCL-2 FAMILY PROTEINS. **Amy E. Keating**

NO ABSTRACT 12:15 PM
PROTEIN MECHANICS: THE LINK BETWEEN STRUCTURE AND FUNCTION. **Rama Ranganathan**

Platform
Cryo-Electron Microscopy

10:45 AM - 12:45 PM, ROOM 502A

Co-Chairs
Gunnar Schroeder, Forschungszentrum Juelich, Germany
Sharon Wolf, Weizmann Institute of Science, Israel

121-PLAT 10:45 AM
HIGH-RESOLUTION STRUCTURAL INSIGHT INTO THE MYOSIN VI-F-ACTIN INTERFACE. Laura Y. Kim, Pinar S. Gurel, Tosan Omabegho, Zev Bryant, **Gregory M. Alushin**

122-PLAT 11:00 AM
USING CRYO-EM TO UNTANGLE THE CONFORMATIONAL LANDSCAPE OF A SMALL ALLOSTERICALLY-REGULATED COMPLEX. **Mario J. Borgnia**, Soojay Banerjee, Alberto Bartesaghi, Doreen Matthies, Prashant Rao, Alan Merk, Jason Pierson, Jacqueline L. Milne, Sriram Subramaniam

123-PLAT 11:15 AM
THE STRUCTURE OF THE METHANOSPIRILLUM HUNGATEI FLAGELLUM AS DETERMINED BY CRYO ELECTRON MICROSCOPY. **Nicole Poweleit**

124-PLAT 11:30 AM
IN SILICO REDUCTION OF CONFORMATIONAL VARIANCE IN CRYO-EM IMAGING. **Gunnar F. Schröder**, Michaela Spiegel, Amudha Kumari Duraisamy

125-PLAT 11:45 AM
COLLAPSE OF INDIVIDUAL DNA CHAINS CONFINED IN BACTERIOPHAGE CAPSIDS. **Françoise Livolant**, Amélie Leforestier, Marta De Frutos, Dominique Durand

126-PLAT 12:00 PM
STRUCTURAL REMODELING OF BACTERIOPHAGE Φ29 DURING INFECTION OF GRAM-POSITIVE BACTERIUM. **Madeline M. Farley**, Jiagang Tu, Ian Molineux, Jun Liu

127-PLAT 12:15 PM
CRYO-STEM TOMOGRAPHY PROVIDES MORPHOLOGICAL AND CHEMICAL CHARACTERIZATION OF PRECIPITATED CALCIUM-PHOSPHATE CLUSTERS SEQUESTERED IN MITOCHONDRIA OF INTACT VITRIFIED FIBROBLASTS. **Sharon G. Wolf**, Yael Mutsafi, Ben Horowitz, Michael Elbaum, Deborah Fass

128-PLAT 12:30 PM
ELECTRON CRYO-TOMOGRAPHY OF NANOWIRES IN SHEWANELLA ONEIDENSIS MR-1. **Poorna Subramanian**, Sahand Pirbadian, Mohamed Y. El-Naggar, Grant J. Jensen

Platform
Cell Mechanics, Mechanosensing, and Motility I

10:45 AM - 12:45 PM, ROOM 502B

Co-Chairs
Melissa Knothe Tate, University of New South Wales, Australia
Mohammad Mofrad, University of California, Berkeley

129-PLAT 10:45 AM
MECHANO-SENSITIVE INTERACTION BETWEEN TALIN AND FULL-LENGTH VINCULIN. **Yinan Wang**, Benjamin T. Goult, Mingxi Yao, Jie Yan

130-PLAT 11:00 AM
DISSIPATION OF STRESS IN THE CYTOSKELETON VIA ALPHA-ACTININ DYNAMIC CROSSLINKING. **Hossein Khadivi Heris**, Adele Khavari, Adam Hendricks, Allen Ehrlicher

131-PLAT 11:15 AM
MECHANOTRANSDUCTION OF THE ENDOTHELIAL GLYCOCALYX MEDIATES NITRIC OXIDE PRODUCTION THROUGH ACTIVATION OF TRP CHANNELS. **Matthew Dragovich**, Daniel Chester, X. Frank Zhang

132-PLAT 11:30 AM
A LAMIN A CHIMERIC PROTEIN CONTAINING A FRET BASED STRESS SENSORS REPORTS SPATIO-TEMPORAL FORCES IN THE NUCLEAR LAMINA. **Thomas M. Suchyna**, Fanji Meng, Frederick Sachs, Wilma Hofmann

133-PLAT 11:45 AM **EDUCATION TRAVEL AWARDEE**
MOLECULAR MECHANISMS OF MECHANOTRANSDUCTION THROUGH LINC COMPLEXES. **Zeinab Jahed**, Hengameh Shams, Mohammad Mofrad

134-PLAT 12:00 PM
CELL INVASION THROUGH STIFF CONSTRICTIONS CAUSES MUTATIONS WHILE DAMAGING THE NUCLEUS. **Jerome Irianto**, Charlotte R. Pfeifer, Avathamsa Athirasala, Irena L. Ivanovska, Roger E. Greenberg, Dennis E. Discher

135-PLAT 12:15 PM
VISUALIZING DIRECT INTERACTIONS IN THE MECHANOBIOME. **Priyanka Kothari**, Vasudha Srivastava, Irina Tchernyshyov, Jennifer Van Eyk, Douglas N. Robinson

136-PLAT 12:30 PM
MAPPING THE MECHANOME: NEW EXPERIMENTAL AND COMPUTATIONAL APPROACHES TO ELUCIDATE STEM CELL MECHANOADAPTATION AND LINEAGE COMMITMENT. **Melissa L. Knothe Tate**, Iman Jalilian, Min Jae Song, Sara McBride

Platform
TRP Channels

10:45 AM - 12:45 PM, ROOM 515A

Co-Chairs
Avi Priel, The Hebrew University of Jerusalem, Israel
Theodore Wensel, Baylor College of Medicine

137-PLAT 10:45 AM
THE STOICHIOMETRY AND ACTIVATION MECHANISM OF TRPV1 BY VANILLOIDS. Rakesh Kumar, Adina Hazan, Henry Matzner, **Avi Priel**

138-PLAT 11:00 AM
ION-ION INTERACTION AT THE MULTI-ION TRPV1 PORE. **Bo Hyun Lee**, Jie Zheng

139-PLAT 11:15 AM
A COMBINED COARSE-GRAINED AND ALL-ATOM MOLECULAR SIMULATION OF THE TRPV1 CHANNEL. **Wenjun Zheng**

140-PLAT 11:30 AM
N-HMME UPREGULATES LIPOLYTIC PROTEINS IN THE LIVER TO COUNTER NAFLD. **Padmamalini Baskaran**, Ross Cook, Sara Cisneros, Steven McAllisted, Baskaran Thyagarajan

141-PLAT 11:45 AM
STRUCTURE OF THE FULL-LENGTH TRPV2 CHANNEL BY CRYOEM. **Kevin Huynh**

142-PLAT 12:00 PM
STRUCTURAL BASIS OF TRPV2 CHANNEL GATING INVESTIGATED WITH CRYO-EM. **Timothy L. Dosey**, Zhao Wang, Fan Guizhen, Irina I. Serysheva, Wah Chiu, Theodore G. Wensel

143-PLAT 12:15 PM
STRUCTURE OF THE TRPA1 ION CHANNEL SUGGESTS REGULATORY MECHANISMS. **Candice E. Paulsen**, Jean-Paul Armache, Yuan Gao, Yifan Cheng, David Julius

144-PLAT 12:30 PM
THE ROLE OF LIPID RAFTS IN THE LOCALIZATION AND FUNCTION OF THE CHEMOSENSORY TRPA1 CHANNEL. **Justyna B. Startek**, Debapriya Ghosh, Yeranddy A. Alpizar, Alejandro López-Requena, Nele Van Ranst, Thomas Voets, Karel Talavera

Platform
Protein Assembly and Function

10:45 AM - 12:45 PM, ROOM 515B

Co-Chairs
Jennifer Boatz, University of Pittsburgh
Jochen Mueller, Ludwig Maximilian University of Munich, Germany

145-PLAT 10:45 AM
STRUCTURAL STUDIES OF THE OLIGOMERIZATION PROCESS OF HUMAN CYSTATIN C VARIANTS. Zuzanna Pietralik, Magdalena Murawska, Aneta Szymanska, Janet R. Kumita, Christopher M. Dobson, **Maciej Kozak**

146-PLAT 11:00 AM
THE STRUCTURAL BASIS OF ENZYME REGULATION BY CTP SYNTHASE METABOLIC FILAMENTS. Eric Lynch, **Justin Kollman**

147-PLAT 11:15 AM
TUBULIN MONOMER-MONOMER ASSOCIATION IS LESS INFLUENCED BY THE SOLVENT THAN DIMER-DIMER ASSOCIATION: STRUCTURE AND FUNCTION OF TUBULIN INTERACTION INTERFACES. **Felipe Montecinos-Franjola**, Peter Schuck, Dan L. Sackett

148-PLAT 11:30 AM
STRUCTURAL STUDIES OF PLANT CESA SUPPORT EIGHTEEN CESAS IN THE PLANT CSC. **Venu G. Vandavasi**, Daniel K. Putnam, Qiu Zhang, Loukas Petridis, William T. Heller, B. Tracy Nixon, Candace H. Haigler, Udaya Kalluri, Leighton Coates, Paul Langan, Jeremy C. Smith, Jens Meiler, Hugh O'Neill

149-PLAT 11:45 AM
STRUCTURAL INSIGHTS INTO TC TOXIN ACTION. **Stefan Raunser**

150-PLAT 12:00 PM
AN INVESTIGATION OF THE ATOMIC STRUCTURE OF CATARACT-FORMING MUTANT GAMMA-D-CRYSTALLIN AGGREGATES FORMED UNDER DISTINCT ENVIRONMENTAL CONDITIONS. **Jennifer C. Boatz**, Matthew J. Whitley, Cody L. Hoop, Xuemei Zeng, Nathan Yates, Angela M. Gronenborn, Patrick C A van der Wel

151-PLAT 12:15 PM
THE GIANT CYTOSKELETAL PROTEIN OBSCURIN ACTS AS A VARIABLE FORCE RESISTOR. **Nathan T. Wright**, Tracy A. Caldwell, Logan C. Meyer

152-PLAT 12:30 PM
FORCE SENSING BY THE VASCULAR PROTEIN VON WILLEBRAND FACTOR IS TUNED BY A STRONG INTERMONOMER INTERACTION. **Jochen P. Mueller**, Salomé Mielke, Achim Löf, Tobias Obser, Christof Beer, Diana A. Pippig, Willem Vanderlinden, Reinhard Schneppenheim, Martin Benoit

Platform
Membrane Active Peptides and Toxins

10:45 AM - 12:45 PM, ROOM 501ABC

Co-Chairs
Estefania Mulvihill, Eidgenössische Technische Hochschule Zürich, Switzerland
Marc-Antoine Sani, University of Melbourne, Australia

153-PLAT 10:45 AM
A PORE MODEL OR THE CARPET MODEL? THE MODE OF ACTION OF AMPS ON E. COLI SPHEROPLASTS. Yen Sun, Tzu-Lin Sun, **Huey W. Huang**

154-PLAT 11:00 AM
PROBING THE ANTIMICROBIAL ACTION OF POLYMYXIN B1 AND MELITTIN VIA COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS. **Damien F. Jefferies**, Pin-Chia Hsu, Syma Khalid

155-PLAT 11:15 AM
THE DISRUPTIVE STATE OF THE MEMBRANE ACTIVE ANTIMICROBIAL PEPTIDE PISCIDIN 1 INVESTIGATED BY MULTI-µS ALL-ATOM SIMULATIONS AND SOLID-STATE NMR: SURFACE DEFECTS ARE FAVORED OVER STABLE PORES. **B. Scott Perrin Jr**, Riqiang Fu, Myriam Cotten, Richard W. Pastor

156-PLAT 11:30 AM
DIRECTLY OBSERVING THE LIPID-DEPENDENT SELF-ASSEMBLY AND PORE FORMING MECHANISM OF THE CYTOLYTIC TOXIN LISTERIOLISYN O. **Estefania S. Mulvihill**, Katharina van Pee, Stefania Mari, Daniel J. Mueller, Özkan Yildiz

157-PLAT 11:45 AM
LIPID-PROTEIN PARTNERING DURING PORE FORMATION OF FRAGACEATOXIN C. **Koldo Morante**, Jose M. M. Caaveiro, Kouhei Tsumoto

158-PLAT 12:00 PM
INHIBITION OF RTX TOXIN ACTIVITY BY THE NUCLEAR STAIN, DRAQ5. **Angela C. Brown**, Joshua Webb

159-PLAT 12:15 PM
MEMBRANE-BINDING PROPERTIES OF GATING-MODIFIER AND PORE BLOCKING TOXINS: MEMBRANE INTERACTION IS NOT A PREREQUISITE FOR MODIFICATION OF CHANNEL GATING. **Evelyne Deplazes**, Sónia Troeira Henriques, Glenn F. King, David J. Craik, Alan E. Mark, Christina I. Schroeder

160-PLAT 12:30 PM
STRUCTURAL CHANGES IN LIPID MODEL MEMBRANES INDUCED BY THE FUNGAL PEPTIDE TOXIN ECE1-III. **Julia Wernecke**, Laura Paulowski, Bernhard Hube, Oliver H. Seeck, Thomas Gutsmann

Platform
Cardiac Smooth and Skeletal Muscle Electrophysiology

10:45 AM - 12:45 PM, ROOM 511ABC

Co-Chairs
Edward Lakatta, NIH
Eric Sobie, University of Maryland Biotechnology Institute

161-PLAT 10:45 AM
SUBSTANTIAL CELL-TO-CELL HETEROGENEITY OF ION CURRENTS IS AN ESSENTIAL CHARACTERISTIC OF THE SINOATRIAL NODE. **Oliver J. Monfredi**, Bruce Ziman, Mark Boyett, Edward Lakatta, Victor A. Maltsev

162-PLAT 11:00 AM INTERNATIONAL TRAVEL AWARDEE
SK4 K^+ CHANNELS REGULATE SINOATRIAL PACEMAKER AND THEIR BLOCKADE AMELIORATE ARRHYTHMIAS IN CPVT2 PATIENT-DERIVED IPSC AND IN VIVO IN CASQ2 KNOCK-IN AND KNOCK-OUT MICE. **Shiraz Haron-Khun**, David Weisbrod, Dor Yadin, Asher Peretz, Michael Eldar, Michael Arad, Bernard Attali

163-PLAT 11:15 AM
ACTION POTENTIAL MORPHOLOGY MEASUREMENT OF CARDIAC CELL CHAMBER SPECIFIC CELL TYPES OF STEM CELL-DERIVED CARDIAC MYOCYTES. Aaron D. Kaplan, Glenna CL Bett, **Randall L. Rasmusson**

164-PLAT 11:30 AM
FLUORESCENCE LOCAL FIELD OPTICAL MAPPING (FLOM) OF CA^{2+} ALTERNANSES TEMPERATURE DEPENDENCY IN INTACT PERFUSED MOUSE HEARTS. **Yuriana Aguilar-Sanchez**, Moris A. Saravia, Jose Millet, Ariel L. Escobar

165-PLAT 11:45 AM
SUDDEN INFANT DEATH AND MODULATION OF LATE SODIUM CURRENT BY HYPOXIA, INVESTIGATED IN INDUCED PLURIPOTENT STEM CELLS. **Stefan A. Mann**, Jamie I. Vandenberg, Adam P. Hill

166-PLAT 12:00 PM
INCREASED SUSCEPTIBILITY OF SPONTANEOUSLY HYPERTENSIVE RATS TO VENTRICULAR TACHYARRHYTHMIAS DURING THE EARLY STAGES OF HYPERTENSION. **Christopher Y. Ko**, Thao P. Nguyen, Ali A. Sovari, Arash Pezhouman, Shankar Iyer, Hong Cao, Aneesh Bapat, Nooshin Vahdani, Mostafa Ghanim, Michael C. Fishbein, James N. Weiss, Hrayr S. Karagueuzian

167-PLAT 12:15 PM
EXTRACELLULAR SODIUM DEPENDENCE OF THE CONDUCTION VELOCITY-CALCIUM RELATIONSHIP: EVIDENCE OF EPHAPTIC SELF-ATTENUATION. **Sharon George**, Mohammad Bonakdar, Michael Zeitz, Rafael Davalos, James Smyth, Steven Poelzing

168-PLAT 12:30 PM
EVIDENCE FOR PHOSPHORYLATION-DEPENDENT MODULATION OF BK CHANNEL ACTIVITY IN VASCULAR SMOOTH MUSCLE (VSM) MYOCYTES AND RESISTANCE ARTERIES. Barry D. Kyle, Ramesh C. Mishra, **Andrew P. Braun**

Undergraduate Student Pizza "Breakfast"

11:30 AM - 1:00 PM, ROOM 406AB

The Education Committee hosts this "breakfast" for undergraduate students. This session provides a valuable networking and social opportunity to meet other students and Committee members, to discuss academic goals and questions, and to develop a biophysics career path. Space is limited to the first 100 registrants. Meeting attendees do not need to preregister for this event.

Colleges in the Community Day

11:30 AM - 5:00 PM, ROOM 406AB

This full day of activities for local college students and their instructors kicks off with an Undergraduate Student Pizza "Breakfast" where participants have an opportunity to socialize and network with their peers and members of the Biophysical Society's Education Committee in a fun and relaxed environment. Next, students have a chance to win prizes during a scavenger hunt designed to promote learning and interaction with researchers. Undergraduates also have a unique opportunity to ask graduate students, postdocs, and leading biophysicists about training and career opportunities in biophysics and related fields during this interactive Q & A session. Come prepared to find out about the course of study that biophysicists undertake, what it means to be a biophysicist, and how biophysicists make important discoveries. Finally, students have access to an exclusive tour of the Exhibit Hall where they will view special demonstrations featuring cutting edge instrumentation producing breakthroughs in structural biology and other areas.

International Travel Awardee Luncheon

12:00 PM - 1:00 PM, ROOM 404AB

A number of international students, postdocs, and scientists will be recognized during this luncheon for their outstanding achievements in biophysics research. This event is hosted by the International Relations Committee.

Career Center Workshop
Creating and Using an Effective CV/Résumé

12:00 PM - 1:00 PM, ROOM 518

The CV and Résumé are critical components of any effective job search, regardless of function, level, or industry. In this workshop, we will look at what constitutes a good résumé or CV, what makes the two documents different, as well as what makes them similar. We will examine sample documents (both good and bad) and discuss which document to use, when to use it, and how to most effectively use it when conducting your job search.

Public Affairs Committee Meeting

12:15 PM - 2:15 PM, ROOM 506

The World Oustide the Lab: Many Ways to Use Your PhD Skills in Industry

1:00 PM - 2:30 PM, ROOM 403A

Have you ever wondered how you can apply the skills learned while working on your PhD in a career away from the bench?
The Early Careers Committee is sponsoring a panel to dicsuss the plethora of career options that exist beyond the bench, such as publishing, science writing, patent law, policy, marketing, etc. Panelist involved in a wide variety of careers will share their personal experiences.

Speakers
Anna Amcheslavsky, Illumina
Ragan Robertson, University of California, Los Angeles
Jeanne Small, Quantum Northwest

Graduate & Postdoc Institution Fair

1:00 PM - 3:00 PM, WEST HALL

This fair will introduce students and postdoctoral candidates to colleges and universities with leading programs in biophysics. Registration is not needed to participate as a student.

Snack Break

1:45 PM - 3:00 PM, WEST HALL

Poster Presentations and Late Posters

1:45 PM - 3:45 PM, WEST HALL

Teaching Science Like We Do Science

2:00 PM - 3:30 PM, ROOM 408A

This interactive workshop provides participants with practical tools, tips and open educational resources for bringing biophysics topics in the lab and in the classroom to life for undergraduate and graduate students. Small group discussions guided by Discipline-Based Education Research (DBER) recommendations provide opportunities to apply the teaching tools presented to participants' educational practice.

Speakers
Gundala Bosch, Johns Hopkins Bloomberg School of Public Health
Scott Gould, Claremont College
Patricia Soto, Creighton University

Career Center Workshop
Networking for Nerds

2:30 PM - 3:30 PM, ROOM 518

It's elementary—networking is an absolute necessity in any career, and especially in science and engineering, and math. In fact, networking is not only critical to advancing your own career, but also to advancing scholarship itself. But what exactly is "networking"? It's more than just saying hello at a conference! Learn how to appropriately promote yourself and build a network. Discover how to "work a room," start conversations with people you have never met before, and obtain information that can set you on a path to career victory. The importance and use of social networks will be emphasized.

Transparency, Reproducibility, and the Progress of Science

2:30 PM - 4:00 PM, ROOM 411

At this panel discussion sponsored by the Public Affairs Committee and the Publications Committee, the panelists will examine the complex issues relating to reproducibility in science, how it can be improved by greater transparency, and how it affects how we communicate science. Speakers will address reproducibility as it pertains to researchers, publishers, and government, and explore why this is a hot topic in the popular press.

Panelists
Helen Berman, Protein Data Bank
Emilie Marcus, Cell/Cell Press
Keith Yamamoto, University of California, San Francisco

Early Careers Committee Meeting

3:30 PM - 5:00 PM, ROOM 506

Career Center Workshop
Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)

4:00 PM - 5:00 PM, ROOM 518

You've been invited to interview with that drug development company that you've always wanted to work for. You've soaked up the details of the position description. You are confident in your ability to do the job, as well as answer any/all technical questions during the interview process. The day is yours…until…that first question catches you by surprise and your confidence begins to wilt. Be prepared for those non-technical questions that you will almost certainly hear at some point, know why they are asked, and learn what a good (if not great) response to each question might be by attending this workshop.

Symposium
Signaling Complexes and Dynamics

4:00 PM - 6:00 PM, PETREE HALL C

Chair
Hao Wu, Harvard Medical School

169-SYMP **4:00 PM**
STRUCTURAL ELUCIDATION OF INNATE IMMUNITY. **Hao Wu**

170-SYMP **4:30 PM**
MECHANISM OF JAK2 ACTIVATION BY THE ARCHETYPE CLASS I CYTOKINE RECEPTOR, THE GROWTH HORMONE RECEPTOR. **Andrew J. Brooks**, Megan L. O'Mara, Wei Dai, Daniel Abankwa, Yash Chhabra, Kathryn A. Tunny, Michael W. Parker, Emma Sierecki, Yann Gambin, Guillermo A. Gomez, Gitte W. Haxholm, Louise F. Nikolajsen, Manolis Doxastakis, Alan E. Mark, Michael J. Waters

171-Symp 5:00 pm
MECHANISM AND FUNCTIONS OF PLATELET MECHANOSENSING. **Renhao Li**

172-Symp 5:30 pm
CONFORMATIONAL PLASTICITY AND DRUGGABILITY OF MEMBRANE-BOUND K-RAS. **Alemayehu A. Gorfe**

Symposium
Structure and Motion of Cilia and Flagella

4:00 pm - 6:00 pm, Petree Hall D

Chair
Jonathan Howard, Yale University

173-Symp 4:00 pm
CRYO-ELECTRON TOMOGRAPHY PROVIDES A NEW WINDOW INTO CILIARY STRUCTURE AND FUNCTION. **Daniela Nicastro**

174-Symp 4:30 pm
STRUCTURAL GENETICS OF CILIA/FLAGELLA. **Masahide Kikkawa**

175-Symp 5:00 pm
MOTOR COORDINATION UNDERLYING THE FLAGELLAR BEAT IN CHLAMYDOMONAS. **Jonathon Howard**

176-Symp 5:30 pm
SYNCHRONIZATION OF EUKARYOTIC FLAGELLA. **Raymond E. Goldstein**

Symposium
DNA Nanostructures for Biophysics

4:00 pm - 6:00 pm, Room 502A

Chair
William Shih, Harvard University

177-Symp 4:00 pm
DNA NANOSTRUCTURES AS BUILDING BLOCKS FOR MOLECULAR BIOPHYSICS AND FUTURE THERAPEUTICS. **William Shih**

178-Symp 4:30 pm
CREATING PROGRAMMABLE DISORDER IN DNA ORIGAMI ARRAYS WITH COMBINATORIAL PATTERNS. **Lulu Qian**, Grigory Tikhomirov, Philip Petersen

179-Symp 5:00 pm
DNA ORIGAMI FOR NANOPORES: DESIGN, DEVELOPMENTS AND CHALLENGES. **Ulrich F. Keyser**

180-Symp 5:30 pm
NANOSCALE CONSTRUCTION AND IMAGING WITH DNA. **Peng Yin**

Platform
Voltage-gated Channels (Na and Ca)

4:00 pm - 6:00 pm, Room 502B

Co-Chairs
Christopher Ahern, University of Iowa
Coeli Lopes, University of Rochester

181-Plat 4:00 pm
RATIONAL DESIGN AND SYNTHESIS OF A NOVEL MEMBRANE BINDING NAV1.8 SELECTIVE INHIBITOR WITH IN VIVO ACTIVITY IN PAIN MODELS. **Christina I. Schroeder**, Jennifer Deuis, Sonia Troeria Henriques, Zoltan Dekan, Marco Inserra, Mehdi Mobli, Irina Vetter

182-Plat 4:15 pm
SODIUM CHANNEL/LIGAND COMPLEX STRUCTURES AS A GUIDE FOR RATIONAL DRUG DESIGN. **Altin Sula**, Paul DeCaen, Claire Naylor, Geancarlo Zanatta, Claire Bagneris, David E. Clapham, David Pryde, B.A. Wallace

183-Plat 4:30 pm
STRUCTURAL BASIS OF NAV1.7 INHIBITION BY AN ISOFORM-SELECTIVE SMALL MOLECULE ANTAGONIST. **David H. Hackos**, Shivani Ahuja, Susmith Mukund, Lunbin Deng, Kuldip Khakh, Elaine Chang, Clint Young, Sophia Lin, J.P. Johnson Jr., Daniel F. Ortwine, Brian S. Safina, Daniel P. Sutherlin, Charles J. Cohen, Christopher M. Koth, Jian Payandeh

184-Plat 4:45 pm
MUTATION-SPECIFIC CARDIAC RISK ASSESSMENT IN LQT3. **Elsa Ronzier**, Alessandra Matavel, Yitschak Biton, Niels Otani, Wojciech Zareba, Arthur J. Moss, Coeli Lopes

185-Plat 5:00 pm
GENETICALLY ENCODING SINGLE-MOLECULE FLUOROPHORES INTO ION CHANNELS IN LIVING CELLS. **Lilia Leisle**, Rahul Chadda, Jason D. Galpin, Janice L. Robertson, Christopher A. Ahern

186-Plat 5:15 pm
GABAPENTINOIDS SUPPRESS EARLY AFTERDEPOLARIZATIONS BY UNCOUPLING $\alpha_2\delta$-1 SUBUNITS FROM $CA_V1.2$ CHANNELS: IMPLICATIONS FOR CA_V CHANNEL GATING-MODIFIERS AS A NEW CLASS OF ANTIARRHYTHMICS. **Nicoletta Savalli**, Marina Angelini, James N. Weiss, Riccardo Olcese

187-Plat 5:30 pm
BIOPHYSICAL CHARACTERIZATION OF THE HONEYBEE'S DSC1 ORTHOLOG HIGHLIGHTS A NEW VOLTAGE DEPENDANT CALCIUM CHANNEL SUBFAMILY. **Pascal Gosselin-Badaroudine**, Adrien Moreau, Louis Simard, Thierry Cens, Matthieu Rousset, Pierre Charnet, Mohamed Chahine

188-Plat 5:45 pm
REGULATION OF MEMBRANE LOCALIZATION OF TYPE TWO VOLTAGE GATED CALCIUM CHANNELS. **Mallory B. Scott**, Paul J. Kammermeier

Platform
Membrane Structure

4:00 pm - 6:00 pm, Room 515A

Co-Chairs
Lisa Della Ripa, University of Illinois at Urbana-Champaign
Tyler Reddy, University of Oxford, United Kingdom

189-Plat 4:00 pm
THE COMPLEX, ASYMMETRIC, ESCHERICHIA COLI ENVELOPE STUDIED BY NEUTRON SCATTERING. Luke A. Clifton, Stephen A. Holt, Nico Paracini, Arwel V. Hughes, Syma Khalid, Damien Jefferies, **Jeremy H. Lakey**

190-Plat 4:15 pm
A COARSE GRAINED FORCE FIELD FOR PSEUDOMONAS AERUGINOSA PAO1 LIPOPOLYSACCHARIDE. **Brad J. Van Oosten**, Thad A. Harroun

191-Plat 4:30 pm
MOLECULAR INSIGHTS INTO THE LOW PERMEABILITY BARRIER OF GRAM-NEGATIVE PATHOGENS. **Cesar A. Lopez Bautista**, S. Gnanakaran, Helen Zgurskaya

192-Plat 4:45 pm
COMPARTMENTAL VOLUME REGULATION OF E. COLI UNDER VARIOUS GROWTH CONDITIONS. **Jonas van den Berg**, Bert Poolman

193-Plat 5:00 pm
ATOMIC RESOLUTION STUDIES OF STEROL INTERACTIONS BY SOLID-STATE NMR SPECTROSCOPY. **Lisa A. Della Ripa**, Alexander G. Cioffi, Samantha Phinney, Xiangyan Shi, Taras V. Pogorelov, Martin D. Burke, Chad M. Rienstra

194-Plat 5:15 pm **INTERNATIONAL TRAVEL AWARDEE**
STRUCTURAL CHARACTERIZATION ON ASYMMETRIC LIPID VESICLES AT SUBNANOMETER RESOLUTION. **Barbara Geier**, Drew Marquardt, Frederick Heberle, Milka Doktorova, John Katsaras, Georg Pabst

195-PLAT 5:30 PM
STIRRING A LOW REYNOLDS NUMBER MARTINI. **Edward R. Lyman**

196-PLAT 5:45 PM
VENI, VIDI, VORONOI: ATTACKING VIRUSES WITH SPHERICAL VORONOI DIAGRAMS. **Tyler Reddy**, Ross Hemsley, Edd Edmondson, Nikolai Nowaczyk, Joe Pitt-Francis, Mark S.P. Sansom

Platform
Intrinsically Disordered Proteins (IDP) and Aggregates I

4:00 PM - 6:00 PM, ROOM 515B

Co-Chairs
Claudiu Gradinaru, University of Toronto, Canada
Ana Melo, University of Pennsylvania

197-PLAT 4:00 PM **CPOW TRAVEL AWARDEE**
DETERMINING A TOPOLOGICAL MODEL FOR TAU BOUND TO TUBULIN HETERODIMERS. **Ana M. Melo**, Garrett Cobb, Juliana Coraor, Shana Elbaum-Garfinkle, Elizabeth Rhoades

198-PLAT 4:15 PM
A NEW APPROACH TO INFER SIZE AND SHAPE OF DISORDERED CONFORMATIONS OF PROTEINS FROM SM-FRET DATA. Gregory-Neal Gomes, Jianhui Song, Hue-Sun Chan, **Claudiu C. Gradinaru**

199-PLAT 4:30 PM
FTIR STUDY REVEAL INTRINSICALLY DISORDERED NATURE OF HEAT SHOCK PROTEIN 90. **Aihua Xie**, Maurie Balch, David Neto, Oliver Causey, Johnny Hendriks, Junpeng Deng, Robert Matts

200-PLAT 4:45 PM
PHYSICAL PRINCIPLES THAT GOVERN THE SEQUENCE-ENCODED PHASE BEHAVIOR OF INTRINSICALLY DISORDERED BLOCK-COPOLYMERIC PROTEINS. **Alex S. Holehouse**, Tyler S. Harmon, Rohit V. Pappu

201-PLAT 5:00 PM
CYTOTOXICITY OF PRION PROTEIN-DERIVED CELL PENETRATING PEPTIDES IS INDEPENDENT OF AMYLOID FORMATION. Vineeth Mukundan, Christy Maksoudian, Maria Vogel, **Mazin Magzoub**

202-PLAT 5:15 PM
INTRINSICALLY DISORDERED PROTEINS DRIVE MEMBRANE CURVATURE. **David J. Busch**, Justin R. Houser, Carl C. Hayden, Michael B. Sherman, Eileen M. Lafer, Jeanne C. Stachowiak

203-PLAT 5:30 PM
KINETICS OF AMYLOID FIBRIL SELF-ASSEMBLY BY DIRECT OBSERVATION OF ELONGATION. **Laurence J. Young**, Clemens F. Kaminski

204-PLAT 5:45 PM
FROM PHYSIOLOGICAL FLUIDS TO PATHOLOGICAL GELS: DISORDERED PROTEINS AT THE NEXUS OF LIQUID PHASE SEPARATION AND NEURODEGENERATIVE DISEASE. Shana Elbaum-Garfinkle, **Nicole Taylor**, Clifford P. Brangwynne

Platform
Membrane Protein Structure and Folding I

4:00 PM - 6:00 PM, ROOM 501ABC

Co-Chairs
Vadim Cherezov, University of Southern California
Syma Khalid, University of Southampton, United Kingdom

205-PLAT 4:00 PM
ARNT: STRUCTURE AND MECHANISM OF THE AMINOARABINOSE TRANSFERASE RESPONSIBLE FOR RESISTANCE TO POLYMYXIN-CLASS ANTIBIOTICS. **Vasileios I. Petrou**, Carmen M. Herrera, Kathryn M. Schultz, Oliver B. Clarke, Jeremie Vendome, David Tomasek, Surajit Banerjee, Kanagalaghatta R. Rajashankar, Brian Kloss, Edda Kloppmann, Burkhard Rost, Candice S. Klug, M. Stephen Trent, Lawrence Shapiro, Filippo Mancia

206-PLAT 4:15 PM
STRUCTURAL STUDIES OF THE HUMAN KAPPA OPIOID RECEPTOR ACTIVE STATE CONFORMATIONS. **Ming-Yue Lee**, Nilkanth Patel, Vsevolod Katritch, Raymond C. Stevens, Vadim Cherezov

207-PLAT 4:30 PM
CRYSTAL STRUCTURE OF THE CALCIUM ATPASE SERCA IN COMPLEX TO A NOVEL ANTI-CANCER AGENT THAT TARGETS MULTIDRUG-RESISTANT LEUKEMIA. **John K. Lee**, Joseph M. Autry, Razvan Cornea, Nicholas Bleeker, Denise Casemore, Chengguo Xing, David D. Thomas

208-PLAT 4:45 PM **CPOW TRAVEL AWARDEE**
ADVANCES IN IN SITU X-RAY CRYSTALLOGRAPHY OF MEMBRANE PROTEINS. **Jana Broecker**, Viviane Klingel, Bryan T. Eger, Oliver P. Ernst

209-PLAT 5:00 PM
A MACHINE LEARNING APPROACH TO HETEROLOGOUS MEMBRANE PROTEIN OVEREXPRESSION. **Shyam M. Saladi**, Nauman Javed, Axel Müller, William M. Clemons

210-PLAT 5:15 PM
LINKING THE OUTER MEMBRANE OF E.COLI TO THE CELL WALL VIA OMPA & BRAUN'S LIPOPROTEIN: TOWARDS A MOLECULAR MODEL OF A VIRTUAL BACTERIAL CELL ENVELOPE. **Syma Khalid**, Maite Ortiz-Suarez, Peter J. Bond, Thomas Piggot

211-PLAT 5:30 PM
SYSTEMATIC EVALUATION OF THE CS-ROSETTA DE NOVO STRUCTURE PREDICTION METHOD FOR MEMBRANE PROTEINS. **Katrin Reichel**, Olivier Fisette, Tatjana Braun, Gerhard Hummer, Oliver Lange, Lars Schäfer

212-PLAT 5:45 PM
INSIGHTS INTO HOW MUTATIONS THERMOSTABILIZE G-PROTEIN-COUPLED RECEPTORS. **Nagarajan Vaidehi**, Sangbae Lee, Supriyo Bhattacharya, Manbir Sandhu, Reinhard Grisshammer, Christopher G. Tate

Platform
Biomaterials and Biosurfaces

4:00 PM - 6:00 PM, ROOM 511ABC

Co-Chairs
Ehud Landau, University of Zurich, Switzerland
Birgit Plochberger, Vienna University of Technology, Austria

213-PLAT 4:00 PM
CONFINEMENT OF LIPID MEMBRANES BY NANOSTRUCTURED POLYMER PATTERNS FOR CELL TO CELL MIMICKING. **Birgit Plochberger**, Richard Wollhofen, Jaroslaw Jacak, Markus Axmann, Viktoria Motsch, Gerhard J. Schütz, Thomas Klar

214-PLAT 4:15 PM
RATIONALLY DESIGNED DYNAMIC PROTEIN HYDROGELS WITH REVERSIBLY TUNABLE MECHANICAL PROPERTIES. Na Kong, **Hongbin Li**

215-PLAT 4:30 PM
THE MUSSEL ATTACHMENT PLAQUE: A LOAD BEARING PROTEIN SCAFFOLD. **Emmanouela Filippidi**, Daniel G. DeMartini, Paula Malo de Molina, Eric W. Danner, Juntae Kim, Matthew E. Helgeson, J. Herbert Waite, Megan T. Valentine

216-PLAT 4:45 PM
LIPID PHASE BEHAVIOR AND PROTEIN-LIPID INTERACTIONS WITHIN NANOLIPOPROTEIN PARTICLES UPON SOL-GEL DERIVED ENCAPSULATION. **Wade F. Zeno**, Silvia L. Hilt, Subhash H. Risbud, John C. Voss, Marjorie L. Longo

217-PLAT 5:00 PM
DESIGNED FUNCTIONAL LIPIDIC BIOMATERIALS: APPLICATIONS IN MOLECULAR RECOGNITION, DRUG DELIVERY AND MEMBRANE PROTEIN CRYSTALLIZATION. Yazmin M. Osornio, Livia Salvati Manni, Simone Aleandri, **Ehud Landau**

218-PLAT 5:15 PM
OPTIMIZATION OF PEPTIDE-TAGGED CATIONIC LIPID NANOPARTICLES FOR TARGETED GENE DELIVERY. **Emily Wonder**, Ramsey Majzoub, Kai K. Ewert, V. Ramana Kotamraju, Erkki Ruoslahti, Tambet Teesalu, Cyrus R. Safinya

219-PLAT 5:30 PM
THE MICROMECHANICS OF CELLULARIZED EXTRACELLULAR MATRIX. **Bo Sun**, Christopher AR Jones, Matthew Cibula, David H. McIntyre

220-PLAT 5:45 PM
ELECTROPHYSIOLOGY OF PATTERNED NEURONAL NETWORKS ON MONOLAYER GRAPHENE. **Sandeep Keshavan**, Shovan Naskar, Alberto Diaspro, Laura Cancedda, Silvia Dante

Korean Biophysicists Meeting

5:00 PM - 6:00 PM, ROOM 403B

PI to PI, a Wine & Cheese Mixer

5:00 PM - 7:00 PM, ROOM 406AB

You finally have a job working in biophysics, in industry or academia, with some funding and a lab, but you've realized that the career challenges continue. Come relax and network with your contemporaries and senior biophysicists over a beer or glass of wine. This event is a great chance to compare notes with colleagues and discuss one-on-one your unique solutions to issues that arise in the time between getting your job and getting your next promotion, including management of lab staff, getting your work published, and renewing your funding. Refreshments will be provided, with cash bar.

Exhibitor Presentation
HEKA Elektronic + Multi Channel Systems

5:30 PM - 7:00 PM, ROOM 505

PATCHMASTER and PatchServer: Solutions for Patch Clamp
Presentation 1: Combined Patch Clamp and Imaging with PATCHMASTER and SmartLUX

SmartLUX is the new imaging extension for PATCHMASTER software synchronizing image acquisition and patch clamp data recordings. Image based data such as fluorescence intensities form ROIs that are stored as traces together with current and voltage traces in the PATCHMASTER data file. A link between data points of the trace and the images enables convenient automatic display of the corresponding images when replaying the patch clamp data.

Presenation 2: Multi-Patch Experiments with EPC 10 Quadro and PATCHMASTER

PATCHMASTER software allows the user to control up to 8 patch clamp amplifiers (2 x EPC 10 USB Quardo) in parallel, making it an ideal platform for either conventional multi-patch experiments or automated patch clamping. The Multi-Cell extension of PATCHMASTER allows easy setup and execution of acquisition sequences and analysis methods for operating all amplifiers in parallel. Conventional patch clamping with multiple electrodes can be facilitated by automating processes using the Protocol Editor.

Presentation 3: PatchServer: A Pipette-Based Automatic Patch Clamp System

PatchServer is Multi Channel Systems' new automated patch-clamp system that adds on to a manual patch-clamp setup. It is able to establish single-channel and whole-cell recording configurations using standard glass electrodes. The automation includes sealing on suspended cells, establishing recording configurations, and moving to application bays for solution exchange – all under visual control. PatchServer comes in a one channel version for performing single experiments, as well as a four channel version for recording from four cells in parallel using the EPC 10 Quadro from HEKA. A piezo-driven ultra-fast solution exchanger (UFA tool) is available as an option and can be easily integrated.
Speakers
Christian Heinemann, Head of Engineering at HEKA Elektronik
Juergen Rettinger, Product Manager – Ion Channel Product Line at Multi Channel Systems

Biophysics Austria Mixer

6:00 PM - 7:00 PM, ROOM 404AB

Student Research Achievement Award (SRAA) Poster Competition

6:00 PM - 9:00 PM, WEST HALL

See page 47 for list of participants.
Supported by The Journal of Physical Chemistry
This session features students who are presenting posters at the Meeting and have pre-registered for the competition. During the SRAA competition, students give a five-to-seven minute oral presentation of their poster to one or more judges. Winners will be recognized on Monday evening prior to the National Lecture.

SUNDAY POSTER SESSIONS

1:45 PM–3:45 PM, West Hall

Below is the list of poster presentations of abstracts submitted by October 1.
The list of late abstracts scheduled for Sunday is available in the Program addendum and the posters can be viewed on boards beginning with L.
All abstracts are available through the desktop planner and mobile app.

Posters should be mounted beginning at 6:00 PM on Saturday and removed by 5:30 PM on Sunday evening. Posters will be on view until 10:00 PM the night before presentation. Poster numbers shown refer to the program order of abstracts as they appear in the online Abstracts Issue. Board numbers indicate where boards are located in the Exhibit Hall.

Odd-Numbered Boards 1:45 PM–2:45 PM | Even-Numbered Boards 2:45 PM–3:45 PM

Board Numbers	Category
B1 – B29	Protein Structure and Conformation I
B30 – B48	Protein-Small Molecule Interactions I
B49 – B71	Protein Dynamics and Allostery I
B72 – B102	Membrane Protein Structure and Folding I
B103 – B121	DNA Replication, Recombination, and Repair
B122 – B144	Chromatin and the Nucleoid
B145 – B173	Membrane Physical Chemistry I
B174 – B196	Membrane-active Peptides and Toxins I
B197 – B226	Membrane Structure I
B227 – B248	Membrane Receptors and Signal Transduction I
B249 – B278	Mechanosensation
B279 – B301	Excitation-Contraction Coupling I
B302 – B331	Voltage-gated K Channels, Mechanisms of Voltage Sensing and Gating I
B332 – B361	Voltage-gated Na Channels I
B362 – B390	Other Channels
B391 – B413	Cardiac Muscle Regulation
B414 – B429	Actin Structure, Dynamics, and Associated Proteins
B430 – B445	Microtubules, Structure, Dynamics, and Associated Proteins
B446 – B464	Cell Mechanics, Mechanosensing, and Motility I
B465 – B490	Membrane Pumps, Transporters, and Exchangers I
B491 – B517	Cellular Signaling and Metabolic Networks
B518 – B533	Neuroscience: Experimental Approaches and Tools
B534 – B555	Magnetic Resonance Spectroscopy: NMR and EPR
B556 – B578	Electron Microscopy
B579 – B583	Diffraction and Scattering Techniques
B584 – B613	Optical Microscopy and Super-Resolution Imaging I
B614 – B639	Bioengineering
B640 – B647	Biophysics Education

It is the responsibility of the poster presenters to remove print materials from the board after their presentations. Please do not leave materials or belongings under poster boards or in the poster area. Posters will not be collected or stored for pick-up at a later time. The Biophysical Society is not responsible for any articles left in the poster area.

Protein Structure and Conformation I (Boards B1 - B29)

221-Pos Board B1
STRUCTURAL AND MECHANISTIC INSIGHTS DERIVED FROM SATURATION MUTAGENESIS OF CCDB. **Pankaj C. Jain**, Siddharth Patel, Prasanth Kumar, Raghavan Varadarajan

222-Pos Board B2
STRUCTURAL AND FUNCTIONAL STUDY ON THE INTERACTION OF HUMAN PLASMINOGEN AND PROTEIN H FROM HAEMOPHILUS INFLUENZAE TYPE F. **Tamim Al-Jubair**, Birendra Singh, Yu Ching Su, Susanna Törnroth Horsefield, Kristian Riesbeck

223-Pos Board B3
WHMD PROMOTES THE ASSEMBLY OF MYCOBACTERIUM SMEGMATIS FTSZ: A POSSIBLE ROLE OF WHMD IN BACTERIAL CELL DIVISION. **Dipanwita Bhattacharya**, Ashutosh Kumar, Dulal Panda

224-Pos Board B4
ASSOCIATION MECHANISM OF LEISHMANIA MAJOR PEROXIDASE AND CYTOCHROME C REVEALED THROUGH BROWNIAN AND MOLECULAR DYNAMICS. **Scott A. Hollingsworth**, James B. Fields, Georges Chreifi, Matthias Heyden, Anton P. Arce, Hugo I. Magaña-Garcia, Douglas J. Tobias, Thomas L. Poulos

225-Pos Board B5
STRUCTURAL AND BIOCHEMICAL CHARACTERIZATION OF CASK PDZ INTERACTION WITH PROTEIN AND LIPID BINDING PARTNERS. **Young Joo Sun**, Titus Hou, Xu Liu, Lokesh Gakhar, Ernesto Fuentes

226-Pos Board B6
NOVEL BIVALENT INTERACTION BETWEEN VASP-EVH1 AND ZYXIN IS CRITICAL FOR BINDING ORIENTATION. **Lucila A. Acevedo**, Alex I. Greenwood, Eric B. Gibbs, Scott Showalter, Linda Nicholson

227-Pos Board B7
CHARACTERIZING PROTEIN-PROTEIN NONSPECIFIC INTERACTIONS BY STATIC LIGHT SCATTERING. **Di Wu**, Huan-Xiang Zhou

228-Pos Board B8
STRUCTURAL STUDIES ON THE MITOCHONDRIAL FISSION PROTEIN FIS1 SUGGEST A MECHANISM OF TPR PROTEIN SELF-ASSOCIATION. **Amber Bakkum**, John Egner, Megan Cleland Harwig, Doug Bierer, R. Blake Hill

229-Pos Board B9
INTRINSICALLY-DISORDERED REGION OF HUMAN SMALL HEAT SHOCK PROTEIN HSPB1 AFFECTS STRUCTURE AND FUNCTION. **Amanda F. Clouser**, Ponni Rajagopal, Rachel E. Klevit

230-Pos Board B10
INTERPLAY BETWEEN IONIC STRENGTH, ASSOCIATION RATES AND ELECTROSTATIC INTERACTION IN THE C3D:CR2 COMPLEX. **Rohith R. Mohan**, Gary L. Huber, J. Andrew McCammon, Dimitrios Morikis

231-Pos Board B11
CONFORMATIONAL CHANGES IN COMPLEMENT COMPONENT 3 UPON ACTIVATION OR THROMBOMODULIN BINDING. Daniel DeHelian, Gavin Palowitch, Nathan Fritzinger, Caroline Gambone, Thomas Holt, Shelby Marchese, **Julia R. Koeppe**

232-Pos Board B12
SYNERGY OF PUTATIVE BINDING MODES IN THE FACTOR H (CCP 19-20) AND C3D COMPLEX. **Reed E S Harrison**, Ronald D. Gorham, Dimitrios Morikis

233-Pos Board B13
THERMAL DENATURATION AND DOMAIN STABILITY OF NAMPT PROTEIN. **Trivikram R. Molugu**, Udeep Chawla, Radu C. Oita, Ting Wang, Michael F. Brown, Joe G. N. Garcia

234-Pos Board B14
STRUCTURE AND FUNCTION OF THE ASB-CONTAINING E3 LIGASES. **Ryan Lumpkin**

235-Pos Board B15
STRUCTURAL BASIS FOR CONFORMATIOANL SPACE OF LINEAR POLYUBIQUITIN BY CRYSTALLOGRAPHY AND SOLUTION SCATTERING. Trung Thanh Thach, Donghyuk Shin, Seungsu Han, **Sangho Lee**

236-Pos Board B16
A HYBRID METHODS APPROACH TO THE STRUCTURAL DETERMINATION OF PHOTOACTIVATION IN THE ORANGE CAROTENOID PROTEIN. **Corie Ralston**, Sayan Gupta

237-Pos Board B17
STRUCTURAL FRAMEWORK FOR PYRIDOXAL 5'-PHOSPHATE BINDING TO THE HUMAN GLUTAMATE-OXALOACETATE TRANSAMINASE VARIANTS. Jesi Lee, Peter Ngoi, Trevor Gokey, Xiao Chang, Ten-Yang Yen, Yanping Tan, Hongyun Tong, Zheng-Hui He, **Anton Guliaev**

238-Pos Board B18
CONFORMATIONAL DIFFERENCES BETWEEN ERK2 AND JNK3α1. **Ji Young Park**, Ka Young Chung

239-Pos Board B19
COMPARISON OF THE CONFORMATIONAL DYNAMICS BETWEEN DIFFERENT ACTIVE STATES OF β-ARRESTIN1 ANALYZED BY HYDROGEN/DEUTERIUM EXCHANGE MASS SPECTROMETRY. **Hee Ryung Kim**, Ka Young Chung

240-Pos Board B20
STRUCTURE-DYNAMIC DETERMINANTS GOVERNING A MODE OF REGULATORY RESPONSE AND PROPAGATION OF ALLOSTERIC SIGNAL IN SPLICE VARIANTS OF NA^+/CA^{2+} EXCHANGE (NCX) PROTEINS. **Su Youn Lee**, Ka Young Chung, Daniel Khananshvili, Moshe Giladi

241-Pos Board B21
THE E.COLI SEC PATHWAY UNDER A SINGLE-MOLECULE LOUPE. Niels Vandenberk, Spiridoula (Lily) Karamanou, Anastassios (Tassos) Economou, Johan Hofkens, **Jelle Hendrix**

242-Pos Board B22
SYMMETRY-CONSTRAINED NORMAL MODE ANALYSIS OF THE BACTERIAL FLAGELLAR MOTOR. **Moon Ki Choi**, Soojin Jo, Moon Ki Kim

243-Pos Board B23
RESOLVING CONFORMATIONAL SWITCHES IN THE PROTEASE FTSH USING SINGLE-MOLECULE FRET. **Martine Ruer**, Philip Gröger, Krainer Georg, Michael Schlierf

244-Pos Board B24
STRUCTURAL CHANGES IN THE SNARE PROTEIN SNAP-25 BY PH AND IONIC STRENGTH. **Kyle S. Clawson**, David Hallan, Timothy T. Harris, Katrina J. Welker, Kara L. Woodbury, Dixon J. Woodbury

245-Pos Board B25
MECHANISM OF COORDINATION OF THE BACTERIOPHAGE T4 DNA PACKAGING MOTOR ANALYZED BY REAL-TIME SINGLE MOLECULE FLUORESCENCE ASSAY. **Li Dai**, Digvijay Singh, Reza Vafabakhsh, Marthandan Mahalingam, Vishal Kottadiel, Yann Chemla, Taekjip Ha, Venigalla B. Rao

246-Pos Board B26
LID CONFORMATIONAL DYNAMICS AND SUBSTRATE SPECIFICITY OF THE PILI CONSTRUCTING SORTASE C ENZYMES. **Emmanuel Naziga**, Jeff Wereszczynski

247-Pos Board B27
A NOVEL SIGNAL TRANSDUCTION MECHANISM IN LOV DOMAIN PROTEINS. **Estella F. Yee**, Anand T. Vaidya, Peter P. Borbat, Jack H. Freed, Brian R. Crane

248-Pos Board B28
NMR STRUCTURAL/FUNCTIONAL CHARACTERIZATION OF AN ONCOGENIC MUTANT OF CAMP-DEPENDENT PROTEIN KINASE A: PRKACA-DNAJB1. **Adak N. Karamafrooz**, Jonggul Kim, Geoffrey Li, Sanford M. Simon, Susan S. Taylor, Gianluigi Veglia

249-Pos Board B29
STUDY ON THE CONFORMATIONAL CHANGE OF C-SRC TYROSINE KINASE: TARGETED MOLECULAR DYNAMICS SIMULATION. **Sangwook Wu**

Protein-Small Molecule Interactions I (Boards B30 - B48)

250-Pos Board B30
BIOPHYSICAL STUDIES ON THE INTERACTION OF THIONINE GOLD NANOCONJUGATE TO SERUM ALBUMIN. **Puja Paul**, G. SURESH KUMAR, S. Chandra Bhattacharyya

251-Pos Board B31
COMPUTATIONAL ASSESSMENT OF TRIMETHOPRIM RESISTANCE IN DIHYDROFOLATE REDUCTASE. Haleh Abdizadeh, Omer Acar, Tandac Furkan Guclu, Yusuf Talha Tamer, Tugce Altinusak Batur, Erdal Toprak, Ali Rana Atilgan, **Canan Atilgan**

252-Pos Board B32
INTERACTIONS BETWEEN A CLASSICAL ALLOSTERIC PROTEIN AND A STRONG EFFECTOR REVISITED. Shunsuke Sakurai, Daiki Sawada, Takashi Yonetani, **Antonio Tsuneshige**

253-Pos Board B33
HUMAN SERUM ALBUMIN-[RU(PHEN)3]2+ COMPLEX FORMATION STUDIED BY OPTICAL SPECTROSCOPIES. **Zuzana Jurasekova**, Veronika Huntosova, Dominik Belej, Pavol Miskovsky, Daniel Jancura

254-Pos Board B34
MULTIMERIZATION OF SOLUTION-STATE PROTEINS BY WATER SOLUBLE PORPHYRINS. **Daniel R. Marzolf**, Aidan M. McKenzie, Alexander C. Hudson, Oleksandr Kokhan

255-Pos Board B35
NANOSCALE MEASUREMENTS OF BIOCHEMICAL INTERACTIONS AT THE SURFACE OF OPTICALLY TRAPPED PARTICLES. **Wooten D. Simpson III**, Volkmar Heinrich

256-Pos Board B36
CHARACTERIZATION OF THE INFLUENCE OF A SMALL MOLECULE ON A RAS-RELATED PROTEIN-PROTEIN INTERACTION. Djamali Muhoza, **Paul D. Adams**

257-Pos Board B37
CATION-SPECIFIC INFLUENCES ON THE SOLVATION AND SOLVENT ACCESSIBILITY OF ALANINE-RICH PEPTIDES. **Taylor P. Light**, Gina MacDonald

258-Pos Board B38
BIOPHYSICAL AND MOLECULAR INVESTIGATION OF THE INTERACTION BETWEEN ENTEROLACTONE AND HUMAN SERUM ALBUMIN. Bahareh Bigdeli, Behdad Delavari, Samaneh Samaei Daryan, Ali Akbar Saboury, **Bahram Goliaei**

259-Pos Board B39
POLYSACCHARIDE CROWDER SHOWS OPTIMAL AFFINITY FOR SEMI-OPEN STATE OF MALTOSE BINDING PROTEIN. **Archishman Ghosh**, Huan X. Zhou

260-Pos Board B40
EFFECT OF A COSOLVENT IN BINDING EVENTS OF HYDROPHOBIC MOLECULES. AN EXPERIMENTAL AND NUMERICAL STUDY. Caroline Senac, Patrick Fuchs, Wladimir Urbach, **Nicolas Taulier**

261-Pos Board B41
ATOMIC MECHANISMS OF STABILIZING AND DESTABILIZING CO-SOLVENTS ON PROTEIN STABILITY. **Cristiano L. Dias**, Zhaoqian Su

262-Pos Board B42
FCS ON PROTEINS IN CROWDED ENVIRONMENTS. **Alyazan Albarghash**, Daryan Kempe, Niklas Ole Junker, Birgit Simone Hillebrecht, Friedemann Melchior Landmesser, Jörg Fitter

263-Pos Board B43
MODELING MACROMOLECULAR CROWDING THROUGH TRANSLATIONAL AND ROTATIONAL DIFFUSION OF SMALL MOLECULAR PROBES. **Megan Currie**, Brenden Berry, Taylor Ward, Erin D. Sheets, Ahmed A. Heikal

264-Pos Board B44
EFFECT OF CO-SOLUTES ON MODEL REACTION EQUILIBRIA: MIGHT CHANGES IN THE FREE ENERGY OF BULK WATER BE THE UNDERLYING CAUSE? **Daryl K. Eggers**

265-Pos Board B45
EXPLORATION OF WEAK INTERACTIONS BETWEEN FOLATE AND GLYCINE-BETAINE. **Purva P. Bhojane**, Michael R. Duff, Elizabeth E. Howell

266-Pos Board B46
QUANTIFYING INTERACTIONS BETWEEN BIOCHEMICAL FUNCTIONAL GROUPS AND WITH HOFMEISTER SALT IONS IN WATER. **Xian Cheng**, Lixue Cheng, Irina Shkel, Ben Knowles, Kevin Connor, Evan Buechel, Cristen Molzahn, Andrew Mcclyman, David Lambert, Hunter Cochran, Thomas Jr. Record

267-Pos Board B47
A PROTEIN EXPRESSION SYSTEM FOR EVALUATING CATION-PI AND PI-PI INTERACTION IN PROTEINS. Jinfeng Shao, Andy-Mark W.H. Thunnissen, **Jaap Broos**

268-Pos Board B48
STRUCTURAL AND FUNCTIONAL INSIGHTS INTO THREE UNDERCHARACTERIZED FIMBRIAL ADHESINS. **Roger D. Klein**, Kevin O. Tamadonfar, Jerome S. Pinkner, Karen W. Dodson, Scott J. Hultgren

Protein Dynamics and Allostery I (Boards B49 - B71)

269-Pos Board B49
THE STRUCTURAL AND DYNAMIC EFFECTS OF INHIBITOR BINDING TO PROTEIN KINASE C βII. **Shashank Jariwala**, Sivaraj Sivaramakrishnan, Barry J. Grant

270-Pos Board B50
MOLECULAR DYNAMICS SIMULATION AND MARKOV STATE MODEL REVEAL IRREGULAR METASTABLE CONFORMATION AND ALLOSTERY IN DNAJB-PKAC. **Yingjie Wang**, Alessandro Cembran, Jiali Gao, Gianluigi Veglia, Susan S. Taylor, Sanford M. Simon

271-Pos Board B51
A SYSTEMS APPROACH TO UNDERSTANDING THE ALLOSTERIC MECHANISM OF PYRUVATE KINASE M2. **Jamie A. Macpherson**

272-Pos Board B52
ROLE OF THE CENTRAL STALK IN THE ROTARY-CHEMICAL COUPLING AND TORQUE GENERATION OF F1-ATPASE. **Shayantani Mukherjee**, Arieh Warshel

273-Pos Board B53
PROTEIN-LIGAND INTERACTIONS THROUGH THE COMPUTATIONAL MICROSCOPE: ALLOSTERY IN A CANONICAL SIGNALING DOMAIN. **Robert D. Malmstrom**, Alexandr P. Kornev, Susan S. Taylor, Rommie E. Amaro

274-Pos Board B54
MAPPING ALLOSTERY IN THE TWO DOMAIN CONSTRUCTS OF PDZ3 AND SH3 WITH ARTIFICIAL DOMAINS. **Kirubakaran Palani**, Lucie Pfeiferová, Jiří Vondrášek

275-Pos Board B55
SIALIC ACID INDUCED CONFORMATIONAL ENSEMBLE SHIFTS IN THE HEMAGGLUTININ-NEURAMINIDASE PROTEIN OF THE NEWCASTLE DISEASE VIRUS. **Nalvi D. Duro**, Priyanka Dutta, Sameer Varma

276-Pos Board B56
MOLECULAR INSIGHTS FOR THE ROLE OF KEY RESIDUES OF CALRETICULIN IN ITS BINDING ACTIVITIES. Hongyi Yang, Joanne E. Murphy-Ullrich, **Yuhua Song**

277-Pos Board B57
UNIQUE FLEXIBILITY PATTERNS OF PDB ENTRIES. **Monique M. Tirion**

278-Pos Board B58
LOSS IN ALLOSTERIC REGULATIONS THROUGH STRUCTURAL DYNAMICS LEAD TO DISEASE. **Avishek Kumar**, Tyler J. Glembo, Banu Ozkan

279-Pos Board B59
UNIVERSALITY OF VIBRATIONAL SPECTRA OF GLOBULAR PROTEINS. Hyuntae Na, Guang Song, **Daniel ben-Avraham**

280-Pos Board B60
THE DEGENERACY OF PROTEIN NORMAL MODES. **Hyuntae Na**, Guang Song

281-Pos Board B61
STATISTICAL PHYSICS OF THE CAUSALITY AND ENERGETICS IN ALLOSTERIC COMMUNICATION. **Enrico Guarnera**, Igor N. Berezovsky

282-Pos Board B62 **International Travel Awardee**
SPECTRUS: A DIMENSIONALITY REDUCTION APPROACH FOR IDENTIFYING DYNAMICAL DOMAINS IN PROTEIN COMPLEXES FROM LIMITED STRUCTURAL DATASETS. **Luca Ponzoni**, Guido Polles, Vincenzo Carnevale, Cristian Micheletti

283-Pos Board B63
MODE LOCALIZATION IN THE COOPERATIVE DYNAMICS OF PROTEIN RECOGNITION. **Jeremy T. Copperman**, Marina G. Guenza

284-Pos Board B64
TUNING ALLOSTERY IN RANDOM SPRING NETWORKS. **Jason W. Rocks**, Nidhi Pashine, Irmgard Bischofberger, Carl P. Goodruch, Sidney R. Nagel, Andrea J. Liu

285-Pos Board B65
REVEALING THE MECHANISM FOR CONFORMATIONAL CHANGES FROM STRUCTURALLY RICH ENSEMBLES. **Laura Orellana**, Ozge Yoluk, Modesto Orozco, Erik Lindahl

286-Pos Board B66
FOLDING RATE AND TRANSITION PATH TIME OF A SINGLE-MOLECULE PROTEIN. **Amar Nath Gupta**

287-Pos Board B67
FASTER BINDING FREE-ENERGY LANDSCAPE CALCULATION BY VIRTUAL-STATE COUPLED ADAPTIVE UMBRELLA SAMPLING. **Bhaskar Dasgupta**, Higo Junichi, Haruki Nakamura

288-Pos Board B68 **Education Travel Awardee**
DYNAMICS OF AGGREGATING MUTANTS OF THE P53 DNA BINDING DOMAIN REVEAL A NOVEL "DRUGGABLE" POCKET. **Mohan R. Pradhan**, Zahra Ouray, Srinivasaraghavan Kannan, David P. Lane, Chandra S. Verma

289-Pos Board B69
CALCULATING MULTI-BODY COOPERATIVITY PARAMETERS FOR CALCIUM BINDING TO CALMODULIN THROUGH COARSE-GRAINED SIMULATIONS. **Prithviraj Nandigrami**, John J. Portman

290-Pos Board B70
UNDERSTANDING CONFORMATIONAL CHANGES IN PERIPLASMIC BINDING PROTEINS. Nahren M. Mascarenhas, **Shachi Gosavi**

291-Pos Board B71
GENERALIZED ALLOSTERY IN THROMBIN. **Jiajie Xiao**, Freddie R. Salsbury Jr

Membrane Protein Structure and Folding I (Boards B72 - B102)

292-Pos Board B72
THE MODEL STRUCTURES OF C5A RECEPTOR (C5AR): INSIGHTS INTO AGONISM, INVERSE AGONISM AND ANTAGONISM. **Soumendra Rana**

293-Pos Board B73
DESIGN PRINCIPLES OF MEMBRANE PROTEIN STRUCTURES. Diane Nguyen, **Vladimir Yarov-Yarovoy**

294-Pos Board B74
DUAL TOPOLOGY GENERATION OF EMRE. **Nicholas Woodall**, Ying Yin, James Bowie

295-Pos Board B75
OPENING ION-TRANSFER PATHS OF CHANNELRHODOPSIN. **Christian Spakowski**, Joachim Heberle, Ana-Nicoleta Bondar

296-Pos Board B76
IMPROVED 3D STRUCTURE PREDICTION OF BETA-BARREL MEMBRANE PROTEINS BY USING EVOLUTIONARY COUPLING CONSTRAINTS, REDUCED STATE SPACE AND AN EMPIRICAL POTENTIAL FUNCTION. Wei Tian, Jie Liang, **Hammad Naveed**

297-Pos Board B77
COARSE-GRAINED MODELING OF MEMBRANE PROTEIN INTEGRATION VIA THE SEC TRANSLOCON. **Michiel J.M. Niesen**, Connie Y. Wang, Thomas F. Miller III

298-Pos Board B78
DETERMINANTS OF MULTISPANNING MEMBRANE PROTEIN INTEGRATION MEDIATED BY THE SEC TRANSLOCON. **Reid C. Van Lehn**, Bin Zhang, Thomas F. Miller III

299-Pos Board B79
HETEROGENEITY OF THE HYDROPHOBIC CORE OF A MEMBRANE PROTEIN COMPLEX. **Satarupa Bhaduri**, Stanislav D. Zakharov, S Saif Hasan, Valentyn Stadnytskyi, Łukasz Bujnowicz, Marcin Sarewicz, Artur Osyczka

300-Pos Board B80
PROBING CONFORMATIONAL EQUILIBRIA IN FLEXIBLE RECOGNITION BY MOLECULAR DYNAMICS AND EPR. **Jennifer M. Hays**, Marissa Kieber, Tsega Solomon, Linda Columbus, Peter M. Kasson

301-Pos Board B81
COMPUTATIONAL STUDY OF ANTHRACYCLINE INTERACTIONS WITH MEMBRANE-EMBEDDED P-GLYCOPROTEIN. **Eric K. Wong**, J. Alfredo Freites, Douglas J. Tobias

302-Pos Board B82
NMR RESTRAINED PROTEIN STRUCTURE CALCULATIONS IN IMPLICIT WATER/MEMBRANE ENVIRONMENTS. **Ye Tian**, Charles Schwieters, Stanley Opella, Francesca Marassi

303-Pos Board B83
PREDICTING THE ROLE OF A SINGLE AMINO ACIDS IN THE DIMERIZATION OF TRANSMEMBRANE HELICES. **Yao Xiao**, Mark Teese, Dieter Langosch

.

304-Pos **Board B84**
INCLUDING H-BONDING IN DEPTH-DEPENDENT MEMBRANE BURIAL POTENTIALS FOR IMPROVING FOLDING SIMULATIONS. **Zongan Wang**, John M. Jumper, Karl F. Freed, Tobin R. Sosnick

305-Pos **Board B85** **Education Travel Awardee**
A COMPUTATIONAL MODEL FOR MEMBRANE PROTEIN FLUX ACROSS THE BACTERIAL PERIPLASM. **Shawn M. Costello**, Ashlee M. Plummer, Patrick J. Fleming, Karen G. Fleming

306-Pos **Board B86**
COMPUTATIONAL MODELS OF INTERACTING LOOP REGIONS IN PH-DEPENDENT GATING OF OMPG. **Alan Perez-Rathke**, Christina Chisholm, Min Chen, Jie Liang

307-Pos **Board B87**
ALL-ATOM STRUCTURAL MODELS OF THE TRANSMEMBRANE DOMAINS OF INSULIN RECEPTOR AND TYPE-1 INSULIN-LIKE GROWTH FACTOR RECEPTOR. Harish Vashisth, **Hossein Mohammadiarani**

308-Pos **Board B88**
MAPPING THE MEMBRANE PROTEOME OF ANAEROBIC GUT FUNGI USING RNA-SEQ. **Susanna Seppala**, Kevin S. Solomon, Sean P. Gilmore, John K. Henske, Monica D. Rieth, Michelle A. O'Malley

309-Pos **Board B89**
PREPARATION AND DELIVERY OF MICROCRYSTALS IN LIPIDIC CUBIC PHASE FOR SERIAL FEMTOSECOND CRYSTALLOGRAPHY.
Andrii Ishchenko, Vadim Cherezov, Wei Liu

310-Pos **Board B90**
IMPACT OF MUTATIONS ON THE STRUCTURE OF THE HUMAN POTASSIUM CHANNEL KCNQ1. **Hui Huang**, Keenan C. Taylor, Brett M. Kroncke, Alfred L. George, Charles R. Sanders

311-Pos **Board B91**
CHARACTERIZING THE STRUCTURAL BASIS FOR USHER ACTIVATION. **Natalie S. Omattage**, Zengqin Deng, Peng Yuan, Scott J. Hultgren

312-Pos **Board B92**
PROTOCOL TO AVOID POSSIBLE ARTIFACTS IN ATOMISTIC SIMULATION OF GPCR PROTEINS WHOSE CRYSTAL STRUCTURE IS HEAVILY ENGINEERED. **Moutusi Manna**, Waldemar Kulig, Matti Javanainen, Joona Tynkkynen, Ulf Hensen, Daniel J. Müller, Tomasz Rog, Ilpo Vattulainen

313-Pos **Board B93**
DYNAMICAL AND STRUCTURAL ALTERATIONS WITHING LIPID-PROTEIN ASSEMBLIES CONTROL APOPTOTIC PORE FORMATION - A SOLID STATE NMR STUDY. **Artur PG Dingeldein**, Martin Lidman, Tobias Sparrman, Gerhard Gröbner

314-Pos **Board B94**
IDENTIFICATION OF CONFORMATION SPECIFIC BINDER FOR THE NA^+/GALACTOSE TRANSPORTER. **Jay P. Kumar**

315-Pos **Board B95** **Education Travel Awardee**
NMR SOLUTION STRUCTURE AND EXTRACELLULAR LOOP DYNAMICS OF THE OUTER MEMBRANE PROTEIN OPRG OF PSEUDOMONAS AERUGINOSA EXPLAIN TRANSPORT OF SMALL AMINO ACIDS. **Iga Kucharska**, Patrick Seelheim, Thomas Edrington, Binyong Liang, Lukas K. Tamm

316-Pos **Board B96**
MOLECULAR BASIS FOR THE INTERACTION OF LIPOPOLYSACCHARIDE WITH OUTER MEMBRANE PROTEIN OPRH FROM PSEUDOMONAS AERUGINOSA. **Iga Kucharska**, Binyong Liang, Lukas K. Tamm

317-Pos **Board B97**
SYMMETRY AND SIZE OF MEMBRANE PROTEIN POLYHEDRAL NANOPARTICLES. **Di Li**, Osman Kahraman, Christoph A. Haselwandter

318-Pos **Board B98**
STRUCTURAL BASIS FOR PHOSPHATIDYLINOSITOL-PHOSPHATE BIOSYNTHESIS. **Meagan L. Belcher Dufrisne**, Oliver B. Clarke, David Tomasek, Carla D. Jorge, Minah Kim, Surajit Banerjee, Kanagalaghatta R. Rajashankar, Lawrence Shapiro, Wayne A. Hendrickson, Helena Santos, Filippo Mancia

319-Pos **Board B99**
SANS STUDIES OF BACTERIORHODOPSIN INCORPORATION AND CRYSTALLIZATION IN CUBIC PHASE. **Thomas E. Cleveland**, Paul Butler

320-Pos **Board B100**
STATISTICAL LEARNING AND DOCKING RECOVER THE REACTION COORDINATES OF A GPCR. **Evan Feinberg**, Vijay Pande

321-Pos **Board B101**
STRUCTURAL CHARACTERIZATION OF THE BACTERIAL SUCCINATE/ACETATE PROTON SYMPORTER SATP IN LIPID BILAYER MEMBRANES. **Vitaly V. Vostrikov**, Tata Gopinath, Jonggul Kim, Sarah E. D. Nelson, John Lee, Gianluigi Veglia

322-Pos **Board B102**
CONFORMATION OF THE MEMBRANE-INTEGRATED FUNCTIONAL STATE OF ANTI-APOPTOTIC BCL-XL. **Yong Yao**, Danielle Nisan, Lynn Fujimoto, Francesca Marassi

DNA Replication, Recombination, and Repair (Boards B103 - B121)

323-Pos **Board B103**
BASE TRIPLET STEPPING BY THE RAD51/RECA FAMILY OF RECOMBINASES DURING STRAND EXCHANGE. **Ja Yil Lee**, Tsuyoshi Terakawa, Zhi Qi, Justin B. Steinfeld, Sy Redding, YoungHo Kwon, William A. Gaines, Weixing Zhao, Patrick Sung, Eric C. Greene

324-Pos **Board B104**
DYNAMICS OF HRPA. **Chu Jian Ma**

325-Pos **Board B105**
BACTERIAL CELL CYCLE CONTROL BY MODIFIED CRISPR BINDING. **Jakub Wiktor**, Christian Lesterlin, David Sherratt, Cees Dekker

326-Pos **Board B106**
LONG-RANGE ALLOSTERIC COMMUNICATION IN MUTS AND HOMOLOGS VIA MOLECULAR DYNAMICS SIMULATIONS. **Michael Feig**, Beibei Wang, Joshua Francis

327-Pos **Board B107**
THE ROLE OF THE EXCLUDED STRAND IN HEXAMERIC HELICASE UNWINDING. **Sean M. Carney**, Sanford H. Leuba, Michael A. Trakselis

328-Pos **Board B108**
DNA-MEDIATED REDOX SIGNALING IN BACTERIAL NUCLEOTIDE EXCISION REPAIR BY UVRC. **Rebekah M.B. Silva**, Andy Zhou, Michael A. Grodick, Jacqueline K. Barton

329-Pos **Board B109**
PROCESSIVE DNA UNWINDING BY RECBCD HELICASE IN THE ABSENCE OF CANONICAL MOTOR TRANSLOCATION. Michael Simon, Joshua E. Sokoloski, Linxuan Hao, Elizabeth Weiland, **Timothy M. Lohman**

330-Pos **Board B110**
ON THE ORIGIN OF SUGAR SELECTIVITY BY DNA POLYMRASES. **Hanwool Yoon**

331-Pos **Board B111**
DNA TRANSLOCATIONS IN REAL-TIME: INSIGHTS IN NON-HOMOLOGOUS END JOINING. Ineke Brouwer, Gerrit Sitters, Andrea Candelli, Mauro Modesti, Erwin Peterman, **Gijs J. Wuite**

332-Pos Board B112
DISSECTION OF E.COLI DNA REPLICATION IN HIGH RESOLUTION WITH TEMPERATURE-CONTROLLED MAGNETIC TWEEZERS. **Bojk A. Berghuis**, Jordi P.A. Wassenburg, Jurjen M. Wilschut, Theo van Laar, Nicholas E. Dixon, Martin Depken, Nynke H. Dekker

333-Pos Board B113
SINGLE-MOLECULE STUDIES ON EXOI EXCISION DURING DNA MISMATCH REPAIR. Yongmoon Jeon, Daehyung Kim, Juana Martín-López, Ryanggeun Lee, Jungsic Oh, Jeungphill Hanne, Richard Fishel, **Jong-Bong Lee**

334-Pos Board B114
GLOBAL DEFORMATION OF DNA FACILITATES RECOGNITION AND NUCLEOTIDE FLIPPING OF DAMAGED SITES: A MOLECULAR DYNAMICS SIMULATION STUDY. **Martin Zacharias**, Alexander Knips, Giuseppe La Rosa

335-Pos Board B115
ENZYME SELECTIVITY OF HIV REVERSE TRANSCRIPTASE: CONFORMATIONS, LIGANDS AND FREE ENERGY PARTITIONS. **Serdal Kirmizialtin**, Kenneth A. Johnson, Ron Elber

336-Pos Board B116
BROAD VELOCITY DISTRIBUTIONS IN SFIV HELICASES ARE A CONSEQUENCE OF HETEROGENEITY. **Huong T. Vu**, Shaon Chakrabarti, Michael Hinczewski, D. Thirumalai

337-Pos Board B117
DIFFERENTIAL EFFECTS OF IONS, MOLECULAR CROWDING, AND SOLUTION DNA DENSITY ON THE DAMAGE SEARCH MECHANISMS OF HOGG1 AND HUNG. **Shannen L. Cravens**, James T. Stivers

338-Pos Board B118
DNA CONFORMATIONAL DISTRIBUTION AND DYNAMICS DURING SEARCH AND RECOGNITION OF DAMAGED SITES BY DNA REPAIR PROTEIN RAD4/XPC. **Sagnik Chakraborty**, Xuejing Chen, Phillip Slogoff-Sevilla, Yogambigai Velmurugu, Peter J. Steinbach, Jung-Hyun Min, Anjum Ansari

339-Pos Board B119
FLUORESCENCE LIFETIME MAPPING OF NADH REVEALS DNA REPAIR ACTIVITY IN LIVE CELLS. **Michael Murata**, Xiangduo Kong, Kyoko Yokomori, Michelle Digman

340-Pos Board B120
VISUALIZING TRANSLESION SYNTHESIS BY POL IV IN LIVE E. COLI CELLS AT SINGLE-MOLECULE RESOLUTION. James E. Kath, **Elizabeth S. Thrall**, Joseph J. Loparo

341-Pos Board B121
VISUALIZING THE FIRST STEPS OF HUMAN DOUBLE-STRAND BREAK REPAIR ON A CROWDED DNA TRACK. Logan Myler, Ignacio Gallardo, Yoori Kim, Tanya T. Paull, **Ilya J. Finkelstein**

Chromatin and the Nucleoid (Boards B122 - B144)

342-Pos Board B122
MOLECULAR MECHANISM FOR GENOME ORGANIZATION IN THE EUKARYOTIC NUCLEUS. **Yuval Garini**

343-Pos Board B123
CHROMATIN DYNAMICS ARE CONTROLLED BY NUCLEAR LAMIN A: LIGHT SHEET MICROSCOPY - FCS STUDIES. Giulia Marcarini, Jan W. Krieger, Giuseppe Chirico, **Jörg Langowski**

344-Pos Board B124
CELLULAR VARIATION IN THE INTERACTIONS BETWEEN CHROMOSOME TERRITORIES. Scott Davidson, Navroop Dhaliwal , Amir Mazouchi, **Joshua Milstein**, Jennifer Mitchell

345-Pos Board B125
GENOME-WIDE MAPPING OF CHROMATIN SECONDARY STRUCTURE USING IONIZING RADIATION COUPLED WITH SEQUENCING. Viviana I. Risca, Sarah Denny, Alicia Schep, Aaron Straight, **William J. Greenleaf**

346-Pos Board B126
CHARACTERIZING TRANSCRIPTION AND SPLICING KINETICS BY 3D ORBITAL TRACKING. Nathan A. Redman, Eric J. Hayden, **Matthew L. Ferguson**

347-Pos Board B127
THE NC-SAC: COMPUTATIONAL PIPELINE FOR PREDICTING STRUCTURES OF 3D CHROMATIN CHAINS FROM EXPERIMENTAL DATA: ORIGIN OF SCALING PROPERTIES, EMERGENCE OF CHROMOSOME TERRITORIES AND DISCOVERY OF NOVEL LOCI INTERACTIONS ASSOCIATED WITH DIFFERENTIAL GENE EXPRESSION. **Gamze Gürsoy**, Yun Xu, Jie Liang

348-Pos Board B128
SINGLE-MOLECULE ANALYSIS OF COLOCALIZED EPIGENETIC MODIFICATIONS. **Jen-Chien Chang**, Takashi Umehara, Keisuke Fujita, Yuichi Taniguchi, Toshio Yanagida, Akiko Minoda

349-Pos Board B129
PHYSICAL MODELING OF STRESS COMMUNICATION BETWEEN CHROMOSOME LOCI. **Thomas J. Lampo**, Andrew S. Kennard, Andrew J. Spakowitz

350-Pos Board B130
EPIGENETICS GOES PHYSICAL. **Christophe Lavelle**

351-Pos Board B131
THE ESCHERICHIA COLI IS CAPABLE OF LARGE-SCALE TRANSLOCATION OF ITS CHROMOSOME. Matthew W. Bailey, **Jaan Mannik**

352-Pos Board B132
QUANTITATIVE LOCALIZATION MICROSCOPY COMBINED WITH DNA SMFISH REVEALS NEW FEATURES OF THE ORGANIZATION OF HIGH-COPY NUMBER PLASMIDS IN BACTERIA. **Yong Wang**, Paul Penkul, Joshua N. Milstein

353-Pos Board B133
COLLISIONS WITH PROTEINS ON DNA REVEAL A SMALL FUNCTIONAL PORE SIZE IN THE COHESIN COMPLEX. **Johannes Stigler**, Gamze Ö. Çamdere, Douglas E. Koshland, Eric C. Greene

354-Pos Board B134
SINGLE-MOLECULE MECHANISTIC DISSECTION OF A CHROMATIN REMODELING MOTOR. **Stephanie L. Johnson**, Nathan I. Gamarra, Matthew J. Johnson, Geeta J. Narlikar

355-Pos Board B135
FORCE SPECTROSCOPY OF NUCLEOSOMES AT THE PROMOTERS OF THE LH GENES REVEALS TWO DISTINCT STRATEGIES FOR THEIR REGULATION. **Ariel Kaplan**

356-Pos Board B136
MAJOR DETERMINANTS OF NUCLEOSOME ORGANIZATION. **Razvan V. Chereji**, Josefina Ocampo, Tara Burke, David J. Clark

357-Pos Board B137
UNRAVELLING THE ROLE OF LINKER HISTONE H1 AND THE H4-TAIL IN CHROMATIN (UN-)FOLDING. **Artur Kaczmarczyk**, Kim Vendel, Abdollah Allahverdi, Lars Nordenskiöld, Nynke H. Dekker, John van Noort

358-Pos Board B138
MOLECULAR MECHANISM OF CHROMATIN TARGETING BY A POTENT ANTICANCER AGENT ACTING AT THE NUCLEOSOME CORE PARTICLE. **Giulia Palermo**, Zhujun Ma, Ben S. Murray, Paul J. Dyson, Curt A. Davey, Ursula Rothlisberger

359-Pos Board B139
UTILIZATION OF NOVEL TECHNIQUES TO MEASURE ION COMPOSITION OF CONDENSED NUCLEOSOME CORE PARTICLES. **Abby Bull**, Kurt Andresen

360-Pos Board B140
MAPPING OF NUCLEOSOMES AND DNA-BOUND PROTEINS IN LIVING CELLS WITH IONIZING RADIATION. **Viviana I. Risca**, Sarah J. K. Denny, Alicia N. Schep, Arwa S. Kathiria, Aaron F. Straight, William J. Greenleaf

361-Pos Board B141
REGULATORS OF CHROMATOSOME DYNAMICS. **Poirier G. Poirier**

362-Pos Board B142
IMPACT OF HISTONE VARIANT AND POST-TRANSLATIONAL MODIFICATION ON NUCLEOSOME. **Hidetoshi Kono**, Jinzen Ikebe, Shun Sakuraba, Hisashi Ishida

363-Pos Board B143
STRUCTURAL DYNAMICS OF TRI-NULEOSOME BY COARSE-GRAINED SIMULATIONS: EFFECTS OF HISTONE TAIL ACETYLATION. **Le Chang**, Shoji Takada

364-Pos Board B144
THE HANDEDNESS OF NUCLEOSOMES IS GOVERNED BY THE SUPERCOILING OF DNA. **Sung Hyun Kim**, Rifka Vlijm, Paul de Zwart, Jaco van der Torre, Yamini Dalal, Cees Dekker

Membrane Physical Chemistry I (Boards B145 - B173)

365-Pos Board B145
MIGRATION OF VESICLES AND THEIR DOMAINS IN A THERMAL GRADIENT. **Emma Talbot**, Lucia Parolini, Jurij Kotar, Lorenzo Di Michele, Pietro Cicuta

366-Pos Board B146
ASSESSING ASYMMETRY IN DETERGENT-LIPID INTERACTIONS WITH ISOTHERMAL TITRATION CALORIMETRY. **Helen Y. Fan**, Dew Das, Heiko Heerklotz

367-Pos Board B147
THE EQUILIBRIUM SPREADING TENSION OF PULMONARY SURFACTANT. Maayan P. Dagan, **Stephen B. Hall**

368-Pos Board B148 **EDUCATION TRAVEL AWARDEE**
STERIC PRESSURE AMONG MEMBRANE-BOUND POLYMERS OPPOSES LIPID PHASE SEPARATION. **Zachary I. Imam**, Laura Kenyon, Jeanne Stachowiak

369-Pos Board B149
THE EFFECT OF NANODISC MSP BELT PROTEINS ON THE INCORPORATED LIPID BILAYER. **Harmen B. B. Steele**, Kristian Stipe, Cynthia Janku, Michelle C. Terwilliger, Bruce E. Bowler, J.B. Alexander Ross

370-Pos Board B150 **EDUCATION TRAVEL AWARDEE**
ORDER DIFFERENCES BETWEEN COEXISTING LIQUID PHASES DRIVEN BY LIPID UNSATURATION DETERMINE PHASE SEPARATION IN BIOMIMETIC MEMBRANES. **Xubo Lin**, Joseph H. Lorent, Kandice R. Levental, Alemayehu A. Gorfe, Ilya Levental

371-Pos Board B151
PROPERTIES AND ORGANIZATION OF LIPIDS IN MEMBRANES DERIVED FROM THE TOTAL LIPIDS EXTRACTED FROM THE CLEAR HUMAN LENS CORTEX AND NUCLEUS OF DONORS FROM DIFFERENT AGE GROUPS. **Laxman Mainali**, Marija Raguz, William J. O'Brien, Witold Subczynski

372-Pos Board B152
LATERAL PHASE BEHAVIOR OF HUMAN SKIN LIPIDS. Michael J. Counihan, **Shelli L. Frey**

373-Pos Board B153
CHARACTERISTICS OF LIPOSOMES MADE BY PHOSPHATIDYLETHANOLAMINE. **Hayato Akizuki**, Tomoyuki Kaneko

374-Pos Board B154
PARAMETERIZATION OF LAMELLAR REPEAT SPACINGS FOR LIPID BILAYERS IN BINARY SALT MIXTURES. **Simran S. Gurdasani**, Ryan Z. Lybarger, Horia I. Petrache

375-Pos Board B155
BILAYER PROPERTIES OF CERAMIDES: ROLE OF INTERFACIAL HYDROXYLATION, ACYL CHAIN LENGTH, AND CHAIN UNSATURATION. Terhi Maula, **Md. Abdullah Al Sazzad**, Peter Slotte

376-Pos Board B156
THE CHAIN LENGTH OF FREE FATTY ACIDS INFLUENCES THE PHASE BEHAVIOUR OF STRATUM CORNEUM MODEL MEMBRANES: A 2H-NMR AND IR INVESTIGATION. **Adrian Paz Ramos**, Michel Lafleur

377-Pos Board B157
HYPERICIN AGGREGATION IN ARTIFICIAL LIPID MEMBRANES. Jaroslava Joniova, Alena Strejčková, Matúš Rebič, Veronika Huntosova, Jana Staničová, Daniel Jancura, Pavol Miskovsky, **Gregor Bánó**

378-Pos Board B158
PARTITIONING BEHAVIOR OF A PROBE BETWEEN LO AND LD PHASES AT THE NANO- AND MACRO-DOMAIN SCALES. **Thomas Torng**

379-Pos Board B159
MULTIPOLE MOMENTS OF LIPID HEADGROUPS. **Ryan Z. Lybarger**, Horia I. Petrache

380-Pos Board B160
MEMBRANE HETEROGENEITY IN ERYTHROCYTES STUDIED BY LAURDAN GP AND FLIM-PHASOR. **Susana A. Sanchez**, Catalina Sandoval, German Gunther

381-Pos Board B161
UPDATE ON MECHANICAL MODULI AND TILT THEORIES OF LIPID BILAYERS. **John F. Nagle**, Dmitry I. Kopelevich, Stephanie Tristram-Nagle

382-Pos Board B162
FLEXIBLE STRING MODEL ANALYTICAL DESCRIPTION OF MAIN PHASE TRANSITION IN LIPID BILAYERS. **Sergei I. Mukhin**, Boris B. Kheyfets, Timur R. Galimzyanov

383-Pos Board B163
DYNAMICS OF METHYL GROUPS IN MEMBRANE PROTEINS STUDIED BY DETERIUM SOLID STATE NMR RELAXATION. **Xiaolin Xu**, Andrey V. Struts, Aswini Kumar Giri, Trivikram R. Molugu, Charitha Guruge, Samira Faylough, Carolina L. Nascimento, Nasri Nesnas, Victor J. Hruby, Michael F. Brown

384-Pos Board B164
DETECTION AND MECHANICAL CHARACTERIZATION OF SMALL MULTILAMELLAR VESICLES USING ATOMIC FORCE MICROSCOPY. **Margherita Marchetti**, Daan Vorselen, Wouter Roos, Gijs Wuite

385-Pos Board B165
LINE TENSION AND PHASE SEPARATION OF A FOUR-COMPONENT PHOSPHOLIPID BILAYER. **Wen-Chyan Tsai**, Gerald W. Feigenson

386-Pos Board B166 **EDUCATION TRAVEL AWARDEE**
INVESTIGATING LARGE SCALE LIQUID-LIQUID PHASE SEPARATION IN A BIOLOGICAL MEMBRANE. **Scott Rayermann**, Sarah Keller

387-Pos Board B167
COMPARISON OF UNSATURATED PHOSPHOLIPIDS EFFECT ON PHASE SEPARATION IN CHOLESTEROL FREE AND CHOLESTEROL CONTAINING BILAYERS. **Oskar Engberg**, Victor Hautala, Anders Kullberg, Thomas K.M Nyholm, J.Peter Slotte

388-Pos Board B168
A COMPARISON OF MONOLAYER PHASE BEHAVIOR FOR HYDROXY-CHOLESTEROLS LIPID SYSTEMS. **Joan C. Kunz**, Vision B. Bagonza, Blair E. Stewig, Luis H. Hernandez-Balderrama, Eleni A. Beyene, Benjamin L. Stottrup

389-Pos Board B169
CORRELATING STEROL STRUCTURE WITH MEMBRANE SOLUBILITY LIMITS AND PHASE BEHAVIOR IN TERNARY MODEL MEMBRANES. **Ranee C. James**, Jonathan P. Litz, Sarah L. Keller

390-Pos Board B170
OXIDATION OF CHOLESTEROL AND FORMATION OF CHOLESTEROL HYDROPEROXIDES DECREASES THE CHOLESTEROL CONCENTRATION AT WHICH FORMATION OF CHOLESTEROL BILAYER DOMAINS AND CHOLESTEROL CRYSTALS IS INITIATED IN PHOSPHOLIPID BILAYERS. **Laxman Mainali**, Mariusz Zareba, Witold Subczynski

391-Pos Board B171
PEROXIDATION OF LIPOPROTEIN AND OF CERTAIN LIPOSOMAL LIPIDS DEPEND SIMILARLY ON THE PHYSICO-CHEMICAL PROPERTIES OF THE AGGREGATED LIPIDS. **Dov A. Lichtenberg**

392-Pos Board B172
EFFECT OF CYCLODEXTRINS ON MEMBRANE BIOPHYSICAL PROPERTIES. **Andreia G. dos Santos**, Jules Bayiha, Marie-Paule Mingeot-Leclercq

393-Pos Board B173
CHARACTERISATION OF THE SELF-ASSEMBLIES PROPERTIES AND INTERACTION WITH MODELS MEMBRANES OF NEW TYPE OF AMPHIPHILIC CYCLODEXTRINS: A DLS AND SS-NMR STUDY. Aurelien Furlan, Sébastien Buchoux, Véronique Bonnet, **Catherine Sarazin**

Membrane-active Peptides and Toxins I (Boards B174 - B196)

394-Pos Board B174
MONITORING THE CONSEQUENCES OF RELOCATING THE TRYPTOPHAN ANCHORS ON TRANSMEMBRANE PEPTIDE DYNAMICS AND ALIGNMENT. **Matthew J. McKay**, Ashley N. Martfeld, Denise V. Greathouse, Roger E. Koeppe II

395-Pos Board B175
THE ROLE OF THERMODYNAMICS IN THE ACTIVITY AND SELECTIVITY OF ANTIMICROBIAL PEPTIDES. **Lorenzo Stella**, Daniela Roversi, Filippo Savini, Zahra Vaezi, Vincenzo Luca, Sara Bobone, Andrea Farrotti, Alessio Bocedi, Gianfranco Bocchinfuso, Yoonkyung Park, Antonio Palleschi, Maria Luisa Mangoni

396-Pos Board B176
INSIGHTS INTO THE MECHANISM OF FENGYCIN, AN ANTIMICROBIAL LIPOPEPTIDE USING MULTISCALE SIMULATIONS. **Sreyoshi Sur**, Alan Grossfield, Tod D. Romo

397-Pos Board B177
MEMBRANE INDUCED PEPTIDE FOLDING AND AGGREGATION. Sai Ganesan, **Silvina Matysiak**

398-Pos Board B178
INSIGHTS FROM MICROSECOND ATOMISTIC SIMULATIONS OF MELITTIN IN THIN LIPID BILAYERS. **Jakob P. Ulmschneider**, Sanjay K. Upadhyay

399-Pos Board B179 **CPOW TRAVEL AWARDEE**
STRUCTURE-ACTIVITY RELATIONSHIP STUDIES REVEAL THAT THE SPIDER TOXIN PROTX-II HAS UNUSUAL MEMBRANE-BINDING PROPERTIES AND INHIBITS NAV1.7 CHANNEL AT THE MEMBRANE SURFACE. **Sonia Troeira Henriques**, David J. Craik, Christina I. Schroeder

400-Pos Board B180
ELECTROPHORESIS AND ELECTROOSMOSIS IN AEROLYSIN AND HEMOLYSIN NANOPORES. **Mordjane Boukhet**, Juan Pelta, Jan C. Behrends, Abdelghani Oukhaled

401-Pos Board B181
A HEXOKINASE II DERIVED-CELL PENETRATING PEPTIDE TARGETS THE MITOCHONDRIA AND TRIGGERS APOPTOSIS IN CANCER CELLS. **Abiy D. Woldetsadik**, Mazin Magzoub

402-Pos Board B182
ELUCIDATING THE CONNECTION BETWEEN PROTONATION SWITCHES AND BINDING AND FOLDING OF PHLIP. **Chitrak Gupta**, Blake Mertz

403-Pos Board B183
VESICLE LEAKAGE REFLECTS TARGET SELECTIVITY OF ANTIMICROBIAL LIPOPEPTIDES FROM BACILLUS SUBTILIS. **Sebastian Fiedler**, Heiko Heerklotz

404-Pos Board B184
RED BLOOD CELLS INTERFERE WITH THE ACTIVITY OF ANTIMICROBIAL PEPTIDES. **Charles G. Starr**, Jing He, William C. Wimley

405-Pos Board B185
MOLECULAR DYNAMICS SIMULATION OF PASSIVE TRANSPORT OF NEUROTOXICANT ANTIDOTES THROUGH THE BLOOD-BRAIN BARRIER. **Yukun Wang**, Peter C. Searson, Martin Ulmschneider

406-Pos Board B186
A COMPARATIVE STUDY ON TECHNIQUES FOR THE DETERMINATION OF PERMEABILIZATION EVENTS ON CHARGED AND UNCHARGED LIPID BILAYERS. **Laura Paulowski**, Nadine Gebauer, Julia Wernecke, Bruce A. Cornell, Thomas Gutsmann

407-Pos Board B187
LOCALISATION OF THE ANTIMICROBIAL PEPTIDE MACULATIN 1.1 IN LIPID BILAYERS USING SOLID-STATE NMR. **Marc-Antoine Sani**, Frances Separovic

408-Pos Board B188
PA-MAP 1.5 AND 1.9: MECHANISMS OF ACTION OF TWO ANTIMICROBIAL PEPTIDES. **Mário R. Felício**, Octavio L. Franco, Marlon H. Cardoso, Ludovico Migliolo, Nuno C. Santos, Sónia Gonçalves

409-Pos Board B189
NANOSTRUCTURE-DEPENDENT ANTIMICROBIOTIC ACTIVITY AND SELECTIVITY OF SYNTHETIC MEMBRANE-ACTIVE POLYMERS. **Hongjun Liang**, Yunjiang Jiang, Wan Zheng, Hairong Ma

410-Pos Board B190
INTERACTIONS OF ANTIBACTERIAL PEPTIDES WITH NANOTUBULAR LIPID BILAYERS: BINDING KINETICS AND DISTORTIONS OF THE BILAYER STRUCTURE. Morteza Jafarabadi, Antonin Marek, Amir Koolivand, Biplav Acharya, Alexander A. Nevzorov, Jacqueline Krim, **Alex I. Smirnov**

411-Pos Board B191
FLUORESCENCE INVESTIGATIONS ON THE ATTACK OF CELL-WALL-DEFICIENT BACTERIA BY ANTIMICROBIAL PEPTIDES. **Matthew G. Burton**, Cynthia B. Whitchurch, Lynne Turnbull, Kelly Rogers, Rebecca Orth, Neil O'Brien Simpson, Michelle Gee, Andrew H.A. Clayton, Trevor A. Smith

412-Pos Board B192
BIOPHYSICAL INVESTIGATIONS ON THE INTERACTION BETWEEN ANTIMICROBIAL PEPTIDES AND BACTERIA KILLED BY CS-137 IRRADIATION. Wilmar Correa, Lena Heinbockel, Kerstin Stephan, **Thomas Gutsmann**

413-Pos Board B193
STREPTOCOCCAL M PROTEIN EPITOPE 10F5 GENERATES ANTIPHOSPHOLIPID ANTIBODIES. **Marie Kelly-Worden**, Morenci Manning, Robyn Gebhard, Mathew Osborne

414-Pos Board B194
A GENERAL MECHANISM FOR DRUG PROMISCUITY: STUDIES WITH AMIODARONE AND OTHER ANTIARRHYTHMICS. **Radda Rusinova**, Roger E. Koeppe II, Olaf S. Andersen

415-Pos Board B195
WHAT IS THE FATE-DETERMINING STEP IN PHLIP-MEDIATED CARGO DELIVERY? **Ming An**, Lukas Klees, Anqi Zhang, Joab O. Onyango, Emma A. Gordon, Chee-Huat Eng, Syris Winge-Barnes, Eliezer Lichter, Vladyslav Nazarenko, Meghan M. Bell, Ilana G. Bandler, Anthony K. Awad, Nicolas S. Shu, Wei Qiang, Lan Yao

416-Pos Board B196
INVESTIGATING THE INTERACTION OF THE PUTATIVE TRANSMEMBRANE DOMAIN OF HUMAN PHOSPHOLIPID SCRAMBLASE WITH LIPID BILAYERS USING MOLECULAR DYNAMICS SIMULATIONS. **Tom Venken**, Anne-Sophie Schillinger, Edvin Fuglebakk, Nathalie Reuter

Membrane Structure I (Boards B197 - B226)

417-Pos Board B197
DISTRIBUTION OF SOLUTE MOLECULES IN BILAYER STACKS BY MEDIUM ANGLE DIFFRACTION. **Christopher Garvey**, Ben Kent, Thomas Hauß, Robert Georgii, Klaus Seemann, Ricardo Mancera, Gary Bryant

418-Pos Board B198
STRUCTURE AND CORRELATION FUNCTIONS OF AN ASYMMETRIC MODEL MEMBRANE OF FIVE COMPONENTS DISPLAY NO RAFTS BUT RATHER THE PROPENSITY TO CREATE THEM. **Michael Schick**, Ha Giang

419-Pos Board B199
ENDOTHELIAL MEMBRANE MODULATION BY OXLDL: MOLECULAR-SCALE EFFECTS OF OXIDATION PRODUCTS ON MODEL MEMBRANES. **Manuela A. Ayee**, Elizabeth LeMaster, Belinda S. Akpa, Irena Levitan

420-Pos Board B200
LIPID COMPOSITION MODULATES MEMBRANE PROTEIN CLUSTERING. **Anna L. Duncan**, Heidi Koldsø, Tyler Reddy, Jean Helie, Mark S P Sansom

421-Pos Board B201
CONTROLLING CELL GROWTH AND MEMBRANE TOPOGRAPHY USING NANOSTRUCTURED THERMORESPONSIVE SCAFFOLDS. **Rana Ashkar**, Mikhael Zhernenkov, Hao Feng, John Ankner, Ryan Toomey, Roger Pynn

422-Pos Board B202
INVESTIGATION OF THE MODE OF ACTION OF THE PROTEIN VAPA OF RHODOCOCCUS EQUI ON PHAGOSOME MEMBRANES. **Christian Nehls**, Albert Haas, Karlo Komorowski, Thomas Gutsmann

423-Pos Board B203
MULTILAYERS OF LUNG SURFACTANT AT THE AIR/WATER INTERFACE OBSERVED BY NEUTRON REFLECTOMETRY UNDER COMPRESSION-EXPANSION CYCLES. **Jenny M. Andersson**, Marcus Larsson, Maximilian W.A. Skoda, Tiago M. Ferreira, Tommy Nylander, Emma Sparr

424-Pos Board B204
DOES THE INFLUENZA VIRUS BUD FROM CHOLESTEROL- AND SPHINGOLIPID-ENRICHED PLASMA MEMBRANE DOMAINS? **Mary L. Kraft**, Ashley N. Yeager, Peter K. Weber, Joshua Zimmerberg

425-Pos Board B205
SOLID-STATE 2H NMR REVEALS THE IMPACT OF DHA ON MOLECULAR ORGANIZATION IN RAFT-LIKE DOMAINS. **Jacob J. Kinnun**, Justin A. Williams, William Stillwell, Robert Bittman, Saame R. Shaikh, Stephen R. Wassall

426-Pos Board B206
IN SILICO MODELING OF BIOLOGICALLY COMPLEX MEMBRANES. **Helgi I. Ingolfsson**, Manuel N. Melo, Svetlana Baoukina, Tsjerk A. Wassenaar, Xavier Periole, Alex H. de Vries, D. Peter Tieleman, Siewert J. Marrink

427-Pos Board B207
VITAMIN E PROMOTES THE INVERSE HEXAGONAL PHASE VIA A NOVEL MECHANISM: IMPLICATIONS FOR ANTIOXIDANT ROLE. **Paul E. Harper**, Andres T. Cavazos, Jacob J. Kinnun, Horia I. Petrache, Stephen R. Wassall

428-Pos Board B208
ANTICANCER DRUG COLCHICINE INCREASES DISORDER AND REDUCES COMPLEXITY IN THE MACROPHAGE MEMBRANE. **Arkady Bitler**, Ron Dover, Yechiel Shai

429-Pos Board B209
HYDRATION MEDIATED G-PROTEIN-COUPLED RECEPTOR ACTIVATION. **Udeep Chawla**, Suchithranga M. D. C. Perera, Andrey V. Struts, Michael C. Pitman, Michael F. Brown

430-Pos Board B210
DIFFFUSION DYNAMICS OF ACHR RECEPTORS ON LIVE MUSCLE CELL MEMBRANE. **Wei He**, Hao Song, Lin Geng, H. Benjamin Peng, Penger Tong

431-Pos Board B211
CHOLESTEROL'S ALIPHATIC SIDE CHAIN STRUCTURE MODULATES MEMBRANE PROPERTIES. **Daniel Huster**, Thomas Meyer, Jörg Nikolaus, Dong Jae Baek, Ivan Haralampiev, Robert Bittman, Peter Müller, Andreas Herrmann, Holger A. Scheidt

432-Pos Board B212
CONTENT OF PLASMALOGEN LIPIDS MARKEDLY DECREASES IN BARTH SYNDROME. Tomohiro Kimura, Atsuko Kimura, Bob Berno, Mindong Ren, Michael Schlame, **Richard M. Epand**

433-Pos Board B213
OXIDATION OF CHOLESTEROL CHANGES THE PHYSICAL PROPERTIES OF LIPID MEMBRANES. **Waldemar Kulig**, Agnieszka Olzynska, Piotr Jurkiewicz, Anu M. Kantola, Moutusi Manna, Mohsen Pourmousa, Mario Vazdar, Lukasz Cwiklik, Tomasz Rog, George Khelashvili, Daniel Harries, Ville-Veikko Telkki, Martin Hof, Ilpo Vattulainen, Pavel Jungwirth

434-Pos Board B214
CLUSTERS OF CHOLERA TOXIN B SUBUNIT ON THE OUTER LEAFLET STABILIZE LIPID HETEROGENEITY ON THE INNER LEAFLET OF B CELL MEMBRANES. **Marcos F. Nunez**, Sarah L. Veatch

435-Pos Board B215
PARTITION COEFFICIENT OF A TRANSMEMBRANE PEPTIDE, BETWEEN LO AND LD PHASES: DOES THE PEPTIDE DISTINGUISH MACRO FROM NANO DOMAINS? **Thais A. Enoki**, Sarah Kim, Frederick A. Heberle, Gerald W. Feigenson

436-Pos Board B216
HOW GOLD NANOPARTICLES AFFECT THE LIPID PACKING IN MODEL MEMBRANES. **Qi Lu**, Anupama Bhat, Lance Edwards, Zaki Harris, Albert Jin

437-Pos Board B217
STABLE FATTY ACID VESICLES FORM UNDER LOW-PH CONDITIONS AND INTERACT WITH AMINO ACIDS AND DIPEPTIDES. **Moshe T. Gordon**, Roy A. Black, Caitlin Cornell, James A. Williams, Kelly K. Lee, Sarah L. Keller

438-Pos Board B218
TUNING MEMBRANE ASYMMETRY. **Jonathan A. Purdie**, John M. Sanderson

439-Pos Board B219
SPONTANEOUSLY FORMED UNILAMELLAR VESICLES OF SILOXANE-PHOSPHOLIPIDS. **Mark Frampton**, Drew Marquardt, Georg Pabst, Paul M. Zelisko

440-Pos Board B220
EFFECT OF CHAIN LENGTH OF HYBRID LIPIDS ON LINE TENSION IN PHASE-SEPARATED GIANT UNILAMELLAR VESICLES. **Eda Baykal-Caglar**, Juyang Huang

441-Pos Board B221
IMPROVED METHODS FOR PREPARING ASYMMETRIC VESICLES USING METHYL-ALPHA-CYCLODEXTRIN. **Johnna St Clair**, Qing Wang, Erwin London

442-Pos Board B222
STUDY OF SELF-ASSOCIATION OF AMPHOTERICIN B AND ITS SYNTHETIC DERIVATIVES USING UV-VIS SPECTROSCOPY. **Rosmarbel Morales-Nava**, Arturo Galván-Hernández, Mario Fernández-Zertuche, Ivan Ortega-Blake

443-Pos Board B223
DETERMINING THE PIVOTAL PLANE OF FLUID LIPID MEMBRANES IN SIMULATIONS. **Xin Wang**, Markus Deserno

444-Pos Board B224
LO/LD PHASE COEXISTENCE AND INTERACTION IN MODEL MEMBRANES WITH IPC LIPIDS. **Viviana Monje-Galvan**, Jeffery B. Klauda

445-Pos Board B225
PROBING THE RIPPLE PHASE OF LIPID BILAYERS USING MOLECULAR SIMULATIONS. **Pouyan Khakbaz**, Jeffery Klauda

446-Pos Board B226
VITAMIN E DIFFERENTIALLY DESTABILIZES BILAYER STRUCTURE OF DOCOSAHEXAENOIC AND OLEIC-ACID CONTAINING MODEL MEMBRANES. **Andres T. Cavazos**, Jacob J. Kinnun, Ryan Z. Lybarger, Justin A. Williams, Bruce D. Ray, Paul E. Harper, Horia I. Petrache, Stephen R. Wassall

Membrane Receptors and Signal Transduction I (Boards B227 - B248)

447-Pos Board B227
REAL-TIME PROBING OF THE SPATIOTEMPORAL DISTRIBUTIONS OF INTEGRIN αVβ3 IN SINGLE LIVING CELLS USING MICRO-SCALE SURFACE ENHANCED RAMAN SPECTROSCOPY SYSTEM. **Shao-yuan Lo**

448-Pos Board B228
FRET ANALYSIS USING SPERM-ACTIVATING PEPTIDES TAGGED WITH FLUORESCENT PROTEINS REVEALS THAT LIGAND-BINDING SITES EXIST AS CLUSTERS. **César Arcos-Hernández**, Francisco Romero, Yoloxochitl Sanchez-Guevara, Carmen Beltran, Takuya Nishigaki

449-Pos Board B229 **EDUCATION TRAVEL AWARDEE**
INVESTIGATING MOLECULAR MECHANISMS OF IGE-MEDIATED SIGNALING AT SUPER RESOLUTION. **Eshan Mitra**, Sarah A. Shelby, David Holowka, Barbara Baird

450-Pos Board B230
CHARACTERIZATION OF TROPOMYOSIN RECEPTOR KINASE (TRK-A) IN RESPONSE TO NEUROTROPHINS NERVE GROWTH FACTOR (NGF) AND NEUROTROPHIN -3 (NT-3) IN LIVE CELLS. **Fozia Ahmed**, Deo Singh, Christopher King, Kalina Hristova

451-Pos Board B231
MICROGLIA-DERIVED INTERLEUKIN-6 INCREASES RETINAL ENDOTHELIAL CELL PERMEABILITY THROUGH STAT3 ACTIVATION IN DIABETIC RETINOPATHY. Jang-Hyuk Yun, Kyung-Jin Kim, Eun Hui Lee, Sangkyu Ye, **Chung-Hyun Cho**

452-Pos Board B232
1H NMR SPECTROSCOPY OF DOPAMINE INTERACTING WITH LIPID VESICLES. **Yashasvi Matam**, Merrell A. Johnson, Bruce D. Ray, Horia I. Petrache

453-Pos Board B233
MOLECULAR DETERMINANTS OF NEISSSERIAL OPA PROTEIN INTERACTIONS WITH CEACAM RECEPTORS. **Jennifer Martin**, Louise M. Ball, Alison K. Criss, Linda Columbus

454-Pos Board B234
PROTEIN ASSEMBLY ON MEMBRANE SURFACE ALTERS THE DYNAMICAL SPECTRUM OF DOWNSTREAM SIGNALING REACTIONS. **William Y. C. Huang**, Qingrong Yan, Wan-Chen Lin, Jean K. Chung, Scott D. Hansen, Sune M. Christensen, Hsiung-Lin Tu, John Kuriyan, Jay T. Groves

455-Pos Board B235
RESTRICTED DIFFUSION OF CAMP IS MEDIATED BY MITOCHONDRIAL LOCALIZED PKA BUFFERING IN LIVING CELLS. **Shailesh R. Agarwal**, Colleen E. Clancy, Robert D. Harvey

456-Pos Board B236
REAL-TIME PROBING OF INTEGRIN αVβ3 SIGNAL PATHWAY INVOLVED IN WOUND HEALING USING BIOFUNCTIONALIZED QUANTUM DOTS. **Mi-Chi Lee**

457-Pos Board B237
MONITORING THE ORGANIZATION, DYNAMICS, AND INTERACTIONS OF EARLY B CELL RECEPTOR SIGNALING PROTEINS USING LIVE CELL SUPER-RESOLUTION MICROSCOPY. **Sarah A. Shelby**, Matthew B. Stone, Sarah L. Veatch

458-Pos Board B238
EFFECT OF INTERNAL WATER DYNAMICS ON THE ACTIVATION MECHANISM OF β2-ADRENERGIC RECEPTORS. **Songmi Kim**, Changbong Hyeon

459-Pos Board B239
GLYCOSYLATION AFFECTS THE CONFORMATIONAL BEHAVIOR OF EGFR. Karol Kaszuba, Michal Grzybek, Adam Orlowski, Reinis Danne, Tomasz Rog, Kai Simons, Unal Coskun, **Ilpo Vattulainen**

460-Pos Board B240 **INTERNATIONAL TRAVEL AWARDEE**
METOPROLOL REVERSES β-ADRENERGIC REMODELING IN THE FAILING RIGHT VENTRICLE OF PULMONARY ARTERY HYPERTENSIVE (PAH) RATS. **Ruth Norman**, Ewan Fowler, Ed White, Sarah Calaghan

461-Pos Board B241
POSITIVE ALLOSTERIC MODULATORS INDUCED CONFORMATIONAL CHANGES IN THE METABOTROPIC GLUTAMATE RECEPTOR 2 - IN SILICO PREDICTIONS AND EXPERIMENTAL TESTS. **Yu Xu**, Amr Ellaithy, Guoqing Xiang, Manolakou Danai, Balatsoukas Agisilaos, Takeharu Kawano, Meng Cui, Diomedes E. Logothetis

462-Pos Board B242
IN VIVO STUDIES OF VEGFR2 INTERACTIONS IN THE PRESENCE AND ABSENCE OF VEGF. **Christopher King**, Kalina Hristova

463-Pos Board B243
THE WNT PROTEINS INDUCE CA^{2+} SIGNALING THROUGH THE ACTIVATION OF THE POLYCYSTIN COMPLEX. **Vasyl Nesin**, Seokho Kim, Hongguang Nie, Leonidas Tsiokas

464-Pos Board B244
PREDICTED MODE OF BINDING OF NON-NITROGENOUS μ-OPIOID RECEPTOR LIGANDS BY METADYNAMICS. **Sebastian Schneider**, Davide Provasi, Rachel Saylor, Thomas Prisinzano, Marta Filizola

465-Pos Board B245
DETERMINISTIC AND STOCHASTIC MATHEMATICAL MODELING OF MELANOPSIN'S LIGHT RESPONSE IN IPRGCS AND HEK CELLS. **Phyllis R. Robinson**, Kathleen Hoffman, Hye-Won Kang

466-Pos Board B246
COVALENT RAS DIMERIZATION ON MEMBRANE SURFACES THROUGH PHOTOSENSITIZED OXIDATION. **Jean K. Chung**

467-Pos **Board B247**
BIASED SIGNALING OF GPCR REGULATES PANCREATIC BETA CELL SECRETION AND SURVIVAL. **Xiao Yu**, Shanglei Ning, Jin-Peng Sun

468-Pos **Board B248**
THE ENIGMATIC CHLOROPLAST STT7 KINASE: TRANS-MEMBRANE FUNCTION WITH CYTOCHROME B6F COMPLEX IN SITU; KINASE ACTIVITY IN VITRO. Sandeep K. Singh, Whitaker Cohn, Saif S. Hasan, Julian P. Whitelegge, **William A. Cramer**

Mechanosensation (Boards B249 - B278)

469-Pos **Board B249**
MECHANOSENSETIVITY AND SYMMETRY IN K2P CHANNELS. **Julian Tim Brennecke**, Bert L. de Groot

470-Pos **Board B250**
ATP RELEASE VIA GAP JUNCTION HEMICHANNELS IN RAT ATRIAL MYOCYTES UNDER SHEAR STRESS. **Joon-Chul Kim**, Sun-Hee Woo

471-Pos **Board B251**
INVESTIGATING THE ROLE OF NAV1.5 IN SOMATOSENSORY MECHANOSENSATION. **Evan O. Anderson**, Eve R. Schneider, Jon D. Matson, Elena O. Gracheva, Slav N. Bagriantsev

472-Pos **Board B252**
FUNCTIONAL HETEROMERIC PIEZO1 ION CHANNELS. **Philip Gottlieb**, Chilman Bae, Radakrishnan Gnanasambandam, Frederick Sachs

473-Pos **Board B253**
PORE DETERMINANTS OF MECHANOSENSITIVE PIEZO CHANNELS. **Qiancheng Zhao**

474-Pos **Board B254**
CHARACTERIZATION AND PHYSIOLOGICAL ROLE OF A BACTERIAL-LIKE MECHANOSENSITIVE CHANNEL IN TRYPANOSOMA CRUZI OSMOREGULATION. **Noopur Dave**, Christopher Skorka, Heather Lynch, Veronica Jimenez

475-Pos **Board B255**
SYSTEMATIC DISCOVERY OF THE 'FORCE-FROM-LIPID' PRINCIPLES. **Pietro Ridone**, Amrutha Patkunarajah, Andrew Battle, Boris Martinac

476-Pos **Board B256**
EXPRESSION AND BIOPHYSICAL CHARACTERIZATION OF BACTERIAL MECHANO-SENSITIVE ION CHANNEL OF LARGE CONDUCTANCE INTO MAMMALIAN CELLS. **Alessandro Soloperto**, A. Bartolozzi, G. Palazzolo, M. Basso, A. Contestabile, M. Vassalli, F. Difato

477-Pos **Board B257** **International Travel Awardee**
THE ROLE OF THE C-TERMINAL DOMAIN ON THE GATING PROPERTIES OF CORYNEBACTERIUM GLUTAMICUM MECHANOSENSITIVE CHANNEL MSCCG. **Yoshitaka Nakayama**, Michael Becker, Haleh Ebrahimian, Tomoyuki Konishi, Hisashi Kawasaki, Reinhard Kramer, Boris Martinac

478-Pos **Board B258**
FAST OSMOTIC PERMEABILITY RESPONSES IN BACTERIA. Ian Rowe, **Ugur Cetiner**, Anthony Schams, Andriy Anishkin, Sergei Sukharev

479-Pos **Board B259**
CONTINUUM MODELING OF THE GATING MECHANISMS OF A MECHANOSENSITIVE (MS) CHANNEL: BACTERIAL MS VERSUS MAMMALIAN MS CHANNELS. **Yuan-Nan Young**, On Shun Pak, Howard A. Stone

480-Pos **Board B260**
THEORETICAL, COMPUTATIONAL, AND EXPERIMENTAL INVESTIGATIONS ON ACTIVATION OF MECHANOSENSITIVE CHANNELS. **Zhangli Peng**, On Shun Pak, Allen Liu, Yuan-Nan Young

481-Pos **Board B261**
VOLTAGE-MEDIATED CONTROL OF BUNDLE DYNAMICS IN HAIR CELLS. **Sebastiaan W.F. Meenderink**, Patricia M. Quiñones, Dolores Bozovic

482-Pos **Board B262**
STRUCTURAL DETERMINANTS OF PROTOCADHERIN-15 FUNCTION IN INNER-EAR MECHANOTRANSDUCTION. **Marcos Sotomayor**, Raul Araya-Secchi, Yoshie Narui, Conghui Chen, Carissa Klanseck, Lahiru Wimalasena

483-Pos **Board B263**
DYNAMICS OF SPONTANEOUS OTOACOUSTIC EMISSIONS: THEORY AND EXPERIMENT. **Christopher Bergevin**, Christopher A. Shera

484-Pos **Board B264**
CHAOTIC BEHAVIOR OF OSCILLATORY HAIR CELLS. **Justin Faber**, Dolores Bozovic

485-Pos **Board B265**
VISUALIZATION OF MECHANICAL FORCES WITHIN THE IMMUNOLOGICAL SYNAPSE. **Janett Göhring**, Florian Kellner, Lukas Schrangl, Johannes Huppa, Gerhard Schütz

486-Pos **Board B266**
VINCULIN REMODELING OF THE SARCOMERE LATTICE REGULATES CONTRACTILE FUNCTION. Gaurav Kaushik, Jennifer Van Eyk, Anthony Cammarato, **Adam Engler**

487-Pos **Board B267**
ULTRASENSITIVITY OF CELL ADHESION TO THE DIFFERENTIAL MECHANICAL CUES AND REQUIREMENT OF REVERSIBILITY. **Mehdi Roein-Peikar**, Farhan Chowdhury, Benjamin Leslie, Seongjin Park, Qian Xu, Taekjip Ha

488-Pos **Board B268**
LIVE QUANTIFICATION OF CHANGES TO MEMBRANE CYTOSKELETON DUE TO RESTRICTED ACCESS TO LAMININ OR SUBSTRATE STIFFNESS. Muhammed F. Simsek, Jin Weixiang, **Arnd Pralle**

489-Pos **Board B269**
MATRIX AND SOLUBLE FACTOR PATHWAYS TO LINEAGE SPECIFICATION. **Irena L. Ivanovska**, Joe Swift, Kyle Spinler, Dave Dingal, Dennis E. Discher

490-Pos **Board B270**
TENSION-REGULATED ACTIN SEVERING REVEALED BY SURFACE-FREE SINGLE-MOLECULE FORCE SPECTROSCOPY. **Yan Jiang**, Theodore C. Feldman, Hyeran Kang, Enrique M. De La Cruz, Wesley P. Wong

491-Pos **Board B271**
ACOUSTIC TWEEZING CYTOMETRY (ATC) ON DISSOCIATED HUMAN EMBRYONIC STEM CELLS (HESCS). **Xiaowei Hong**, Xufeng Xue, Tuğba Topal, Jianping Fu, Cheri X. Deng

492-Pos **Board B272**
ELECTROSTATIC AND ALLOSTERIC RESPONSE OF MYOSIN AS A MECHANOSENSOR. **Jun Ohnuki**, Takato Sato, Mitsunori Takano

493-Pos **Board B273**
SCREENING CELL MECHANOTYPE BY PARALLEL MICROFILTRATION. **Navjot Kaur Gill**

494-Pos **Board B274**
THE MECHANISM OF STRESS GRANULE FORMATION INDUCED BY INTRACELLULAR LOCAL THERMOGENESIS. **Beini Shi**, Kohki Okabe, Takashi Funatsu

495-Pos **Board B275**
AS THE BEATING HEART STIFFENS IN DEVELOPMENT, SO DOES THE NUCLEAR LAMINA. **Sangkyun Cho**, Stephanie Majkut, Manorama Tewari, Jerome Irianto, Dennis E. Discher

496-Pos **Board B276** **INTERNATIONAL TRAVEL AWARDEE**
MECHANICAL REGULATION OF NUCLEAR SHAPE AND VOLUME. **Dong-Hwee Kim**, Bo Li, Fangwei Si, Jude Phillip, Denis Wirtz, Sean X. Sun

497-Pos **Board B277**
MECHANOSENSING DEFECTS IN NUCLEAR ENVELOPE RELATED DISORDERS. Christine Technau, Martina Fischer, Kamel Mamchaoui, Anne Bigot, Thevy Lok, Claude Verdier, Alain Duperray, Thomas Voit, Susana Quijano-Roy, Gisèle Bonne, **Catherine Coirault**

498-Pos **Board B278**
CYCLIC STRAIN OF PRECISION CUT LUNG SLICES (PCLS) INDUCES PRO-INFLAMMATORY AND PRO-PROLIFERATIVE SIGNALLING. **David Salman**, Charlotte Dean, Mark J. D Griffiths

Excitation-Contraction Coupling I (Boards B279 - B301)

499-Pos **Board B279**
RYANODINE RECEPTOR SENSITIVITY GOVERNS THE STABILITY AND SYNCHRONY OF LOCAL CALCIUM RELEASE DURING CARDIAC EXCITATION-CONTRACTION COUPLING. **Andrew P. Wescott**, M. Saleet Jafri, W. Jonathan Lederer, George S. B. Williams

500-Pos **Board B280**
DANTROLENE INHIBITION OF SKELETAL MUSCLE RYR IN THE PRESENCE OF CAM. **Ye W. Oo**, M.S Imtiaz, D.F. vanHelden, D.R Laver

501-Pos **Board B281**
NOVEL COMPOUNDS INHIBIT CALMODULIN DEFICIENT RYR2 ACTIVITY AND ARRHYTHMIAS IN A CPVT MOUSE MODEL. **Robert C. Klipp**, Na Li, Qiongling Wang, Martha Sibrian-Vazquez, Robert M. Strongin, Xander H.T. Wehrens, Jonathan J. Abramson

502-Pos **Board B282** **INTERNATIONAL TRAVEL AWARDEE**
S4-S5 LINKER REGULATES RYR2 CHANNEL GATING THROUGH MULTIPLE INTERACTIONS. **Takashi Murayama**, Nagomi Kurebayashi, Haruo Ogawa, Junji Suzuki, Kazunori Kanemaru, Masamitsu Iino, Takashi Sakurai

503-Pos **Board B283**
SPONTANEOUS AND VOLTAGE-ACTIVATED ELEMENTARY CALCIUM RELEASE EVENTS IN INTACT SKELETAL MUSCLE FIBERS EXPRESSING THE EMBRYONIC CAV1.1 SPLICE VARIANT. **Beatrix Dienes**, János Vincze, Péter Szentesi, Nasreen Sultana, Berhnard E. Flucher, László Csernoch

504-Pos **Board B284**
CHARACTERIZATION OF THE STAC3-CAV1.1 INTERACTION IN SKELETAL MUSCLE EXCITATION-CONTRACTION COUPLING. **Marta Campiglio**, Bernhard E. Flucher

505-Pos **Board B285**
THE TRANSMEMBRANE DOMAIN IS SUFFICIENT TO DIRECT JUNCTOPHILIN-1 LOCALIZATION AT THE JUNCTIONAL SR. **Daniela Rossi**, Angela Maria Scarcella, Stefania Lorenzini, Vincenzo Sorrentino

506-Pos **Board B286**
CELLULAR PATHOPHYSIOLOGY OF "MHH", A LARGE GROUP OF PATIENTS WITH EQUIVOCAL DIAGNOSIS OF MALIGNANT HYPERTHERMIA. **Lourdes Figueroa**, Carlo Manno, Natalia Kraeva, Sheila Toro, Eduardo Rios, Sheila Riazi

507-Pos **Board B287**
THE MALIGNANT HYPERTHERMIA RYR1Y522S MUTATION AFFECTS CALCIUM HOMEOSTASIS IN ARTERIAL SMOOTH MUSCLE CELLS. Ruben Lopez, Susan N. Treves, **Francesco Zorzato**

508-Pos **Board B288**
INACTIVATION OF CAV1.1 CHANNELS IN ADULT SKELETAL MUSCLE: EFFECTS OF A C-TERMINAL PRE-IQ MUTATION. **Erick O. Hernández-Ochoa**, Brian R. Cannon, Camilo Vanegas, David J. Weber, Martin F. Schneider

509-Pos **Board B289**
STIM1-DEPENDENT CA2+ SIGNALING IN CARDIAC MYOCYTES. Cory Parks, Ryan Sullivan, **Salvatore Mancarella**

510-Pos **Board B290**
MODELING THE ROLE OF NCX IN THE REGULATION OF CARDIOMYOCYTE MICRODOMAIN CA^{2+} DYNAMICS. **Lulu Chu**, Joseph L. Greenstein, Raimond L. Winslow

511-Pos **Board B291**
TRANSMURAL DIFFERENCES IN PRELOAD-DEPENDENCY OF CA^{2+} TRANSIENTS IN ISOLATED CARDIOMYOCYTES. **Anastasia Khokhlova**, Gentaro Iribe, Olga Solovyova

512-Pos **Board B292**
THE TRPV4 ION CHANNEL ALTERS INTRACELLULAR CALCIUM TRANSIENTS IN CARDIOMYOCYTES OF AGED MICE. **John L. Jones**, Michelle D. Lambert, Justin T. Whitfield, Timothy L. Domeier

513-Pos **Board B293**
THE CONCENTRATIONS OF TOTAL CALCIUM IN FAST-TWITCH AND HEART MUSCLES FROM MICE IN AN AGITATED AND ACTIVE STATE IS ALMOST 2-FOLD GREATER THAN THOSE FROM RESTING MICE. Abby F. McDonell, **Paul C. Pape**

514-Pos **Board B294**
CA2+ TIDES IN CARDIOMYOCYTES UNDER MECHANICAL LOADING. **Zhong Jian**, Leighton T Izu, Yi-Je Chen, Brittani Wood, Julie Bossuyt, Kit S Lam, Ye Chen-Izu

515-Pos **Board B295**
DYSSYNCHRONOUS CA REMOVAL IN ATRIAL CARDIAC MYOCYTES. **Felix Hohendanner**, Frank Heinzel, Lothar Blatter

516-Pos **Board B296**
INTEPLAY OF TRIGGER CA^{2+} WAVES AND CA^{2+} TRANSIENT ALTERNANS IN ATRIAL MYOCYTES. **Gary Aistrup**, Yohannes Shiferaw, Rishi Arora, Georg Gussak, Soren Grubb, William Marszalec, J. Andrew Wasserstrom

517-Pos **Board B297**
ACTIVATION OF REVERSE NA/CA EXCHANGER BY SKELETAL NA CHANNEL ISOFORM INCREASES EXCITATION-CONTRACTION COUPLING EFFICIENCY IN RABBIT CARDIOMYOCYTES. **Natalia S. Torres**, John HB Bridge

518-Pos **Board B298**
USING ACTION POTENTIAL CLAMP DATA TO DETERMINE THE CALCIUM FLUXES AND CONTRIBUTIONS IN EXCITATION-CONTRACTION COUPLING IN VIVO IN CARDIOMYOCYTES. **Martin Laasmaa**, Marko Vendelin, Rikke Birkedal

519-Pos **Board B299**
CHARACTERIZATION OF TWO HUMAN SKELETAL CALSEQUESTRIN MUTANTS IMPLICATED IN MALIGNANT HYPERTHERMIA AND VACULOLAR AGGREAGTES MYOPATHY. **Eduardo Rios**, Kevin M. Lewis, Leslie A. Ronish, ChulHee Kang

520-Pos **Board B300**
IMAGING STUDIES OF CALSEQUESTRIN STRUCTURE IN SKELETAL MUSCLE. EFFECTS OF CALCIUM RELEASE. **Eduardo Rios**, Carlo Manno, Lourdes Figueroa, Clara Franzini-Armstrong

521-Pos **Board B301**
MECHANICAL ANALYSIS OF SINGLE MYOCYTE CONTRACTION IN A 3D VISCOELASTIC GEL. **John A. Shaw**, Alan Wineman, Rafael Shimkunas, Leighton Izu, Ye Chen-Izu

Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating I (Boards B302 - B331)

522-Pos Board B302
WATER TRANSPORT ACROSS THE VOLTAGE SENSOR OF SHAKER K-CHANNELS DURING ACTIVATION. **Ignacio Diaz-Franulic**, David Naranjo

523-Pos Board B303
HYDRATION AND THE ELECTRIC FIELD IN THE VOLTAGE SENSING DOMAIN OF THE KV1.2 CHANNEL: QUANTUM CALCULATIONS SHOW S4 DOESN'T MOVE, BUT WATER AND PROTONS MOVE. Alisher M. Kariev, **Michael E. Green**

524-Pos Board B304
WATER AND A PROTON SHIFT BETWEEN A TYROSINE AND A GLUTAMATE ARE TWO KEYS TO GATING IN KV1.2; A HYPOTHESIS BASED ON QUANTUM CALCULATIONS: THE SENSOR IS DYNAMIC, BASED ON HYDROGEN BOND REARRANGEMENTS, PRINCIPALLY IN WATER ROTATIONAL DEGREES OF FREEDOM, PLUS A PROTON PATHWAY. **Alisher M. Kariev**, Michael E. Green

525-Pos Board B305
STRUCTURAL INSIGHTS OF THE CALCIUM MEDIATED REORGANIZATION OF THE CALMODULIN/KV7.2 CHANNEL COMPLEX. **Alvaro Villarroel**, Ganeko Bernardo-Seisdedos, Alessandro Alaimo, Carolina Gomis-Perez, Araitz Alberdi, Covadonga Malo, Pilar Areso, Oscar Millet

526-Pos Board B306 **CID TRAVEL AWARDEE**
BIOCHEMICAL ANALYSIS OF THE REGULATION OF KV7 CHANNELS BY PIP2 AND CALMODULIN. **Crystal R. Archer**, Benjamin T. Enslow, Mark S. Shapiro

527-Pos Board B307
CENTRIN 4 IS A BINDING PARTNER OF RAT EAG1 K^+ CHANNELS. Po-Hao Hsu, **Chih-Yung Tang**, Chung-Jiuan Jeng

528-Pos Board B308
GATING CURRENT MODELS COMPUTED WITH CONSISTENT INTERACTIONS. Tzyy-Leng Horng, **Robert S. Eisenberg**, Chun Liu, Francisco Bezanilla

529-Pos Board B309 **INTERNATIONAL TRAVEL AWARDEE**
A MOLECULAR SUBSTRATE FOR LONG QT IN HIV PATIENTS: TAT PROTEIN REDUCES IKR IN HUMAN INDUCED PLURIPOTENT STEM CELLS-DERIVED CARDIOMYOCYTES. **Zeineb Es-Salah-Lamoureux**, Mariam Jouni, Nadjet Belbachir, Marine Gandon-Renard, Bruno Beaumelle, Isabelle Baró, Flavien Charpentier, Kazem Zibara, Patricia Lemarchand, Nathalie Gaborit, Gildas Loussouarn

530-Pos Board B310
CHARACTERIZATION OF A FAST VOLTAGE-SENSING PROTEIN USING VOLTAGE-CLAMP FLUOROMETRY. **Ferenc Papp**, Jaime Smith, Orsolya Szilagyi, Tsg-Hui Chang, Kenton J. Swartz

531-Pos Board B311
PATCH-CLAMP FLUOROMETRY BASED DETERMINATION OF RELATIVE ION PERMEABILITY FOR HCN CHANNELS. Khade L. Grant, Chang Liu, **Lei Zhou**

532-Pos Board B312
DISTANCE-RESOLVING VOLTAGE CLAMP FLUOROMETRY (DRVCF) QUANTIFIES INTRAMOLECULAR TRANSITIONS IN THE HUMAN BK AND CI-VSP VOLTAGE SENSORS UNDER PHYSIOLOGICALLY-RELEVANT CONDITIONS. **Antonios Pantazis**, Riccardo Olcese

533-Pos Board B313
EFFECT OF SMALL-MOLECULES ON S4 MOVEMENT AND GATING OF NORMAL AND MUTATED IKM CHANNELS. **Rene Barro-Soria**

534-Pos Board B314
PROBING THE S4-S5 LINKER MOVEMENT DURING ACTIVATION IN KV CHANNELS. **Tanja Kalstrup**, Rikard Blunck

535-Pos Board B315
THE EFFECT OF MEMBRANE CHOLESTEROL CONTENT ON THE GATING MECHANISM OF VOLTAGE GATED POTASSIUM CHANNELS. Pal Pap, Zoltan Petho, Gyorgy Panyi, **Zoltan Varga**

536-Pos Board B316
THE CONSTRICTED FILTER CONFORMATION: A GENERAL PROPERTY FOR C-TYPE INACTIVATION OF DIFFERENT POTASSIUM CHANNELS? **Jing Li**, Jared Ostmeyer, Mikolai Fajer, Benoit Roux

537-Pos Board B317
A RECIPROCAL VOLTAGE SENSOR-TO-PORE COUPLING IN C-TYPE INACTIVATION. **Luca Conti**, Jakob Renhorn, Anders Gabrielsson, Fredrik Turesson, Sara Liin, Erik Lindahl, Fredrik Elinder

538-Pos Board B318
DYN-MEDIATED INTERNALIZATION OF KCNQ1/KCNE1 CHANNELS UNDER SUSTAINED CPKC ACTIVATION. **Xiaorong Xu Parks**, Elsa Ronzier, Jin O-Uchi, Coeli M. Lopes

539-Pos Board B319
TRAFFICKING DEFICIENT KV11.1 (HERG) MUTATIONS LINKED TO LONG QT SYNDROME LOCALIZE TO DIFFERENT ENDOPLASMIC RETICULUM SUBCOMPARTMENTS. Jennifer L. Smith, Corey L. Anderson, Criag T. January, **Brian Delisle**

540-Pos Board B320
INTERACTIONS BETWEEN THE C-LINKER AND THE S4-S5 LINKER MEDIATE GATING IN CNGA1 CHANNELS. Manuel Arcangeletti, Monica Mazzolini, Claudio Anselmi, **Debora Grosa**, Sourav Maity, Arin Marchesi, Luisa Napolitano, Vincent Torre

541-Pos Board B321
ENGINEERING SUBUNIT AND NONSENSE SUPPRESSION STOICHIOMETRY IN POTASSIUM CHANNELS. **John D. Lueck**, Adam L. Mackey, Jason D. Galpin, Christopher A. Ahern

542-Pos Board B322
SLACK CHANNELS NULL MICE EXHIBIT INCREASED SENSITIVITY TO MECHANICAL STIMULI BUT NORMAL RESPONSE TO THERMAL STIMULI. Ran Wang, Ying Song, Jie Xu, Meng-Jiao Tan, Tian-Yu Cao, Shun-Heng Gao, Meng-Han Sun, Fei-Fei Zhang, **Zhe Zhang**

543-Pos Board B323
EQUILIBRIUM FLUCTUATION RELATIONS FOR GATING CHARGE IN VOLTAGE SENSITIVE MEMBRANE PROTEINS: A MICROSCOPIC CAPACITOR MODEL APPROACH. **ILSOO KIM**, Arieh Warshel

544-Pos Board B324
MEMBRANE FORCES REGULATE VOLTAGE SENSOR MOVEMENT. Mehdi Torbati, Vikash Chaurasia, Kranthi Mandadapu, **Ashutosh Agrawal**

545-Pos Board B325
GATING CHARGE CALCULATIONS: PROBING VOLTAGE-SENSING PROTEINS THROUGH COMPUTATIONAL ELECTROPHYSIOLOGY. **Jan-Philipp Machtens**, Rodolfo Briones, Bert L. de Groot, Christoph Fahlke

546-Pos Board B326
COMPUTATIONAL CHARACTERIZATION OF CONFORMATIONAL TRANSITIONS IN THE VOLTAGE-SENSING DOMAIN OF CI-VSP. **Rong Shen**, Qufei Li, David Medovoy, Yilin Meng, Benoît Roux, Eduardo Perozo

547-Pos Board B327
MODELING OF THE SMALL-CONDUCTANCE CALCIUM-ACTIVATED POTASSIUM CHANNEL AND CARDIAC ALTERNANS. **Matthew Kennedy**, Donald M. Bers, Nipavan Chiamvimonvat, Daisuke Sato

548-Pos Board B328
WHAT DETERMINES THE CHARYBDOTOXIN SPECIFICITY AMONG KV1 POTASSIUM CHANNELS? **Drew C. Tilley**, Sarel Fleishman, Jon T. Sack, Vladimir Yarov-Yarovoy

549-Pos Board B329
THE MOLECULAR MECHANISM OF THE DUAL SPIDER TOXIN EFFECT ON VOLTAGE GATED K^+ CHANNELS. Sara Liin, Anders Gabrielsson, Fredrik Elinder, **Erik Lindahl**

550-Pos Board B330
IN-SILICO ELECTROPHYSIOLOGY: ON THE ACTIVATION OF VOLTAGE-GATED ION CHANNELS USING MOLECULAR DYNAMICS SIMULATIONS. **Mounir Tarek**, Lucie Delemotte, Marina Kasimova, Michael L. Klein, Vincenzo Carnevale

551-Pos Board B331
INSERTION OF CROSSLINKABLE AMINO ACIDS INTO THE I_{KS} CHANNEL COMPLEX DEMONSTRATES A VARIABLE KCNQ1:KCNE1 STOICHIOMETRY OF UP TO 4:4. **Maartje F.E. Westhoff**, Christopher I. Murray, Emely Thompson, Robert Emes, Jodene Eldstrom, David Fedida

Voltage-gated Na Channels I (Boards B332 - B361)

552-Pos Board B332
MOLECULAR SCALE PREDICTION OF LIDOCAINE INTERACTION WITH THE PORE DOMAIN OF HUMAN NAV1.5. **Kevin DeMarco**, Céline Boiteux, Toby W. Allen, Vladimir Yarov-Yarovoy, Colleen E. Clancy

553-Pos Board B333
A COMPUTATIONAL MODELING INVESTIGATION INTO SCN10A LINKED BRUGADA SYNDROME. **Marcus Vincent**, Pei-Chi Yang, Colleen E. Clancy

554-Pos Board B334
FACILITATION OF RAPID TEMPORAL PROCESSING BY ION CHANNEL COOPERATIVITY SUGGESTS COORDINATION THROUGH MEMBRANE ELECTROMECHANICS. **Mussie K. Araya**, William E. Brownell

555-Pos Board B335
COMPUTATIONAL MODELING OF SODIUM CHANNEL INACTIVATION. **Kin Lam**, Zhe Wu, Klaus Schulten

556-Pos Board B336
MOLECULAR DYNAMICS SIMULATIONS OF THE OPEN STATE STRUCTURE OF A BACTERIAL VOLTAGE-GATED SODIUM CHANNEL REVEAL THE BINDING MECHANISMS OF CHANNEL BLOCKERS. **Song Ke**, B. Ann Wallace, Jakob P. Ulmschneider, Martin B. Ulmschneider

557-Pos Board B337
COMPUTATIONAL STUDY OF BINDING OF μ-CONOTOXIN GIIIA (μ-CTX) TO NAVRH AND NAVAB. **Dharmeshkumar J. Patel**

558-Pos Board B338
BINARY ARCHITECTURE OF THE NAV1.2-β2 SIGNALING COMPLEX. **John M. Gilchrist**, Samir Das, Filip Van Petegem, Frank Bosmans

559-Pos Board B339
STRUCTURAL COMPARISONS OF IMMUNOGLOBULIN FOLDS OF HUMAN NAVβ SUBUNITS. **Samir Das**, John Gilchrist, Frank Bosmans, Filip Van Petegem

560-Pos Board B340
CALMODULIN AND FIBROBLAST GROWTH FACTOR HOMOLOGOUS FACTOR CO-REGULATION OF THE NAV1.5 CHANNEL IN LQT3 MUTATIONS. **Chaojian Wang**, Haidun Yan, Geoffrey S. Pitt

561-Pos Board B341
INTRACELLULAR CALCIUM DIFFERENTIALLY AFFECTS SCN5A MIXED SYNDROME MUTATIONS. **Mena Abdelsayed**, Peter C. Ruben

562-Pos Board B342
STRUCTURAL DIFFERENCES IN CALMODULIN BOUND TO VOLTAGATE-GATED SODIUM CHANNEL IQ MOTIFS. **Ryan Mahling**, C. Andrew Fowler, Liam Hovey, Liping Yu, Lokesh Gakhar, Zesen Lin, Nisha Pandey, Toni Martins, Madeline A. Shea

563-Pos Board B343
FUNCTIONAL MODIFICATION OF BACTERIAL VOLTAGE-GATED SODIUM CHANNELS BY BATRACHOTOXIN. **Rocio K. Finol-Urdaneta**, Jeffrey R. McArthur, Rachelle Gaudet, Robert J. French

564-Pos Board B344
MECHANOSENSITIVITY OF THE BACTERIAL VOLTAGE-GATED SODIUM CHANNEL NACHBAC. **Constanza A. Alcaino**, Peter R. Strege, Cheryl E. Bernard, Gianrico Farrugia, Arthur Beyder

565-Pos Board B345
EFFECTS OF LATE SODIUM CURRENT (INAL) BLOCKADE DURING ACUTE MYOCARDIAL ISCHEMIA. **Carlotta Ronchi**, Marcella Rocchetti, Eleonora Torre, Riccardo Rizzetto, Joyce Bernardi, Gaspare Mostacciulo, Antonio Zaza

566-Pos Board B346
NOVEL STORM-BASED QUANTITATIVE ASSESSMENT OF RELATIVE PROTEIN LOCALIZATION REVEALS NEW ROLE FOR SODIUM CHANNEL β1 SUBUNIT IN CARDIAC CONDUCTION. **Rengasayee Veeraraghavan**, Robert G. Gourdie

567-Pos Board B347
BIOPHYSICAL AND PHARMACOLOGICAL CHARACTERIZATION OF MULTIPLE NAV SUBTYPES ON QUBE. **Mads P. Korsgaard**, Anders Lindqvist, Søren Friis, Mette T. Christensen

568-Pos Board B348
CYSTEINE RESIDUES C489 AND C1135 OF NAV 1.5 PLAY A CRITICAL ROLE IN PRODUCING LATE SODIUM CURRENT THROUGH NNOS-DEPENDENT S-NITROSYLATION OF NAV 1.5. **Jianding Cheng**, John W. Kyle, Graham S. Adsit, Carmen R. Valdivia, Alyson K. Fisher, Jonathan C. Makielski

569-Pos Board B349
MODULATION OF A BACTERIAL VOLTAGE-GATED SODIUM CHANNEL BY THE ANTI-EPILEPTIC DRUG LACOSAMIDE. Celine Boiteux, **Chris French**, Toby W. Allen

570-Pos Board B350
PATIENT-SPECIFIC INDUCED PLURIPOTENT STEM CELL CARDIAC MYOCYTES AS PREDICTORS OF SUDEP RISK. **Chad R. Frasier**, Helen Zhang, James Offord, David S. Auerbach, Jack M. Paren, Lori L. Isom

571-Pos Board B351
BIOPHYSICAL, MOLECULAR AND PHARMACOLOGICAL CHARACTERIZATION OF NAV CHANNELS FROM INDUCED PLURIPOTENT STEM CELLS DERIVED CARDIOMYOCYTES. **Aurélie Mercier**, Adrien Moreau, Olivier Thériault, Mohamed Chahine

572-Pos Board B352
MICE WITH A NULL ALLELE FOR NAV1.4 EXHIBIT PSEUDO-MYASTHENIA, BUT ARE NOT SUSCEPTIBILE TO PERIODIC PARALYSIS. Fenfen Wu, Wentao Mi, Yu Fu, **Steve C. Cannon**

573-Pos Board B353
SCN4A PORE MUTATION PATHOGENETICALLY CONTRIBUTES TO AUTOSOMAL DOMINANT ESSENTIAL TREMOR AND MAY INCREASE SUSCEPTIBILITY TO EPILEPSY. Alberto Bergareche, **Marcin J. Bednarz**, Elena Sánchez, Catharine E. Krebs, Javier Ruiz-Martinez, Patricia De la Riva, Vladimir Makarov, Ana Gorostidi, Karin Jurkat-Rott, Jose Felix Marti-Masso, Coro Paisán-Ruiz

574-Pos Board B354
MAPPING RECEPTOR SITES FOR SODIUM CHANNEL BLOCKING INSECTICIDES DCJW AND METAFLUMIZONE IN AN INSECT SODIUM CHANNEL. Yuzhe Du, Yongqiang Zhang, Dingxin Jiang, Caitlyn Behnke, Yoshiko Nomura, Ke Dong, **Boris S. Zhorov**

575-Pos Board B355
MECHANISM OF SLOW INACTIVATION IN PROKARYOTIC VOLTAGE-GATED SODIUM CHANNEL. **Soumili Chatterjee**

576-Pos Board B356
DIFFERENTIAL ACTION OF PYRETHROIDS ON HONEY BEE AND BUMBLE BEE VOLTAGE-GATED SODIUM CHANNELS. **Claude Collet**, Aklesso Kadala, Bernard Vaissière, Matthieu Rousset, Thierry Cens, Yves Le Conte, Mohamed Chahine, Jean-Baptiste Thibaud, Pierre Charnet

577-Pos Board B357
IDENTIFICATION OF NOVEL PORE INTERACTIONS FOR SELECTIVE NAV1.8 INHIBITORS. **Matthew D. Fuller**, Sonia Santos, Mark L. Chapman

578-Pos Board B358
CHARACTERIZATION OF NAV1.8 ON A HIGHLY PARALLEL AUTOMATED PATCH CLAMP SYSTEM. **Markus Rapedius**, Andrea Bruggemann, Tom Goetze, Claudia Haarmann, Ilka Rinke, Atsushi Ohtsuki, Takayuki Oka, Marius Vogel, Timo Stengel, Johannes Stiehler, Michael George, Nils Fertig

579-Pos Board B359
THE EFFECTS OF AMIODARONE AND N-DESETHYLAMIODARONE ON CARDIAC VOLTAGE-GATED SODIUM CHANNELS. **Mohammad-Reza Ghovanloo**, Peter C. Ruben

580-Pos Board B360
HIGH AFFINITY NAV CHANNEL BINDER WITH SPECIFIC CONJUGATION SITE DERIVED FROM SCORPION TOXIN WITH ATTENUATED TOXICITY. **Tomoya Kubota**, Bobo Dang, Joao L. Carvalho-de-Souza, Stephen B.H. Kent, Ana M. Correa, Francisco Bezanilla

581-Pos Board B361
PROBING VOLTAGE-DEPENDENT STRUCTURAL CHANGES OF THE VSD IN MAMMALIAN NAV WITH LRET. **Tomoya Kubota**, Thomas Durek, Rocio K. Finol-Urdaneta, David J. Craik, Robert J. French, Francisco Bezanilla, Ana M. Correa

Other Channels (Boards B362 - B390)

582-Pos Board B362
STRUCTURAL DETERMINANTS FOR SELECTIVITY OF THE POSITIVE KCA CHANNEL GATING MODULATOR, SKA-121. **Brandon M. Brown**, Heesung Shim, Vladimir Yarov-Yarovoy, Heike Wulff

583-Pos Board B363
BK-CA^{2+} CHANNEL COUPLING IN THE MOUSE CIRCADIAN CLOCK. Joshua P. Whitt, **Andrea L. Meredith**

584-Pos Board B364
LOSS-OF-FUNCTIONAL KIR6.1 KATP CHANNEL MUTATIONS INDUCE CELL APOPTOSIS THROUGH ROS PRODUCTION AND MITOCHONDRIAL DYSFUNCTION. **Bi-Hua Tan**, Shengyi Xie, Tianyu Sun, Sinisa Dovat, Blaise Z. Peterson, Chunhua Song

585-Pos Board B365
HUMAN ERYTHROCYTE MECHANO-ACTIVATED K^+ CHANNEL A (HEMKCA): EFFECT OF APPLIED PRESSURE ON OPEN PROBABILITY, A KINETIC STUDY. Alejandro Mata, **Jesus G. Romero**

586-Pos Board B366
CATSPER HAS A CALCIUM-PERMEABLE VOLTAGE SENSOR DOMAIN. **Hiroki Arima**, Hidekazu Tsutsui, Kohei Takeshita, Atsushi Nakagawa, Ayako Sakamoto, Manabu Yoshida, Yasushi Okamura

587-Pos Board B367
CSFV P7 VIROPORIN ION CHANNEL ACTIVITY IN LIPID BILAYERS MIMICKING THE ER MEMBRANE. **Vicente M. Aguilella**, Eneko Largo, Carmina Verdiá-Báguena, José L. Nieva, Antonio Alcaraz

588-Pos Board B368
ELECTRO-OSMOTIC DRIVEN KINETICS OF CYCLODEXTRIN THROUGH THE CYMA CHANNEL. **Satya Prathyusha Bhamidimarri**, Jigneshkumar Dahyabhai Prajapati, Bert van den Berg, Ulrich Kleinekathoefer, Mathias Winterhalter

589-Pos Board B369
INTERNAL ELECTRIC FIELD OF GRAM- UNSPECIFIC PORINS DIRECTS THE CHOREOGRAPHY OF ANTIBIOTIC TRANSLOCATION. **Mariano A. Scorciapino**, Tommaso D'Agostino, Silvia Acosta-Gutierrez, Igor Bodrenko, Matteo Ceccarelli

590-Pos Board B370 **INTERNATIONAL TRAVEL AWARDEE**
WATER-BASED SCREENING OF ANTIBIOTICS PERMEABILITY. **Silvia Acosta-Gutierrez**, Andrea Mariano Scorciapino, Igor Bodrenko, Matteo Ceccarelli

591-Pos Board B371
GSMTX4 MUTAGENESIS REVEALS DYNAMIC MEMBRANE BINDING PROPERTIES THAT CONFER INHIBITION OF PIEZO1. **Radhakrishnan Gnanasambandam**, Chiranjib Ghatak, Anthony Yasmann, Frederick Sachs, Alexey S. Ladokhin, Sergei I. Sukharev, Thomas M. Suchyna

592-Pos Board B372 **INTERNATIONAL TRAVEL AWARDEE**
THE N-TERMINAL HELIX ACTS AS A DYNAMIC MEMBRANE COUPLER IN THE GATING CYCLE OF THE MECHANOSENSITIVE CHANNEL MSCL. **Navid Bavi**, Charles D. Cox, Paul R. Rohde, Adam P. Hill, Ben Corry, Boris Martinac

593-Pos Board B373
ASSESSING CLC-2 CHLORIDE CHANNEL VOLTAGE GATING BY PORE OCCUPATION WITH ACETATE. **José J. De Jesús-Pérez**, Jorge Arreola

594-Pos Board B374
SPONTANEOUS OPENINGS OF CFTR ARE COUPLED TO DIMER FORMATION OF ITS NUCLEOTIDE BINDING DOMAINS. **Csaba Mihályi**, László Csanády

595-Pos Board B375
THE PROSTACYCLIN ANALOG TREPROSTINIL INHIBITS ANO1-ENCODED CA^{2+}-ACTIVATED CL- CHANNELS AND MOUSE PULMONARY ARTERIAL TONE THROUGH STIMULATION OF CAMP-DEPENDENT SIGNALING PATHWAY. Fiona Cunningham, John Lilly, **Normand Leblanc**

596-Pos Board B376
FUNCTIONAL DIVERSITY WITHIN THE FNT SUPERFAMILY OF ANION CHANNELS: PHYLOGENETICS & MOLECULAR DYNAMICS STUDIES. **Mishtu Mukherjee**, Manu Vajpai, Ramasubbbu Sankararamakrishnan

597-Pos Board B377
BASIS OF NEGATIVE COOPERATIVITY IN TWO-SIDED MONOBODY BLOCK OF FLUC. **Daniel L. Turman**, Jake Nathanson, Randy Stockbridge, Chris Miller

598-Pos Board B378
A BACTERIAL HOMOLOG OF CHLORIDE INTRACELLULAR CHANNEL (CLIC) PROTEIN FAMILY, STRINGENT STARVATION PROTEIN A (SSPA), FORMS A NON-SELECTIVE ION CHANNEL. **Harpreet Singh**, Devasena Ponnalagu, Sowmya Sukur, Harkewal Singh, Yan Ning Zhou, Ding J. Jin, Shubha Gururaja Rao

599-Pos Board B379
NEAR-IR RESONANCE RAMAN CHARACTERIZATION OF AN ANION CHANNELRHODOPSIN FROM GUILLARDIA THETA. **Adrian Yi**, Natalia Mamaeva, Hai Li, John L. Spudich, Kenneth J. Rothschild

600-Pos Board B380
HUMAN CONNEXIN 26 (CX26) N14K MUTANT ALTERS HEMICHANNEL CALCIUM AND VOLTAGE SENSITIVITY. **Juan M. Valdez Capuccino**, William Lopez, Andrew L. Harris, Jorge E. Contreras

601-Pos Board B381
NITRIC OXIDE INCREASES ENDOTHELIAL CELL MEMBRANE PERMEABILITY VIA S-NITROSYLATION-MEDIATED OPENING OF CX43 HEMICHANNELS. **Mauricio A. Lillo**, Jorge E. Contreras, Xavier F. Figueroa

602-Pos Board B382
A NOVEL E. COLI-BASED ASSAY FOR RAPID SCREENING OF HEMICHANNEL FUNCTION. **Srinivasan Krishnan**, D. Marien Cortés, Guillermo A. Altenberg, Luis G. Cuello

603-Pos Board B383
ENGINEERED CX40 VARIANTS SHOWED HETEROTYPIC COLOCALIZATION AND INCREASED GAP JUNCTIONAL COUPLING WITH CX43. Arjewan Jassim, Hiroshi Aoyama, Willy G. Ye, Honghong Chen, **Donglin Bai**

604-Pos Board B384
WATER DYNAMICS AND ION INTERACTION AT CHANNEL ENTRANCE OF AQUAPORIN 1. **Eiji Yamamoto**, Takuma Akimoto, Masato Yasui, Kenji Yasuoka

605-Pos Board B385
EFFECT OF LIPID LAYER ON THE WATER PERMEABILITY OF AQUAPORIN: A MOLECULAR DYNAMICS STUDY. **Sangjae Seo**, Youngjin Kim, Hyunki Kim, Moon Ki Kim

606-Pos Board B386
HIGHLY PERMEABLE ARTIFICIAL WATER CHANNELS THAT SELF-ASSEMBLE INTO TWO-DIMENSIONAL ARRAYS. **Karl Decker**

607-Pos Board B387
AN INSECT PROTON CHANNEL. Gustavo Chaves, Christian Derst, Arne Franzen, Ryuichiro Machida, Yuta Mashimo, **Boris Musset**

608-Pos Board B388
NOVEL PLAYERS IN THE CONTROL OF MITOCHONDRIAL ION HOMEOSTASIS. **Angela Paggio**, Vanessa Checchetto, Ildikò Szabò, Rosario Rizzuto, Diego De Stefani

609-Pos Board B389
MEMBRANE-SPANNING DNA ION CHANNELS: CONDUCTANCE MECHANISM, ELECTRO-OSMOTIC TRANSPORT AND MECHANICAL GATING. Jejoong Yoo, **Chen-Yu Li**, Aleksei Aksimentiev

610-Pos Board B390
OLIGOMERIZATION STATES OF LRRC8A AND LRRC8B, ESSENTIAL COMPONENTS OF THE VOLUME-REGULATED ANION CHANNEL VRAC. **Gunther Schmalzing**, Silvia Detro-Dassen, Christoph Fahlke, Fritz Markwardt

Cardiac Muscle Regulation (Boards B391 - B413)

611-Pos Board B391
MECHANICAL SIGNALING COORDINATES THE EMBRYONIC HEARTBEAT. **Kevin K. Chiou**, Jason W. Rocks, Sangkyun Cho, Koen E. Merkus, Patrick Robison, Manorama Tewari, Kenneth Vogel, Stephanie F. Majkut, Benjamin L. Prosser, Dennis E. Discher, Andrea J. Liu

612-Pos Board B392
SIMULTANEOUS MEASUREMENT OF FORCE AND LATTICE SPACING IN SKINNED CARDIAC FIBERS. David Gonzalez-Martinez, Maicon Landim-Vieira, Olga A. Antipova, **Omar Awan**, P. Bryant Chase, Thomas Irving, Jose R. Pinto

613-Pos Board B393
THE LOAD DEPENDENCE OF THE SIZE AND THE SPEED OF THE WORKING STROKE OF CARDIAC MYOSIN IN SITU. Marco Caremani, Francesca Pinzauti, Massimo Reconditi, Gabriella Piazzesi Piazzesi, Vincenzo Lombardi, **Ger J. Stienen**, Marco Linari

614-Pos Board B394
EFFECT OF STIMULATION FREQUENCY MODULATION ON CROSS-BRIDGE CYCLING RATE OF EXPLANTED HUMAN MYOCARDIUM WITH NON-ISCHEMIC AND ISCHEMIC CARDIOMYOPATHY. **Jae-Hoon Chung**

615-Pos Board B395
ASSESSMENT OF CARDIAC EFFECTS OF PROTEIN KINASE A AND PROTEIN KINASE C INHIBITORS ON MYOFILAMENT-BASED CONTRACTILE ACTIVATION IN FAILING HUMAN MYOCARDIUM. **Nancy S. Saad**

616-Pos Board B396
THE BENEFITS OF VOLUNTALY EXERSICE ON CARDIAC FUNCTION IN DCM MODEL MICE. **Masami Sugihara**, Ryo Kakigi, Takashi Murayama, Takashi Sakurai, Takashi Miida, Sachio Morimoto, Nagomi Kurebayashi

617-Pos Board B397
DATP RESTORES THE CONTRACTILE FUNCTION OF CARDIAC MYOFIBRIL FROM ADULT DOGS WITH NATURALLY OCCURRING DILATED CARDIOMYOPATHY. **Yuanhua Cheng**, Kaley A Hogarth, M Lynne O'Sullivan, Michael Regnier, W Glen Pyle

618-Pos Board B398
TIME-COURSE OF CARDIAC MYOFIBRILLAR CONTRACTILE PROPERTIES DURING THE PROGRESSION OF RAT HYPERTENSIVE HEART FAILURE. **Laurin M. Hanft**, Craig A. Emter, Kerry S. McDonald

619-Pos Board B399
AMP KINASE MODULATES HEART RATE AND HEART RATE VARIABILITY THROUGH AUTONOMIC AND INTRINSIC MECHANISMS. **Jack M. Moen**, Ismayil Ahmet, Arash Yavari, Michael G. Matt, Max G. Beyman, Christopher Ramirez, Houman Ashrafian, Edward G. Lakatta

620-Pos Board B400
UNIQUE LOCALIZATION OF PHOSPHOLAMBAN IN PERINUCLEAR MEMBRANES OF CARDIOMYOCYTES FROM SEVERAL SPECIES. Yu-An Chiou, Yen-Ling Sung, Peng-Sheng Chen, Shien-Fong Lin, **Zhenhui Chen**

621-Pos Board B401
SPATIAL AND FUNCTIONAL INTERACTIONS BETWEEN SK CHANNELS AND L-TYPE CALCIUM CHANNELS IN CARDIOMYOCYTES. **Xiao-Dong Zhang**, Wei Chun Chen, Jeong-Han Lee, Zhong Jian, Gu Dai, Leighton Izu, Ye Chen-Izu, Nipavan Chiamvimonvat

622-Pos Board B402
ZACOPRIDE, A NOVEL IK1 ACTIVATOR, IS A POTENTIAL EFFECTIVE TREATMENT FOR TRIGGERED ARRHYTHMIA IN SUSCEPTIBLE HUMAN HEARTS. **Mohammad T. Elnakish**, , Benjamin D. Canan, Robert SD Higgins, Ahmet Kilic, Peter J. Mohler, Paul ML Janssen

623-Pos Board B403
COMPUTATIONAL STUDY OF HUMAN-AMYLIN INDUCED CALCIUM DYSREGULATION IN CARDIAC MYOCYTES CHARACTERISTIC OF PRE-DIABETES. Caitlin Scott, Florin Despa, Sanda Despa, **Peter M. Kekenes-Huskey**

624-Pos Board B404
SMALL OBSCURINS AT THE INTERCALATED DISC MEDIATE STRUCTURE, CELL SIZE, AND ADHESION. **Maegen Ackermann**, Brendan King, Nicole Perry, Michael Rudloff, Christopher Berndsen, Nathan Wright, Peter Hecker, Aikaterini Kontrogianni-Konstantopoulos

625-Pos Board B405
MODELING THE RESPONSE OF CARDIAC TROPONIN C TO CALCIUM ON THE THIN FILAMENT: EFFECTS OF DISEASE-RELATED AND POST-TRANSLATIONAL MODIFICATIONS. **Jalal K. Siddiqui**, Bin Liu, Shane D. Walton, Vikram K. Shettigar, Andrew J. O'Neil, Grace A. Davis, Peeyush Shrivastava, Jianchao Zhang, Brandon Biesiadecki, Jonathan P. Davis

626-Pos **Board B406**
STRUCTURE AND FUNCTION OF THE LEVOSIMENDAN ANALOG I9 COVALENTLY BOUND TO CARDIAC TROPONIN C. **Sandra Elizabeth Pineda-Sanabria**, Ian M. Robertson, Yin-Biao Sun, Malcolm Irving, Brian D. Sykes

627-Pos **Board B407**
PRIMARY EFFECTS OF HCM MUTATIONS IN HUMANS AND CATS. **Andrew E. Messer**, Mary Papadaki, Petr G. Vikhorev, Yousef Sebzali, Mohammed El-Mezgueldi, Alex Daley, David J. Connolly, Steven B. Marston

628-Pos **Board B408**
THERMODYNAMICS OF CALCIUM BINDING TO ZEBRAFISH TROPONIN C (TNC) VISUALIZED THROUGH ISOTHERMAL TITRATION CALORIMETRY (ITC) AND MOLECULAR DYNAMICS (MD). **Kaveh Rayani**, Charles M. Stevens, Bo Liang, Christine E. Genge, Glen F. Tibbits

629-Pos **Board B409**
A8V MUTATION OF CARDIAC TROPONIN C ENHANCES TROPONIN I BINDING. **Javier E. Hasbun**, Henry G. Zot, Clara A. Michel, Maicon Landim-Vieira, Jose R. Pinto

630-Pos **Board B410**
THE REGULATION OF ATP-BINDING, PI RELEASE AND ADP DISSOCIATION FROM MYOSIN II IN NATIVE CARDIAC MYOFIBRILS BY THE N-TERMINAL EXTENSION OF CARDIAC TROPONIN T. **Laura Gunther**, Han-Zhong Feng, Jian-Ping Jin, Takeshi Sakamoto

631-Pos **Board B411**
A NOVEL TRYPTOPHAN ANALOG DESIGNED FOR STUDYING CALCIUM INDUCED CONFORMATIONAL CHANGE OF TROPONIN C. **Alison Y. Li**, Kaveh Rayani, Danielle Wilson, Neil Branda, Glen Tibbits

632-Pos **Board B412**
CARDIOMYOPATHY LINKED MUTATIONS IN ALPHA TROPOMYOSIN INFLUENCE BLOCKED STATE STABILITY BUT NOT MYOSIN STRONG BINDING. Gerrie P. Farman, Michael Rynkiewicz, Marek Orzechowski, William Lehman, **Jeffrey Moore**

633-Pos **Board B413**
NOVEL POTENTIAL TREATMENT OF FAMILIAL HYPERTROPHIC CARDIOMYOPATHY WITH ANALOGUES OF THE GREEN TEA POLYPHENOL EPIGALLOCATECHIN-3-GALLATE. **Paul J. Robinson**, Suketu Patel, Xing Liu, Yin-Hua Zhang, Anuj Khandelwal, Brian Blagg, Barbara Casadei, Hugh Watkins, Charles Redwood

Actin Structure, Dynamics, and Associated Proteins (Boards B414 - B429)

634-Pos **Board B414**
SPECIFIC CATION BINDING STIFFENS ACTIN FILAMENTS BY ADHERING D-LOOPS TO ADJACENT MONOMERS. **Glen M. Hocky**, Joseph L. Baker, Michael J. Bradley, Anton V. Sinitskiy, Enrique M. De La Cruz, Gregory A. Voth

635-Pos **Board B415**
C0 AND C1 N-TERMINAL IG-DOMAINS OF MYOSIN BINDING PROTEIN-C EXERT DIFFERENT EFFECTS ON THIN FILAMENT ACTIVATION. Samantha P. Harris, Betty Belknap, Howard D. White, **Vitold E. Galkin**

636-Pos **Board B416** **CID TRAVEL AWARDEE**
MOLECULAR MECHANISM OF α-ACTININ BINDING TO F-ACTIN: EFFECT OF K255E MUTATION. **Hengameh Shams**, Kiavash Garakani, Javad Golji, Mohammad R. K. Mofrad

637-Pos **Board B417**
3D MODEL OF FISSION YEAST CONTRACTILE RING ASSEMBLY: EFFECTS OF CYTOKINETIC NODE INTERACTION WITH THE CELL MEMBRANE AND MYOSIN MOTORS. **Tamara C. Bidone**, Dimitrios Vavylonis

638-Pos **Board B418**
SIMULATION OF THE EFFECT OF CONFINEMENT IN ACTIN RING FORMATION. **Maral Adeli Koudehi**, Haosu Tang, Dimitrios Vavylonis

639-Pos **Board B419**
ROLE OF CROSS-LINKERS IN YEAST BRANCHED ACTIN NETWORKS: LINKING BIOCHEMISTRY AND MECHANICS. **Jessica Planade**, Audrey Guillotin, Alphée Michelot, Olivia du Roure, Julien Heuvingh

640-Pos **Board B420**
SELF-ORGANIZATION OF ACTOMYOSIN NETWORKS ATTACHED TO ARTIFICIAL MEMBRANES. **Markus Schön**, Corinna Kramer, Helen Noeding, Ingo Mey, Andreas Janshoff, Claudia Steinem

641-Pos **Board B421**
DIFFERENCES IN THE SPATIAL DISTRIBUTION OF ACTIN IN THE LEFT AND RIGHT VENTRICLES OF HEALTHY HUMAN HEARTS. **Janhavi Nagwekar**, Divya Duggal, Ryan Rich, Sangram Raut, Zygmunt Gryczynski, Julian Borejdo

642-Pos **Board B422**
NOVEL MECHANISMS OF FRNK INHIBITION OF FAK IN VASCULAR SMOOTH MUSCLE CELLS. **Taylor J. Zak**, Allen Samarel, Seth Robia

643-Pos **Board B423**
ACTIN POLYMERIZATION AND BUNDLING: EXPLORING THEIR TEMPERATURE AND PRESSURE LIMITS. **Mimi Gao**, Melanie Berghaus, Julian von der Ecken, Stefan Raunser, Roland Winter

644-Pos **Board B424**
REAL-TIME PROBING OF THE EGFR-MEDIATED CELL SIGNALING USING MICRO-SCALE SURFACE ENHANCED RAMAN SPECTROSCOPY SYSTEM. **Yi-Jie Lu**

645-Pos **Board B425**
HOW SYNERGY OF ACTIN ASSEMBLY-DISASSEMBLY AND MYOSIN MOTORS DRIVES CELL SHAPE CHANGES. **Valentina Caorsi**, Wu Sangsong, Joël Lemiere, Clément Campillo, Timo Betz, Julie Plastino, Cécile Sykes

646-Pos **Board B426**
LOCAL FORCES IN ACTIN NETWORKS WITH GRADIENTS. **Erin Rericha**, Austin N. Oleskie

647-Pos **Board B427**
THE ACTIN F352S NEMALINE MYOPATHY MUTATION DISRUPTS INDIRECT FLIGHT MUSCLE STRUCTURE AND FUNCTION IN DROSOPHILA. **Manuela Lavorato**, William Schmidt, Meera C. Viswanathan, Julien Ochala, Clara Franzini-Armstrong, Anthony Cammarato

648-Pos **Board B428**
SPECTROSCOPIC AND COMPUTATIONAL ANALYSIS OF DYSTROPHIN REGULATION OF ACTIN DYNAMICS. **Michael E. Fealey**, Benjamin Horn, Alessandro Cembran, Anne Hinderliter, David D. Thomas

649-Pos **Board B429**
BETA-ADRENERGIC AGONIST REDUCES THE DEFORMABILITY OF HUMAN BREAST CANCER CELLS. **Tae-Hyung Kim**, Navjot Gill, Erica Sloan, Amy Rowat

Microtubules, Structure, Dynamics, and Associated Proteins (Boards B430 - B445)

650-Pos **Board B430**
EFFECTS OF SPERMINE ON MICROTUBULE STRUCTURES. **Chola K. Regmi**, Shengfeng Cheng

651-Pos **Board B431**
DERIVING MECHANICAL PROPERTIES OF MICROTUBULES FROM MOLECULAR SIMULATIONS. **Soheil Fatehiboroujeni**, Sachin Goyal

652-Pos **Board B432**
INITIAL SEPARATION OF POLES TO FORM A BIPOLAR SPINDLE IS A RAPID AND IRREVERSIBLE PROCESS. **Allen Y. Leary**, Elena Nazarova, Shannon Sim, Eileen O'Toole, Paul Francois, Jackie Vogel

653-Pos **Board B433** **Education Travel Awardee**
OXIDATIVE STRESS IN MYOCARDIAL INFARCTION DISRUPTS MICROTUBULE TRAFFICKING, REDUCING TRANSIENT OUTWARD CURRENT DENSITY. **Benjamin Drum**, Can Yuan, Lei Li, Linda Wordeman, L. Fernando Santana

654-Pos **Board B434**
THREE-DIMENSIONAL STRUCTURES ASSOCIATED WITH PHOTORECEPTOR CILIA BY CRYO-ELECTRON TOMOGRAPHY. **Zhixian Zhang**, Feng He, Michael F. Schmid, Theodore G. Wensel

655-Pos **Board B435**
STUDYING THE EFFECTS OF MODIFIED TUBULIN C-TERMINAL TAILS ON KATANIN SEVERING ACTIVITY. **Corey E. Reed**

656-Pos **Board B436**
MOLECULAR DISSECTION OF THE TUBULIN C-TERMINAL TAILS BY NMR. Kathryn Wall, Maria Pagratis, Geoffrey Armstrong, Chad Pearson, **Loren Hough**

657-Pos **Board B437**
BRIDGING LENGTH SCALES TO STUDY POLYMER ASSEMBLY: UTILIZING BAYESIAN ANALYSIS OF FRET TO MEASURE MICROTUBULE NUCLEATION. **Bryan Kaye**, Daniel J. Needleman

658-Pos **Board B438**
STRUCTURAL BASIS OF MICROTUBULE POLYMERASES IN ACCELERATING TUBULIN POLYMERIZATION VIA MULTIPLE TOG DOMAINS. Stanley Nithianantham, Brian D. Cook, Fred Chang, **Jawdat Al-Bassam**

659-Pos **Board B439**
KINESIN-CARGO MOTILITY IN RANDOM MICROTUBULE NETWORKS. **Julianne Flowers**, Mehmet Kaplan

660-Pos **Board B440**
EFFECT OF ACTIVE KINESIN MOTOR DENSITY ON MICROTUBULES DURING SELF-ASSEMBLY OF SPOOLS. **Amanda Tan**, Dail Chapman, Linda Hirst, Jing Xu

661-Pos **Board B441**
POST-TRANSLATIONAL MODIFICATION IN MICROTUBULE ARRAYS EXHIBITS SPATIAL PATTERNS THAT CAN ACT AS A SIGNAL TO TIGHTLY LOCALIZE MOTOR-DRIVEN CARGO. **Abdon Iniguez**, Jun F. Allard

662-Pos **Board B442**
LABEL-FREE IMAGING OF MICROTUBULES WITH SUBNANOMETER PRECISION USING INTERFEROMETRIC SCATTERING MICROSCOPY. **Joanna Andrecka**, Jaime Ortega-Arroyo, Robert Cross, Philipp Kukura

663-Pos **Board B443**
DEFORMABILITY OF MICROTUBULES: AN ATOMISTIC COMPUTATIONAL STUDY. **Ondrej Kucera**, Daniel Havelka, Marco A. Deriu, Michal Cifra

664-Pos **Board B444**
EFFECTS OF LATTICE SEGMENTATION ON MICROTUBULE MECHANICS. **Scott A. Erickson**, Naoto Isozaki, Jennifer Ross, Taviare Hawkins

665-Pos **Board B445**
IS MICROTUBULE RIGIDITY PROPORTIONAL TO PROTOFILAMENT NUMBER? **Brandon J. Harris**

Cell Mechanics, Mechanosensing, and Motility I (Boards B446 - B464)

666-Pos **Board B446**
HIGH SPEED, HIGH RESOLUTION IMAGING OF FLUCTUATIONS AT THE LEADING EDGE OF MOTILE CELLS. **Rikki M. Garner**, Julie Theriot

667-Pos **Board B447**
SEPARATING CILIARY BEATING FORCE INTO DYNEIN-DRIVEN FORCE AND AXONEME-INTRINSIC BENDING FORCE BY 3-D TRACKING MICROSCOPY. **Takanobu A. Katoh**, Koji Ikegami, Nariya Uchida, Toshihito Iwase, Tomoko Masaike, Mitsutoshi Setou, Takayuki Nishizaka

668-Pos **Board B448**
VERTICAL NANOPILLARS AS PROBES FOR IN SITU NUCLEAR MECHANOTRANSDUCTION. **Hsin-Ya Lou**, Lindsey Hanson, Wenting Zhao, Yi Cui, Bianxiao Cui

669-Pos **Board B449**
HIGH FREQUENCY MICRORHEOLOGY OF LIVING CELLS. **Felix Rico**, Annafrancesca Rigato, Simon Scheuring

670-Pos **Board B450**
EXAMINING SPATIO-TEMPORAL DYNAMICS OF CELL-SUBSTRATE LINKERS DURING CELL MIGRATION USING POLYMER-TETHERED LIPID MULTIBILAYERS OF ADJUSTABLE STIFFNESS. Yifan Ge, Kent Shilts, Yu-Hung Lin, Lena Lautscham, Ben Fabry, Wolfgang Goldmann, **Christoph A. Naumann**

671-Pos **Board B451**
THE PHYSICAL ORIGINS OF CELL TRANSIT THROUGH MICROFLUIDIC CONSTRICTIONS. **Kendra Nyberg**, Amy Rowat

672-Pos **Board B452**
STUDY ON THE REGULATION OF CELL MORPHOLOGY BY MATRIX NANOTOPOGRAPHY IN 3D ENVIRONMENT. **Jingjing Han**, Kenghui Lin, Lock Yue Chew

673-Pos **Board B453**
FOCAL ADHESION FORMATION AND REORGANIZATION ON NANOPATTERNED SURFACES. **Emma J. Mah**, Elena I. Liang, Albert F. Yee, Michelle A. Digman

674-Pos **Board B454**
CELLULAR CONTRACTILE FORCES MEASURED A MULTI-WELL SILICONE DEVICE REVEAL PHYSICAL FORCES THAT CONTROL CELL MIGRATION IN PHYSIOLOGY AND DISEASE. **Haruka Yoshie**

675-Pos **Board B455**
MOLECULAR TENSION SENSORS FOR PROBING THE MECHANICAL AND CHEMICAL ROLES OF DISTINCT INTEGRIN CLASSES. **Steven J. Tan**, Armen H. Mekhdjian, Alice C. Chang, Masatoshi Morimatsu, Alexander R. Dunn

676-Pos **Board B456**
DYNAMIC MONITORING OF CELL MECHANICAL PROPERTIES USING PROFILE MICROINDENTATION. **Lionel Guillou**, Avin Babataheri, Pierre-Henri Puech, Abdul Barakat, Julien Husson

677-Pos **Board B457**
DISSECTING THE ROLE AND REGULATION OF MECHANICAL FORCE AT THE T-APC SYNAPSE USING ATOMIC FORCE MICROSCOPY. **Kenneth H. Hu**, Manish J. Butte

678-Pos **Board B458**
'OPTICAL SHAKING' OF RED BLOOD CELLS: A STRATEGY TO MEASURE CELL-FLUID COUPLING WITH OPTICAL TWEEZERS. **Carla Zensen**, Isis E. Fernandez Buelvas, Oliver Eickelberg, Theobald Lohmüller, Jochen Feldmann

679-Pos **Board B459**
REGULATION OF CYTOSKELETON CONTRACTILITY AND OSTEOGENESIS OF HUMAN MESENCHYMAL STEM CELLS USING ACOUSTIC TWEEZING CYTOMETRY (ATC). **Xufeng Xue**, Xiaowei Hong, Jianping Fu, Cheri Deng

680-Pos **Board B460**
PROBING THE DOSE-DEPENDENT EFFECT OF MIGRATION STIMULATING FACTOR-LIKE DRUG ON FIBROBLAST MIGRATION USING OPTICAL TWEEZERS. **Tung-Ju Tsai**

681-Pos **Board B461**
EXTERNAL REGULATION OF EGFR-MEDIATED CELL LOCOMOTION USING OPTICAL TWEEZERS. **Hsin-Jui Wu**

682-Pos **Board B462**
QUANTIFYING THE EFFECTS OF CELL DIVISION ON MASS REDISTRIBUTION DYNAMICS IN MULTICELLULAR CLUSTERS USING LIVE CELL INTERFEROMETRY. **Thang L. Nguyen**, Michael A. Teitell, Thomas A. Zangle

683-Pos **Board B463**
MICROFLUIDIC PLATFORM FOR MECHANO-INVESTIGATION OF SINGLE PLANT CELLS. **Eric Thorand**, Teuta Pilizota, Naomi Nakayama

684-Pos **Board B464**
CELL MECHANICAL PROPERTIES MEASURED WITH MICRON-SCALE CONSTRICTIONS: INFLUENCE OF PRESSURE, STRAIN AND CULTURE CONDITIONS. **Janina R. Lange**, Julian Steinwachs, Claus Metzner, Graeme Whyte, Ben Fabry

Membrane Pumps, Transporters, and Exchangers I (Boards B465 - B490)

685-Pos **Board B465**
STRUCTURAL DYNAMICS OF THE SMALL MULTIDRUG TRANSPORTER EMRE. **Reza Dastvan**, Axel W. Fischer, Smriti Mishra, Jens Meiler, Hassane S. Mchaourab

686-Pos **Board B466**
PROBING THE SECONDARY ACTIVE TRANSPORT MECHANISM OF THE BACTERIAL EFFLUX PUMP EMRE. Maureen Leninger, Anindita Gayen, **Nathaniel Traaseth**

687-Pos **Board B467**
INVESTIGATING THE BIOPHYSICAL BASIS OF MOSAIC SPREAD IN ALIGNED SAMPLES. **Maureen Lenigner**, James Banigan, Ampon Sae Her, Nate Traaseth

688-Pos **Board B468**
WATER TRANSPORT BY THE SODIUM GLUCOSE COTRANSPORTER SGLT1. Liudmila Erokhova, Andreas Horner, Denis G. Knyazev, Sergey A. Akimov, **Peter Pohl**

689-Pos **Board B469**
STRUCTURE-BASED DRUG DESIGN FOR SODIUM-DEPENDENT GLUCOSE TRANSPORTERS. **Paola Bisignano**, Chakrapani Kalyanaraman, Ernest Wright, Jeff Abramson, Matthew Jacobson, Michael Grabe

690-Pos **Board B470**
HUMANIZATION OF THE SUBSTRATE BINDING SITE IN VSGLT. **Thorsten Althoff**, Nisha Gopal, Jeff Abramson

691-Pos **Board B471**
STRUCTURE AND FUNCTION OF A SODIUM AND PROTON COUPLED NUCLEOBASE/ASCORBATE TRANSPORTER. Zhenning Ren, Jun Weng, Xiaoming Zhou, Vitali Stanevich, Pattama Wiriyasermkul, Elena Levin, Matthias Quick, **Ming Zhou**

692-Pos **Board B472**
ELUCIDATING THE ANION CHANNEL GATING MECHANISM IN EXCITATORY AMINO ACID TRANSPORTERS. **Delany Torres Salazar**, Horacio Poblete, Aneysis Gonzalez, Ariela Vergara-Jaque, Jeffrey Comer, Susan G. Amara

693-Pos **Board B473**
STRUCTURE AND MECHANISM OF THE MAMMALIAN FRUCTOSE TRANSPORTER GLUT5. **Gregory Verdon**, Norimichi Nomura, Hae Joo Kang, Tatsuro Shimamura, Yayoi Nomura, Saba Abdul Hussien, Aziz Abdul Qureshi, Mathieu Coincon, Yumi Sato, Yoshiko Nakada-Nakura, Takeshi Murata, Takuya Kobayashi, Michihiro Kasahara, So Iwata, David Drew

694-Pos **Board B474**
THERMODYNAMIC INSIGHTS INTO CONFORMATIONAL DYNAMICS OF SUGAR TRANSPORTERS. **Hariharan Parameswaran**, Xiaoxu Jiang, Els Pardon, Jan Steyaert, H. Ronald Kaback, Lan Guan

695-Pos **Board B475**
STRUCTURE OF THE BORATE TRANSPORTER BOR1P BY CRYO-EM. **Nicolas Coudray**, Zhening Zhang, Kathleen M. Clark, Iban Ubarretxena, Oliver Beckstein, Mark E. Dumont, David L. Stokes

696-Pos **Board B476**
EXPRESSION, PURIFICATION AND FUNCTIONAL CHARACTERIZATION OF HUMAN PROTON-COUPLED FOLATE TRANSPORTER (SLC46A1). **Swapneeta Date**, Mariana Fiori, Narong Sok, Ina Urbatsch, Michaela Jansen

697-Pos **Board B477**
MOLECULAR CLONING AND FUNCTIONAL CHARACTERIZATION OF A GLUCOSE TRANSPORTER (CSGLUT) IN CLONORCHIS SINENSIS. **Seong Kyu Ahn**, Ho-jong Jun, Bomin Seol, Seok Ho Cha

698-Pos **Board B478**
AN OPTOGENETIC APPROACH TO DYNAMICALLY STUDY MEMBRANE CONFINEMENT OF PRESTIN. **Jing Guo**, Karl Gerhardt, Esther Lee, Jeffrey Tabor, Robert Raphael

699-Pos **Board B479**
ROLE OF COUNTERIONS IN ACIDIFICATION IN MOUSE LIVER LYSOSOMES. **Anowarul Amin**, Mary Weston, Joseph A. Mindell

700-Pos **Board B480**
NA^+-H^+ ANTIPORTER IN THE SOMATA OF DORSAL ROOT GANGLION NEURONS. Érika Y. Taniguchi, **Antonio C. Cassola**

701-Pos **Board B481**
RIBONUCLEOTIDE REDUCTASE OVEREXPRESSION DOES NOT ALTER CARDIOMYOCYTE MITOCHONDRIAL RESPIRATION. **Jason D. Murray**, Farid Moussavi-Harami, David Marcinek, Michael Regnier

702-Pos **Board B482**
SLO2.1 POTASSIUM CHANNEL KNOCKOUT MICE HAVE AN ALTERED METABOLIC PHENOTYPE IN CARDIAC MITOCHONDRIA. **Charles O. Smith**

703-Pos **Board B483**
IS SODIUM MONOCARBOXYLATE TRANSPORTER (SMCT1) A PROTEIN INVOLVED IN THE APICAL IODIDE TRANSPORT? **Ariela Vergara-Jaque**, Peying Fong, Jeffrey Comer

704-Pos **Board B484**
A BIOPHYSICAL APPROACH TOWARDS UNDERSTANDING THE TRANSPORT MECHANISM OF AN ABC L-METHIONINE IMPORTER. **Qi W. Li**

705-Pos **Board B485**
THE CONTRIBUTION OF METHIONINE TO THE STABILITY OF THE ESCHERICHIA COLI METNIQ ABC TRANSPORTER - SUBSTRATE BINDING PROTEIN COMPLEX. **Phong T. Nguyen**

706-Pos **Board B486**
THE ALLOSTERIC REGULATORY MECHANISM OF THE E.COLI METNI METHIONINE ABC TRANSPORTER. **Janet G. Yang**, Douglas C. Rees

707-Pos **Board B487**
THE LIPID BILAYER MODULATES THE STRUCTURE AND FUNCTION OF AN ATP-BINDING CASSETTE EXPORTER. **Maria E. Zoghbi**, Guillermo A. Altenberg

708-Pos Board B488
MECHANISMS OF BACTERIAL ABC IMPORTERS: LESSONS FROM STRUCTURAL AND FUNCTIONAL STUDIES OF THE RIBOSE TRANSPORTER. **Satchal K. Erramilli**, Michael J. Simon, Matthew C. Clifton, Cynthia V. Stauffacher

709-Pos Board B489
REFINEMENT OF A RECENT CFTR HOMOLOGY MODEL GUIDED BY PORE FORMATION. Gorman Stock, Nael McCarty, **James C. Gumbart**

710-Pos Board B490
IN SILICO CHARACTERIZATION OF P-GLYCOPROTEIN SUBSTRATE ENTRANCE PATHWAYS. Laura Domicevica, Teresa Paramo, **Philip C. Biggin**

Cellular Signaling and Metabolic Networks (Boards B491 - B517)

711-Pos Board B491
3D SIMULATIONS OF MORPHOGEN TRANSPORT IN AN EARLY FISH EMBRYO. **Ines Reinartz**, Claude Sinner, Eliana Stanganello, Benjamin Mattes, Steffen Scholpp, Alexander Schug

712-Pos Board B492
TRANSPLANTATION OF MESENCHYMAL STEM CELLS ENHANCES ANGIOGENESIS AFTER ISCHEMIC LIMB INJURY IN MICE. **Hua Zhu**, Nanzi Xie, Timothy Adesanya, Ahmet Kilic, Tao Tan, Xiaoyun Xie

713-Pos Board B493
QUANTIFICATION OF THE NUTRIENT DEPENDENCE OF FACTORS CONTROLLING START IN BUDDING YEAST BY 2-PHOTON SCANNING NUMBER AND BRIGHTNESS. **Savanna B. Dorsey**, Sylvain Tollis, Jing Cheng, Linnea Olofsson, Mike Tyers, Catherine A. Royer

714-Pos Board B494
TOWARDS PREDICTIVE MODELING OF INFORMATION PROCESSING IN MICROBIAL ECOSYSTEMS WITH QUORUM SENSING INTERACTIONS. **Tahir Yusufaly**, James Boedicker

715-Pos Board B495
BCL-2 OR BCL-XL OVEREXPRESSION STIMULATES BOTH OXIDATIVE AND FERMENTATIVE COMPONENTS OF CARBOHYDRATE METABOLISM. Bushra Mahmood, Jessica Wilson, Miriam Ahmad, Patricia Olino, Hooi Chong, Diana Lopez, Justin King, Rhaul Llanos, **Laurent M. Dejean**

716-Pos Board B496
KINETIC PROPERTIES AND REDOX REGULATION OF RECOMBINANT CALCIUM-INDEPENDENT PHOSPHOLIPASE A2γ RECONSTITUTED IN LIPOSOMES. **Martin Jaburek**, Petr Jezek

717-Pos Board B497
UNDERSTANDING DOPAMINE RECEPTOR MEDIATED REGULATION OF INSULIN SECRETION BY TWO-COLOR SPATIAL INTENSITY DISTRIBUTION ANALYSIS. **Daniel Foust**, Brittany Caldwell, Antoine Godin, Alessandro Ustione, Paul Wiseman, David Piston

718-Pos Board B498
SPATIO-TEMPORAL DYNAMICS OF QUORUM SENSING SIGNALS. **Pavan Silva**, James Boedicker

719-Pos Board B499
TUDCA RESCUES β-CELL METABOLIC OSCILLATIONS FROM ER STRESS, REVEALED BY NAD(P)H-FLIM AND FRET. **Chetan Poudel**, Brian A. Schmidt, Quincy E. Harenda, Feyza Engin, Kevin W. Eliceiri, Matthew J. Merrins

720-Pos Board B500
HIGH-ORDER INTERACTIONS BETWEEN SPECIES STRONGLY INFLUENCE THE ACTIVITY OF MICROBIAL COMMUNITIES. **Xiaokan Guo**, James Boedicker

721-Pos Board B501
NON-INVASIVE FLUORESCENCE LIFETIME IMAGING(FLIM) OF STEM CELL SIGNATURE METABOLIC STATES. **Ning Ma**, Michelle Digman, Peter Donovan

722-Pos Board B502
TEMPORAL MODULATION OF A GPCR PATHWAY ELUCIDATES BAND-PASS PROCESSING FOR THE DOWNSTREAM SIGNALING AND TRANSCRIPTION FACTOR ACTIVATION. **Madhuresh Sumit**, Richard R. Neubig, Shuichi Takayama, Jennifer J. Linderman

723-Pos Board B503
LIMITATIONS OF THE USE OF THE PI4-KINASE INHIBITOR WORTMANNIN IN EXPERIMENTS EMPLOYING FLUORESCENT PHOSPHOINOSITIDE PROBES. **Christian R. Halaszovich**, Dominik Oliver

724-Pos Board B504
SYSTEMS BIOLOGY APPROACH REVEALS THE IMPORTANCE OF SHC1-GRB2 INTERACTIONS IN EGFR PHOSPHORYLATION KINETICS. **Emanuel Salazar-Cavazos**, Luis G. Contreras-Vidal, Bridget S. Wilson, William S. Hlavacek, Diane S. Lidke

725-Pos Board B505
THE ACTIN CYTOSKELETON MEDIATES HYPEROXIA RESPONSE OF PATIENT-DERIVED PRIMARY ENDOTHELIAL PROGENITOR CELLS THROUGH THYMOSIN BETA-4 AND HYPOXIA-INDUCIBLE FACTOR SIGNALING. Jennifer Larmore, Claudine Black, Gregory Seedorf, Christopher Baker, **Douglas Shepherd**

726-Pos Board B506
LOCAL PHEROMONE RELEASE FROM DYNAMIC POLARITY SITES UNDERLIES CELL-CELL PAIRING DURING YEAST MATING. Laura Merlini, Felipe O. Bendezu, Bita Khalili, Daniel Hurwitz, Vincent Vincenzetti, **Dimitrios Vavylonis**, Sophie G. Martin

727-Pos Board B507
FROZEN PROTEIN CONCENTRATIONS AND SURVIVAL OF INFORMATION DURING SHIFTS IN BACTERIAL GROWTH. **Joe Christian J. Ray**, Arnab Bandyopadhyay

728-Pos Board B508
AGING OF INDIVIDUAL CELLS OVER TENS OF GENERATIONS. **Charles Wright**, Srividya Iyer-Biswas

729-Pos Board B509
QUANTITATIVE CHARACTERIZATION OF INTRACELLULAR COMPARTMENT-SPECIFIC REACTIVE OXYGEN SPECIES (ROS) DYNAMICS IN A HEART FAILURE MODEL OF ARRHYTHMIC SUDDEN CARDIAC DEATH (SCD). **Swati Dey**, Deeptankar DeMazumder, Brian O'Rourke

730-Pos Board B510
2-HYDROXYGLUTARATE PRODUCTION BY MUTANT ISOCITRATE DEHYDROGENASE IS INDEPENDENT OF SUBSTRATE CHANNELING BUT SENSITIVE TO COMPARTMENT-SPECIFIC METABOLITE LEVELS. **Joseph P. Dexter**, Patrick S. Ward, Tathagata Dasgupta, Aaron M. Hosios, Jeremy Gunawardena, Matthew G. Vander Heiden

731-Pos Board B511
MULTISCALE GEONAVIGATIONAL APPROACH TO UNDERSTAND ORGAN BIOSYSTEMS AND THEIR CELLULAR INHABITANTS IN HEALTH AND DISEASE. Melissa Knothe Tate, **André F. Pereira**, Dirk Zeidler, Daniel Hageman, Ulf R. Knothe

732-Pos Board B512
REAL-TIME 3D IMAGING AT THE SINGLE MOLECULE LEVEL OF SIGNAL TRANSDUCTION IN SACCHAROMYCES CEREVISIÆ RESPONDING TO ENVIRONMENTAL CHANGES. **Erik G. Hedlund**, Sviatlana Shashkova, Adam J. M. Wollman, Stefan Hohmann, Mark C. Leake

733-Pos **Board B513**
MODELING POLYCYSTIC KIDNEY DISEASE CYSTOGENESIS WITH GENOME-MODIFIED HUMAN PLURIPOTENT STEM CELLS. **Benjamin S. Freedman**, Theodore I. Steinman, Jing Zhou, Joseph V. Bonventre

734-Pos **Board B514** **CID TRAVEL AWARDEE**
TOWARD A COMPREHENSIVE MODEL OF FEEDBACK REGULATION IN A YEAST STRESS RESPONSE PATHWAY. **Patrick C. McCarter**

735-Pos **Board B515**
DYNAMIC TEMPORAL CONTROL OF SIGNALING-ACTIVATED GENE REGULATION. **Gregor Neuert**, Guoliang Li

736-Pos **Board B516**
RECONSTRUCTING MULTICELLULAR BEHAVIORS STEP-BY-STEP WITH ENGINEERED YEAST CELLS. **Hyun Youk**

737-Pos **Board B517** **EDCUATION TRAVEL AWARDEE**
CD147 REGULATES CELL METABOLISM IN PANCREATIC CANCER VIA TARGETING OF MULTIPLE SMALL MOLECULE TRANSPORTERS TO THE CELL MEMBRANE. **Agnieszka A. Kendrick**, Johnathon Schafer, Monika Dzieciatkowska, Travis Nemkov, Joseph Guy, Angelo D'allesandro, Chad G. Pearson, Colin D. Weekes, Kirk C. Hansen, Elan Z. Eisenmesser

Neuroscience: Experimental Approaches and Tools (Boards B518 - B533)

738-Pos **Board B518**
SILICON MESOSTRUCTURES FOR PHOSPHOLIPID BASED BIOELECTRIC DEVICE AND DETERMINISTIC NEUROMODULATION. **Joao L. Carvalho-de-Souza**, Yuanwen Jiang, Raymond Wong, Bozhi Tian, Francisco Bezanilla

739-Pos **Board B519** **EDUCATION TRAVEL AWARDEE**
MAPPING NEURONAL CONNECTIVITY USING LASER PHOTOSTIMULATION AND CALCIUM IMAGING. **Kelly O'Connor**, Krishna Sheth, Tuan Nguyen

740-Pos **Board B520**
DETECTION OF THE SPONTANEOUS ACTION POTENTIALS OF HEK 293 CELLS BY PRUSSIAN BLUE THIN FILMS. **Felix Alfonso**, Allister McGuire, Thomas Li, Francesca Santoro, Luke Kaplan, Bianxiao Cui

741-Pos **Board B521**
HIGH-RESOLUTION IMAGING OF GFP-TAGGED CARDIAC RYANODINE RECEPTOR IN INTACT HEART AND BRAIN. **Florian Hiess**, Ruiwu Wang, Jason de Mesa Miclat, S.R. Wayne Chen

742-Pos **Board B522**
IMMUNOIMAGING WITH LIGHT SHEET MICROSCOPY: MICROGLIAL DYNAMICS IN THE DEVELOPING ZEBRAFISH BRAIN. **Daniel B. Holland**, Thai V. Truong, Jason A. Junge, Scott E. Fraser

743-Pos **Board B523**
INFLUENCE OF NANOPARTICLE EXPOSURE ON NERVOUS SYSTEM DEVELOPMENT IN ZEBRAFISH STUDIED BY MEANS OF LIGHT SHEET FLUORESCENCE MICROSCOPY. **Marta d'Amora**, Giuseppe Sancataldo, Francesca Cella Zanacchi, Alberto Diaspro

744-Pos **Board B524**
ROLE OF AL, FE, CU IN THE ALTERATIONS OF MECHANICAL PROPERTIES OF CORTICAL NEURONS PROBED BY ATOMIC FORCE MICROSCOPY. **Maria Carmela Lauriola**, Massimiliano Papi, Giuseppe Maulucci, Gabriele Ciasca, Valentina Palmieri, Salvatore Fusco, Claudio Grassi, Marco De Spirito

745-Pos **Board B525**
NEW INSIGHTS INTO BIOPHYSICAL MECHANISMS OF THE NSPEF-INDUCED NEURONAL RESPONSE. **Gleb P. Tolstykh**, Melissa Tarango, Anna Sedelnikova, Bennett L. Ibey

746-Pos **Board B526**
CLEANING PATCH CLAMP PIPETTES ENABLES THEIR REUSE. **Ilya Kolb**, William A. Stoy, Erin Rousseau, Olivia A. Moody, Andrew Jenkins, Craig R. Forest

747-Pos **Board B527**
HIGH YIELD SUBCORTICAL PATCH CLAMPING IN VIVO. **William Stoy**, Bo Yang, Thomas Capocasale, Clarissa Whitmire, Yi Liew, Garrett Stanley, Craig Forest

748-Pos **Board B528**
DEVELOPMENT OF AN IN VITRO MODEL OF MILD TRAUMATIC BRAIN INJURY. **Krishna P. Sheth**, Kelly D. O'Connor, Tuan Nguyen

749-Pos **Board B529**
EXPERIMENTAL MULTI-PHYSICS MEASUREMENT OF NEURONAL RESPONSES UNDER TRAUMA. **Majid Malboubi**, Antoine Jerusalem

750-Pos **Board B530**
MEASURING HYDRAULIC CONDUCTANCE AND HYDRATION POTENTIAL OF BRAIN EXTRACELLULAR MATRIX BY OSMOTIC STRESS. **Maria P. McGee**, Michael Morykwas, Louis Argenta

751-Pos **Board B531**
SOLITARY ELECTROMECHANICAL PULSES IN LOBSTER NEURONS. **Rima Budvytyte**, Alfredo Gonzalez-Perez1, Lars D. Mosgaard, Edgar Villagran-Vargas, Andrew D. Jackson, Thomas Heimburg

752-Pos **Board B532**
EFFECT OF ANESTHETICS ON ACTION POTENTIAL PROPAGATION. **Tian Wang**, Henrike Sasse-Middelhoff, Lars Mosgaard, Thomas Heimburg

753-Pos **Board B533**
THE VALUE OF ENCRYPTING BIOPHYSICAL DATA. **Peter S. Pennefather**, West Suhanic

Magnetic Resonance Spectroscopy: NMR and EPR (Boards B534 - B555)

754-Pos **Board B534**
PROBING THE LOCAL SECONDARY STRUCTURE OF AMPHIPATHIC 3-10 HELICAL PEPTIDES USING ELECTRON SPIN ECHO ENVELOPE MODULATION. **Lauren M. Bottorf**, Sophia Rafferty, Indra D. Sahu, Robert M. McCarrick, Gary A. Lorigan

755-Pos **Board B535**
PELDOR/DEER SPECTROSCOPY ON A BACTERIAL MEMBRANE TRANSPORTER IN NATIVE CELLULAR ENVIRONEMNTS. **Benesh Joseph**, Arthur Sikora, David Cafiso, Thomas Prinser

756-Pos **Board B536**
PROBING THE PROTEIN-PROTEIN INTERACTIONS BETWEEN KCNQ1 AND KCNE1 USING ELECTRON PARAMAGNETIC RESONANCE (EPR) SPECTROSCOPY. **Andrew F. Craig**, Indra D. Sahu, Rongfu Zhang, Nick D. Frantz, Robert M. McCarrick, Gary A. Lorigan

757-Pos **Board B537**
INVESTIGATION OF THE BINDING OF THE HUMAN KCNE1 PROTEIN WITH THE VOLTAGE GATED POTASSIUM CHANNEL KCNQ1 USING DEER EPR SPECTROSCOPY. **Indra D. Sahu**, Andrew F. Craig, Zhang Rongfu, Gunjan Dixit, Robert M. McCarrick, Gary A. Lorigan

758-Pos **Board B538**
STRUCTURAL TOPOLOGY OF SERCA-PLB COMPLEX IN ORIENTED LIPID BICELLES DETECTED BY MULTIFREQUENCY EPR. **Jesse E. McCaffrey**, Zachary M. James, Christine B. Karim, Bengt Svensson, Peter D. Martin, David D. Thomas

759-Pos Board B539
USING EPR SPECTROSCOPY TO CHARACTERIZE THE STRUCTURE OF LIPID MEMBRANE-POLYMER NANORING COMPLEXES. **Avnika Bali**, Andrew Craig, Indra D. Sahu, Dominik Konkolewicz, Carole Dabney-Smith, Gary A. Lorigan

760-Pos Board B540
PROBING THE STRUCTURAL MECHANISM OF CARDIAC CALCIUM PUMP REGULATION BY PHOSPHOLAMBAN WITH SITE-DIRECTED SPIN LABELING. **Peter Martin**, Zach James, Jesse McCaffrey, David Thomas

761-Pos Board B541
SITE-DIRECTED SPIN LABELING STUDIES OF NUCLEIC ACID DEPENDENT CONFORMATIONAL CHANGES IN CRISPR-CAS9. **Carolina Vazquez Reyes**, Peter Zhifeng Qin

762-Pos Board B542
STRUCTURAL DYNAMICS OF CALMODULIN USING BIFUNCTIONAL SPIN LABELS AND DOUBLE ELECTRON-ELECTRON RESONANCE. **Cheng Her**, Christine B. Karim, David D. Thomas

763-Pos Board B543 **CPOW Travel Awardee**
DETECTING STRUCTURAL CHANGES IN MYOSIN USING BIFUNCTIONAL SPIN LABELS. Tatiana Soboleva, Benjamin P. Binder, Andrew R. Thompson, David D. Thomas, **Rebecca J. Moen**

764-Pos Board B544
STRUCTURAL TRANSITIONS IN MYOSIN II DETECTED BY CONVENTIONAL AND PULSED EPR OF A BIFUNCTIONAL SPIN LABEL. **Benjamin P. Binder**, Andrew R. Thompson, Sinziana Cornea, David D. Thomas

765-Pos Board B545
PREDICTION AND SELECTION OF SPIN LABEL ROTAMERS FOR HIGH-RESOLUTION INSIGHT INTO PROTEIN STRUCTURES BY DEER SPECTROSCOPY. **Aidin R. Balo**, Hannes Feyrer, Oliver P. Ernst

766-Pos Board B546
BAYESIAN STATISTICAL METHODS IN THE ANALYSIS OF DEER DATA. **Thomas H. Edwards**, Stefan Stoll

767-Pos Board B547
CALCULATION OF EPR SPECTRA OF SAMPLES WITH ANISTROPIC LINE WIDTH: A NEW EFFICIENT ALGORITHM. **Yaroslav V. Tkachev**

768-Pos Board B548
AUTOMATIC PROTEIN STRUCTURE DETERMINATION FROM SPARSE NMR SPECTROSCOPY DATA. **Justin L. MacCallum**, Yuefeng Tang, Y. Janet Huang, Gaetano T. Montelione

769-Pos Board B549
DESIGN, SYNTHESIS, AND CHARACTERIZATION OF STABLE TETRABENZOFLUORENE RADICALS FOR DNP. **Kelsey Michenko**, Edward Fenlon

770-Pos Board B550
MODELING MATRIX METALLOPROTEINASE INHIBITION WITH CARBONIC ANHYDRASE. **Whitney A. Richert**, Daniel DeGenova, Rahil Patel, Preet Patel, Ania Plonski, Rithvik Venna, Anthony Forchonie, Micah Morris, Zachary Higgins, Garrett Reed, M. Sameer Al-Abdul-Wahid, David Tierney

771-Pos Board B551
ACQUISITION OF MULTIDIMENSIONAL NMR DATA ON GST-FUSED PROTEINS. **Beatrice Kachel**, Srinivas Jayanthi, Rory Henderson, TKS Kumar

772-Pos Board B552
SOLID STATE NMR STRUCTURAL AND TOPOLOCICAL STUDIES OF ANTIMICROBIAL PEPTIDES LPCIN ANALOGS. **Yongae Kim**, Ji-Ho Jeong, Ji-Sun Kim

773-Pos Board B553
DYNAMIC REGULATION OF THE 7TM RECEPTOR BACTERIORHODOPSIN FUNCTION UNDER ALKALINE PH CONDITIONS. Xiaoyan Ding, Haolin Cui, Honglei Wang, Yujiao Gao, Bo Peng, Anthony Watts, Guohui Li, **Xin Zhao**

774-Pos Board B554
SITE-SPECIFIC PROTEIN INTERNAL MOTIONS REVEALED BY 2H SOLID-STATE NMR SPECTROSCOPY. **Xiangyan Shi**, Deborah A. Berthold, Chad M. Rienstra

775-Pos Board B555
SOLID STATE NITROGEN 14 NMR METHODS FOR THE ANALYSIS OF HYDROGEN BOND NETWORKS IN BIOLOGICAL SYSTEMS. James A. Jarvis, Ibraheem Haies, Michael Jolly, Malcolm Levitt, Ilya Kuprov, Marina Carravetta, **Philip T.F. Williamson**

Electron Microscopy (Boards B556 - B578)

776-Pos Board B556
3D MICROSTRUCTURAL VISUALIZATION OF THE SIMPLEST OF EUKARYOTIC CELL (CYANIDIOSCHYZON MEROLAE) DURING MITOSIS PROCESS USING SEVERAL NEW MICROSCOPIC TECHNIQUES. **Atsuko H. Iwane**, Keisuke Ohta

777-Pos Board B557
THREE DIMENSIONAL IMAGE ANALYSIS APPLYING VARIOUS SERIAL SECTION TECHNIQUES ON STUDY OF MELANIN TRANSFER IN HUMAN SKIN. Bo Ram Kim, Hyo Sun Choi, Il-Hwan Kim, **Ji Young Mun**

778-Pos Board B558 **Education Travel Awardee**
GRAPHENE-ENABLED ELECTRON MICROSCOPY AND CORRELATED SUPER-RESOLUTION MICROSCOPY OF WET CELLS. Michal Wojcik, **Margaret Hauser**, Wan Li, Seonah Moon, Ke Xu

779-Pos Board B559
CRYO-ELECTRON TOMOGRAPHY AND NUCLEOCAPSID PROTEIN LABELING BY TOMO-BUBBLEGRAM IMAGING REVEAL A ROLE FOR HIV-1 INTEGRASE IN VIRAL MATURATION. **Juan Fontana**, Kellie A. Jurado, Naiqian Cheng, Alan N. Engelman, Alasdair C. Steven

780-Pos Board B560
DETECTION OF ZN ATOMS ON FERRITIN BY ANNULAR DARK-FIELD CRYO-STEM. Nadav Elad, Giuliano Bellapadrona, Lothar Houben, Irit Sagi, **Michael Elbaum**

781-Pos Board B561
STRUCTURE OF THE F-ACTIN-TROPOMYOSIN COMPLEX REVEALED BY ELECTRON CRYOMICROSCOPY. **Julian von der Ecken**, Mirco Müller, William Lehman, Dietmar Manstein, Pawel Penczek, Stefan Raunser

782-Pos Board B562
USING ELECTRON CRYOTOMOGRAPHY AND COARSE-GRAINED MOLECULAR DYNAMICS TO STUDY CONTRACTILE MECHANISMS OF EUKARYOTIC CELL DIVISION MACHINERY. **Matthew T. Swulius**, Lam Nguyen, Mark Ladinsky, Mithilesh Mishra, Grant Jensen

783-Pos Board B563
MITOCHONDRIAL NETWORKS IN BETA CELLS OF PANCREATIC ISLET OF LANGERHANS INVESTIGATED BY SERIAL BLOCK FACE SCANNING ELECTRON MICROSCOPY. Gina N. Calco, Bryan C. Kuo, Jake D. Hoyne, Maria A. Aronova, Guofeng Zhang, **Richard D. Leapman**

784-Pos Board B564
FROM CRYO-EM DENSITIES TO ATOM COORDINATES AND ENSEMBLES WITH BAYES APPROACH. **Christian Blau**, Nicolas Lenner, Carsten Kutzner, Helmut Grubmuller, Erik Lindahl

785-Pos Board B565
ORDERS OF MAGNITUDE FASTER CRYO-EM REFINEMENT WITH GPUS. **Dari Kimanius**, Bjoern Forsberg, Erik Lindahl

786-Pos Board B566
HIGHER RESOLUTION WITH THE SAME DATA - TUNING CRYO-EM REFINEMENT IN RELION. **Björn O. Forsberg**, Dari Kimanius, Erik Lindahl

787-Pos **Board B567**
VISUALIZING THE MOLECULAR SOCIALOGY AT THE HELA NUCLEUS IN SITU. **Julia Mahamid**

788-Pos **Board B568**
DEFINING MEMBRANE INTERACTIONS THAT DRIVE DYNAMIN RELATED PROTEIN 1 (DRP1) OLIGOMERIZATION USING CRYO-EM. **Christopher A. Francy**, Chris Frohlich, Oliver Daumke, Jason A. Mears

789-Pos **Board B569**
OMOKAGE SEARCH AND GMFIT : SHAPE SIMILARITY SEARCH AND SUPERPOSITION AMONG MODELS AND MAPS. **Takeshi Kawabata**, Hirofumi Suzuki, Haruki Nakamura

790-Pos **Board B570**
ULTRASTABLE GOLD SUBSTRATES IMPROVE THE RESOLUTION OF 3D RECONSTRUCTED DENSITY MAPS FROM ELECTRON MICROGRAPHS AND TOMOGRAMS. **Christopher Russo**

791-Pos **Board B571**
APPLICATION OF DEEP LEARNING TO CRYOEM HETEROGENEITY ANALYSIS. **Muyuan Chen**, Matthew L. Baker, Steven J. Ludtke

792-Pos **Board B572**
2.9-Å RESOLUTION STRUCTURE OF ANTHRAX PROTECTIVE ANTIGEN PORE DETERMINED BY CRYO ELECTRON MICROSCOPY. **Jiansen Jiang**, Bradley L. Pentelute, R. John Collier, Z. Hong Zhou

793-Pos **Board B573**
RESOLUTION AND PROBABILISTIC STRUCTURAL MODELS OF SUBCOMPONENTS DERIVED FROM CRYOEM MAPS OF MATURE P22 BACTERIOPHAGE. **Grigore Pintilie**, Dong-Hua Chen, Jonathan A. King, Wah Chiu

794-Pos **Board B574**
IN SITU STRUCTURES OF THE SEGMENTED GENOME AND RNA POLYMERASE COMPLEX INSIDE A DSRNA VIRUS. Xing Zhang, Ke Ding, Xuekui Yu, Winston Chang, Jingchen Sun, **Z. Hong Zhou**

795-Pos **Board B575**
SERIAL BLOCK FACE SEM OF BIOLOGICAL STRUCTURES AT NEAR ISOTROPIC SPATIAL RESOLUTION USING MULTIPLE BEAM ENERGIES AND MONTE CARLO SIMULATIONS. **Qianping He**, Maria A. Aronova, David C. Joy, Guofeng Zhang, Richard D. Leapman

796-Pos **Board B576**
STRUCTURES OF THE CARBON-PHOSPHORUS LYASE COMPLEX REVEAL THE BINDING MODE OF THE NBD-LIKE PHNK. **Kailu Yang**, Zhongjie Ren, Frank M. Raushel, Junjie Zhang

797-Pos **Board B577**
COMPUTATIONAL TOOLS TO IMPROVE VISUALIZATION BY CRYO-ELECTRON TOMOGRAPHY. **Jesus G. Galaz-Montoya**, Corey W. Hecksel, Jessica Chin, Rui Wang, Cannon W. Lewis, Monika Haemmerle, Michael F. Schmid, Steven J. Ludtke, Anil K. Sood, Wah Chiu

798-Pos **Board B578**
LIVE BACTERIAL PHYSIOLOGY VISUALIZED WITH 5 NM RESOLUTION USING SCANNING TRANSMISSION ELECTRON MICROSCOPY. **Eamonn Kennedy**, Edward M. Nelson, Tetsuya Tanaka, John Damiano, Gregory L. Timp

Diffraction and Scattering Techniques (Boards B579 - B583)

799-Pos **Board B579**
DISTINGUISHING PROTEIN NANOCRYSTALS FROM AMORPHOUS PRECIPITATE BY DEPOLARIZED DYNAMIC LIGHT SCATTERING. **Robin Schubert**, Arne Meyer, Karsten Dierks, Svetlana Kapis, Rudolph Reimer, Markus Perbandt, Christian Betzel

800-Pos **Board B580**
DEVELOPMENT OF MICROFLUIDIC MIXER AT LIX BEAMLINE FOR STUDYING BIOMOLECULAR STRUCTURAL KINETICS. **Shirish N. Chodankar**, Aziz Md Tareque, Lu Ming, Vito Graziano, Jonathan DiFabio, Lin Yang

801-Pos **Board B581**
NEW STRUCTURAL ANALYSIS METHODS FOR HEMOGLOBIN CRYSTALS. TIME-RESOLVED CRYOGENIC X-RAY CRYSTALLOGRAPHY WITH EXTENDED PULSED-LASER PUMPING AND 3D IMAGING BY X-RAY FLUORESCENCE HOLOGRAPHY. **Ayana Sato-Tomita**, Shin-ichi Adachi, Sam-Yong Park, Yuji C. Sasaki, Koichi Hayashi, Naoya Shibayama

802-Pos **Board B582**
NONLINEAR LIGHT SCATTERING AS A GENERALLY APPLICABLE APPROACH FOR STUDYING MOLECULAR TRANSPORT ACROSS BIOLOGICAL MEMBRANES. **Mohammad Sharifian Gh.**, Michael J. Wilhelm, Hai-Lung Dai

803-Pos **Board B583**
CELL MEMBRANE INTEGRITY EXAMINED BY NONLINEAR LIGHT SCATTERING. **Mohammad Sharifian Gh.**, Charles D. Cox, Michael J. Wilhelm, Joel B. Sheffield, Hai-Lung Dai

Optical Microscopy and Super-Resolution Imaging I (Boards B584 - B613)

804-Pos **Board B584**
DEEP AND HIGH-RESOLUTION THREE-DIMENSIONAL TRACKING OF SINGLE PARTICLES USING NONLINEAR AND MULTIPLEXED ILLUMINATION - TSUNAMI. Evan P. Perillo, Yen-Liang Liu, Cong Liu, Andrew K. Dunn, **Tim Yeh**

805-Pos **Board B585**
SUPER-RESOLUTION MOLECULAR IMAGING WITH PHOTOSTABLE NANOPROBES. **Maxim B. Prigozhin**, Peter C. Maurer, Nian Liu, Alexandra M. Courtis, Shaul Aloni, Frank D. Ogletree, Roger M. MacFarlane, Yi Cui, Paul A. Alivisatos, Steven Chu

806-Pos **Board B586**
HYBRID RANDOM WALK-LINEAR DISCRIMINANT ANALYSIS METHOD FOR UNWRAPPING QUANTITATIVE PHASE IMAGES OF BIOLOGICAL SAMPLES. **Diane N.H. Kim**, Michael A. Teitell, Jason Reed, Thomas A. Zangle

807-Pos **Board B587**
SUPERRESOLUTION MICROSCOPY AS A PERCOLATION PROBLEM: MAXIMUM ACHIEVABLE IMAGING DENSITY AND RESOLUTION COST. **Alexander Small**

808-Pos **Board B588**
SINGLE MOLECULE LOCALISATION MICROSCOPY WITH SCMOS CAMERAS. **Ruisheng Lin**, Alex Clowsley, David Baddeley, Isuru Jayasinghe, Christian Soeller

809-Pos **Board B589** **INTERNATIONAL TRAVEL AWARDEE**
ADVANCES IN GATED CW STED MICROSCOPY: TOWARD A VERSATILE IMPLEMENTATION. **Iván Coto Hernández**, Marco Castello, Luca Lanzano, Alberto Diaspro, Giuseppe Vicidomini

810-Pos **Board B590**
ADVANCED PULSE PATTERN GENERATION AND FINE TUNING FOR STED MICROSCOPY. **Marcelle Koenig**, Olaf Schulz, Rhys Dowler, Paja Reisch, Alexander Glatz, Sebastian Tannert, Thomas Schönau, Romano Härtel, Tino Röhlicke, Marcus Sackrow, Christian Litwinski, Matthias Patting, Felix Koberling, Rainer Erdmann

811-Pos **Board B591**
FAST VOLUMETRIC IMAGING IN TWO-PHOTON MICROSCOPY AND ENHANCED BACKGROUND REJECTION USING AN ACOUSTIC LENS. **Simonluca Piazza**, Paolo Bianchini, Colin Sheppard, Alberto Diaspro, Martí Duocastella

812-Pos Board B592
LOCAL DYNAMIC RANGE COMPRESSION FOR HIGH ORDER SUPER-RESOLUTION OPTICAL FLUCTUATION IMAGING (SOFI). **Xiyu Yi**, Xi Lin, Shimon Weiss

813-Pos Board B593
EFFECTIVE PHOTON COUNT ESTIMATION FROM A SINGLE IMAGE ACQUISITION. **Peter K. Relich**, Robert P.J. Nieuwenhuizen, Keith A. Lidke, Rainer Heintzmann, Bernd Rieger

814-Pos Board B594
MULTICHANNEL HYPERSPECTRAL IMAGING AND CHARACTERIZATION OF FAR-RED FLUOROPHORES USING A THIN-FILM TUNABLE FILTER. **Adriano Vissa**, Maximilano Giuliani, Christopher M. Yip

815-Pos Board B595
ORGANIZATION OF INNER CELLULAR COMPONENTS AS REPORTED BY A VISCOSITY-SENSITIVE FLUORESCENT BODIPY PROBE SUITABLE FOR PHASOR APPROACH TO FLIM. Gianmarco Ferri, Luca Nucara, Tarita Biver, Antonella Battisti, Giovanni Signore, **Ranieri Bizzarri**

816-Pos Board B596
MREB SENSES LOCAL GAUSSIAN CURVATURE TO PATTERN ROD-LIKE GROWTH OF THE BACTERIAL CELL WALL. **Benjamin P. Bratton**, Jeffrey P. Nguyen, Nikolay Ouzounov, Randy M. Morgenstein, Zemer Gitai, Joshua W. Shaevitz

817-Pos Board B597
THREE-DIMENSIONAL SUPER-RESOLUTION IMAGING OF THE RNA DEGRADATION MACHINERY IN CAULOBACTER CRESCENTUS. **Camille A. Bayas**, Jared M. Schrader, Marissa K. Lee, Lucy Shapiro, W. E. Moerner

818-Pos Board B598 **International Travel Awardee**
DEVELOPING A SINGLE-MOLECULE FLUORESCENCE TOOL TO QUANTIFY DNA DAMAGE. **Helen L. Miller**, Adam J.M. Wollman, Katherine E. Dunn, Adam M. Hirst, Sonia Antoranz Contera, Steve Johnson, Deborah O'Connell, Peter O'Toole, Andy M. Tyrrell, Mark C. Leake

819-Pos Board B599
CONFORMATIONAL CHANGE IN β_{120} AND β_{240} OF F_1-ATPASE FROM THE ASPECT OF DIFFERENCE OF NUCLEOTIDES BY ADVANCED TIRF MICROSCOPE. **Nagisa Mikami**, Yuko Ito, Kengo Adachi, Mitsunori Ikeguchi, Takayuki Nishizaka

820-Pos Board B600
PROBING THE NANOSCALE ARCHITECTURE OF CADHERIN-BASED ADHESIONS BY SUPERRESOLUTION MICROSCOPY. Cristina Bertocchi, Yilin Wang, Andrea Ravasio, Yao Wu, Talgat Sailov, Michelle Baird, Michael W. Davidson, Ronen Zaidel-Bar, Benoit Ladoux, Rene-Marc Mege, **Pakorn Kanchanawong**

821-Pos Board B601
THE MOLECULAR ATLAS PROJECT. **Jesse L. Silverberg**, Peng Yin

822-Pos Board B602
OPTIMIZED VOLUMETRIC LIVE IMAGING WITH LIGHT FIELD MICROSCOPY AND SELECTIVE VOLUME ILLUMINATION. **Thai Truong**, Daniel B. Holland, Sara Madaan, Andrey Andreev, Scott E. Fraser

823-Pos Board B603
AUTOMATIC FIVE-DIMENSIONAL SINGLE PARTICLE TRACKING IN LIVE CELLS. **Ning Fang**

824-Pos Board B604
A MULTIFOCAL MULTIPHOTON VOLUMETRIC IMAGING TECHNIQUE FOR HIGH SPEED TIME-RESOLVED FRET IMAGING IN VIVO. Simon P. Poland, James A. Levitt, Nikola Krstajić, Ahmet Erdogen, Richard J. Walker, Viviane Devauges, Tony Ng, Robert K. Henderson, **Simon M. Ameer-Beg**

825-Pos Board B605
INTRINSIC BIOMARKER FOR OXIDATIVE STRESS BY FLIM. **Rupsa Datta**, Enrico Gratton

826-Pos Board B606
DIFFUSIONAL MOBILITY AND NANOSCALE MOLECULAR ORGANIZATION OF THE MUSCULAR DYSTROPHY RELATED NUCLEAR MEMBRANE PROTEIN EMERIN. **Anthony M. Fernandez**, Fabien F. Pinaud

827-Pos Board B607
SUPERRESOLUTION MICROSCOPY REVEALS STAGGERED ARRANGEMENT OF MAMMALIAN DISTAL APPENDAGES. Tony Yang, Weng Man Chong, Won-Jing Wang, Yi-De Chen, Meng-Fu Bryan Tsou, **Jung-Chi Liao**

828-Pos Board B608
MULTI-PARAMETRIC MICROFLUIDIC SCREENING AND SORTING FOR SIMULTANEOUS EVOLUTION OF PHOTOPHYSICAL PARAMETERS OF FLUORESCENT PROTEINS. **Felix Vietmeyer**, Premashis Manna, Pia Friis, Amy E. Palmer, Ralph Jimenez

829-Pos Board B609
STRETCHED ORIENTED DNA ARRAYS (SODA) AS A TOOL FOR STUDYING PROTEIN-DNA INTERACTIONS. **Eugeniu Ostrofet**, Seungkyu Ha, Richard Janissen, Theo van Laar, Nynke Dekker

830-Pos Board B610
USE OF SECOND HARMONIC IMAGING AND FOURIER TRANSFORMATION TO ANALYZE CARTILAGE REPAIR IN MICE INJECTED WITH A NOVEL PEPTIDE CK2.1. **Hemanth Akkiraju**, Michael T. Moore, Padma P. Srinivasan, Catherin Kirn Safran, Anja Nohe

831-Pos Board B611
CHARACTERIZATION OF TERNARY PROTEIN SYSTEMS IN LIVING CELLS WITH TRICOLOR HETEROSPECIES PARTITION ANALYSIS. Kwang-Ho Hur, Yan Chen, **Joachim D. Mueller**

832-Pos Board B612 **Education Travel Awardee**
SINGLE-MOLECULE FLUORESCENCE IMAGING REVEALS THE DYNAMICS OF STARCH CATABOLISM PROTEINS IN THE HUMAN MICROBIOME BACTERIUM BACTEROIDES THETAIOTAOMICRON. **Hannah H. Tuson**, Matthew H. Foley, Eric C. Martens, Nicole M. Koropatkin, Julie S. Biteen

833-Pos Board B613
METABOLIC PROFILING IN METASTATIC CANCER CELLS USING FREQUENCY DOMAIN FLUORESCENCE LIFETIME MICROSCOPY. **Jenu V. Chacko**, Sailesh Gopalakrishna-Pillai, Michelle A. Digman

Bioengineering (Boards B614 - B639)

834-Pos Board B614
QUANTIFICATION OF MULTI-SCALE MECHANICS AND FAILURE OF HUMAN STRATUM CORNEUM. **Xue Liu**, Guy German

835-Pos Board B615
QUANTIFYING CELLULAR ELASTICITY USING QUANTITATIVE PHASE MICROSCOPY MEASUREMENTS OF ELECTROMAGNETICALLY ACTUATED MAGNETIC MICROSPHERE INDENTATION. **Edward R. Polanco**, Thang Nguyen, Michael A. Teitell, Thomas A. Zangle

836-Pos Board B616
PLASMA PROTEIN CORONA REDUCES THE HAEMOLYTIC ACTIVITY OF THE GRAPHENE OXIDE NANO AND MICRO FLAKES. **Marco De Spirito**, Massimiliano Papi, Giuseppe Maolucci, Gabriele Ciasca, Valentina Palmieri, Maria Carmela C. Lauriola

837-Pos Board B617
THE IRREVERSIBLE ASSEMBLY OF SMALL SYMMETRIC NANOSHELLS. **Jef Wagner**, Roya Zandi

838-Pos Board B618
STRUCTURING HUMAN INTESTINAL ORGANOIDS. **Barkan Sidar**, Jonathan N. V. Martinson, Jason R. Spence, Seth T. Walk, James N. Wilking

839-Pos Board B619
SYNTHESIZING LOVINC, A LIGHT-ACTIVATED DNAE INTEIN, FOR SEVERAL TARGET PROTEINS. Stanley Wong, Abdullah Mosabbir, **Anam Qudrat**, Kevin Truong

840-Pos Board B620
QUANTITATIVELY MEASURING THE INTERACTIONS BETWEEN BRIDGING CELLS USING OPTICAL TWEEZERS. **Di Li**, Yue Yuan, Gaolin Liang, Haowei Wang, Yinmei Li

841-Pos Board B621
PHOTOCONTROL OF SMALL G-PROTEIN H-RAS MULTIMER FORMATION USING CAGED COMPOUNDS. **Seigo Iwata**, Takashi Hashimoto, Nobuhisa Umeki, Yasunobu Sugimoto, Kazunori Kondo, Shinsaku Maruta

842-Pos Board B622
CONTRIBUTION OF DEPLETION EFFECT FOR SIZE-SELECTIVE TARGET CELL ACQUISITION IN CUP-SHAPED MICROSTRUCTURES. **Hyonchol Kim**, Hideyuki Terazono, Hiroyuki Takei, Kenji Yasuda

843-Pos Board B623
METHODS FOR QUANTIFYING HETEROGENEITY IN THE FLUID PHASE OF PATIENTS WITH PROSTATE CANCER. **Kevin K. Dizon**, Anders Carlsson, Madelyn Luttgen, Paymaneh Malihi, Erik Gerdtsson, Amado J. Zurita, Christopher J. Logothetis, James Hicks, Peter Kuhn

844-Pos Board B624
DEVELOPMENT OF SINGLE CARDIOMYOCYTE MEASUREMENT OF EXTRACELLULAR POTENTIAL. Jyunpei Shimada, **Tomoyuki Kaneko**

845-Pos Board B625
MICROCHAMBER ARRAY TECHNOLOGY AND MICRODOSIMETRY FOR NANOSECOND PULSED ELECTRIC FIELDS CELL EXPOSURE. **Delia Arnaud-Cormos**, Rodney P. O'Connor, Philippe Leveque

846-Pos Board B626
SYNCHRONIZATION OF LARGE CLUSTERS OF CARDIOMYOCYTES CONNECTED BY FIBROBLASTS. **Shota Miyakoshi**, Toshiyuki Mitsui, Tomoyuki Kaneko

847-Pos Board B627
MANIPULATION OF CELL PROLIFERATION AND MIGRATION EMPLOYING SURFACE ACOUSTIC WAVES AND HYDROPHOBIC/HYDROPHILIC STRUCTURED SUBSTRATES. **Melanie E.M. Stamp**, Manuel Brugger, Achim Wixforth, Christoph Westerhausen

848-Pos Board B628
FAST TWO DIMENSIONAL SUPERRESOLUTION IMAGE RECONSTRUCTION ALGORITHM FOR ULTRAHIGH EMITTER DENSITY. **Mingzhai Sun**, Jiaqing Huang, Kristyn Gumpper, Yuejie Chi, Jianjie Ma

849-Pos Board B629
MICROWAVE DIELECTRIC PROPERTIES OF STANDARD LIQUIDS: NUMERICAL AND EXPERIMENTAL DATA. **Christopher E. Bassey**, Madeson K. Claiborne

850-Pos Board B630
RHODOPSIN ENGINEERING THROUGH STRUCTURE-GUIDED RECOMBINATION. **Austin J. Rice**, Claire N. Bedbrook, Kevin K. Yang, Viviana Gradinaru, Frances H. Arnold

851-Pos Board B631
HEAT-ON-A-CHIP: A MICROFLUIDIC DEVICE FOR HIGHLY EFFICIENT ADENOVIRAL TRANSDUCTION OF EX VIVO PANCREATIC ISLETS. Pamuditha N. Silva, Romario Regeenes, Zaid Atto, Uilki Tufa, Yih Yang Chen, Allen Volchuk, Dawn M. Kilkenny, **Jonathan V. Rocheleau**

852-Pos Board B632
REVEALING THE SELF-ASSEMBLY PATHWAYS AND NANOMECHANICS OF ENZYME-TRIGGERED NANOFIBERS FROM PEPTIDE AMPHIPHILES FOR CANCER THERANOSTICS. **Hsien-Shun Liao**, Peng Huang, Yuan Gao, Edward Cai, Ferenc Horkay, Xiaoyuan Chen, Albert J. Jin

853-Pos Board B633
QUANTIFYING NANOSCALE PROPERTIES OF ENGINEERED VIRUS CAPSIDS FOR MALARIA VACCINES. **Albert J. Jin**, David Mertz, Hsien-Shun Liao, Aanchal Johri, Luis Torres, Yimin Wu, David Narum

854-Pos Board B634 **EDUCATION TRAVEL AWARDEE**
BIO-AFM OF CANCER CELLS AND MULTIFUNCTIONAL THERANOSTICS. **Xiao Fu**, Zhe Wang, Ashwin Bhirde, Jenny Zhu, Hsien-Shun Liao, Nicole Carvajal, Gang Niu, Henry Eden, Xiaoyuan Chen, Albert J. Jin

855-Pos Board B635
HEALING OF HUMAN INTESTINAL ORGANOIDS. **Emily A. Berglund**, Jonathan N.V. Martinson, Jason R. Spence, Seth T. Walk, James N. Wilking

856-Pos Board B636
DEVELOPING HIGH-SPEED AFM AND NANOMECHANICAL CHARACTERIZATIONS FOR BIOMEDICAL INVESTIGATIONS. Hsien-Shun Liao, Nicole Carvajal, Xiao Fu, Maryam Raftari, **Albert J. Jin**

857-Pos Board B637
FLUIDIC-RESISTANCE CONTROL IN ARTERIAL PULSATION SIMULATORS. **Yuma Shiraishi**, Yun Jung Heo, Atsushi Sakuma

858-Pos Board B638
RAPID PURIFICATION OF BISPECIFIC MOUSE ANTIBODIES BY DIFFERENTIAL PROTEIN A BINDING. **Adam Zwolak**, Anthony A. Armstrong, Jose R. Pardinas, Susan H. Tam, Dennis R. Goulet, Kerry Brosnan, Eva Emmell, Mark Chiu

859-Pos Board B639 **EDUCATION TRAVEL AWARDEE**
CHARACTERIZING BIOFILM EXTRACELLULAR MATRICES WITH MECHANICAL MEASUREMENT TECHNIQUES. **Michael P. Vigers**, James N. Wilking

Biophysics Education (Boards B640 - B647)

860-Pos Board B640
LEARNING PHYSICAL BIOLOGY VIA MODELING AND SIMULATION: A NEW COURSE AND TEXTBOOK FOR SCIENCE AND ENGINEERING UNDERGRADUATES. **Philip Nelson**

861-Pos Board B641
INTRODUCTORY PHYSICS FOR THE LIFE SCIENCES (IPLS). **Peter H. Nelson**

862-Pos Board B642
DELICIOUS BIOPHYSICS. **Christophe Lavelle**

863-Pos Board B643
NADH CONFORMATION ASSESSED USING SPECTRAL PHASOR ANALYSIS: ILLUSTRATING CONCEPTS FROM MOLECULAR FOLDING TO METABOLIC MONITORING. Paul Urayama, **Dylan Palo**, Symeon Stefan, Madhu Gaire, James O'Connor

864-Pos Board B644
INTEGRATING DIY AND TRADITIONAL BIOCHEMICAL LABORATORY EXPERIENCES INTO AN UNDERGRADUATE BIOPHYSICS COURSE. **Kayla M. Washenberger**, Benjamin L. Stottrup

865-Pos Board B645
AN IMAGING FLOW CYTOMETER FOR INTRODUCTORY PHYSICS. Jason Puchalla, **Angela Li**

866-Pos Board B646
OPEN PLANS OF A LOW COST FLUORESCENCE AND IMAGING ELLIPSOMETRY MICROSCOPE FOR TEACHING AND RESEARCH. **Victoria Nguyen**, John Rizzo, Jacquelyn Zehner, Walter Cook, Babak Sanii

867-Pos Board B647
THE LUMINESCENT LUNCHBOX: TRANSLATING RESEARCH ON EDIBLE GRAS PROBES INTO AN EDUCATIONAL KIT IN PHOTOPHYSICS. **Alexia Ciarfella**, Maria G. Corradini, Richard D. Ludescher

Student Research Achievement Award (SRAA) Poster Competition

These posters will be displayed for judging on Sunday, February 28, 6:00 PM–9:00 PM, in the SRAA poster board area marked S1–S82, in the Exhibit Hall. S board numbers before each title indicate where the posters will be assigned during the Sunday evening competition.

The posters will also be presented during the regular daily sessions as programmed below. Note that only the competitor's name is listed. Please refer to the full abstract for all authors.

Bioenergetics

Board S1
TO UNFOLD OR NOT TO UNFOLD? STRUCTURAL INSIGHTS OF PEROXIDASE-ACTIVE CARDIOLIPIN-BOUND CYTOCHROME C BY SOLID-STATE NMR.
Abhishek Mandal (2853-Pos, B230)

Board S2
ASSESSING CLC-2 CHLORIDE CHANNEL VOLTAGE GATING BY PORE OCCUPATION WITH ACETATE.
José De Jesús-Pérez (593-Pos, B373)

Board S3
PROTEOMIC MAPPING AND OPTOGENETIC CONTROL OF ER-PM JUNCTIONS IN LIVING CELLS.
Ji Jing (1282-Pos, B259)

Board S4
USING NETWORK MODELS OF PROTEINS TO PREDICT FUNCTIONALLY LINKED INTERFACES OF PROTEINS (FLIPS) AT THE RESIDUE LEVEL.
Isha Mehta (2440-Pos, B584)

Board S5
CHARACTERIZATIONS OF SUBSTRATE DELIVERY PATHWAYS IN THE NITRIC OXIDE REDUCTASE.
Paween Mahinthichaichan (1541-Pos, B518)

Biological Fluorescence

Board S6
RESOLVING THE HETEROGENEITY OF THE ENSEMBLE OF UNFOLDED STATES BY A COMBINATION OF FLUORESCENCE SPECTROSCOPIC METHODS.
Katherina Hemmen (1927-Pos, B71)

Board S7
SINGLE-POINT FRAP DISTINGUISHES INNER AND OUTER NUCLEAR MEMBRANE PROTEIN DISTRIBUTION.
Krishna Mudumbi (2942-Pos, B319)

Board S8
IMAGING AND TRACING MULTIPLE GENETIC ELEMENTS VIA MULTIPLEXED CRISPR IMAGING.
Narendra Chaudhary (1996-Pos, B140)

Board S9
KINETIC COMPENSATION BETWEEN ESTER-BOND CLEAVAGE, FOLDING AND RELEASE FROM THE RIBOSOME IN PROTEIN BIOGENESIS.
Rayna Addabbo (1936-Pos, B80)

Biopolymers in vivo

Board S10
COARSE-GRAINED MODELING OF MEMBRANE PROTEIN INTEGRATION VIA THE SEC TRANSLOCON.
Michiel Niesen (297-Pos, B77)

Board S11
DIFFUSION AND BIOCHEMICAL REACTIONS IN INHOMOGENEOUS CROWDED FLUIDS.
Olivia Stiehl (3152-Pos, B529)

Board S12
THERMODYNAMIC MECHANISM OF PROTEIN STABILIZATION: CROWDERS VS. OSMOLYTES.
Liel Sapir (1058-Pos, B35)

Board S13
DISULFIDE BRIDGES: BRINGING TOGETHER FRUSTRATED STRUCTURE IN A BIOACTIVE PEPTIDE.
Yi Zhang (1046-Pos, B23)

Exocytosis & Endocytosis

Board S14
ALCOHOL SIGNIFICANTLY ALTERS FUSIGENICITY OF VESICLES IN A MODEL MEMBRANE SYSTEM.
Jason Paxman (1232-Pos, B209)

Board S15
DYNAMICS OF EGFR TRAFFICKING FROM MEMBRANE INTO DEEP CYTOPLASM REVEALED BY A SPATIOTEMPORALLY MULTIPLEXED 3D TRACKING MICROSCOPE.
Yen-Liang Liu (3149-Pos, B526)

Intrinsically Disordered Proteins

Board S16
A MINIMALISTIC KINETIC MODEL FOR AMYLOID SELF-ASSEMBLY.
Srivastav Ranganathan (1094-Pos, B71)

Board S17
PROTEIN AGGREGATION AND PORE-FORMATION OF A NEURODEGENERATIVE PROTEIN FRAGMENT.
Charles Chen (1974-Pos, B118)

Board S18
DYNAMICS OF CONTACT FORMATION IN DISORDERED POLYPEPTIDES.
Gül Zerze (2748-Pos, B125)

Board S19
STRUCTURAL BASIS OF MEMBRANE TARGETING BY THE INNATE IMMUNITY ADAPTOR TIRAP.
Xiaolin Zhao (2676-Pos, B53)

Board S20
FIBRILS ACT AS AQUEOUS PORES: A MOLECULAR DYNAMICS STUDY.
Sachin Natesh (2729-Pos, B106)

Board S21
UNIVERSAL METRICS OF INTERSTRUCTURE DISTANCE FOR FLEXIBLE AND INTRINSICALLY DISORDERED PROTEINS.
Timothy Connolly (3177-Pos, B554)

Mechanobiology

Board S22
DYNAMIC INSTABILITY EMERGES FROM MICROMECHANICS AND CHEMICAL KINETICS OF MICROTUBULE PROTOFILAMENTS.
Ishutesh Jain (3045-Pos, B422)

Board S23
SYMMETRY-CONSTRAINED NORMAL MODE ANALYSIS OF THE BACTERIAL FLAGELLAR MOTOR.
Moon Ki Choi (242-Pos, B22)

Board S24
DERIVING MECHANICAL PROPERTIES OF MICROTUBULES FROM MOLECULAR SIMULATIONS.
Soheil Fatehiboroujeni (651-Pos, B431)

Membrane Biophysics

Board S25
A NON-CANONICAL VOLTAGE SENSOR CONTROLS GATING IN K2P K^+ CHANNELS.
Marcus Schewe (1365-Pos, B342)

Board S26
THE PATHOGENIC A116V MUTATION ENHANCES THE SELECTIVE ION-CHANNEL ACTIVITY AND TOXICITY OF THE PRION PROTEIN IN LIVING CELLS.
Sabareesan Ambadi Thody (2199-Pos, B343)

Board S27
MECHANISM OF TIM1, TIM3, AND TIM4 BINDING TO LIPID MEMBRANES.
Zhiliang Gong (2921-Pos, B298)

Board S28
OXIDATIVE STRESS IN MYOCARDIAL INFARCTION DISRUPTS MICROTUBULE TRAFFICKING, REDUCING TRANSIENT OUTWARD CURRENT DENSITY.
Benjamin Drum (653-Pos, B433)

Board S29
INTRA AND INTERDOMAIN MOTIONS OF THE NMDA RECEPTOR USING SINGLE MOLECULE FRET.
Drew Dolino (1421-Pos, B398)

Board S30
INHIBITION OF A VOLTAGE-GATED SODIUM CHANNEL BY PROPOFOL INVOLVES MODULATION OF SLOW INACTIVATION.
Elaine Yang (2162-Pos, B306)

Board S31
STRUCTURAL EFFECTS OF PHOSPHORYLATION ON C-TERMINAL SEGMENT OF AMPA RECEPTOR.
Caitlin Nurik (1431-Pos, B408)

Board S32
STRUCTURAL AND MECHANISTIC STUDIES OF ANDROPIN, A MEMBRANE-SELECTIVE ANTIMICROBIAL PEPTIDE.
Meghan McCaskey (2052-Pos, B196)

Board S33
1H NMR SPECTROSCOPY OF DOPAMINE INTERACTING WITH LIPID VESICLES.
Yashasvi Matam (452-Pos, B232)

Board S34
SELECTIVE PRESSURE FOR RAPID MEMBRANE INTEGRATION CONSTRAINS THE SEQUENCE OF BACTERIAL OUTER MEMBRANE PROTEINS.
Ashlee Plummer (1949-Pos, B93)

Board S35
FUNCTIONAL RESCUE OF CALMODULINOPATHY IPSC-DERIVED CARDIOMYOCYTES -- A FORAY INTO PERSONALIZED MEDICINE.
Worawan Limpitikul (2173-Pos, B317)

Board S36
RADIAL TILTING OF THE EXTRACELLULAR DOMAIN OF GLIC REVEALED BY EPR SPECTROSCOPY.
Varun Tiwari (2251-Pos, B395)

Membrane Structure & Assembly

Board S37
THE INTERACTION OF PROTEINS WITH ASYMMETRIC LIPID BILAYERS.
Milka Doktorova (2076-Pos, B220)

Board S38
CONTROL OF INFLUENZA VIRUS BINDING BY TARGET MEMBRANE COMPOSITION.
Isabel Goronzy (1236-Pos, B213)

Board S39
INVESTIGATING LARGE SCALE LIQUID-LIQUID PHASE SEPARATION IN A BIOLOGICAL MEMBRANE.
Scott Rayermann (386-Pos, B166)

Board S40
MECHANISTIC INSIGHTS INTO MEMBRANE BENDING BY PROTEIN CROWDING: UNDERSTANDING THE ROLE OF MEMBRANE COMPOSITION, PHASE SEPARATION AND FREE ENERGY OF PROTEIN BINDING.
Gokul Raghunath (2862-Pos, B239)

Board S41
GENERAL ANESTHETICS RAISE THE MISCIBILITY TRANSITION TEMPERATURE OF MODEL MEMBRANES.
Caitlin Cornell (2036-Pos, B180)

Board S42
DESIGN OF PH TRIGGERED, MACROMOLECULAR PORE FORMING PEPTIDES FOR ENDOSOMAL ESCAPE.
Sarah Kim (2054-Pos, B198)

Board S43
HETERODIMERIZATION OF WILD-TYPE AND MUTANT FIBROBLAST GROWTH FACTOR RECEPTORS IN CELL-DERIVED VESICLES.
Nuala Del Piccolo (1118-Pos, B95)

Board S44
THE SIZE OF A REVERSE MICELLE.
Gozde Eskici (2822-Pos, B199)

Board S45
MOLECULAR BASIS FOR LIPID SPECIFICITY OF THE COAGULATION FACTOR X MEMBRANE-BINDING DOMAIN.
Melanie Muller (2102-Pos, B246)

Board S46
DOES LIPID COMPOSITION REGULATE ANTHRAX TOXIN UPTAKE?
Nnanya Kalu (2094-Pos, B238)

Board S47
LIPID-DEPENDENT MODULATION OF MEMBRANE RECRUITMENT AND PROTEIN-PROTEIN INTERACTIONS IN BCL-2 FAMILY OF APOPTOTIC REGULATORS.
Victor Vasquez-Montes (1267-Pos, B244)

Board S48
A COMPUTATIONAL MODEL FOR MEMBRANE PROTEIN FLUX ACROSS THE BACTERIAL PERIPLASM.
Shawn Costello (305-Pos, B85)

Board S49
GPCR HANDSHAKE IN THE SPOTLIGHT: EXPLORING THE DIMERIZATION INTERFACE OF DOPAMINE D2 RECEPTORS BY SIMULATIONS AT MULTIPLE RESOLUTIONS.
Manu Vajpai (2115-Pos, B259)

Molecular Biophysics

Board S50
AN IN VITRO INVESTIGATION OF GLOBIN FOLDING AND EXPRESSION.
Premila Samuel (1043-Pos, B20)

Board S51
EXPLORING THE BINDING OF GABA TO THE INSECT RDL RECEPTOR WITH METADYNAMICS.
Federico Comitani (2239-Pos, B383)

Board S52
ILLUMINATING DYNAMIC PROCESSES IN THE EMBRYOGENESIS OF CAENORHABDITIS ELEGANS WITH LIGHSHEET MICROSCOPY.
Philipp Struntz (2402-Pos, B546)

Board S53
LOCAL CA^{2+} NANODOMAINS INITIATE CA^{2+}/CALMODULIN-DEPENDENT INACTIVATION OF NMDA RECEPTORS.
Gary Iacobucci (1424-Pos, B401)

Board S54
THERMODYNAMIC FINGERPRINTS OF THE HOFMEISTER SERIES - PROTEIN INTERACTIONS WITH IONIC LIQUIDS.
Michael Senske (1057-Pos, B34)

Board S55
A CYTOKINE RECEPTOR REVOLUTION: ACTIVATION OF THE TYPE-I CYTOKINE RECEPTORS VIA PROTOMER ROTATION.
Michael Corbett (2923-Pos, B300)

Board S56
STRUCTURAL EFFECTS OF HIGH HYDROSTATIC PRESSURE ON HUMAN LOW DENSITY LIPOPROTEIN REVEALED BY SMALL ANGLE X-RAY AND NEUTRON SCATTERING.
Bernhard Lehofer (1271-Pos, B248)

Board S57
CHARACTERIZATION OF THE PYRUVATE OXIDASE CIDC FROM S. AUREUS.
Xinyan Zhang (2707-Pos, B84)

Board S58
KINETIC MODEL OF MG^{2+} INDUCED RNA TERTIARY FOLDING FROM STOPPED FLOW FLUORESCENCE DATA.
Robb Welty (2029-Pos, B173)

Board S59
MULTISCALE MODELING OF DENDRIMERS FOR BIOLOGICAL APPLICATIONS.
Bo Wang (2691-Pos, B68)

Board S60
METHODS FOR QUANTIFYING HETEROGENEITY IN THE FLUID PHASE OF PATIENTS WITH PROSTATE CANCER.
Kevin Dizon (843-Pos, B623)

Board S61
MULTIMERIZATION OF SOLUTION-STATE PROTEINS BY WATER SOLUBLE PORPHYRINS.
Daniel Marzolf (254-Pos, B34)

Board S62
DYNAMICS OF AGGREGATING MUTANTS OF THE P53 DNA BINDING DOMAIN REVEAL A NOVEL "DRUGGABLE" POCKET.
Mohan Pradhan (288-Pos, B68)

Board S63
ELECTROSTATICS OF ACTOMYOSIN INTERFACE AND THE RATE OF RIGOR BINDING.
Jinghua Ge (3036-Pos, B413)

Board S64
PROTONATION AND DEPROTONATION REACTION OF ASPARTIC ACID SIDE CHAIN MODULATED BY THE SURROUNDING DIELECTRIC MEDIUM - AB INITIO QUANTUM CHEMICAL STUDIES ON ASPARTIC ACID IN SIXTEEN DIFFERENT SOLVENTS AND TWO PROTEIN STRUCTURES.
AKSHAY BHATNAGAR (1877-Pos, B21)

Board S65
STRUCTURAL AND MECHANISTIC INSIGHTS DERIVED FROM SATURATION MUTAGENESIS OF CCDB.
Pankaj Jain (221-Pos, B1)

Board S66
SIMULATIONS OF ENDPLATE ACHRS: AGONIST SITE β-SHEET AND M1 π-HELIX.
Srirupa Chakraborty (2980-Pos, B357)

Board S67
INHIBITION OF KIR2.1 BY INTRACELLULAR ACIDIFICATION CONTRIBUTES TO SOUR TASTE TRANSDUCTION.
Wenlei Ye (2104-Pos, B248)

Motility

Board S68
NEW INSIGHT INTO THE CATALYTIC AND INHIBITION MECHANISM OF THE HUMAN ACYL PROTEIN THIOESTERASE.
Martina Audagnotto (2700-Pos, B77)

Board S69
EXPRESSION AND CONTRIBUTIONS OF THE KIR2.1 INWARD-RECTIFIER K^+ CHANNEL TO PROLIFERATION, MIGRATION AND CHEMOTAXIS OF MICROGLIA IN UNSTIMULATED AND ANTI-INFLAMMATORY STATES.
Doris Lam (1564-Pos, B541)

Board S70
MYOSIN VA MOTOR TEAMS NAVIGATE VESICLE CARGOS THROUGH 3D ACTIN FILAMENT INTERSECTIONS.
Andrew Lombardo (2298-Pos, B442)

Nanoscale Biophysics

Board S71
PRECISE CONTROL AND MEASUREMENT OF TEMPERATURE WITH FEMTOSECOND OPTICAL TWEEZERS.
Dipankar Mondal (2466-Pos, B610)

Board S72
ELECTRON-CONFORMATIONAL TRANSFORMATIONS GOVERN THE TEMPERATURE DEPENDENCE OF THE RYR2 GATING.
Bogdan Iaparov (1303-Pos, B280)

Board S73
BIO-AFM OF CANCER CELLS AND MULTIFUNCTIONAL THERANOSTICS.
Xiao Fu (854-Pos, B634)

Board S74
HU PROTEIN AND DNA SUPERCOILING DRAMATICALLY ENHANCE LAC-REPRESSOR-MEDIATED DNA LOOPING.
Yan Yan (1173-Pos, B150)

Permeation & Transport

Board S75
ELUCIDATION OF MOLECULAR MECHANISM UNDERLYING KCSA'S HYSTERETIC GATING BEHAVIOR.
Cholpon Tilegenova (1370-Pos, B347)

Board S76
A NOVEL E. COLI-BASED ASSAY FOR RAPID SCREENING OF HEMICHANNEL FUNCTION.
Srinivasan Krishnan (602-Pos, B382)

Board S77
CATSPER HAS A CALCIUM-PERMEABLE VOLTAGE SENSOR DOMAIN.
Hiroki Arima (586-Pos, B366)

Board S78
THE ROLE OF MULTIVALENCY IN INHIBITION OF BACILLUS ANTHRACIS AND CLOSTRIDIUM BOTULINUM BINARY TOXINS BY CATIONIC PAMAM DENDRIMERS.
Goli Yamini (2072-Pos, B216)

Board S79
ENZYMATIC REQUIREMENTS FOR NON-CANONICAL PROTON IMPORT BY NA/K PUMPS.
Kevin Stanley (3102-Pos, B479)

Board S80
RECEPTOR-LOCALIZED CA^{2+} SIGNALING ACTIVATES P2X2 RECEPTOR CHANGING CYTOSKELETAL MORPHOLOGY.
Anam Qudrat (1286-Pos, B263)

Board S81
EXPRESSION, PURIFICATION AND FUNCTIONAL CHARACTERIZATION OF HUMAN PROTON-COUPLED FOLATE TRANSPORTER (SLC46A1).
Swapneeta Date (696-Pos, B476)

Board S82
FUNCTIONAL DIVERSITY WITHIN THE FNT SUPERFAMILY OF ANION CHANNELS: PHYLOGENETICS & MOLECULAR DYNAMICS STUDIES.
Mishtu Mukherjee (596-Pos, B376)

Monday, February 29, 2016

Daily Program Summary

All rooms are located in the *Los Angeles Convention Center* unless noted otherwise.

7:30 AM–8:30 AM	**Graduate Student Breakfast**	**Room 404AB**
7:30 AM–5:00 PM	**Registration/Exhibitor Registration**	**West Lobby**
8:00 AM–10:00 PM	**Poster Viewing**	**West Hall**
8:15 AM–10:15 AM	**Symposium: Lipid Flippases** **Chair:** *Raimund Dutzler, University of Zurich, Switzerland* THE STRUCTURE AND FUNCTION OF CALCIUM ACTIVATED TMEM16 CHANNELS AND SCRAMBLASES. *Raimund Dutzler* MECHANISMS OF ION AND LIPID TRANSPORT BY TMEM16 SCRAMBLASES. *Alessio Accardi* STRUCTURE AND MECHANISM OF AN ATP-DRIVEN FLIPPASE OF LIPID-LINKED OLIGOSACCHARIDES. *Kaspar Locher* PHOSPHOLIPID FLIP MEDIATED BY MODEL FLIPPASES. *Dieter Langosch*	**Petree Hall C**
8:15 AM–10:15 AM	**Symposium: Biomimetic Models for Study of Cytoskeletal Organization** **Chair:** *Kinneret Keren, Technion, Israel Institute of Technology, Israel* NON EQUILIBRIUM STEADY STATE DYNAMICS OF CONTRACTILE ACTIN NETWORKS. *Keren Kinneret* SHAPE REMODELING OF ACTIVE CYTOSKELETAL VESICLES. *Andreas R. Bausch* TOWARDS THE RECONSTITUTION OF MINIMAL CELL DIVISION. *Petra Schwille* CARGO TRANSPORT BY MYOSIN VA MOLECULAR MOTORS: WHAT A MESH! *David Warshaw*	**Petree Hall D**
8:15 AM–10:15 AM	**Platform: Optical Microscopy and Super-Resolution Imaging II**	**Room 502A**
8:15 AM–10:15 AM	**Platform: Molecular Dynamics I**	**Room 502B**
8:15 AM–10:15 AM	**Platform: Membrane Pumps, Transporters, and Exchangers**	**Room 515A**
8:15 AM–10:15 AM	**Platform: Protein Stability, Folding, and Chaperones I**	**Room 515B**
8:15 AM–10:15 AM	**Platform: Excitation-Contraction Coupling**	**Room 501ABC**
8:15 AM–10:15 AM	**Platform: DNA Structure and Dynamics**	**Room 511ABC**
8:30 AM–10:30 AM	**CPOW Committee Meeting**	**Room 506**
9:30 AM–11:00 AM	**Exhibitor Presentation: Sophion together with Biolin Scientific** **Pioneering Ion Channels - Expanding the Boundaries of Automated Patch Clamp**	**Room 505**
10:00 AM–11:00 AM	**Career Center Workshop** **Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)**	**Room 518**
10:00 AM–5:00 PM	**Exhibits**	**West Hall**
10:15 AM–11:00 AM	**Coffee Break**	**West Hall**
10:15 AM–11:15 AM	**New Member Welcome Coffee**	**Room 404AB**
10:30 AM–12:00 PM	**Exhibitor Presentation: Wyatt Technology Corporation** **Get it Right the First Time – Enhancing Protein Binding and Structural Studies with the Light-Scattering Toolkit**	**Room 513**
10:45 AM–12:45 PM	**Symposium: Mechanosending and Mechanosignaling in Muscle** **Chair:** *Olga Mayans, University of Konstanz, Germany* MECHANOSENSITIVE STRUCTURAL STATES OF TITIN. *Miklós S. Kellermayerc* TITIN(S): TOWARDS AN ATOMIC UNDERSTANDING OF MECHANOSENSORY EVENTS IN THE ELASTIC SCAFFOLDS OF THE MUSCLE SARCOMERE. *Olga Mayans* MECHANO-CHEMO-TRANSDUCTION IN CARDIOMYOCYTES DURING BEAT-TO BEAT CONTRACTION UNDER MECHANICAL LOAD. *Ye Chen-Izu* DETYROSINATED MICROTUBULES BEAR LOAD AND TRANSMIT MECHANICAL FORCE IN CARDIOMYOCYTES. *Benjamin Prosser*	**Petree Hall C**

10:45 AM–12:45 PM	**Symposium: Future of Biophysics** **Co-Chairs:** *Vasanthi Jayaraman, University of Texas Health Science Center, and E. Michael Ostap, University of Pennsylvania* ENGINEERING BIOMIMETIC MATRICES TO UNDERSTAND BRAIN/TUMOR INTERACTIONS DURING METASTASIS. *Kimberly Stroka* COMBINATORIAL REGULATION OF BAR DOMAIN PROTEINS AT THE INTERFACE BETWEEN THE CYTOSKELETON AND MEMBRANES. *David Kast* NASCENT AND ANTIMICROBIAL PEPTIDES THAT TARGET THE RIBOSOMAL EXIT TUNNEL TO BLOCK PROTEIN SYNTHESIS IN BACTERIA. *Axel Innis* MECHANISM OF GATING AND ION SELECTIVITY IN ASIC/ENAC/DEG CHANNELS. *Isabelle Baconguis*	**Petree Hall D**
10:45 AM–12:45 PM	**Platform: Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating I**	**Room 502A**
10:45 AM–12:45 PM	**Platform: Computational Methods and Bioinformatics**	**Room 502B**
10:45 AM–12:45 PM	**Platform: Membrane Physical Chemistry II**	**Room 515A**
10:45 AM–12:45 PM	**Platform: Membrane Protein Structure and Folding II**	**Room 515B**
10:45 AM–12:45 PM	**Platform: Cytoskeletal Motor Proteins**	**Room 501ABC**
10:45 AM–12:45 PM	**Platform: Single-Molecule Spectroscopy**	**Room 511ABC**
11:30 AM–12:30 PM	**Career Center Workshop** **Leveraging Social Media for Networking and Career Advancement**	**Room 518**
11:30 AM–1:00 PM	**Exhibitor Presentation: Asylum Research, an Oxford Instrument Company** **Soft, Sticky, and Viscous: Practical Considerations for Measuring Cell Mechanics with AFM**	**Room 505**
12:30 PM–2:00 PM	**Exhibitor Presentation: Nanion Technologies GmbH** **Ion Channel Drug Discovery - Beyond the Bottlenecks and Ready for CiPA**	**Room 513**
1:00 PM–3:00 PM	**NSF Grant Writing Workshop**	**Room 403B**
1:30 PM–3:00 PM	**Industry Panel**	**Room 411**
1:30 PM–3:00 PM	**Exhibitor Presentation: KinTek Corp** **Why You Should Fit Kinetic and Equillibrium Binding Data Using KinTeck Explorer Software**	**Room 505**
1:30 PM–3:00 PM	**Biophysics 101: Forster Resonance Energy Transfer**	**Room 409AB**
1:45 PM–3:00 PM	**Snack Break**	**West Hall**
1:45 PM–3:45 PM	**Poster Presentations and Late Posters**	**West Hall**
2:15 PM–3:45 PM	**How to Get Your Scientific Paper Published**	**Room 408B**
2:30 PM–3:30 PM	**Speed Networking**	**Room 407**
2:30 PM–3:30 PM	**Career Center Workshop** **Selling Yourself to the Life Sciences Industry**	**Room 518**
2:30 PM–4:00 PM	**Hiring, Firing, and Beyond: How to Be an Effective Supervisor**	**Room 408A**
2:30 PM–4:00 PM	**The Science of Hollywood**	**Room 403A**
2:30 PM–4:00 PM	**Exhibitor Presentation: Renishaw Inc** **Innovative Raman Imaging in the Life Sciences**	**Room 513**
3:00 PM–5:00 PM	**Membership Committee Meeting**	**Room 506**
3:30 PM–5:00 PM	**Exhibitor Presentation: Bruker Nano Surfaces** **Advances in Live-Super-Resolution Imaging Using the Vutara 352 Microscope**	**Room 505**
4:00 PM–5:00 PM	**Career Center Workshop** **Successfully Navigating the International Job Search**	**Room 518**

4:00 PM–6:00 PM	**Symposium: Molecular Mechanisms of Mechanosensation** **Chair:** *Robert Fettiplace, University of Wisconsin-Madison* GLOBAL AND SPECIFIC INTERACTIONS BETWEEN MECHANOSENSITIVE ION CHANNELS AND THE LIPID BILAYER. *Boris Martinac* SINGLE MOLECULE FORCE SPECTROSCOPY OF HAIR-CELL TIP-LINK PROTEINS. *David P. Corey* LOCALIZATION OF ANOMALOUS MECHANO-SENSITIVE ION CHANNELS IN COCHLEAR HAIR CELLS. *Robert Fettiplace* STRUCTURE AND CHEMICAL BIOLOGY OF MECHANOSENSITIVE K2P CHANNELS. *Daniel L. Minor*	**Petree Hall C**
4:00 PM–6:00 PM	**Symposium: Folding Rates and Routes** **Chair:** *Jane Clarke, University of Cambridge, United Kingdom* ASSESSING AND MANIPULATING PROTEIN FOLDING DYNAMICS. *Feng Gai* COUPLED PROTEIN FOLDING AND BINDING REACTIONS: MECHANISMS AND SPEED LIMITS. *Thomas Kiefhaber* IMPACTS OF CHARGE PATTERNING ON INTRINSICALLY DISORDERED PROTEINS AND MECHANISMS OF DISORDER-TO-ORDER TRANSITIONS. *Rohit V. Pappu* THE ROLE OF DISORDER IN PROTEIN FOLDING. *Jane Clarke*	**Petree Hall D**
4:00 PM–6:00 PM	**Symposium: Expanding Horizons in Biophysics and Medical Physics** **Chair:** *Robert Jeraj, University of Wisconsin-Madison* INTERPLAY BETWEEN MOLECULAR IMAGING AND TUMOR MODELING OF ANTI-ANGIOGENIC THERAPIES. *Robert Jeraj* CHERENKOV IMAGING OF RADIATION DOSE AND MOLECULAR SIGNALING IN VIVO. *Brian Pogue* THE ROLE OF PHYSICS IN DRIVING PRECISION IN CANCER MEDICINE. *David Jaffray* CELL ADHESION STRENGTH IS REDUCED BY THE PRESENCE OF PERICELLULAR MATRIX PATCHES. *Jennifer Curtis*	**Room 502A**
4:00 PM–6:00 PM	**Platform: Cell Mechanics, Cytoskeleton, and Motility**	**Room 502B**
4:00 PM–6:00 PM	**Platform: Bioengineering and Biotechnology**	**Room 515A**
4:00 PM–6:00 PM	**Platform: Ligand-gated Channels**	**Room 515B**
4:00 PM–6:00 PM	**Platform: Protein-Small Molecule Interactions**	**Room 501ABC**
4:00 PM–6:00 PM	**Platform: Protein-Lipid Interactions I**	**Room 511ABC**
4:30 PM–6:00 PM	**Exhibitor Presentation: Molecular Devices** **Pushing the Performane Envelope: Evaluation of the NMDA Receptor Using Automated Electrophysiology and Fast Fluidics**	**Room 513**
5:30 PM–7:00 PM	**Exhibitor Presentation: Sutter Instrument** **Scientists Empowering Scientists**	**Room 505**
8:00 PM–9:30 PM	**Awards and National Lecture**	**Concourse Hall**
9:30 PM–12:00 AM	**Reception and Dance**	**J.W. Marriott - Diamond Ballroom**
9:30 PM–12:00 AM	**Reception and Quiet Room**	**J.W. Marriott - Gold Ballroom**

Monday, February 29

Graduate Student Breakfast

7:30 AM - 8:30 AM, ROOM 404AB

Supported by the Burroughs Wellcome Fund

This breakfast presents an opportunity for graduate student members of the Society to meet and discuss the issues they face in their current career stage. Members of the Early Careers Committee will be available to answer questions about how the Committee serves graduate students in the biophysical community. Limited to the first 100 attendees.

Registration/Exhibitor Registration

7:30 AM - 5:00 PM, WEST LOBBY

Poster Viewing

8:00 AM - 10:00 PM, WEST HALL

Symposium
Lipid Flippases

8:15 AM - 10:15 AM, PETREE HALL C

Chair
Raimund Dutzler, University of Zurich, Switzerland

868-SYMP 8:15 AM
THE STRUCTURE AND FUNCTION OF CALCIUM ACTIVATED TMEM16 CHANNELS AND SCRAMBLASES. Janine D. Brunner, Novandy K. Lim, Stephan Schenck, **Raimund Dutzler**

869-SYMP 8:45 AM
MECHANISMS OF ION AND LIPID TRANSPORT BY TMEM16 SCRAMBLASES. **Alessio Accardi**

870-SYMP 9:15 AM
STRUCTURE AND MECHANISM OF AN ATP-DRIVEN FLIPPASE OF LIPID-LINKED OLIGOSACCHARIDES. **Kaspar Locher**

871-SYMP 9:45 AM
PHOSPHOLIPID FLIP MEDIATED BY MODEL FLIPPASES. **Dieter Langosch**

Symposium
Biomimetic Models for Study of Cytoskeletal Organization

8:15 AM - 10:15 AM, PETREE HALL D

Chair
Kinneret Keren, Technion, Israel Institute of Technology

872-SYMP 8:15 AM
NON EQUILIBRIUM STEADY STATE DYNAMICS OF CONTRACTILE ACTIN NETWORKS. **Keren Kinneret**

873-SYMP 8:45 AM
SHAPE REMODELING OF ACTIVE CYTOSKELETAL VESICLES. **Andreas R. Bausch**

874-SYMP 9:15 AM
TOWARDS THE RECONSTITUTION OF MINIMAL CELL DIVISION. **Petra Schwille**

NO ABSTRACT 9:45 AM
CARGO TRANSPORT BY MYOSIN VA MOLECULAR MOTORS: WHAT A MESH! **David Warshaw**

Platform
Optical Microscropy and Super-Resolution Imaging II

8:15 AM - 10:15 AM, ROOM 502A

Co-Chairs
Viviane Devauges, King's College London, United Kingdom
MinKwan Kim, Korea Advanced Institute of Science and Technology, Korea

875-PLAT 8:15 AM
TOWARDS SINGLE MOLECULE IMAGING OF FLUORESCENCE ANISOTROPY. **Viviane Devauges**, Simon P. Poland, James Monypenny, Anthony H. Keeble, Andrew J. Beavil, Simon M. Ameer-Beg

876-PLAT 8:30 AM
A METHOD FOR ESTIMATING UNKNOWN PARAMETERS FROM PARTICLE TRACKING EXPERIMENTS. Trevor T. Ashley, **Sean B. Andersson**

877-PLAT 8:45 AM
SUPER RESOLUTION MICROSCOPY WITH INDUCED OPTICAL FLUCTUATION. **MinKwan Kim**, Chung-Hyun Park, Yong-Hoon Cho, YongKeun Park

878-PLAT 9:00 AM
ULTRA-HIGH RESOLUTION THREE DIMENSIONAL IMAGING USING 4PI-SMSN THROUGHOUT WHOLE CELLS. **Fang Huang**, George Sirinakis, Edward S. Allgeyer, Lena Schroeder, Whitney C. Duim, Joerg Bewersdorf

879-PLAT 9:15 AM
3D SINGLE-MOLECULE SUPER-RESOLUTION FLUORESCENCE MICROSCOPY WITH THE CORKSCREW POINT SPREAD FUNCTION. **Maurice Lee**, Matthew Lew, Alex von Diezmann, Lucien Weiss, Yoav Shechtman, W. E. Moerner

880-PLAT 9:30 AM
SPECTRALLY RESOLVED SUPER-RESOLUTION MICROSCOPY. **Ke Xu**, Zhengyang Zhang, Samuel Kenny, Margaret Hauser, Wan Li

881-PLAT 9:45 AM
SIMPLE, LOW-COST BAYESIAN SUPER RESOLUTION MICROSCOPY. **Jorge Madrid-Wolff**, Joel I. Klahr, John Mario Gonzalez, Manu Forero-Shelton

882-PLAT 10:00 AM
ARBITRARY-REGION IMAGE CORRELATION SPECTROSCOPY. **Jelle Hendrix**, Tomas Dekens, Don C. Lamb

Platform
Molecular Dynamics I

8:15 AM - 10:15 AM, ROOM 502B

Co-Chairs
Arthur Palmer, Columbia University
Francis Starr, Wesleyan University

883-PLAT 8:15 AM
LIPASE DYNAMICS AND ACTIVATION: THE CASE OF M37. **Nathalie Willems**, Mickael Lelimousin, Mark S.P. Sansom

884-PLAT 8:30 AM
A COMPREHENSIVE DESCRIPTION OF THE HOMO AND HETERODIMERIZATION MECHANISM OF THE CHEMOKINE RECEPTORS CCR5 AND CXCR4. **Daniele Di Marino**, Vittorio Limongelli

885-PLAT 8:45 AM
SIMULATIONS OF FGFR2 KINASE ACTIVATION LOOP DYNAMICS AND THEIR EFFECTS ON CATALYTIC ACTIVITY. **Jerome M. Karp**, David Cowburn

886-PLAT 9:00 AM
STEERED MOLECULAR DYNAMICS SIMULATIONS OF INNER-EAR CADHERINS USING THE DRUDE POLARIZABLE FORCE FIELD. Yoshie Narui, **Florencia Velez-Cortes**, Zachary Johnson, Marcos Sotomayor

887-Plat 9:15 AM
A TRIO OF CATIONS IN GRAMICIDIN A CHANNEL: IMPORTANCE OF QUANTUM EFFECTS TO DESCRIBE ION SELECTIVITY OF K^+ AND NA^+, AND PROTON TRANSFER. **Van Ngo**, Sergei Yu Noskov

888-Plat 9:30 AM
REDUCING IAPP AGGREGATION WITH MITOCHONDRIAL HUMANIN PEPTIDES; RESULTS FROM SIMULATIONS AND EXPERIMENTS. **Zachary A. Levine**, Alan Okada, Kazuki Teranishi, Ralf Langen, Joan-Emma Shea

889-Plat 9:45 AM
RATIONAL DEVELOPMENT OF A NEW TYPE OF HBV CAPSID INHIBITORS BY A COMBINATION OF MICROSECOND-SCALE MOLECULAR DYNAMICS AND DOCKING. Maksym Korablyov, **Anna Pavlova**, James Gumbart

890-Plat 10:00 AM
HOLLIDAY JUNCTION THERMODYNAMICS AND STRUCTURE: COMPARISONS OF COARSE-GRAINED SIMULATIONS AND EXPERIMENTS. **Francis W. Starr**, Wujie Wang, Laura M. Nocka, Brianne Z. Wiemann, Daniel M. Hinckley, Ishita Mukerji

Platform
Membrane Pumps, Transporters, and Exchangers

8:15 AM - 10:15 AM, Room 515A

Co-Chairs
Merritt Maduke, Stanford University
Pernilla Wittung-Stafshede, Umeå Univeristy, Sweden

891-Plat 8:15 AM
AN OUTWARD-FACING OPEN CONFORMATIONAL STATE IN A CLC TRANSPORTER. Sherwin J. Abraham, Tanmay Chavan, Ricky C. Cheng, Cristina Fenollar-Ferrer, Wei Han, Shahidul M. Islam, Tao Jiang, Chandra M. Khantwal, Irimpan I. Mathews, Richard A. Stein, Benoit Roux, Lucy R. Forrest, Hassane S. Mchaourab, Emad Tajkhorshid, **Merritt Maduke**

892-Plat 8:30 AM
TRANSPORT MECHANISM OF THE EIIC GLUCOSE SUPERFAMILY OF TRANSPORTERS. **Zhenning Ren**, Jason G. McCoy, Vitali Stanevich, Jumin Lee, Sharmistha Mitra, Elena J. Levin, Sebastien Poget, Matthias Quick, Wonpil Im, Ming Zhou

893-Plat 8:45 AM
DIRECT VISUALIZATION OF GLUTAMATE TRANSPORTER TRANSPORT CYCLE. Yi Ruan, Atsushi Miyagi, Xiaoyu Wang, Mohamed Chami, Henning Stahlberg, Olga Boudker, **Simon Scheuring**

894-Plat 9:00 AM
RESOLVING ACTIVE ION TRANSPORT AT THE SINGLE MOLECULE LEVEL FOR THE FIRST TIME. **Salome Veshaguri**, Sune M. Christensen, Gerdi C. Kemmer, Mads P. Møller, Garima Ghale, Christina Lohr, Andreas L. Christensen, Bo H. Justesen, Ida L. Jørgensen, Jürgen Schiller, Nikos S. Hatzakis, Michael Grabe, Thomas Günther Pomorski, Dimitrios Stamou

895-Plat 9:15 AM
PROTEIN INTERACTIONS THAT ENABLE SAFE AND EFFICIENT COPPER ION TRANSPORT IN THE HUMAN CYTOPLASM. **Pernilla Wittung-Stafshede**

896-Plat 9:30 AM **INTERNATIONAL TRAVEL AWARDEE**
DISSECTING THE CATALYTIC CYCLE OF THE SEROTONIN TRANSPORTER. **Peter S. Hasenhuetl**, Michael Freissmuth, Harald H. Sitte, Klaus Schicker, Yang Li, Walter Sandtner

897-Plat 9:45 AM
TRANSLOCASE ACTIVITY AND ASYMMETRIC MODEL MEMBRANES PROBED BY NEUTRON SCATTERING. **Allison M. Whited**, Frederick A. Heberle, Robert F. Standaert, Jonathan David Nickels, Xiaolin Cheng, John Katsaras, Alexander Johs

898-Plat 10:00 AM
FUNCTIONAL CHARACTERIZATION OF CALCIUM-ACTIVATED PHOSPHOLIPID SCRAMBLASE ACTIVITY OF NHTMEM16. **Tao Jiang**, Sundar Thangapandian, Emad Tajkhorshid

Platform
Protein Stability, Folding, and Chaperones I

8:15 AM - 10:15 AM, Room 515B

Co-Chairs
Susan Marqusee, University of California, Berkeley
Hugo Sanabria, Clemson University

899-Plat 8:15 AM
MECHANICAL UNFOLDING OF E. COLI RNASE H REVEALS AN INTERMEDIATE WITH A FORCE-INDUCED SHIFT IN THE RATE-LIMITING BARRIER. **Diane M. Wiener**, Jesse W. Dill, Susan Marqusee

900-Plat 8:30 AM
IN-CELL PROTEIN FOLDING - PAPS SYNTHASES. Oliver Brylski, David Gnutt, **Simon Ebbinghaus**

901-Plat 8:45 AM
PROVING THE ROLE OF ENTROPIC ELASTICITY IN PROTEIN FOLDING. **Jessica Valle-Orero**, Edward C. Eckels, Ionel Popa, Jaime Andres Rivas-Pardo, Julio M. Fernandez

902-Plat 9:00 AM
SUB-MILLISECOND UNFOLDING KINETIC SPECTRA REVEALS INTERMEDIATE TRANSITIONS. **Hugo Sanabria**, Katherina Hemmen, Dmitro Rodnin, Daniel Rohrbeck, Soheila Rezai Adariani, Ralf Kühnemuth, Claus A. M. Seidel

903-Plat 9:15 AM
STUDYING THE FUNCTION OF BAP IN THE NUCLEOTIDE CYCLE OF BIP BY SPFRET USING MFD-PIE. **Daniela Wengler**, Mathias Rosam, Jelle Hendrix, Johannes Buchner, Don C. Lamb

904-Plat 9:30 AM
THE EFFECT OF LOOP INSERTIONS ON THE FOLDING OF TANDEM-REPEAT PROTEINS. **Albert Perez-Riba**, Ewan R. Main, Laura S. Itzhaki

905-Plat 9:45 AM
LINKING MECHANOCHEMISTRY TO PROTEIN FOLDING AT THE SINGLE BOND LEVEL. **Amy EM Beedle**, Sergi Garcia-Manyes

906-Plat 10:00 AM
FOLDING DYNAMICS OF B1 DOMAIN OF PROTEIN G USING SINGLE MOLECULE FORCE SPECTROSCOPY. **Dena Izadi**

Platform
Excitation-Contraction Coupling

8:15 AM - 10:15 AM, Room 501ABC

Co-Chairs
Bradley Launikonis, University of Queensland, Australia
Isabelle Marty, Grenoble Institut des Neurosciences, France

907-Plat 8:15 AM
THE MICROTUBULE-ASSOCIATED PROTEIN CLIMP-63 IS A NEW MEMBER OF THE CALCIUM RELEASE COMPLEX. Alexis Osseni, Muriel Sebastien, Julien Fauré, Anne Fourest-Lieuvin, **Isabelle Marty**

908-Plat 8:30 AM
STRUCTURAL INSIGHTS INTO RYANODINE RECEPTOR-FKBP12 INTERACTIONS IN WILD-TYPE AND MUTATED STATES. **Zhiguang Yuchi**, Siobhan M Wong King Yuen, Kelvin Lau, Ainsley Underhill, Razvan Cornea, James Fessenden, Filip Van Petegem

909-PLAT 8:45 AM
CALSEQUESTRIN DEPOLYMERIZES WHEN CA^{2+} CONCENTRATION DECAYS IN THE SARCOPLASMIC RETICULUM OF SKELETAL MUSCLE. **Carlo Manno**, Lourdes Figueroa, Dirk Gillespie, Eduardo Rios

910-PLAT 9:00 AM
SHEET-LIKE REMODELING OF THE T-SYSTEM OF VENTRICULAR CARDIOMYOCYTES IN HEART FAILURE. **Thomas Seidel**, Martin Tristani-Firouzi, Craig H. Selzman, Frank B. Sachse

911-PLAT 9:15 AM
DIFFUSION PROPERTIES OF CARDIAC T-TUBULAR SYSTEM. Marina Scardigli, **Claudia Crocini**, Cecilia Ferrantini, Raffaele Coppini, Chiara Tesi, Elisabetta Cerbai, Corrado Poggesi, Francesco S. Pavone, Leonardo Sacconi

912-PLAT 9:30 AM
MICROTUBULE-DEPENDENT ALTERATIONS TO MECHANICAL PROPERTIES AND MECHANOTRANSDUCTION IN SKELETAL MUSCLE. **Jaclyn P. Kerr**, Guoli Shi, W Jonathan Lederer, Kelley M. Virgilio, Sylvia S. Blemker, Stuart S. Martin, Roberto Raiteri, Christopher W. Ward

913-PLAT 9:45 AM
CALCIUM ENTRY UNITS: EXERCISE-DEPENDENT FORMATION OF NEW SR-TT JUNCTIONS CONTAINING STIM1 AND ORAI1 IN MUSCLE. Simona Boncompagni, Antonio Michelucci, Laura Pietrangelo, Robert T. Dirksen, **Feliciano Protasi**

914-PLAT 10:00 AM
RYANODINE RECEPTOR ACTIVITY REGULATES THE LEVELS OF CA^{2+} EXTRUSION AND STORE-OPERATED CA^{2+} ENTRY IN SKELETAL MUSCLE. Tanya R. Cully, Rocky H. Choi, Thomas R. Shannon, **Bradley S. Launikonis**

Platform
DNA Structure and Dynamics

8:15 AM - 10:15 AM, ROOM 511ABC

Co-Chairs
Vincent Croquette, LPS-ENS Research University, France
Catherine Tardin, Institute of Pharmacology and Structural Biology, France

915-PLAT 8:15 AM
REVISITING SEQUENCING BY HYBRIDIZATION AT THE SINGLE MOLECULE LEVEL USING THE UNZIPPING ASSAY. **Vincent Croquette**, Saurabh Raj, Jean-François Allemand, David Bensimon, Jean-Baptiste Boulé

916-PLAT 8:30 AM
MODELING SECONDARY STRUCTURAL ELEMENTS IN PROGRAMMED DNA ASSEMBLIES. **Keyao Pan**, Mark Bathe

917-PLAT 8:45 AM
THE OVERSTRETCHING TRANSITION OF DIAMINOPURINE SUBSTITUTED TRIPLY HYDROGEN-BONDED DNA. **Daniel T. Kovari**, Matteo Cristofalo, David Dunlap, Laura Finzi

918-PLAT 9:00 AM
THREE DIMENSIONAL DYNAMICS AND FLUCTUATIONS OF DNA-NANOGOLD DIMERS BY INDIVIDUAL-PARTICLE ELECTRON TOMOGRAPHY. **Lei Zhang**, Dongsheng Lei, Jessica M. Smith, Huimin Tong, Xing Zhang, Paul Alivisatos, Gang Ren

919-PLAT 9:15 AM
BRANCHPOINT STRUCTURE OF DNA THREEWAY JUNCTIONS. Anita Toulmin, **Michael J. Morten**, Tara Sabir, Laura E. Baltierra-Jasso, Peter McGlynn, Gunnar F. Schröder, Brian Smith, Steven W. Magennis

920-PLAT 9:30 AM
DYNAMICS OF HUMAN TELOMERIC G-QUADRUPLEX PROBED BY SINGLE MOLECULE FLUORESCENCE-FORCE SPECTROSCOPY. **Jaba Mitra**, Thuy T.M. Ngo, Taekjip Ha

921-PLAT 9:45 AM
PROBING A LABEL-FREE LOCAL BEND IN DNA BY SINGLE MOLECULE TETHERED PARTICLE MOTION. Annaël Brunet, Sébastien Chevalier, Nicolas Destainville, Manoel Manghi, Philippe Rousseau, Maya Sahi, Laurence Salome, **Catherine Tardin**

922-PLAT 10:00 AM
QUANTIFYING THE ION ATMOSPHERE OF UNFOLDED, SINGLE-STRANDED NUCLEIC ACIDS. **David R. Jacobson**, Omar A. Saleh

CPOW Committee Meeting

8:30 AM - 10:30 AM, ROOM 408A

Exhibitor Presentation
Sophion together with Biolin Scientific

9:30 AM - 11:00 AM, ROOM 505

Pioneering Ion Channels - Expanding the Boundaries of Automated Patch Clamp

Recent advances in automated patch clamp for voltage and ligand gated ion channels with emphasis on NMDA, cardiac safety and induced pluripotent stem cells
Speakers
Timm Danker, NMI, Germany
Automated Patch Clamp on Crdiac Ion Channels and Multiwell MEA Recordings on Human iPSC-derived Cardiomyocytes: a Complementary Approach for Predictable Proarhytmia Assessments

Caterina Virginio, Aptuit
NMDA Receptors: Meaningful Biophysical and Pharmacological Studies to Redefine Ligands Properties

Denise Franz, University of Rostock, Germany
Electrophysiological Characterization of Human Induced Ppluripotent Stem Cell-derived Dopaminergic Neurons on the QPatch

Career Center Workshop
Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)

10:00 AM - 11:00 AM, ROOM 518

You've been invited to interview with that drug development company that you've always wanted to work for. You've soaked up the details of the position description. You are confident in your ability to do the job, as well as answer any/all technical questions during the interview process. The day is yours…until…that first question catches you by surprise and your confidence begins to wilt. Be prepared for those non-technical questions that you will almost certainly hear at some point, know why they are asked, and learn what a good (if not great) response to each question might be by attending this workshop.

Exhibits

10:00 AM - 5:00 PM, WEST HALL

Coffee Break

10:15 AM - 11:00 AM, WEST HALL

New Member Welcome Coffee

10:15 AM - 11:15 AM, ROOM 404AB

All new and prospective Biophysical Society members are invited to participate in an informal gathering to meet members of the Society's council and committees, find out about the Society's activities, get acquainted with other new members, and enjoy refreshments. Current members are encouraged to come meet the new members.

Exhibitor Presentation
Wyatt Technology Corporation

10:30 AM - 12:00 PM, ROOM 513

Get it Right the First Time - Enhancing Protein Binding and Structural Studies with the Light-Scattering Toolkit
Biophysical binding studies utilizing surface plasmon resonance (SPR), biolayer interferometry (BLI), isothermal titration calorimetry (ITC), and related techniques are central to the study of protein-protein, protein-DNA and similar biomolecular interactions. Though these are well-established techniques, in a variety of circumstances, binding measurements may be ambiguous or even fail to provide useful data. Wasted measurements can end up being costly in terms of consumables and time.

Small-angle X-ray scattering (SAXS) and small-angle neutron scattering (SANS) are powerful techniques for studying biomolecular structure. SAXS and SANS usually require precious beam time at large facilities, leaving little room for error where the sample preparation is concerned. Poor samples provide poor SAXS/SANS data, but the opportunity to utilize the X-ray or neutron beam may never be recovered.

One thing that SAXS and SANS have in common with SPR, BLI and ITC, is the urgent need to verify sample quality and aggregation state in solution prior to carrying out structural or binding measurements. This seminar discusses a suite of complementary techniques, all based on light scattering, that are useful in assessing and troubleshooting many of the underlying characterization issues. Multi-angle light scattering (MALS) and dynamic light scattering (DLS) can help researchers assess solution quality prior to running binding or structural experiments, qualify aggregation behavior of analytes, and characterize complex interactions that may not be amenable to standard characterization methodology. Judicious use of the biophysical light-scattering toolkit is essential for robust and reliable interaction and structure studies.
Speaker
Sophia Kenrick, Application Scientist, Wyatt Technology Corporation

Symposium
Mechanosending and Mechanosignaling in Muscle

10:45 AM - 12:45 PM, PETREE HALL C

Chair
Olga Mayans, University of Konstanz, Germany

923-SYMP 10:45 AM
MECHANOSENSITIVE STRUCTURAL STATES OF TITIN. Zsolt Mártonfalvi, Pasquale Bianco, Katalin Naftz, Dorina Kőszegi, György Ferenczy, **Miklós S. Kellermayer**

924-SYMP 11:15 AM
TITIN(S): TOWARDS AN ATOMIC UNDERSTANDING OF MECHANOSENSORY EVENTS IN THE ELASTIC SCAFFOLDS OF THE MUSCLE SARCOMERE. **Olga Mayans**, Jennifer Fleming, Rhys Williams, Barbara Franke, Hang Lu, Guy Berrian

925-SYMP 11:45 AM
MECHANO-CHEMO-TRANSDUCTION IN CARDIOMYOCYTES DURING BEAT-TO BEAT CONTRACTION UNDER MECHANICAL LOAD. **Ye Chen-Izu**

926-SYMP 12:15 PM
DETYROSINATED MICROTUBULES BEAR LOAD AND TRANSMIT MECHANICAL FORCE IN CARDIOMYOCYTES. Patrick Robison, Matthew Caporizzo, Alexey Bogush, Kenneth Margulies, **Benjamin Prosser**

Symposium
Future of Biophysics

10:45 AM - 12:45 PM, PETREE HALL D

Co-Chairs
Vasanthi Jayaraman, University of Texas Healtah Science Center
E. Michael Ostap, University of Pennsylvania

NO ABSTRACT 10:45 AM
ENGINEERING BIOMIMETIC MATRICES TO UNDERSTAND BRAIN/TUMOR INTERACTIONS DURING METASTASIS. **Kimberly Stroka**

NO ABSTRACT 11:15 AM
COMBINATORIAL REGULATION OF BAR DOMAIN PROTEINS AT THE INTERFACE BETWEEN THE CYTOSKELETON AND MEMBRANES. **David Kast**

NO ABSTRACT 11:45 AM
NASCENT AND ANTIMICROBIAL PEPTIDES THAT TARGET THE RIBOSOMAL EXIT TUNNEL TO BLOCK PROTEIN SYNTHESIS IN BACTERIA. **Axel Innis**

NO ABSTRACT 12:15 PM
MECHANISM OF GATING AND ION SELECTIVITY IN ASIC/ENAC/DEG CHANNELS. **Isabelle Baconguis**

Platform
Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating I

10:45 AM - 12:45 PM, ROOM 502A

Co-Chairs
Peter Larsson, University of Miami
Gail Robertson, University of Wisconsin-Madison

927-PLAT 10:45 AM
N-ARACHIDONOYL TAURINE RESCUES DIVERSE LONG QT SYNDROME-ASSOCIATED MUTATIONS IN THE CARDIAC IKS CHANNEL. **Sara I. Liin**, Johan E. Larsson, Rene Barro-Soria, Mark A. Skarsfeldt, Bo H. Bentzen, H Peter Larsson

928-PLAT 11:00 AM
THE F-ACTIN BINDING PROTEIN TRIOBP-1 REGULATES HERG K^+ CHANNELS. **Ashley A. Johnson**, Dave Jones, Elon C. Roti Roti, Gail Robertson, Matthew Trudeau

929-PLAT 11:15 AM
A NOVEL SITE OF COMPETITIVE PIP2 AND CALMODULIN INTERACTION TO KCNQ1 C-TERMINUS HELIX B IS CRUCIAL FOR IKS CHANNEL ACTIVITY. **William S. Tobelaim**, Meidan Dvir, Guy Lebel, Meng Cui, Tal Buki, Asher Peretz, Diomedes Logothetis, Joel Hirsch, Bernard Attali

930-PLAT 11:30 AM
MOLECULAR DYNAMICS SIMULATIONS OF KIR2.2-CHOLESTEROL INTERACTIONS. **Nicolas Barbera**, Manuela A. Ayee, Belinda S. Akpa, Irena Levitan

931-PLAT 11:45 AM
CRYO-EM STRUCTURE OF THE BK ION CHANNEL IN A LIPID MEMBRANE. **Liguo Wang**, Lige Tonggu, Xi Zhan

932-PLAT 12:00 PM
DELETION OF CYTOPLASMIC GATING RING ALTERS VOLTAGE DEPENDENT ACTIVATION OF BK CHANNELS. **Guohui Zhang**, Yanyan Geng, Jingyi Shi, Kelli McFarland, Karl L. Magleby, Lawrence Salkoff, Jianmin Cui

933-PLAT 12:15 PM
SELECTIVE CATION BINDING TO THE GATING-RING TRIGGERS INDEPENDENT RCK MOTIONS IN THE BK CHANNEL. **Pablo Miranda**, Teresa Giraldez, Miguel Holmgren

934-PLAT 12:30 PM
ROLE OF AN INTERSUBUNIT CA^{2+} BRIDGE IN STRUCTURE AND FUNCTION OF BK CHANNELS. **Alexandre G. Vouga**, Eunan Hendron, Brad S. Rothberg

Platform
Computational Methods and Bioinformatics

10:45 AM - 12:45 PM, ROOM 502B

Co-Chairs
Lanyuan Lu, Nanyang Technological University, Singapore
Liskin Swint-Kruse, University of Kansas

935-PLAT 10:45 AM
PL-PATCHSURFER: A FAST, SURFACE-PATCH-BASED VIRTUAL SCREENING PROGRAM USING THREE-DIMENSIONAL ZERNIKE DESCRIPTORS. **Woong-Hee Shin**, Daisuke Kihara

936-PLAT 11:00 AM
BIASING THE SAMPLING OF LOCAL STATES TO DRIVE THE EXPLORATION OF GLOBAL CONFORMATIONS IN PROTEINS. **Alessandro Pandini**, Arianna Fornili

937-PLAT 11:15 AM
PROTEIN STRUCTURE DETERMINATION BY CONFORMATIONAL SPACE ANNEALING USING NMR GEOMETRIC RESTRAINTS. **Jooyoung Lee**, Keehyoung Joo, InSuk Joung, Jinhyuk Lee, Jinwoo Lee, Weontae Lee, Bernard Brooks, Sung Jong Lee

938-PLAT 11:30 AM
MODELING SOLUTION X-RAY SCATTERING WITH KNOWLEDGE-BASED COARSE-GRAINED FORM FACTORS. **Lanyuan Lu**, Dudu Tong

939-PLAT 11:45 AM
DECODING DYNAMIC DISORDER IN SINGLE MOLECULE DATA. **Wonseok Hwang**, Il-Buem Lee, Seok-Cheol Hong, Changbong Hyeon

940-PLAT 12:00 PM
A NEW PATTERN IN PROTEIN EVOLUTIONARY SEQUENCE INFORMATION ROBUSTLY IDENTIFIES FUNCTIONALLY-IMPORTANT AMINO ACID POSITIONS. **Liskin Swint-Kruse**

941-PLAT 12:15 PM
AUTOMATED IMAGE ANALYSIS REVEALS SPATIALLY-REGULATED CELL DIVISION DYNAMICS DURING DROSOPHILA AXIS ELONGATION. **Michael F.Z. Wang**, Rodrigo Fernandez-Gonzalez

942-PLAT 12:30 PM
AGENT-BASED MODELING OF BIOLOGICAL PATHWAYS - A CASE-STUDY ON MRNA EXPORT AND QUALITY CONTROL MECHANISM. **Mohammad Soheilypour**, Mohammad Mofrad

Platform
Membrane Physical Chemistry II

10:45 AM - 12:45 PM, ROOM 515A

Co-Chairs
Susanne Fenz, Wuerzburg University, Germany
Tommy Nylander, Lund University, Sweden

943-PLAT 10:45 AM
NANOPARTICLES INTERACTING WITH MEMBRANES: FROM ENGULFMENT PATTERNS TO ENDOCYTOSIS. **Jaime Agudo-Canalejo**, Reinhard Lipowsky

944-PLAT 11:00 AM
ON THE FORMATION OF LIPID NANO-SCALE STRUCTURES AT INTERFACES BEYOND PLANAR BILAYERS. Aleksandra Dabkowska, Cassandra Niman, Gaelle Offranc Piret, Henrik Persson, Hanna Wacklin, Heiner Linke, Christelle Prinz, **Tommy Nylander**

945-PLAT 11:15 AM
α-SYNUCLEIN BOUND TO MITOCHONDRIAL MEMBRANES– CHANGES IN LIPID BILAYER STRUCTURE AND MECHANICS. **Ana West**, Ben Brummel, Jonathan Sachs

946-PLAT 11:30 AM
MEMBRANE FLUCTUATIONS EFFECT PROTEIN DIFFUSION AND INDUCE PROTEIN AGGREGATION. **Kayla Sapp**, Lutz Maibaum

947-PLAT 11:45 AM
MEMBRANE PROTEIN CROWDING AT THE MESOSCALE: INSIGHTS FROM MD SIMULATIONS. **Matthieu G. Chavent**, Anna Duncan, Jean Helie, Patrice Rassam, Tyler Reddy, Joseph Goose, Colin Kleanthous, Mark S P Sansom

948-PLAT 12:00 PM
MEMBRANE MEDIATED COOPERATIVITY FACILITATES CADHERIN CLUSTERING IN MODEL MEMBRANES. **Susanne Fenz**, Timo Bihr, Daniel Schmidt, Rudolf Merkel, Kheya Sengupta, Udo Seifert, Ana-Suncana Smith

949-PLAT 12:15 PM
MEMBRANE HETEROGENEITY AND ITS ROLE IN IMMUNE SIGNALING ELUCIDATED BY SPECTRAL IMAGING. **Erdinc Sezgin**, Christian Eggeling

950-PLAT 12:30 PM
IONIZATION OF PHOSPHATIDYLINOSITOL (3,4,5)-TRISPHOSPHATE IN MIXED LIPID MEMBRANES. **Joseph Thomas**, Zachary Graber, Emily Johnson, Arne Gericke, Edgar E. Kooijman

Platform
Membrane Protein Structure and Folding II

10:45 AM - 12:45 PM, ROOM 515B

Co-Chairs
Timothy Cross, Florida State University
Janice Robertson, University of Iowa

951-PLAT 10:45 AM
MEASURING REVERSIBLE CLC-EC1 DIMERIZATION IN MEMBRANES BY SINGLE MOLECULE PHOTOBLEACHING. **Rahul Chadda**, Larry Friedman, Mike Rigney, Luci-Kolmakova Partensky, Jeff Gelles, Janice L. Robertson

952-PLAT 11:00 AM
MAPPING THE ENERGY LANDSCAPE FOR SECOND STAGE FOLDING OF A SINGLE MEMBRANE PROTEIN. **Duyoung Min**, Robert E. Jefferson, James U. Bowie, Tae-Young Yoon

953-PLAT 11:15 AM
SYNCHROTRON RADIATION CIRCULAR DICHROISM (SRCD) SPECTROSCOPY INVESTIGATIONS OF THE STRUCTURE AND ORIENTATION OF MEMBRANE PROTEINS IN ORIENTED LIPID BILAYERS. **Luke S. Evans**, Rohanah Hussain, Giuliano Siligardi, Philip T. F. Williamson

954-PLAT 11:30 AM
MECHANISMS OF ASSEMBLY AND COVALENT FLAVINYLATION IN COMPLEX II. **Chrystal Starbird**, Elena Maklashina, Sany Rajagukguk, Gary Cecchini, Tina Iverson

955-Plat 11:45 AM
PROBING THE STRUCTURE AND BINDING OF KCNE1 TO THE VOLTAGE-GATED POTASSIUM CHANNEL KCNQ1 USING PULSED EPR SPECTROSCOPY. **Gary A. Lorigan**, Indra D. Sahu, Andrew Craig, Rongfu Zhang, Robert M. McCarrick

956-Plat 12:00 PM
STRUCTURAL DETERMINANTS AND BINDING PROPERTIES OF THE NEURITE OUTGROWTH INHIBITOR (NOGO). **Melanie J. Cocco**, Ali Alhoshani, Verna Vu, D'Artagnan Greene

957-Plat 12:15 PM
STRUCTURE AND DYNAMICS OF COMPLEXES OF INTERLEUKIN-8 AND ITS RECEPTOR CXCR1 IN PHOSPHOLIPID BILAYERS BY SOLID-STATE NMR. **Sang Ho Park**, Anna De Angelis, Jasmina Radoicic, Sabrina Berkamp, Zheng Long, Stanley J. Opella

958-Plat 12:30 PM
FUNCTIONAL, DYNAMIC AND STRUCTURAL UNDERSTANDING OF M2 PROTON CHANNEL FROM INFLUENZA A AND ITS INHIBITION. **Timothy A. Cross**, Riqiang Fu, E. Vindana Ekanayake, Yimin Miao, Joana Paulino, Wright Anna, Jian Dai, Huan-Xiang Zhou

Platform
Cytoskeletal Motor Proteins
10:45 AM - 12:45 PM, Room 501ABC

Co-Chairs
Carolyn Moores, Birkbeck College, United Kingdom
Jing Xu, University of California, Merced

959-Plat 10:45 AM
ON THE FORCE-GENERATING CAPACITY OF DISASSEMBLING MICROTUBULES. Jonathan W. Driver, Elisabeth Geyer, Luke M. Rice, **Charles L. Asbury**

960-Plat 11:00 AM
A STRUCTURAL MODEL OF THE MITOTIC KINESIN-6 MECHANOCHEMICAL CYCLE. Joseph Atherton, I-Mei Yu, Steven S. Rosenfeld, Anne Houdusse, **Carolyn A. Moores**

961-Plat 11:15 AM EDUCATION TRAVEL AWARDEE
KINETICS OF NUCLEOTIDE-DEPENDENT STRUCTURAL TRANSITIONS IN THE KINESIN-1 HYDROLYSIS CYCLE. **Keith J. Mickolajczyk**, Nathan C. Deffenbaugh, Jaime Ortega-Arroyo, Joanna Andrecka, Philipp Kukura, William O. Hancock

962-Plat 11:30 AM
DIRECT OBSERVATION OF THE ALLOSTERIC CONFORMATIONAL CHANGE OF KINESIN-1 USING GOLD NANOROD AND ITS IMPLICATION FOR HEAD-HEAD COORDINATION. Yamato Niitani, Sawako Enoki, Hiroyuki Noji, Ryota Iino, **Michio Tomishige**

963-Plat 11:45 AM
IMPACTS OF MICROTUBULE STRUCTURAL DEFECTS ON KINESIN-BASED TRANSPORT. Winnie H. Liang, Qiaochu Li, K Faysal, Stephen J. King, Ajay Gopinathan, **Jing Xu**

964-Plat 12:00 PM
ENGINEERING NOVEL ACTIN-BASED MOLECULAR MOTORS FROM THE MICROTUBULE-BASED MOTOR DYNEIN. Akane Furuta, Kazuhiro Oiwa, Hiroaki Kojima, **Kenya Furuta**

965-Plat 12:15 PM
TWO LEVELS OF MYOSIN-IIA DYNAMICS IN CELLS: TURNOVER OF FILAMENTS AND SELF-ORGANIZATION OF FILAMENT STACKS. **Shiqiong Hu**, Kinjal Dasbiswas, Zhenhuan Guo, Yee-Han Tee, Visalatchi Thiagarajan, Ronen Zaidel-Bar, Pascal Hersen, Samuel Safran, Alexander D. Bershadsky

966-Plat 12:30 PM
AN OPTOGENETIC METHOD FOR CONTROLLING FULL-LENGTH MYOSIN VI THROUGH ITS CARGO BINDING DOMAIN. **Alexander R. French**, Ronald S. Rock, Tobin R. Sosnick

Platform
Single-Molecule Spectroscopy
10:45 AM - 12:45 PM, Room 511ABC

Co-Chairs
Victoria Birkedal, Aarhus University, Denmark
Sonja Schmid, University of Freiburg, Germany

967-Plat 10:45 AM
TESTING THE PHYSICAL THEORY OF FOLDING AS DIFFUSIVE MOTION OVER AN ENERGY LANDSCAPE USING TRANSITION PATH ANALYSIS OF SINGLE-MOLECULE FOLDING TRAJECTORIES. **Krishna P. Npane**, Ajay P. Manuel, John Lambert, Michael Woodside

968-Plat 11:00 AM
3D TRACKING SINGLE MOLECULE FLUORESCENCE ENERGY TRANSFER MEASUREMENTS. Aaron Keller, Matt DeVore, Dung Vu, Tim Causgrove, **James Werner**

969-Plat 11:15 AM
QUANTITATIVE PROTEIN KINETICS FROM SM-FRET TIME TRACES. **Sonja Schmid**, Markus Goetz, Thorsten Hugel

970-Plat 11:30 AM
INFLUENCE OF THE BACKGROUND IN SINGLE MOLECULE FRET TIRF MICROSCOPY. Søren Preus, Lasse Lava Hildebrandt, **Victoria Birkedal**

971-Plat 11:45 AM
A MULTISPOT CONFOCAL PLATFORM FOR HIGH-THROUGHPUT FREELY DIFFUSING SINGLE-MOLECULE FRET STUDIES. Antonino Ingargiola, Eitan Lerner, SangYoon Chung, Angelo Gulinatti, Ivan Rech, Massimo Ghioni, Shimon Weiss, **Xavier Michalet**

972-Plat 12:00 PM INTERNATIONAL TRAVEL AWARDEE
FARFRET: EXTENDING THE RANGE IN SINGLE-MOLECULE FRET EXPERIMENTS BEYOND 10 NM. **Georg Krainer**, Andreas Hartmann, Michael Schlierf

973-Plat 12:15 PM
COMBINING SINGLE-MOLECULE TECHNIQUES WITH MICROFLUIDICS FOR PROTEIN ANALYSIS. **Christopher Taylor**, Tuomas Knowles, David Klenerman

974-Plat 12:30 PM INTERNATIONAL TRAVEL AWARDEE
APPLICATION OF THE SPLIT-FLCS METHOD TO THE DETECTION OF NANOSCALE DIFFUSION IN 3D IN LIVE CELLS. **Luca Lanzano**, Lorenzo Scipioni, Melody Di Bona, Paolo Bianchini, Ranieri Bizzarri, Francesco Cardarelli, Giuseppe Vicidomini, Alberto Diaspro

Career Center Workshop
Leveraging Social Media for Networking and Career Advancement
11:30 AM - 12:30 PM, Room 518

More and more recruiters, job decision-makers and hiring managers are using the web to find and research potential candidates. How can you make sure that you are not only found, but are ahead of the pack? In this session, we will discuss how decision-makers use LinkedIn and Facebook, and how you can use LinkedIn to establish yourself as a leader in your field, enhance your research reputation, and seek out and take advantage of innovative opportunities. We will demonstrate how to create a winning LinkedIn profile, and how to use its multitude of features (such as joining and commenting in groups) to generate solid leads for your career.

Exhibitor Presentation
Asylum Research, an Oxford Instruments Company

11:30 AM - 1:00 PM, ROOM 505

Soft, Sticky, and Viscous: Practical Considerations for Measuring Cell Mechanics with AFM

The atomic force microscope (AFM) has found broad use in the investigation of cell mechanics, with numerous studies of cell stiffness and modulus dating back over a decade. Because AFM can quantitatively measure the mechanical properties of individual live cells, novel insights to cell function and to cell-substrate interactions have been realized. This is pertinent for cell biology, as it has been demonstrated that the geometrical and mechanical properties of the extracellular microenvironment are important in such processes as cancer, cardiovascular disease, muscular dystrophy, and even the control of cell life and death. Indeed, the ability to control and quantify these external geometrical and mechanical parameters now arises as a key issue in the field and AFM seems poised to play a prominent role in building that understanding.

The use of AFM in this field presents unique challenges and opportunities. Some of the most important considerations are because many of the AFM techniques used here have largely been borrowed from those first developed for materials science. This is simultaneously a success of interdisciplinary research and an opportunity to further tailor measurements to cells and biological materials, which have some fundamentally different characteristics compared to polymers. Most dramatically, cells are far "softer" than polymers, usually at least 100× lower in modulus than even soft rubbers and easily 10,000× lower in modulus than some common plastics. Further, cells are usually quite "sticky," leading to large adhesion to the AFM tip that can complicate measurements. Finally, cells are often strongly viscoelastic, exhibiting not just elastic deformation described by the elastic modulus but also a viscous response that depends on the velocity of the deformation- and this mechanical component can sometimes be lost or ignored in certain experimental setups and techniques. In fact, this viscous response may prove just as enlightening to cell mechanics as the elastic response more commonly measured alone until recently. This talk will discuss these important issues that must be considered when AFM techniques are applied to cells and other biological materials.

Speaker

Sophia Hohlbauch, Asylum Research, an Oxford Instruments Company

Exhibitor Presentation
Nanion Technologies GmbH

12:30 PM - 2:00 PM, ROOM 513

Ion Channel Drug Discovery - Beyond the Bottlenecks and Ready for CiPA

Nanion Technologies is one of the leading providers of automated patch clamp systems, offering a diverse product portfolio ranging from single channel recordings to HTS-compatible ion channel drug discovery. During this workshop, we will show how to push the boundaries of patch clamp-based ion channel high throughput screening projects of various voltage- and ligand gated targets, and how to get ready for CiPA-compliant safety screening going well beyond hERG.

Cardiac arrhythmic risk assessment is a hot topic these days calling for new screening strategies. With the CiPA-initiative, the panel of cardiac ion channels to consider have drastically expanded, consequently requiring increased data throughput for early compound safety prediction.

The *SyncroPatch 384/768PE*, an automated patch clamp platform recording from up to 768 cells simultaneously, allows the highest data throughput on the market supporting HTS of ion channel active compounds and early safety assessment on cardiac channels. Examples will be shown, where six different cardiac channels were recorded using one single plate, in one single run.

Patchliner, a medium-throughput APC platform, supports automated current clamp recordings, experiments at physiological temperatures, and a minimal cell usage, making it the ideal partner for safety testing on stem cell derived cardiomyocytes. Additionally, the *CardioExcyte 96*, a hybrid system combining impedance-based and EFP recordings from beating cardiomyocyte networks from 96 recording wells in parallel, has proven a versatile tool for safety and toxicity screening applications serving as a powerful tool complementing APC.

The *SURFE2R* technology allows direct and functional measurements electrogenic transporter. Hands-on experiments on the SURFE2R will be shown. Also membrane fragments from Chantest, a Charles River company, will be used.

Join our workshop to learn more about new safety screening strategies and how to keep up with the increasing demands on cardiac safety and toxicity screening.

Speakers

Maria Barthmes, Nanion Technologies GmbH
Andrea Brüggemann, Nanion Technologies GmbH
Niels Fertig, Nanion Technologies GmbH
Markus Rapedius, Nanion Technologies GmbH

NSF Grant Writing Workshop

1:00 PM - 3:00 PM, ROOM 403B

Putting your best foot forward in your grant proposal is key to securing funding for research. Program officers past and present from the National Science Foundation will walk attendees through the process and provide tips on how to prepare the best possible proposal during this session, sponsored by the Public Affairs Committee.

Panelists

Gary Pielak, University of North Carolina at Chapel Hill
Kamal Shukla, NSF

Industry Panel

1:30 PM - 3:00 PM, ROOM 411

Are you interested in learning about science in industry? Stop by to hear from a panel of experts who work in bio-related industries. The panel will provide guidance on techniques and skill sets that are sought after in industry and discuss ideas on how to incorporate industry relevant techniques in academic research.

Panel Chair

Anita Niedziela-Majka, Gilead Sciences Inc
Speakers to be announced

Exhibitor Presentation
KinTek Corp

1:30 PM - 3:00 PM, ROOM 505

Why You Should Fit Kinetic and Equilibrium Binding Data Using KinTek Explorer Software

KinTek Explorer software offers the fastest, most dynamic and robust method of fitting kinetic or equilibrium binding data. Based on fast numerical integration of rate equations, data are fit without the often-inaccurate approximations needed to derive equations. Rather than fitting data to extract "observed rates" or Eigenvalues, which must be then interpreted in second step, *KinTek Explorer* yield rate and equilibrium constants directly while accounting for both the rate and amplitude of observable reactions. By modeling the experiments exactly as

performed, all details of the experimental setup are included, eliminating errors in interpretation. Moreover, multiple experiments can be fit simultaneously to a single unifying model. Fast dynamic simulation using proprietary methods for numerical integration allows you to explore parameter space and learn kinetics. Don't be fooled by other vendors pretending to do the same. Only *KinTek Explorer* offers such robust and dynamic data fitting.

In this presentation, Professor Johnson will introduce the theory and operation of the software to show you how easy it is to fit data to any model you care to input. Examples of experiments that can be fit include: transient and single turnover stopped-flow kinetics, steady state kinetics, slow onset inhibition, equilibrium titrations, rapid-quench-flow kinetics, temperature dependence, voltage-dependent rate constants. In addition time-resolved absorbance or fluorescence and pH-dependent spectra can be analyzed by singular value decomposition to yield spectra and time- or pH-dependence of each species. In addition to describing *KinTek Explorer's* basic features, Johnson will introduce new features and will be available to help you to fit your own data. Learn about what you are missing in your own data fitting.

Speaker
Kenneth A Johnson, President, KinTek Corporation; Professor of Biochemistry, University of Texas at Austin

Biophysics 101
Forster Resonance Energy Transfer

1:30 PM - 3:00 PM, ROOM 409AB

Forster Resonance Energy Transfer (FRET) is widely used to study protein structure and protein in vitro and in vivo, in molecular ensembles and in single molecules. The utility of FRET comes from its ability to resolve distances that are smaller than the diffraction limit of light, in the 20 to 100 Angstrom range. This year's "Biophysics 101" session will include two lectures on FRET that highlight the power and the limitations of the technique.

Presenters
Kalina Hristova, Johns Hopkins University
Steven Vogel, NIH

Snack Break

1:45 PM - 3:00 PM, WEST HALL

Poster Presentations and Late Posters

1:45 PM - 3:45 PM, WEST HALL

How to Get Your Scientific Paper Published

2:15 PM - 3:45 PM, ROOM 408B

This panel discussion, sponsored by the Publications Committee, will focus on the practical issues involved in publishing a scientific paper. The panelists have extensive experience in writing, reviewing, and editing papers, and will provide information on the dos and don'ts of submitting research manuscripts. Discussions will focus on strategies to avoid common pitfalls, how to prevent and fix problems before submission, and how to respond to critiques and even rejection of a paper. Attendees are encouraged to ask questions during the session.

Panelists
William Hancock, Pennsylvania State University
William Kobertz, University of Massachusetts
Elizabeth Komives, Univesrity of California,San Diego
Leslie Loew, Univesrity of Connecticut

Moderator
Catherine A. Royer, Rensselaer Polytechnic Institute

Speed Networking

2:30 PM - 3:30 PM, ROOM 407

Career development and networking is important in science, but can be a big time commitment. Here we offer refreshments and the chance to speed network, an exciting way to connect with a large number of biophysicists in a short amount of time. Early career scientists can use the opportunity to discuss career goals and challenges, get advice on tenure or grant writing, find out how to gain recognition, or network for your next job. Mid- career and more experienced scientists can use the opportunity to find a postdoc, learn how to get more involved in the society, or network for possible reviewers for papers. We will introduce everyone, and then give time for short 3-5 minute meetings with a new contact. During this time you can exchange information and ask questions. Then when time is up, you select the next person to talk to. By the end of the event, each participant will have meaningful interactions with over half a dozen colleagues and the opportunity to meet many more. It's that simple!

Career Center Workshop
Selling Yourself to the Life Sciences Industry

2:30 PM - 3:30 PM, ROOM 518

The industrial employer is looking for a different set of skills and attitudes than either the academic or government employer. Learn what the pharmaceutical/biotechnology industries want to hear from potential employees and why. Learn how to develop and best position your marketing message in order to improve the chances of a successful industrial job search.

Hiring, Firing, and Beyond
How to Be an Effective Supervisor

2:30 PM - 4:00 PM, ROOM 408A

Do you find personnel and conflict management a formidable challenge as a supervisor? Come join us at this session, sponsored by the Committee for Professional Opportunities for Women, where a panel of new and seasoned PIs share their experiences in setting up and running a successful team in academia and industry.

Speakers
Dorothy Beckett, University of Maryland
Kelly Knee, Pfizer
Prithwish Pal, Illumina
Rohit Pappu, Washington University in St. Louis
Rajini Rao, Johns Hopkins University
Joanna Swain, Bristol-Myers Squibb

The Science of Hollywood

2:30 PM - 4:00 PM, ROOM 403A

The portrayal of scientists and science in popular media can play an important role in shaping the public's opinion about scientific issues. Whether a big box office feature like *Jurassic World*, an animated feature like *Inside Out*, or a sitcom like the *Big Bang Theory*, getting the science right requires experts in the pertinent field to weight in. At this session, sponsored by the Public Affairs Committee, hear panelists discuss the role scientists play in the developing storylines involving scientists for movies and television, why sometimes even the best intentions do not result in an accurate representation, and what scientists can learn about communicating their work from Hollywood.

Moderator
Rick Loverd, Program Director, Science and Entertainment Exchange

Panelists
Amy Berg, Film/TV Writer and Executive Producer
Jessica Cail, Professor of Psychopharmacology, Pepperdine University
Mike Ireland, Senior Vice President, Production, 20th Century Fox
Clifford Johnson, University of Southern California Department of Physics and Astronomy

Exhibitor Presentation
Renishaw Inc

2:30 PM - 4:00 PM, ROOM 513

Innovative Raman Imaging in the Life Sciences
When light illuminates a sample, most of it scatters without changing. A tiny fraction of the light however is Raman scattered. The Raman scattered light excites the phonons in the samples and produces a spectrum. This spectrum tells us how the atoms are vibrating, providing a chemical fingerprint which allows identification of the sample. Raman spectroscopy produces chemical and structural information to help us understand more about the material being analyzed. The ability to probe the chemical and molecular structure of biological materials is obtained directly without the need for any dyes or markers. These systems can be utilized to generate chemical images of cells, tissue, bone and bio-compatible materials with very high spatial resolution. It has been employed for cancer diagnosis, stem cell differentiation, skin treatments, protein structure analysis, bio-diagnostics and bacterial identification.

Renishaw's inVia confocal Raman microscope can be integrated with other instruments, such as atomic force microscopy (AFM) and scanning electron microscopy (SEM), to provide Raman analysis from the same point on the sample. This talk will provide an introduction to Raman microscopy with biological materials, the instrumentation required for these techniques and will highlight some applications where Raman microscopy is making the biggest impact with biological materials**.**

Speakers
Tim Prusnick, USA Sales Manager SPD, Renishaw Inc
Andrew King, Regional Sales Manager - West Coast, Renishaw Inc
Mark Canales, Field Applications Specialist (Life Science) Spectroscopy Products Division, Renishaw Inc

Membership Committee Meeting

3:00 PM - 5:00 PM, ROOM 506

Exhibitor Presentation
Bruker Nano Surfaces

3:30 PM - 5:00 PM, ROOM 505

Advances in Live Super-Resolution Imaging Using the Vutara 352 Microscope
Super-resolution microscopy has made a significant impact in the field of biological imaging by enabling a ten-fold improvement in spatial resolution over traditional light microscopy techniques. Most of the imaging has been so far targeted at fixed specimens with a few live cell applications. The Vutara 352 microscope has been engineered towards live-cell imaging by enhancing spatial and temporal resolution in single molecule localization super-resolution. The sCMOS detector in the Vutara 352 enables imaging at 800 fps at full ROI and at video frame rates at reduced ROI. Two color simultaneous imaging can be applied in both super-resolution live cell and 3D particle tracking experiments. The biplane based detection path enables imaging thicker samples such as whole mount Drosophila and offers deeper penetration into tissues. The Vutara 352 also includes real time localization along with several statistical and live cell analysis features for processing data. In summary, the Vutara 352 microscope is a powerful super-resolution imaging and analysis tool.

Speaker
Manasa Gudheti, Applications Scientist at Bruker – Fluorescence Microcopy Business

Career Center Workshop
Successfully Navigating the International Job Search

4:00 PM - 5:00 PM, ROOM 518

Applying for a job in one country while finishing up your education and training in another can be challenging, but it can be done with success. In this workshop we will discuss specific strategies to finding jobs in another country while one is abroad and how to leverage your networks in-country to access opportunities, especially those that are hidden. Special emphasis will be placed on establishing your reputation as a leader in your field with professionals in the country or region in which you wish to work. Case studies will be shared.

Symposium
Molecular Mechanisms of Mechanosensation

4:00 PM - 6:00 PM, PETREE HALL C

Chair
Robert Fettiplace, University of Wisconsin-Madison

975-SYMP **4:00 PM**
GLOBAL AND SPECIFIC INTERACTIONS BETWEEN MECHANOSENSITIVE ION CHANNELS AND THE LIPID BILAYER. **Boris Martinac**

976-SYMP **4:30 PM**
SINGLE MOLECULE FORCE SPECTROSCOPY OF HAIR-CELL TIP-LINK PROTEINS. Mounir A. Koussa, Andrew Ward, Marcos Sotomayor, Wesley P. Wong, **David P. Corey**

977-SYMP **5:00 PM**
LOCALIZATION OF ANOMALOUS MECHANO-SENSITIVE ION CHANNELS IN COCHLEAR HAIR CELLS. Maryline Beurg, Adam Goldring, **Robert Fettiplace**

NO ABSTRACT **5:30 PM**
STRUCTURE AND CHEMICAL BIOLOGY OF MECHANOSENSITIVE K2P CHANNELS. **Daniel L. Minor**

Symposium
Folding Rates and Routes

4:00 PM - 6:00 PM, PETREE HALL D

Chair
Jane Clarke, University of Cambridge, United Kingdom

978-SYMP **4:00 PM**
ASSESSING AND MANIPULATING PROTEIN FOLDING DYNAMICS. **Feng Gai**

NO ABSTRACT **4:30 PM**
COUPLED PROTEIN FOLDING AND BINDING REACTIONS: MECHANISMS AND SPEED LIMITS. **Thomas Kiefhaber**

979-SYMP **5:00 PM**
IMPACTS OF CHARGE PATTERNING ON INTRINSICALLY DISORDERED PROTEINS AND MECHANISMS OF DISORDER-TO-ORDER TRANSITIONS. **Rohit V. Pappu**

980-SYMP **5:30 PM**
THE ROLE OF DISORDER IN PROTEIN FOLDING. **Jane Clarke**

Symposium
Expanding Horizons in Biophysics and Medical Physics

4:00 PM - 6:00 PM, ROOM 502A

Chair
Robert Jeraj, University of Wisconsin- Madison

981-SYMP 4:00 PM
INTERPLAY BETWEEN MOLECULAR IMAGING AND TUMOR MODELING OF ANTI-ANGIOGENIC THERAPIES. **Robert Jeraj**

982-SYMP 4:30 PM
CHERENKOV IMAGING OF RADIATION DOSE AND MOLECULAR SIGNALING IN VIVO. **Brian Pogue**

NO ABSTRACT 5:00 PM
THE ROLE OF PHYSICS IN DRIVING PRECISION IN CANCER MEDICINE. **David Jaffray**

983-SYMP 5:30 PM
CELL ADHESION STRENGTH IS REDUCED BY THE PRESENCE OF PERICELLULAR MATRIX PATCHES. **Jennifer Curtis,** Patrick Chang, Louis McLane, Jan Scrimgeour, Michelle Truong, Ruth Fogg, Dennis Zhou, Andres J. Garcia

Platform
Cell Mechanics, Cytoskeleton, and Motility

4:00 PM - 6:00 PM, ROOM 502B

Co-Chairs
Wylie Ahmed, Institut Curie, France
Jennifer Ross, California Pacific Medical Center

984-PLAT 4:00 PM
FORCE SPECTROSCOPY OF EXTENSILE MICROTUBULE BUNDLES. **Feodor Hilitski**, Zvonimir Dogic

985-PLAT 4:15 PM
SINGLE-MOLECULE IMAGING TAU DYNAMICS ON THE MICROTUBULE SURFACE: EFFECTS OF PHOSPHOREGULATION. **Miranda Redmond**, Gregory Hoeprich, Jamie Stern, Lynn Chrin, Christopher L. Berger

986-PLAT 4:30 PM
COMPLEXES MADE BETWEEN MICROTUBULES, MOTOR PROTEINS, AND ANTIPARALLEL CROSSLINKERS PRODUCE DYNAMIC INTERACTIONS. **Kasimira T. Stanhope**, Vikrant Yadav, Jennifer Ross

987-PLAT 4:45 PM
ACTIVE MECHANICS IN LIVING OOCYTES REVEAL MOLECULAR-SCALE FORCE KINETICS. **Wylie Ahmed**, Etienne Fodor, Maria Almonacid, Matthias Bussonnier, Marie-Helene Verlhac, Nir Gov, Paolo Visco, Frederic van Wijland, Timo Betz

988-PLAT 5:00 PM
NANOSCALE ORGANIZATION OF THE ACTOMYOSIN CORTEX DURING THE CELL CYCLE. **Priyamvada Chugh**, Andrew G. Clark, Matthew B. Smith, Davide A. D. Cassani, Guillaume Charras, Guillaume Salbreux, Ewa K. Paluch

989-PLAT 5:15 PM
ROTATIONAL MEASUREMENTS AND MANIPULATIONS OF THE BACTERIAL FLAGELLAR MOTOR. **Ashley L. Nord**, Richard M. Berry, Francesco Pedaci

990-PLAT 5:30 PM
UNITARY STEPS OF SUPERMOLECULAR MOTILITY MACHINERIES IN GLIDING BACTERIA AND SWIMMING ARCAEA. Yoshiaki Kinosita, Nakane Daisuke, Nariya Uchida, Makoto Miyata, **Takayuki Nishizaka**

991-PLAT 5:45 PM
THE FLAGELLAR MOTOR OF CAULOBACTER CRESCENTUS GENERATES MORE TORQUE WHEN A CELL SWIMS BACKWARD. **Pushkar Lele**, Howard Berg

Platform
Bioengineering and Biotechnology

4:00 PM - 6:00 PM, ROOM 515A

Co-Chairs
Danielle France, NIST
Brigitte Papahadjopoulos-Sternberg, NanoAnalytical Laboratory

992-PLAT 4:00 PM
LIGHT-ACTIVATED PHOTO PROTECTION IN AN ARTIFICIAL ANTENNA SYSTEM. **Alessio Andreoni**, Su Lin, Haijun Liu, Hao Yan, Robert E. Blankenship, Neal W. Woodbury

993-PLAT 4:15 PM
STEPS FOR CONSTRUCTING SYNTHETIC MEMBRANE CURVATURE-INDUCING DNA ORIGAMI SCAFFOLDS. **Alena Khmelinskaia**, Henri G. Franquelim, J. Philippe Sobczak, Hendrik Dietz, Petra Schwille

994-PLAT 4:30 PM
DISSECTION OF MELANOMA DRUG RESISTANCE AND HETEROGENEITY USING LIVE CELL INTERFEROMETRY. **Dian Huang**, Thomas A. Zangle, Michael A. Teitell

995-PLAT 4:45 PM
FREEZE-FRACTURE ELECTRON MICROSCOPY ON NANO- AND MICRO-DELIVERY VEHICLES FOR BIOLOGICAL ACTIVE COMPOUNDS. **Brigitte Papahadjopoulos-Sternberg**

996-PLAT 5:00 PM
COMPUTATIONAL AND EXPERIMENTAL CHARACTERIZATION OF NOVEL BOLAAMPHIPHILES AS RNA NANOSTRUCTURE DELIVERY AGENTS. **Wojciech K. Kasprzak**, Taejin Kim, Kirill A. Afonin, Kshitij Gupta, Mathias Viard, Anu Puri, Bruce A. Shapiro

997-PLAT 5:15 PM
X-RAY CONTROLLED DRUG RELEASE FROM LIPOSOMES. **Daniel Fologea**, Greg Salamo, Ralph Henry, Michael J. Borrelli, Peter Corry

998-PLAT 5:30 PM
RAPID ANTIMICROBIAL SUSCEPTIBILITY TESTING THROUGH PHASE NOISE MEASUREMENTS OF CELLULAR BIOPHYSICS. **Danielle France**, Ward Johnson, William Cordell, Fred Walls

999-PLAT 5:45 PM
LENGTH- AND SPECIES-SELECTIVE DETECTION OF SHORT OLIGONUCLEOTIDES USING A MICROELECTRODE CAVITY ARRAY OF BIOLOGICAL NANOPORES. Ibrahim Halimeh, Chan Cao, **Gerhard Baaken**, Yi-Tao Long, Jan C. Behrends

Platform
Ligand-gated Channels

4:00 PM - 6:00 PM, ROOM 515B

Co-Chairs
Derek Bowie, McGill University, Canada
Robert Oswald, Cornell University

1000-PLAT 4:00 PM
FUNCTIONAL MECHANISMS OF DESENSITIZATION IN AMPA RECEPTORS. **Hector Salazar**, Andrew J. Plested

1001-PLAT 4:15 PM
INVESTIGATING IGLUR DESENSITISATION WITH STEERED MOLECULAR DYNAMICS SIMULATIONS. **Maria Musgaard**, Philip C. Biggin

1002-Plat 4:30 PM
MECHANISM OF AMPA RECEPTOR GATING RE-SHAPED BY AUXILIARY PROTEINS. **George B. Dawe**, Derek Bowie

1003-Plat 4:45 PM
SENSING ALLOSTERIC MODULATOR BINDING TO AMPA RECEPTORS AT THE GLUTAMATE-BINDING SITE. **Christopher P. Ptak**, Ahmed H. Ahmed, Robert E. Oswald

1004-Plat 5:00 PM
ACID SENSING ION CHANNELS ARE UNIQUELY TUNED TO FOLLOW HIGH FREQUENCY 'SYNAPTIC' STIMULI. **David M. MacLean**, Vasanthi Jayaraman

1005-Plat 5:15 PM
HUMAN α1 GLYCINE RECEPTOR ALLOSTERY AS IDENTIFIED BY STATE-DEPENDENT CROSSLINKING STUDIES. **Michael Cascio**, Rathna J. Veeramachaneni, Jeffry Madura

1006-Plat 5:30 PM
CRYSTAL STRUCTURE OF HUMAN GLYCINE RECEPTOR-α3 BOUND TO ANTAGONIST STRYCHNINE. **Xin Huang**

1007-Plat 5:45 PM
MOLECULAR DETERMINANTS OF PARTIAL AGONIST AFFINITY IN ADULT NEUROMUSCULAR ACETYLCHOLINE RECEPTORS. **Iva Bruhova**, Anthony Auerbach

Platform
Protein-Small Molecule Interactions

4:00 PM - 6:00 PM, Room 501ABC

Co-Chairs
Alex Dickson, Michigan State University
Giulia Palermo, École Polytechnique Fédérale de Lausanne, Switzerland

1008-Plat 4:00 PM
2-DEOXY-ATP ENHANCES MULTIPLE KINETIC PARAMETERS TO IMPROVE CARDIAC FUNCTION. **Ivan B. Tomasic**, Marcus Henze, Ferdinand Evangelista, Anu R. Anto, Hector Rodriguez, Sadie R. Bartholomew

1009-Plat 4:15 PM
EXAMINATION OF CLPB QUATERNARY STRUCTURE AND LINKAGE TO NUCLEOTIDE BINDING. **JiaBei Lin**, Aaron L. Lucius

1010-Plat 4:30 PM
THUMB SITE 2 INHIBITORS OF HEPATITIS C VIRAL RNA-DEPENDENT RNA POLYMERASE ALLOSTERICALLY BLOCK THE TRANSITION FROM INITIATION TO ELONGATION. **Jiawen Li**, Daniel Deredge, Patrick L. Wintrode, Kenneth A. Johnson

1011-Plat 4:45 PM
MOLECULAR SIMULATIONS INTEGRATED WITH EXPERIMENTS UNRAVEL THE KEY FACTORS OF LIPID SELECTION IN FATTY ACID AMIDE HYDROLASE AND SUGGEST A GENERAL MECHANISM OF LIPID-PROCESSING IN THE PARENT ENZYMES. **Giulia Palermo**, Inga Bauer, Pablo Campomanes, Andrea Cavalli, Andrea Armirotti, Stefania Girotto, Marco De Vivo, Ursula Rothlisberger

1012-Plat 5:00 PM
CURCUMIN-LIKE COMPOUNDS DESIGNED TO MODIFY AMYLOID BETA PEPTIDE AGGREGATION PATTERN. **Maria Grazia Ortore**, Antonella Battisti, Ranieri Bizzarri, Donatella Bulone, Claudio Ferrero, Francesco Ghetti, Valentina Giacalone, Antonino Lauria, Maria Rosalia Mangione, Antonella Marino Gammazza, Caterina Ricci, Antonella Sgarbossa, Francesco Spinozzi, Silvia Vilasi, Antonio Palumbo Piccionello

1013-Plat 5:15 PM
IN SILICO STUDY ON THE LIGAND-BINDING AND ACTIVATION MECHANISMS OF THE HUMAN DOPAMINE D3 RECEPTOR. **Wei-Hsiang Weng**, Hao-Jen Hsu

1014-Plat 5:30 PM
MIMICKING PROTEIN FUNCTIONS WITH ENTROPICALLY CONSTRAINED PEPTIDES. **Blake Farrow**, Andrew G. Wang, David N. Bunck, James R. Heath

1015-Plat 5:45 PM
LIGAND RESIDENCE TIMES AND EXIT PATHWAYS OBTAINED IN SILICO WITHOUT BIASING FORCES. **Alex Dickson**

Platform
Protein-Lipid Interactions I

4:00 PM - 6:00 PM, Room 511ABC

Co-Chairs
Oliver Soubias, NIH
Stephanie Tristram-Nagle, Carnegie Mellon University

1016-Plat 4:00 PM
PENETRATION OF HIV-1 TAT47-57 INTO PC/PE BILAYERS ASSESSED BY MD SIMULATION AND X-RAY SCATTERING. Chris Neale, Kun Huang, Angel E. Garcia, **Stephanie Tristram-Nagle**

1017-Plat 4:15 PM
INVESTIGATING THE INTERACTIONS OF PERIPHERAL MEMBRANE PROTEINS WITH MODEL MEMBRANES USING HIGH THROUGHPUT MOLECULAR DYNAMICS SIMULATIONS. **Antreas C. Kalli**, Eiji Yamamoto, Fiona B. Naughton, Mark S.P. Sansom

1018-Plat 4:30 PM
ELUCIDATING THE MECHANISM FOR STEROL REGULATION OF CHLORIDE INTRACELLULAR ION CHANNEL PROTEIN INTERACTIONS WITH LIPID MEMBRANES. **Khondker R. Hossain**, Heba Al Khamici, Stephen A. Holt, Stella M. Valenzuela

1019-Plat 4:45 PM
TRANSIENT EFFECT OF CALCIUM INFLUX ON PIP2 CLUSTERS IN THE INNER PLASMA MEMBRANE LEAFLET OF INTACT CELLS. **Weixiang Jin**, Arnd Pralle

1020-Plat 5:00 PM
ELUCIDATING GPCR FUNCTIONAL DEPENDENCE ON PLASMA MEMBRANE COMPOSITION USING GIANT UNILAMELLAR PROTEIN-VESICLES. **Mary Gertrude L. Gutierrez**, Kylee Mansfield, Noah Malmstadt

1021-Plat 5:15 PM
CONTROLLING GPCR RHODOPSIN FUNCTION BY SMALL, PHYSIOLOGICALLY RELEVANT CHANGES IN BILAYER HYDROPHOBIC THICKNESS. **Olivier Soubias**, Alexander J. Sodt, Walter E. Teague, Kirk G. Hines, Klaus Gawrisch

1022-Plat 5:30 PM
CHARACTERIZATION OF CEACAM1 AND LIPID RAFT NANOCLUSTERING, ASSOCIATION AND STRUCTURE BY DSTORM AND HOMO-FRET IMAGING. **Amine Driouchi**, Maximilano Giuliani, Scott Gray-Owen, Christopher M. Yip

1023-Plat 5:45 PM
STRUCTURAL DETERMINANTS OF RAFT PARTITIONING FOR SINGLE-PASS TRANSMEMBRANE PROTEINS. **Joseph H. Lorent**, Barbara B. Diaz-Rohrer, Kandice R. Levental, Ilya Levental

Exhibitor Presentation
Molecular Devices

4:30 PM - 6:00 PM, ROOM 513

Pushing the Performance Envelope: Evaluation of the NMDA Receptor Using Automated Electrophysiology and Fast Fluidics

Ligand gated ion channels (LGICs) mediate fast synaptic transmission in the nervous system and are highly attractive drug targets due to the pivotal role they play in many physiological functions. The N-Methly-D-Aspartate (NMDA) receptor is a LGIC that is activated by glutamate, the primary excitatory neurotransmitter in the nervous system. Functional impairment or over-excitation of the NMDA receptor occurs in a variety of disease states, however efficient screening for compounds that target the NMDA receptor remains elusive.

Over the last decade, automated electrophysiology has become an indispensable tool for analyzing ion channel activities. Here data will be presented evaluating the fluidic performance of automated patch clamp and its impact on measurement of NMDA receptor activity. We examine channel biophysics both in the presence and absence of extracellular Mg^{2+}, calculate the EC_{50} of glutamate and the IC_{50}s of antagonists D-AP5 and Ifenprodil, and explore use-dependent blockage by MK801. We also examine differences between competitive and non-competitive inhibition models. Our studies demonstrate the robust fluidics performance of our automated electrophysiology system and its successful application to high-throughput screens and compound profiling assays targeting LGICs.

Speaker

Jeff Webber, Product Manager, Molecular Devices LLC

Exhibitor Presentation
Sutter Instrument

5:30 PM - 7:00 PM, ROOM 505

Scientists Empowering Scientists

Patch clamp electrophysiology has matured from a highly specialized scientific technique to a recognized method used to address a variety of experimental questions. Sutter Instrument introduces a highly flexible, intuitive patch clamp instrumentation and software package that enables the experimenter to quickly set up and perform routine tasks, yet remains highly configurable to meet the demands of the experienced electrophysiologist.

We will demonstrate how the IPA™ Integrated Patch Amplifier and SutterPatch™ software can be used for a variety of commonly performed assays, including the characterization of an ionic current and the recording of synaptic events in tissue slices. We will also highlight how the IPA and SutterPatch software provide easy access and flexibility to perform and fine-tune the most challenging acquisition and analysis scenarios.

Building on the basic pipette pulling tutorials presented at the 2015 user meeting and a mid-year webinar, we will further teach advanced techniques that enable the user to create specialized pipette morphologies for unique applications.

There will be plenty of opportunity for discussion with hosts and speakers from the Sutter Instrument Tech Support Team.

Who should attend?

- Electrophysiologists who use amplifiers, micropipettes and micromanipulators for patch clamp, sharp electrode or extracellular recordings.
- Researchers who perform microinjections, including nuclear transfer, sperm injection and application of substances into cell cultures or intact organisms.

Speakers

Jan Dolzer, Tech Support and Product Development, Sutter Instrument
Gregory Hjelmstad, Tech Support and Product Development, Sutter Instrument
Adair Oesterle, Tech Support Micropipette Fabrication and Microinjection, Sutter Instrument

Awards and National Lecture

8:00 PM - 9:30 PM, CONCOURSE HALL

Reception and Dance

9:30 PM - 12:00 AM, J.W. MARRIOTT - DIAMOND BALLROOM

Registrants are invited to attend the reception following the National Lecture. Badges will be required for admittance. Guest badges for this event are available for purchase during registration.

Reception and Quiet Room

9:30 PM - 12:00 AM, J.W. MARRIOTT - GOLD BALLROOM

Registrants are invited to attend the reception in a more quiet atmosphere following the National Lecture. Badges will be required for admittance. Guest badges for this event are available for purchase during registration.

MONDAY POSTER SESSIONS

1:45 PM–3:45 PM, WEST HALL

Below is the list of poster presentations of abstracts submitted by October 1.
The list of late abstracts scheduled for Monday is available in the Program addendum and the posters can be viewed on boards beginning with L.
All abstracts are available through the desktop planner and mobile app.

Posters should be mounted beginning at 6:00 PM on Sunday and removed by 5:30 PM on Monday evening. Posters will be on view until 10:00 PM the night before presentation. Poster numbers shown refer to the program order of abstracts as they appear in the online Abstracts Issue. Board numbers indicate where boards are located in the Exhibit Hall.

ODD-NUMBERED BOARDS 1:45 PM–2:45 PM | EVEN-NUMBERED BOARDS 2:45 PM–3:45 PM

Board Numbers	Category
B1 – B18	Protein Structure and Conformation II
B19 – B47	Protein Stability, Folding, and Chaperones I
B48 – B72	Protein Assemblies I
B73 – B93	Protein Dynamics and Allostery II
B94 – B122	Membrane Protein Structure and Folding II
B123 – B137	Transcription
B138 – B147	Ribosomes and Translation
B148 – B178	Protein-Nucleic Acid Interaction I
B179 – B207	Membrane Physical Chemistry and Membrane Dynamics
B208 – B226	Membrane Fusion and Non-Bilayer Structures
B227 – B257	Protein-Lipid Interactions I
B258 – B292	Calcium Signaling
B293 – B313	Intracellular Calcium Channels and Calcium Sparks and Waves I
B314 – B335	Cardiac Smooth and Skeletal Muscle Electrophysiology I
B336 – B339	Muscle Regulation
B340 – B369	Voltage-gated K Channels, Mechanisms of Voltage Sensing and Gating II
B370 – B392	TRP Channels I
B393 – B416	Ligand-gated Channels I
B417 – B444	Cardiac Muscle Mechanics and Structure I
B445 – B469	Skeletal Muscle Mechanics, Structure, and Regulation
B470 – B494	Cell Mechanics, Mechanosensing, and Motility II
B495 – B508	Mitochondrial Permeability
B509 – B524	Energy and Light Transducing Complexes
B525 – B530	Genetic Regulatory Systems
B531 – B537	Emerging Techniques and Synthetic Biology
B538 – B555	Molecular and Cellular Neuroscience
B556 – B583	Molecular Dynamics I
B584 – B610	Computational Methods and Bioinformatics I
B611 – B640	Biosensors I
B641 – B661	Biomaterials & Biosurfaces

It is the responsibility of the poster presenters to remove print materials from the board after their presentations. Please do not leave materials or belongings under poster boards or in the poster area. Posters will not be collected or stored for pick-up at a later time. The Biophysical Society is not responsible for any articles left in the poster area.

Protein Structure and Conformation II (Boards B1 - B18)

1024-Pos Board B1
REVEALING ACTIVATION MECHANISM OF ALK2 KINASE MUTATIONS IN FIBRODYSPLASIA OSSIFICANS PROGRESSIVA (FOP). Abdelaziz Alsamarah, Jijun Hao, **Yun Luo**

1025-Pos Board B2
A COMPARATIVE STUDY OF GAMMA SUBUNITS OF A.THALIANA AND O.SATIVA. **Bihter Avsar**, Ines Karmous, Ersoy Colak, Zehra Sayers

1026-Pos Board B3
STRUCTURAL AND FUNCTIONAL BASIS OF ALTERNATIVE ESCRT-0 PROTEIN COMPLEXES. Shuyan Xiao, Xiaolin Zhao, Wen Xiong, Mary K. Brannon, Kristen Fread, Jeffrey Ellena, John Bushweller, Carla V. Finkielstein, Geoffrey Armstrong, **Daniel G. Capelluto**

1027-Pos Board B4
INSIGHTS INTO THE AUTOINHIBITION MECHANISM OF THE TIAM1 GUANINE NUCLEOTIDE EXCHANGE FACTOR. **Zhen Xu**, Lokesh Gakhar, Elizabeth Boehm, Todd Washington, Maria Spies, Ernesto J. Fuentes

1028-Pos Board B5
STRUCTURES OF HUMAN PHOSPHOFRUCTOKINASE-1 AND ATOMIC BASIS OF CANCER-ASSOCIATED MUTATIONS. **Bradley Webb**, Farhad Forouhar, Fu-En Szu, Jayaraman Seetharaman, Liang Tong, Diane Barber

1029-Pos Board B6
COMPARISON OF THE ENERGETICS OF HISTONE PEPTIDE BINDING AMONG HISTONE READERS. **Suvobrata Chakravarty**, Francisca Essel, Tao Lin

1030-Pos Board B7
SIMULATING MTOR HYPERACTIVATING MUTATIONS TO UNDERSTAND FUNCTIONALLY SIGNIFICANT STRUCTURAL REARRANGEMENTS. **Steven Albanese**, Jianing Xu, James Hsieh, John D. Chodera

1031-Pos Board B8
PROMISCUITY AND POLYREACTIVITY OF ANTIBODIES AND THEIR BINDING MODES DURING B-CELL DIFFERENTIATION. **Franca Fraternali**, Julie Laffy, Deborah Dunn-Walters

1032-Pos Board B9
IMPLICATION OF NATURAL POLYMORPHISM IN HINGE REGION OF HIV-1 PROTEASE ON PROTEIN CONFORMATIONS, LOCAL STRUCTURES AND BACKBONE DYNAMICS. **Zhanglong Liu**, Xi Huang, Lingna Hu, Linh Pham, Katye Poole, Yan Tang, Brian P. Mahon, Wenxing Tang, Kunhua Li, Nathan E. Goldfarb, Ben M. Dunn, Robert McKenna, Gail E. Fanucci

1033-Pos Board B10
CATCHING EXCITED STATES IN THE ACT: FUNCTIONAL UNFOLDING IN E. COLI ADENYLATE KINASE. **Jeremy A. Anderson**, Ananya Majumdar, Vincent J. Hilser

1034-Pos Board B11
STRUCTURAL INVESTIGATION INTO CALMODULIN'S ROLE IN ACTIVATING BORDETELLA PERTUSSIS ADENYLYL CYCLASE TOXIN CYAA. **Tzvia I. Springer**, Christian Johns, Natosha L. Finley

1035-Pos Board B12
TROPONIN STRUCTURE AND EFFECTS OF PHOSPHORYLATION AND MUTATIONS STUDIED BY MOLECULAR DYNAMICS SIMULATIONS. **Juan Eiros Zamora**, Alice Sheehan, Maria Papadaki, Andrew E. Messer, Steven B. Marston, Ian R. Gould

1036-Pos Board B13
CALCIUM ION SIGNALING CASCADES THROUGH THE MECHANISM OF MODULATED MUTUALLY INDUCED CONFORMATION IN DOWNSTREAM PROTEINS. **Jacob Ezerski**

1037-Pos Board B14
CONFORMATIONAL EFFECTS OF THE C-TERMINAL TAIL ON THE HUMAN NEURONAL CALCIUM SENSOR-1 PROTEIN: AN ATOMISTIC SIMULATION STUDY. **Yuzhen Zhu**, Qingwen Zhang

1038-Pos Board B15
NMR STRUCTURAL STUDIES OF THE C-DOMAIN OF TCB2, A CALCIUM BINDING PROTEIN FROM TETRAHYMENA THERMOPHILA. **Adina M. Kilpatrick**, C. Andrew Fowler, Theodore Gurrola, Jerry E. Honts

1039-Pos Board B16 **Education Travel Awardee**
MOLECULAR DYNAMICS STUDY OF DIVALENT ION COORDINATION IN EF HAND PROTEINS. **Caitlin E. Scott**, Amir N. Kucharski Jr., Peter M. Kekenes-Huskey

1040-Pos Board B17
STRUCTURE AND STABILITY OF TIP LINK CADHERIN-23 FRAGMENTS INVOLVED IN HEARING AND DEAFNESS. **Avinash Jaiganesh**, Deryanur Kilic, Aniket Patel, Domenic Termine, Florencia Velez-Cortes, Omer Irfan Kufrevioglu, Marcos Sotomayor

1041-Pos Board B18
INTRACELLULAR/SURFACE MOONLIGHTING PROTEINS. **Constance Jeffery**, Wangfei Wang

Protein Stability, Folding, and Chaperones I (Boards B19 - B47)

1042-Pos Board B19
MODELING PEPTIDE VIBRATIONS LOCAL AND PERTURBATIVE CONTRIBUTIONS. **Timothy A. Keiderling**, Ahmed Lakhani, Yue Wei, Frank Vazquez, Jan Kubelka, Petr Bour

1043-Pos Board B20 **Education Travel Awardee**
AN IN VITRO INVESTIGATION OF GLOBIN FOLDING AND EXPRESSION. **Premila P. Samuel**, William Ou, George N. Phillips Jr., John S. Olson

1044-Pos Board B21
LOSS OF PROTEIN STABILITY DUE TO FORMATION OF INTERMOLECULAR DISULFIDE BONDS UNDER THE EFFECT OF OXIDATIVE STRESS: CASE STUDY OF THE RRM2 DOMAIN FROM NEUROPATHOLOGICAL PROTEIN TDP-43. **Sevastyan O. Rabdano**, Ivan S. Podkorytov, Sergei A. Izmailov, Yulia V. Pivovarova, Alexander P. Yakimov, Tairan Yuwen, Adam Groves, Nikolai R. Skrynnikov

1045-Pos Board B22
DISULFIDE SELECTIVITY UNDER THE CONTROL OF SECONDARY STRUCTURE IN PROTEIN FOLDING. **Kosuke Toyama**, Masaki Okumura, Shigeru Shimamoto, Yuji Hidaka

1046-Pos Board B23
DISULFIDE BRIDGES: BRINGING TOGETHER FRUSTRATED STRUCTURE IN A BIOACTIVE PEPTIDE. **Yi Zhang**, Paramjit Bansal, David Wilson, Klaus Schulten, Norelle Daly, Martin Gruebele

1047-Pos Board B24
CHEMICAL ACCELERATION OF DISULFIDE-COUPLED PROTEIN FOLDING. **Yuji Hidaka**, Takeyosi Nakanishi, Shigeru Shimamoto

1048-Pos Board B25
WHEN ENZYMES AND GREEN SURFACTANTS MEET. **Jens K. Madsen**, Jørn D. Kaspersen, Kell K. Andersen, Jan S. Pedersen, Daniel E. Otzen

1049-Pos Board B26
EXPERIMENTAL MEASUREMENT OF THE THERMODYNAMICS UNDERLYING THE SURFACE-INDUCED STRUCTURAL CHANGES OF NUCLEIC ACIDS AND PROTEINS. **Martin Kurnik**, Netzahualcóyotl Arroyo, Hui Li, Di Kang, Kevin W. Plaxco

1050-Pos Board B27
THE ROLE OF HYDRODYNAMIC INTERACTIONS IN THE RATE OF PROTEIN FOLDING. **Mohammadmehdi Ezzatabadipour**, Fabio Zegarra, Margaret Cheung

1051-Pos Board B28 **Education Travel Awardee**
THE COMBINED EFFECT OF MACROMOLECULAR CROWDING AND CHEMICAL INTERFERENCE ON THE DYNAMICS OF APOAZURIN FOLDING. **Fabio C. Zegarra**, Mohammadmehdi Ezzatabadipour, Dirar Homouz, Margaret S. Cheung

1052-Pos Board B29
THERMAL STABILITY OF HUMAN SERUM ALBUMIN: THE DEPENDENCE ON THE PROTEIN CONCENTRATION, SCAN RATE, AND THE PRESENCE OF FATTY ACIDS AND LOW-WEIGHT MOLECULAR LIGANDS. Dominik Belej, Erik Sedlak, Gabriela Fabriciova, **Daniel Jancura**

1053-Pos Board B30
MODULATION OF THE KINETIC STABILITY OF IMMUNOGLOBULIN G BY SOLVENT ADDITIVES. **Erik Sedlak**, Jonas V. Schaefer, Andreas Pluckthun

1054-Pos Board B31
GLUCOSE AND TEMPERATURE EFFECT ON HUMAN SERUM ALBUMIN STRUCTURE. **Minoo Shahani**

1055-Pos Board B32
PROTECTIVE EFFECT OF PYRUVATE AGAINST RADIATION-INDUCED DAMAGE IN COLLAGENIZED TISSUES. **Yuri V. Griko**, Xiaoli Yan

1056-Pos Board B33
THE EFFECT OF HOFMEISTER IONS ON THE FOLDING PATHWAY OF CYTOCHROME C DURING THERMAL OR CHEMICAL DENATURIZATION. **Eric S. Peterson**, Sean J. Steinke, Collin A. O'Leary, Mikayla J. Freese

1057-Pos Board B34
THERMODYNAMIC FINGERPRINTS OF THE HOFMEISTER SERIES - PROTEIN INTERACTIONS WITH IONIC LIQUIDS. **Michael Senske**, Diana Constantinescu Aruxandei, Martina Havenith, Hermann Weingärtner, Christian Herrmann, Simon Ebbinghaus

1058-Pos Board B35
THERMODYNAMIC MECHANISM OF PROTEIN STABILIZATION: CROWDERS VS. OSMOLYTES. **Liel Sapir**, Daniel Harries

1059-Pos Board B36
HIGH MOLECULAR MASS CROWDERS CHANGE THE FOLDING PATHWAY OF D-GLUCOSE/D-GALACTOSE-BINDING PROTEIN. **Alexander V. Fonin**, Serge A. Silonov, Asia K. Sitdikova, Irina M. Kuznetsova, Konstantin K. Turoverov

1060-Pos Board B37
PROBING THE THERMAL STABILITY OF LYSOZYME IN CROWDED ENVIRONMENTS: TRACKING LINDEMANN CRITERION. **Marina Katava**, Guillaume Stirnemann, Simone Capaccioli, Alessandro Paciaroni, Fabio Sterpone

1061-Pos Board B38
CROWDING AND PROTEIN DIMERIZATION. **Alex J. Guseman**, Stephen T. Lanier, Gary J. Pielak

1062-Pos Board B39
PROTEIN-PROTEIN INTERACTIONS AND SECONDARY STRUCTURE AFFECT HELIX STABILITY IN CROWDED ENVIRONMENTS. **Alan van Giessen**, Bryanne Macdonald, Pho Bui

1063-Pos Board B40
INVESTIGATION ON STRUCTURAL FEATURES AND ANTIAGGREGATION PROPERTIES OF CHAPERONINS AND CHAPERON LIKE MOLECULES. Maria Rosalia Mangione, Dario Spigolon, Rosa Passantino, Rita Carrotta, Fabio Librizzi, Caterina Ricci, Maria Grazia Ortore, Annalisa Vilasi, Vincenzo Martorana, Claudia Marino,Francesco Cappello, Pier Luigi San Biagio, Donatella Bulone, **Silvia Vilasi**

1064-Pos Board B41
THE UNIQUE ROLES OF UNC-45 DOMAINS IN CHAPERONING MYOSIN FOLDING AND MODULATING MYOSIN POWERSTROKE. Paul Nicholls, Paul Bujalowski, **Andres Oberhauser**

1065-Pos Board B42
REGULATION AND QUALITY CONTROL OF ADIPONECTIN ASSEMBLY BY ENDOPLASMIC RETICULUM CHAPERONE ERP44. **Lutz Hampe**, Alok Kumar Mitra, Mazdak Radjainia

1066-Pos Board B43
SIGNATURE NETWORKS UNDERLYING UNFOLDED INTERMEDIATE OF AN OBLIGATE GROEL SUBSTRATE. **Lipi Thukral**

1067-Pos Board B44
STUDIES ON DOMAIN SPECIFIC AGGREGATION BEHAVIOR OF HUNTINGTIN EXON1. **Nitin K. Pandey**, Jose Mario Isas, Ralf Langen

1068-Pos Board B45
CONTRASTING ROLES OF ASPARAGINE AND GLUTAMINE IN THE AGGREGATION OF PRION-LIKE PROTEINS. **Yuan Zhang**, Viet Hoang Man, Christopher Roland, Celeste Sagui

1069-Pos Board B46
STRUCTURAL DETERMINANTS OF POLYQLUTAMINE PROTOFIBRILS AND CRYSTALLITES. **Viet H. Man**, Christopher Roland, Celeste Sagui

1070-Pos Board B47
FOLDING PATHWAYS OF EVOLUTIONARILY RELATED PROTEINS PROBED BY HYDROGEN EXCHANGE MASS SPECTROMETRY. **Eric Bolin**, Susan Marqusee, Shion Lim

Protein Assemblies I (Boards B48 - B72)

1071-Pos Board B48
DETERMINING UNITARY WATER PERMEABILITY OF MEMBRANE PROTEINS RECONSTITUTED INTO GIANT UNILAMELLAR VESICLES. **Danila Boytsov**, Christof Hannesschlaeger, Andreas Horner, Peter Pohl

1072-Pos Board B49 **Education Travel Awardee**
REGULATION OF ALIX DURING EXOCYTIC VESICLE RELEASE AND ASSEMBLY OF ESCRT PROTEINS ON THE PLASMA MEMBRANE. **Pei-I Ku**, Saveez Saffarian

1073-Pos Board B50
FUNCTIONAL COOPERATIVITY AMONG THE SUBUNITS OF THE HOMOTETRAMERIC AQUAGLYCEROPROTEIN GLPF. **Andreas Horner**, Danila Boytsov, Christine Siligan, Johannes Preiner, Peter Pohl

1074-Pos Board B51
SINGLE-MOLECULE STUDY OF THE OLIGOMERIC STATES OF THE M2 MUSCARINIC RECEPTOR, THE GI1 PROTEIN AND THE M2-GI1 COMPLEX. **Dennis D. Fernandes**, Rabindra V. Shivnaraine, Yuchong Li, Ji Huiqiao, Zhenfu Zhang, Brendan Kelly, Nellie Han, Fei Huang, Krishana S. Sankar, Jonathon V. Rocheleau, James W. Wells, Claudiu C. Gradinaru

1075-Pos Board B52
LIPID MEDIATED OLIGOMERIC ASSEMBLY OF THE SEROTONIN TRANSPORTER AT THE PLASMA MEMBRANE. **Andreas Anderluh**, Tina Hofmaier, Enrico Klotzsch, Oliver Kudlacek, Thomas Stockner, Harald H. Sitte, Gerhard J. Schütz

1076-Pos Board B53
PROBING THE INTERMOLECULAR INTERFACES BETWEEN CLAUDIN PROTOMERS. **Jun Zhao**, Evan Krystofiak, Cristina Fenollar Ferrer, Angela Ballesteros Morcillo, Christina van Itallie, Runjia Cui, James Anderson, Lucy Forrest, Bechara Kachar

1077-Pos Board B54
MITOCHONDRIAL RECRUITMENT OF DRP1 BY MFF IS OPPOSED BY THE VARIABLE DOMAIN. **Ryan W. Clinton**, Rajesh Ramachandran, Jason A. Mears

1078-Pos Board B55
SIZE, ORGANIZATION AND DYNAMICS OF SOLUBLE SQSTM1 AND LC3/SQSTM1 COMPLEXES IN LIVING CELLS. Lewis J. Kraft, Jacob Dowler, Pallavi Manral, **Anne K. Kenworthy**

1079-Pos Board B56
CALIBRATING SICKLE CELL DISEASE. Donna A. Yosmanovich, Maria A. Rotter, Alexey Aprelev, **Frank A. Ferrone**

1080-Pos Board B57
ENGINEERING AN ANTI-ARRHYTHMIC CALMODULIN. **Shane D. Walton**, Hsiang-Ting Ho, Norma M. Elizaga, Jalal K. Siddiqui, Andrew J. O'Neil, Nathan A. Neilson, Andriy Belevych, Bin Liu, Przemyslaw Radwanski, Sandor Gyorke, Jonathan P. Davis

1081-Pos Board B58
DECIPHERING CAMKII MULTIMERIZATION USING HOLOENZYME ASSEMBLY MUTANTS, FCS, AND CONCURRENT HOMO- AND HETERO-FRET ANALYSIS. Pabak Sarkar, Jithesh V. Veetil, Kaitlin Davis, Henry L. Puhl III, **Tuan A. Nguyen**, Steven S. Vogel

1082-Pos Board B59
USE OF 2-PHOTON FLUORESCENCE CORRELATION SPECTROSCOPY TO INVESTIGATE RAT LIVER PHOSPHOFRUCTOKINASE SELF-ASSOCIATION. **David A. Holland**, Gregory D. Reinhart

1083-Pos Board B60
FROM SINGLE MOLECULES TO SINGLE CELLS: BIOPHYSICS OF INTERACTIONS BETWEEN SMALL REGULATORS AND PROTEASOME. **Pawel A. Osmulski**, Przemyslaw Karpowicz, Elzbieta Jankowska, Matt Giletto, Theresa Lansdell, Jetze Tepe, Tim H. Huang, Maria Gaczynska

1084-Pos Board B61 CPOW TRAVEL AWARDEE
ACTIVATION OF TOLL-LIKE RECEPTOR 5 IMMUNE SIGNALING BY HMGB1. **Nabanita Das**, Varun Dewan, Hang Hubert Yin

1085-Pos Board B62
DESTABILIZING EFFECT OF CASPASE-9 ASSOCIATION WITH APOPTOSOME. **Jamshid Davoodi**, Sanaz Naderi, Mahboobeh Kheikhah, Najmeh Ajili, Faezeh Attaran, Somaye Sadeghzadeh

1086-Pos Board B63
PHOTOPHYSICAL PROPERTIES OF THIOFLAVIN T. DOES IT FORM EXCIMERS WHEN INTEGRATED INTO AMYLOID FIBRILS? **Anna I. Sulatskaya**, Irina M. Kuznetsova, Konstantin Turoverov

1087-Pos Board B64
STRUCTURAL TRANSITIONS IN UNMODIFIED AND PYROGLUTAMYLATED AMYLOID β PEPTIDES UPON HYDRATION BY WATER VAPOR. **Greg Goldblatt**, Jason O. Matos, Suren A. Tatulian

1088-Pos Board B65
UNDERSTANDING AMYLOID ASSEMBLY OF NATIVELY UNFOLDED POLYPEPTIDE BY MEANS OF CONFORMATIONALLY RESTRICTED PEPTIDES. Noé Quittot, De Carufel Carole Anne, Phuong Trang Nguyen, **Steve Bourgault**

1089-Pos Board B66
ALZHEIMER'S DISEASE: INSIGHTS INTO AMYLOID FIBRIL FORMATION FROM LATTICE MONTE CARLO SIMULATIONS. **Thanh - Thuy Tran**, Phuong H. Nguyen, Philippe Derreumaux

1090-Pos Board B67
AMYLOID BETA-PROTEIN FIBRILS FROM HUMAN ALZHEIMER'S BRAIN TISSUE AND FROM MOUSE MODELS OF ALZHEIMER'S DIFFER IN STRUCTURES. **Hiroaki Komatsu**, Paul H. Axelsen

1091-Pos Board B68
HYDRODYNAMIC EFFECTS ON AMYLOID-β AGGREGATION. **Mara Chiricotto**, Simone Melchionna, Philippe Derreumaux, Fabio Sterpone

1092-Pos Board B69
RELATIONSHIP BETWEEN AGGREGATION OF AMYLOID-β PROTEIN ON CELLS AND CYTOTOXICITY. Naoya Itoh, Eri Takada, Yoshiaki Yano, Masaru Hoshino, **Katsumi Matsuzaki**

1093-Pos Board B70
CURCUMIN-β-CYCLODEXTRIN ALLOY: SYNERGISTIC EFFECT ON AGGREGATION INHIBITION OF SILK FIBROIN. **Priyanka Dubey**, Sourabh Ghosh

1094-Pos Board B71
A MINIMALISTIC KINETIC MODEL FOR AMYLOID SELF-ASSEMBLY. **Srivastav Ranganathan**, Samir K. Maji, Ranjith Padinhateeri

1095-Pos Board B72 INTERNATIONAL TRAVEL AWARDEE
BIOPHYSICAL INSIGHT OF DNA INDUCED AGGREGATION OF STEM BROMELAIN. **Masihuz Zaman**, Rizwan Hasan Khan

Protein Dynamics and Allostery II (Boards B73 - B93)

1096-Pos Board B73
ANION BINDING EXOSITES AS A TARGET TO UNDERSTAND THE ACTIVATION OF THROMBIN. **Ramya Billur**, Muriel C. Maurer

1097-Pos Board B74 EDUCATION TRAVEL AWARDEE
NMR EXPERIMENTS ON WILD-TYPE AND MUTANT FIBROBLAST GROWTH FACTOR RECEPTOR KINASES REVEAL CONFORMATIONAL DYNAMICS ASSOCIATED WITH ENZYME ACTIVATION. **William Marsiglia**, Huaibin Chen, Min-kyu Cho, Moosa Mohammadi, Nathaniel J. Traaseth

1098-Pos Board B75
USING STRUCTURAL AND DYNAMIC NMR ANALYSES TO DISSECT THE PATHOLOGIC FUNCTION OF A NOVEL CHEMOKINE. **Monica A. Thomas**, Francis C. Peterson, Brian F. Volkman

1099-Pos Board B76
GLOBAL STABILIZATION OF NFKB UPON IKBA BINDING. **Kristen M. Ramsey**, Holly E. Dembinski

1100-Pos Board B77
LIGAND INDUCED ALLOSTERY IN PSEUDOMONAS AERUGINOSA CYTOPLASMIC HEME BINDING PROTEIN (PHUS) DRIVES THE PROTEIN-PROTEIN INTERACTION WITH HEME OXYGENASE. **Daniel J. Deredge**, Weiliang Huang, Colleen Hui, Pierre Moenne-Loccoz, Angela Wilks, Patrick Wintrode

1101-Pos Board B78
ALLOSTERY THROUGH PROTEIN MOTION AT DIFFERENT LENGTH AND TIME SCALES. **Colin A. Smith**, Adam Mazur, David Ban, Stefan Becker, Christian Griesinger, Donghan Lee, Bert L. de Groot

1102-Pos Board B79
NEISSERIAL OPA PROTEIN LOOP DYNAMICS AND MECHANISM OF INTERACTION WITH HOST CEACAM RECEPTORS. **Marissa K. Kieber**, Jennifer Hays, Tsega Solomon, Peter Kasson, Linda Columbus

1103-Pos Board B80
REVEALING THE TRANSPORT CYCLE DYNAMICS OF THE SODIUM DEPENDENT SUGAR TRANSPORTER BY DOUBLE ELECTRON-ELECTRON RESONANCE AND WIDE-ANGLE X-RAY SCATTERING. **Aviv Paz**, Derek P. Claxton, Shruti Sharma, Kelli Kazmier, Jay Prakash Kumar, Shannon A. Nolte, Terrin M. Liwag, Hassane S. Mchaourab, Jeff Abramson

1104-Pos Board B81
THE EFFECT OF THE PROTEIN DYNAMICAL TRANSITION ON INTRAMOLECULAR VIBRATIONS. **Mengyang Xu**, Katherine A. Niessen, Yanting Deng, Nigel S. Michki, Edward H. Snell, Andrea G. Markelz

1105-Pos Board B82
REALTIME SINGLE MOLECULAR MOTION ANALYSIS OF NICOTINIC ACETYLCHOLINE RECEPTOR ALPHA 7 BY DIFFRACTED X-RAY TRACKING METHOD. **Tai Kubo**, Tomoyuki Baba, Keigo Ikezaki, Hiroshi Sekiguchi, Yuri Nishino, Atsuo Miyazawa, Yuji C. Sasaki

1106-Pos Board B83
STRUCTURAL DYNAMICS OF HSP90 RESOLVED BY A NOVEL MULTI-PAIR FRET APPROACH. **Bjoern Hellenkamp**, Philipp Wortmann, Florian Kandzia, Martin Zacharias, Thorsten Hugel

1107-Pos Board B84
REVEALING A HETERODIMERIC INTERFACE BETWEEN THE MEMBERS OF TWO UNRELATED FLUORESCENT PROTEIN LINEAGES. **Gary CH Mo**, Jin Zhang

1108-Pos Board B85
DYNAMIC DNA BINDING LICENSES A EUKARYOTIC REPAIR COMPLEX TO BYPASS PROTEIN ROADBLOCKS IN SEARCH OF DNA LESIONS. **Maxwell W. Brown**, Yoori Kim, Gregory M. Williams, John D. Huck, Jennifer A. Surtees, Ilya J. Finkelstein

1109-Pos Board B86 International Travel Awardee
X-RAY OBSERVATION OF NOVEL NUCLEATION FACTOR IN PROTEIN SUPERSATURATED SOLUTION. **Yufuku Matsushita**, Hiroshi Sekiguchi, Noboru Ohta, Keigo Ikezaki, Yuji Goto, Yuji C. Sasaki

1110-Pos Board B87
BRIDGING IN VITRO WITH IN VIVO ENZYMOLOGY. Hasan Tükenmez, Helge M. Magnussen, Per Rogne, Anders Byström, **Magnus Wolf-Watz**

1111-Pos Board B88
DETERMINATION OF THERMODYNAMIC AND KINETIC PARAMETERS FOR CO MIGRATION WITHIN BACTERIAL FLAVOHEMOGLOBINS OF RALSTONIA EUTROPHA AND STAPHYLOCOCCUS AUREUS. **David Butcher**, Myriam Moussaoui, Laura Baciou, Jaroslava Miksovska

1112-Pos Board B89
EFFECTOR-LINKED HIGH-FREQUENCY THERMAL FLUCTUATIONS OF GLOBIN (CHANGES IN PROTEIN DYNAMICS) REGULATE THE OXYGE-AFFINITY AND COOPERATIVITY OF HEMOGLOBIN. **Takashi Yonetani**, Kenji Kanaori

1113-Pos Board B90
ALLOSTERIC PATHWAYS IN THE MULTI-DOMAIN THYROID HORMONE RECEPTOR. **Vandna Gahlot**, Balananda D. Kumar Putcha, Quentin Johnson, Tongye Shen, Elias Fernandez

1114-Pos Board B91
CATALYZING OF IMMUNE PEPTIDE/MHC CLASS II COMPLEX WITH DM MOLECULE OBSERVED BY DIFFRACTED X-RAY TRACKING (DXT). **Toshihiro Miyabe**, Yuhuku Mastushita, Yuko Kozono, Hiroshi Sekiguchi, Keigo Ikezaki, Haruo Kozono, Yuji C. Sasaki

1115-Pos Board B92
PEPTIDE AND PROTON DRIVEN ALLOSTERIC CLAMPS CATALYZE ANTHRAX TOXIN TRANSLOCATION ACROSS MEMBRANES. **Debasis Das**

1116-Pos Board B93
INVESTIGATION AND COMPARISON OF THE FLEXIBILITY AND DYNAMICS OF TC1/MARINER TRANSPOSASES. **Diana Joy**, Christopher M. Singer, Daniel P. Godfrey, Donald J. Jacobs, Irina V. Nesmelova

Membrane Protein Structure and Folding II (Boards B94 - B122)

1117-Pos Board B94
UNCOUPLING PROTEINS OF THE CENTRAL NERVOUS SYSTEM: COMPARATIVE BIOPHYSICAL STUDIES. **Masoud Jelokhani-Niaraki**, Tuan Hoang, Marina V. Ivanova, Matthew D. Smith

1118-Pos Board B95
HETERODIMERIZATION OF WILD-TYPE AND MUTANT FIBROBLAST GROWTH FACTOR RECEPTORS IN CELL-DERIVED VESICLES. **Nuala Del Piccolo**, Sarvenaz Sarabipour, Kalina Hristova

1119-Pos Board B96
DIMERIC E. COLI YIDC FORMS A TRANSLOCATION PORE IN THE MEMBRANE. **Lukas Winter**, Andreas Vogt, Christine Siligan, Denis Knyazev, Roland Kuttner, Hans-Georg Koch, Peter Pohl

1120-Pos Board B97
STRUCTURAL DYNAMICS OF THE LIGAND-RECEPTOR INTERACTION OF THE NEUROPEPTIDE Y RECEPTOR TYPE 2. **Daniel Huster**, Anette Kaiser, Julian Kahr, Tristan Zellmann, Holger A. Scheidt, Rene Meier, Jens Meiler, Annette G. Beck-Sickinger, Peter Schmidt

1121-Pos Board B98 International Travel Awardee
MODULAR ASSEMBLY OF SYNTHETIC PROTEINS THAT SPAN THE PLASMA MEMBRANE IN MAMMALIAN CELLS. **Anam Qudrat**, Kevin Truong

1122-Pos Board B99
OPRG FACILITATES THE TRANSPORT OF SMALL AMINO ACIDS ACROSS THE OUTER MEMBRANE OF PSEUDOMONAS AERUGINOSA. **Patrick Seelheim**, Iga Kucharska, Lukas K. Tamm

1123-Pos Board B100
STRIPPING THE CLC-EC1 DIMERIZATION INTERFACE: AN INVESTIGATION INTO THE ROLE OF VAN DER WAALS INTERACTIONS IN MEMBRANE PROTEIN ASSEMBLY. Kacey Mersch, Venkatramanan Krishnamani, Marley Brimberry, John Tian, **Janice L. Robertson**

1124-Pos Board B101
HETERO-OLIGOMERIC COMPLEXES FORMED BY THE HOMO-OLIGOMERIC TRANSMEMBRANE DOMAINS OF HIV-1 VPU AND HUMAN TETHERIN. **Gregory Cole**, Simon Sharpe

1125-Pos Board B102
HETERODIMERIZATION OF NEUROPILIN-1 TRANSMEMBRANE HELICES AND PLEXIN SIGNALING. **Susmita Borthakur**, Liqun Zhang, Matthias Buck

1126-Pos Board B103
INVERSION OF SIGNAL SEQUENCE TOPOLOGY DURING MEMBRANE INTEGRATION. **Connie Wang**, Shuai Wang, Michiel Niesen, Shu-ou Shan, Thomas F. Miller III

1127-Pos Board B104
THE ATLASTIN C-TERMINAL TAIL IS AN AMPHIPATHIC HELIX THAT PERTURBS THE BILAYER STRUCTURE DURING ENDOPLASMIC RETICULUM HOMOTYPIC FUSION. **Joseph E. Faust**, Tanvi Desai, Avani Verma, Idil Ulengin, Tzu-Lin Sun, Tyler J. Moss, Miguel A. Betancourt-Solis, Huey W. Huang, Tina Lee, James A. McNew

1128-Pos Board B105
FUNCTIONAL STUDIES OF NUCLEOTIDE SUGAR TRANSPORTERS. **Lavanyaa Manjunatha**

1129-Pos Board B106
CONNECTING PIE-FCCS MEASUREMENTS TO DIMERIZATION AFFINITY TO RESOLVE THE ROLE OF GPCR DIMERIZATION IN LIVE CELLS. **Megan Kaliszewski**

1130-Pos Board B107
STRUCTURAL CHARACTERIZATION OF THE FULL LENGTH CRGA PROTEIN FOUND IN MYCOBACTERIUM TUBERCULOSIS. **Yiseul Shin**, Huajune Qin, Malini Rajagopalan, Timothy A. Cross

1131-Pos Board B108
INVESTIGATING THE ROLE OF TRANSMEMBRANE DOMAIN CYSTEINE RESIDUES IN THE ORGANIZATION OF TNF RECEPTORS. **Tiffany L. Senkow**, Andrew K. Lewis, Jonathan N. Sachs

1132-Pos Board B109
THE LIPOPROTEIN BAMB FACILITATES FOLDING AND INSERTION OF OUTER MEMBRANE PROTEIN A (OMPA) INTO LIPID MEMBRANES DEPENDING ON BILAYER THICKNESS. Lisa Gerlach, **Jörg H. Kleinschmidt**

1133-Pos Board B110
DETERMINATION OF THE INTERACTION OF γ-SECRETASE WITH ITS βCTF SUBSTRATE. **Ayse Julius**

1134-Pos Board B111
MEASURING LARGE MEMBRANE PROTEIN DIMERIZATION IN LIPID BILAYERS BY FORSTER RESONANCE ENERGY TRANSFER. **Venkatramanan Krishnamani**, Kacey Mersch, Rahul Chadda, Ankita Chadda, Janice L. Robertson

1135-Pos Board B112
PROBING STRUCTURE AND DYNAMICS OF TRANSMEMBRANE ALPHA HELICES OF THE S21 PINHOLIN PROTEIN USING ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY. **Daniel L. Drew**

1136-Pos Board B113
COMPLEX FOLDING PATHWAYS OF BACTERIORHODOPSIN REVEALED BY 1-μS-RESOLUTION FORCE SPECTROSCOPY. **Matthew G. W. Siewny**, Hao Yu, Devin T. Edwards, Aric W. Sanders, Thomas T. Perkins

1137-Pos Board B114
NEUTRON SCATTERING REVEALS PROTEIN FLUCTUATIONS IN GPCR ACTIVATION. **Suchithranga M. D. C. Perera**, Utsab Shrestha, Debsindhu Bhowmik, Udeep Chawla, Andrey V. Struts, Xiang-qiang Chu, Michael F. Brown

1138-Pos Board B115
CONFORMATIONAL CHANGES OF THE MULTIDRUG TRANSPORTER P-GLYCOPROTEIN IN SOLUTION AND LIPID DISCS. Leo Mok, Maria-Elena Zoghbi, Douglas J. Swartz, Anukriti Singh, Greg Fendley, Guillermo A. Altenberg, **Ina Urbatsch**

1139-Pos Board B116
INSIGHTS INTO THE STABILITY OF GPCRS IN DETERGENT MICELLES. **Sangbae Lee**, Supriyo Bhattacharya, Allen Mao, Reinhard Grisshammer, Christopher Tate, Nagarajan Vaidehi

1140-Pos Board B117
MONITORING GPCR CONFORMATIONAL CHANGES DURING AGONIST RELEASE IN REAL-TIME: EVIDENCE THAT TRANSMEMBRANE HELIX 6 (TM6) MOVEMENT IN RHODOPSIN LAGS BEHIND RETINAL RELEASE. **Christopher T. Schafer**, David L. Farrens

1141-Pos Board B118
RETINAL CHROMOPHORE STRUCTURE IN META-II RHODOPSIN REVEALED BY SOLID-STATE ^{2}H NMR AND MOLECULAR MODELING. **Andrey V. Struts**, Xiaolin Xu, Trivikram R. Molugu, Michael C. Pitman, Samira Faylough, Charitha Guruge, Carolina Nascimento, Nasri Nesnas, Michael F. Brown

1142-Pos Board B119 International Travel Awardee
UNDERSTANDING STRUCTURAL AND FUNCTIONAL STABILITY OF TWO RHOMBOID PROTEASES: HIGLPG AND PSAARA. **Rashmi Panigrahi**, Elena Arutyunova, Pankaj Panwar, Katharina Gimpl, Sandro Keller, Joanne Lemieux

1143-Pos Board B120 Education Travel Awardee
INFLUENCE OF FAMILIAL PARKINSON'S DISEASE MUTATIONS ON MITOCHONDRIAL LOCALIZATION AND SECONDARY STRUCTURE OF PINK1. **Stephania Irwin**, Rashmi Panigrahi, Elena Arutyunova, Nicolas Touret, M. Joanne Lemieux

1144-Pos Board B121
STRUCTURAL BASIS FOR KCNQ1 LONG-QT SYNDROME DISEASE CAUSING MUTATIONS. **Keenan C. Taylor**, Hui Huang, Brett Kroncke, Charles Sanders

1145-Pos Board B122
ENERGY COUPLING MECHANISMS AND LIPID-MEDIATED SUBUNIT INTERACTIONS OF THE MITOCHONDRIAL PROTEIN TRANSPORT MACHINERY. **Nathan N. Alder**, Ketan Malhotra, Murugappan Sathappa, Shivangi Nangia, Tyler Daman, Dejana Mokranjac, Eric May

Transcription (Boards B123 - B137)

1146-Pos Board B123
PAUSING IN ESCHERICHIA COLI TRANSCRIPTION INITIATION. **Eitan Lerner**, Sangyoon Chung, Benjamin Allen, Wang Shuang, Lee J. Jookyung, Lu Winson Shijia, Grimaud Wilson Logan, Antonino Ingargiola, Yazan Alhadid, Sergei Borukhov, Terence Strick, Dylan J. Taatjes, Shimon Weiss

1147-Pos Board B124
WALK AND CHECK ALONG A VIRAL RNA POLYMERASE TRANSCRIPTION ELONGATION PATH. **Jin Yu**

1148-Pos Board B125
TRANSCRIPTION FACTOR CLUSTERING IN LIVE YEAST CELLS. **Adam Wollman**, Sviatlana Shashkova, Erik Hedlund, Stefan Hohmann, Mark C. Leake

1149-Pos Board B126
E.COLI RNA POLYMERASE ACTIVITY UNDER CROWDING. **SangYoon Chung**, Eitan Lerner, Yan Jin, Yazan Alhadid, Soohong Kim, Charles M. Knobler, William M. Gelbart, Shimon Weiss

1150-Pos Board B127
LIVE CELL SINGLE MOLECULE BINDING OF TRANSCRIPTION FACTORS IN LIVING CELLS. CHARACTERIZING P53 LATENCY. Emanuela Jacchetti, Paolo Rainone, Tiziana Daniele, Tacchetti Carlo, **Davide Mazza**

1151-Pos Board B128
NANOSCALE PROBING OF THE P53 TUMOR SUPPRESSION TRANSCRIPTION MACHINERY. Robert A. Coleman, Sameer K. Singh, Chunte S. Peng, Michael Cianfrocco, Zhengjian Zhang, William Rice, Edward Eng, **Wei-Li Liu**

1152-Pos Board B129
RAPID LONG RANGE SLIDING OF RNA DEPENDENT RNA POLYMERASES ON VIRAL GENOME TEMPLATES VISUALIZED BY PHOTOACTIVATABLE LOCALIZATION MICROSCOPY. **Xiaolin Tang**, Mourad Bendjennat, Saveez Saffarian

1153-Pos Board B130
PPI RELEASE FOLLOWED BY DNA TRANSLOCATION STUDIED FROM ATOMISTIC SIMULATIONS OF T7 RNA POLYMERASE TRANSCRIPTION. **Chao E**, Lin-Tai Da, Baogen Duan, Shaogui Wu, Jin Yu

1154-Pos Board B131
REGULATION OF THE BDNF MRNA 3' UTR ON THE RNA LEVEL. **Brett A. DeMarco**, Mihaela-Rita Mihailescu, Snezana Stefanovic

1155-Pos Board B132
SUBNUCLEAR SPATIAL STRUCTURING OF CHROMATIN AND POLYMERASE II DURING TRANSCRIPTION ACTIVATION OF THE ZEBRAFISH ZYGOTIC GENOME. **Lennart Hilbert**, Vasily Zaburdaev, Nadine Vastenhouw

1156-Pos Board B133
KINETICS AND MECHANISM OF FORMATION AND STABILIZATION OF THE RNA POLYMERASE-PROMOTER OPEN COMPEX. **Munish Chhabra**, Raashi Sreenivasan, Mikaela Poulos, Emily Ruff, Irina Artsimovitch, Tom Record

1157-Pos Board B134
LARGE EFFECTS OF DISCRIMINATOR EXCHANGES ON THE RNA POLYMERASE-PROMOTER OPEN COMPLEX STRUCTURE, LIFETIME AND TRANSCRIPTION INITIATION PATTERNS. **Kate Henderson**, Lindsey Felth, Si Wang, Cristen Molzahn, Munish Chhabra, Mikaela Poulos, Emily Ruff, Lauren Bieter, M. Thomas Record Jr

1158-Pos Board B135
EFFECT OF PRESSURE AND TEMPERATURE ON TRANSCRIPTION INITIATION IN BACTERIAL CELLS. **Khanh Nguyen**

1159-Pos Board B136
MEASURING THE DYNAMICS OF TFIIF ON RNA POLYMERASE II BY SMFRET. **Wei-hau Chang**

1160-Pos Board B137
EFFECT OF FIS ON TRANSCRIPTION-COUPLED DNA SUPERCOILING IN E. COLI. **Samantha Dages**, Xiaoduo Zhi, Fenfei Leng

Ribosomes and Translation (Boards B138 - B147)

1161-Pos Board B138
STRUCTURE AND FUNCTION OF YIDC, AN INSERTASE THAT CHANNELS NEWLY SYNTHESIZED PROTEINS INTO THE CELL MEMBRANE. **Rezvan Shahoei**, Noah Trebesch, Abhi Singharoy, Klaus Schulten

1162-Pos Board B139
SIMULATING MRNA-TRNA TRANSLOCATION THROUGH THE RIBOSOME. **Kien Nguyen**, Paul C. Whitford

1163-Pos Board B140
ERMBL TRANSLATION ON THE RIBOSOME IN THE PRESENCE OF ERYTHROMYCIN IS STALLED BY INHIBITION OF PEPTIDE BOND FORMATION. **Lars V. Bock**, Stefan Arenz, Daniel N. Wilson, Helmut Grubmüller, Andrea C. Vaiana

1164-Pos Board B141
PROGRAMMED -1 FRAMESHIFT OF A RIBOSOME: NON-MONOTONIC VARIATION OF FRAMESHIFT EFFICIENCY WITH INCREASING STIFFNESS OF MRNA SECONDARY STRUCTURE. Bhavya Mishra, **Debashish Chowdhury**

1165-Pos Board B142
CORRELATED MOVEMENT OF TRNA AND THE RIBOSOME DURING ELONGATION. **Huan Yang**, Paul Charles Whitford

1166-Pos Board B143
IDENTIFYING EXPERIMENTAL MEASURES OF INTERSUBUNIT ROTATION IN THE RIBOSOME. **Mariana Levi**, Kien Nguyen, Liah Dukaye, Paul Charles Whitford

1167-Pos Board B144
COAXING A VIRAL RNA OUT OF ITS SHELL: HOW DOES A VIRAL RNA GENOME INITIATE CONTACT WITH ITS HOST? **Richard Sportsman**, Christian Beren, Benjamin Kartub, Rees Garmann, William M. Gelbart, Charles M. Knobler

1168-Pos Board B145 EDUCATION TRAVEL AWARDEE
NASCENT PROTEINS INTERACT WITH KEY REGIONS OF THE OUTER SURFACE OF THE RIBOSOME. **Andrew M. Fuchs**

1169-Pos Board B146
UNDERSTANDING THE EFFECT OF POST TRANSCRIPTIONAL MODIFICATIONS IN THE ANTICODON STEM LOOP OF E.COLI TRNA ARGININE. **Sweta Vangaveti**, Srivathsan Ranganathan, Kathryn L. Sarachan, Paul F. Agris, Alan Chen, William Cantara

1170-Pos Board B147
DYNAMICS OF STOP CODON DISCRIMINATION BY RELEASE FACTOR 1. **Colin D. Kinz-Thompson**, Ruben L. Gonzalez, Jr.

Protein-Nucleic Acid Interaction I (Boards B148 - B178)

1171-Pos Board B148
PROTEIN SEARCH FOR MULTIPLE TARGETS ON DNA. **Maria Kochugaeva**, Martin Lange, Anatoly Kolomeisky

1172-Pos Board B149
CATALYTIC MECHANISM OF THE INO80 CHROMATIN REMODELER ACTING ON THE NUCLEOSOME. **Marianne Schwarz**, Jens Michaelis, Karl-Peter Hopfner

1173-Pos Board B150 EDUCATION TRAVEL AWARDEE
HU PROTEIN AND DNA SUPERCOILING DRAMATICALLY ENHANCE LAC-REPRESSOR-MEDIATED DNA LOOPING. **Yan Yan**, Fenfei Leng, David D. Dunlap, Laura Finzi

1174-Pos Board B151
EXPLORING THE MECHANICS AND DYNAMICS OF GENE SILENCING PROTEINS. **Haowei Wang**, William Wiley Navarre, Joshua N. Milstein

1175-Pos Board B152
MOLECULAR SELF-TITRATION AS A MECHANISM OF GENE REGULATION. **Gregory M.K. Poon**, Suela Xhani, Dominique Curtis Stephens

1176-Pos Board B153
DNA-BINDING DYNAMICS OF GLUCOCORTICOID RECEPTOR REVEALED BY PARTICLE IMAGE CORRELATION SPECTROSCOPY. **Veer Keizer**, Rolf Harkes, Thomas Schmidt, Marcel Schaaf

1177-Pos Board B154
AUTONOMOUS SENSITVITY TO EPIGENETICALLY MODIFIED DNA IS ENCODABLE IN A STRUCTURALLY CONSERVED DNA-BINDING DOMAIN. **Dominique C. Stephens**, Gregory M. K. Poon

1178-Pos Board B155
INTEGRATIVE MODELING OF THE ISWI CHROMATIN REMODELING ENZYME FROM CROSS-LINKING/MASS SPECTROMETRY AND SAXS DATA. **Christina EM Schindler**, Nadine Harrer, Jan Lipfert, Felix Müller-Planitz, Martin Zacharias

1179-Pos Board B156
QUANTITATIVE EXPERIMENTAL ANALYSIS OF THE INFLUENCE OF QUASI-SPECIFIC SITES ON KINETICS OF DNA SCANNING BY THE ZINC-FINGER PROTEIN EGR-1. **Catherine A. Kemme**, Alexandre Esadze, Junji Iwahara

1180-Pos Board B157
SPATIAL DYNAMICS OF SIRT1 DICTATE METABOLIC TRANSITIONS IN THE CELL NUCLEUS. **Suman Ranjit**, Lorena Aguilar-Arnal, Chiara Stringari, Paolo Sassone-Corsi, Enrico Gratton

1181-Pos Board B158
EXAMINING TALE PROTEIN BINDING KINETICS AND SITE COMPETITION USING SINGLE MOLECULE IMAGING. **Max Kushner**, Alexander Van Slyke, Fabio Rinaldi, Avtar Singh, John Lis, Adam Bogdanove, Warren Zipfel

1182-Pos Board B159
A MOLECULE-SCALE VIEW OF THE STRUCTURE AND SPECIFICITY OF THE RNA-GUIDED ENDONUCLEASE CAS9. **Eric A. Josephs**, D. Dewran Kocak, Christopher J. Fitzgibbon, Joshua McMenemy, Charles A. Gersbach, Piotr E. Marszalek

1183-Pos Board B160
DNA UNWINDING BY CRISPR-CAS9 STUDIED USING SITE-DIRECTED SPIN LABELING. **Narin S. Tangprasertchai**, Carolina Vazquez Reyes, Xiaojun Zhang, Peter Z. Qin

1184-Pos Board B161
INVESTIGATION OF THE CAS9 MEDIATED DNA CLEAVAGE USING TIME-LAPSE AFM IMAGING. **Suleyman Ucuncuoglu**, Ozgur Sahin

1185-Pos Board B162
DNA BINDING FLUORESCENT PROTEINS FOR THE DIRECT VISUALIZATION OF LARGE DNA MOLECULES. **Seonghyun Lee**, Kyubong Jo

1186-Pos Board B163
DIRECT OBSERVATION OF DNA OVERWINDING BY RVERSE GYRASE. **Taisaku Ogawa**, Katsunori Yogo, Shou Furuike, Kazuo Sutoh, Akihiko Kikuchi, Kazuhiko Kinosita, Jr.

1187-Pos Board B164
BINDING OF THE SINGLE-STRANDED DNA BINDING PROTEIN (GP32) OF T4 BACTERIOPHAGE INDUCES POSITION-SPECIFIC LOCAL CONFORMATIONAL CHANGES IN DNA LATTICES THAT CAN BE MONITORED BY FLUORESCENT PROBES. **Davis Jose**, Miya M. Michael, Pablo Romano, Benjamin R. Camel, Katarina H. Meze, Neil P. Johnson, Marina Guenza, Andrew H. Marcus, Peter H. von Hippel

1188-Pos Board B165
AN ISING MODEL DESCRIBES HYSTERESIS IN A NOVEL FORM OF COOPERATIVE BINDING. **Natalia N. Vtyurina**, David Dulin, Margreet W. Docter, Anne S. Meyer, Nynke H. Dekker, Elio A. Abbondanzieri

1189-Pos Board B166
CONFORMATIONAL CHANGES IN HIV-1 GAG REGULATE ITS ASSEMBLY AND GENOME SELECTION. **Ioulia Rouzina**

1190-Pos Board B167
RECOGNITION OF SPECIFIC URIDINES IN TRNA SUBSTRATES BY DIHYDROURIDINE SYNTHASES. Huw Jenkins, Fiona Whelan, Daniel Peters, Robert Byrne, Andrey Konevega, Eugene Koonin, **Fred Antson**

1191-Pos Board B168
A SINGLE-MOLECULE FRET STRATEGY THAT ENABLES THE ORDERING THE PROXIMITIES OF YEAST SPECIFIC U1 PROTEINS TO THE 5 SPLICE SITE. **Jheng-Syong Wu**, Tz-yun Chen, Sean Chang, Tien-Hsien Chang, Wei-hau Chang

1192-Pos Board B169
SINGLE STRANDED DNA TRANSLOCASES CAN PUSH SINGLE STRANDED DNA BINDING PROTEINS ALONG SINGLE STRANDED DNA. **Joshua E. Sokoloski**, Alexander Kozlov, Roberto Galletto, Timothy M. Lohman

1193-Pos Board B170
FUSED IN SARCOMA (FUS) TARGETS NEURONAL G QUADRUPLEX CONTAINING MRNAS. **Damian McAninch**, Mihaela-Rita Mihailescu

1194-Pos Board B171
PROTEIN PACKING CODE FOR DNA RECOGNITION BASED ON THE KNOB-SOCKET MODEL. **Hyun Joo**, Vivian Chen, Sruti Elson, Jerry Tsai

1195-Pos Board B172
E. COLI GYRASE FAILS TO NEGATIVELY SUPERCOIL DIAMINOPURINE-SUBSTITUTED DNA. Monica Fernandez-Sierra, Qing Shao, Chandler Fountain, Laura Finzi, **David D. Dunlap**

1196-Pos Board B173
SINGLE MOLECULE MEASUREMENTS OF DNA DECATENATION BY THE TOPOISOMERASE III-RECQ HELICASE COMPLEX. **K. Maria Mills**, Keir C. Neuman

1197-Pos Board B174
EXTRACTING ENZYME PROCESSIVITY FROM KINETIC ASSAYS. **Itay Barel**, Frank L.H. Brown

1198-Pos Board B175 **CPOW TRAVEL AWARDEE**
MODELING PROTEIN-RNA COMPLEXES. **Adelene Sim**, Jinglin Chen, Julie Bernauer

1199-Pos Board B176
SIGNIFICANCE OF STERIC BULK IN DNA THREADING INTERCALATION REVELAED THROUGH FORCE-DEPENDENT KINETICS. **Andrew G. Clark**, Thayaparan Paramanathan, Fredrik Westerlund, Per Lincoln, Micah McCauley, Ioulia Rouzina, Mark Williams

1200-Pos Board B177
SINGLE-MOLECULE CONFORMATIONAL DYNAMICS OF E. COLI DNA POLYMERASE I. **Raymond Pauszek**, Rajan Lamichhane, Ingemar Pedron, David Millar

1201-Pos Board B178
SENSING THE BINDING SITES OF RNAP HOLOENZYME ON λ DNA ATTACHED TO A PROBE TIP WITH SOLID STATE NANOPORES. **Harpreet Kaur**, Santoshi Nandivada, Changbae Hyun, Tao Huang, Min Xiao, David S. McNabb, Jiali Li

Membrane Physical Chemistry and Membrane Dynamics (Boards B179 - B207)

1202-Pos Board B179
POLYSTYRENE NANOPARTICLES ALTER THE STRUCTURE AND STABILITY OF MODEL CELL MEMBRANES. **David Van Doren**, Luke Cuculis, Shelli L. Frey

1203-Pos Board B180
NANOPARTICLE INTERACTIONS WITH GIANT VESICLES FABRICATED FROM INVERTED HEADGROUP LIPIDS. **Lu Wang**, Noah Malmstadt

1204-Pos Board B181
CARBON NANOSTRUCTURES INTERACTION WITH GIANT UNILAMELLAR VESICLES AS A CELLULAR MODEL. **Carlos A. Moreno Aguilar**, Verónica Pérez Luna, José Luis Arauz Lara, Said Eduardo Aranda Espinoza, Mildred Quintana Ruiz

1205-Pos Board B182
PLFE AS A LIPOSOMAL STABILIZING AGENT: A SHEAR STRESS STUDY. **Alexander Bonanno**, Allison Andrews, Umme Ayesa, Servio Ramirez, Parkson Lee-Gao Chong

1206-Pos Board B183
UNDERSTANDING LIPID BILAYER DYNAMICS: RELATING BENDING AND THICKNESS FLUCTUATIONS TO MEMBRANE ELASTICITY. **Michihiro Nagao**, Rana Ashkar, Elizabeth Kellery, Robert Bradbury, Paul Butler

1207-Pos Board B184
BENDING MODULI OF TERNARY MIXTURE MODELS OF THE CELL PLASMA MEMBRANE. **Rebecca Simpson**, Sanjula Wickramasinghe, David Ackerman, Gerald Feigenson

1208-Pos Board B185
THE EFFECT OF PROTEINS AND LIPIDS ON MEMBRANE STIFFNESS. Philip W. Fowler, Anna Duncan, Jean Helie, Matthieu Chavent, Heidi Koldsø, **Mark S.P. Sansom**

1209-Pos Board B186
USING MOLECULAR DYNAMICS SIMULATIONS AND ATOMIC FORCE MICROSCOPY TO DETERMINE HOW α-SYNUCLEIN AFFECTS MEMBRANE MECHANICS. **Benjamin E. Brummel**, Jonathan Sachs

1210-Pos Board B187
LIPID-LIPID COUPLING TO MEMBRANE CURVATURE BY SIMULATION AND NMR. **Alexander J. Sodt**, Olivier Soubias, Klaus Gawrisch, Richard W. Pastor

1211-Pos Board B188
CURVED LIPID BILAYER MEMBRANES: PROTEIN MOTIONS AND HYDRODYNAMIC TRANSPORT. **Paul J. Atzberger**

1212-Pos Board B189
DYNAMICS OF MEMBRANE TUBES FORMED BY I-BARS. Younes F. Baroji, Andreas Rørvig-Lund, S. Nader S. Reihani, Szabolcs Semsey, **Poul M. Bendix**

1213-Pos Board B190
LACTOSE GLICOLIPIDS AND THEIR CAPABILITIES TO FORM GIANT VESICLES AND TUBULES. **German Gunther**, Catalina Sandoval, Susana Sanchez

1214-Pos Board B191
SPONTANEOUS TUBULATION IN GIANT VESICLES INDUCED BY GM1 OR PEG ADSORPTION. **Rumiana Dimova**, Raktim Dasgupta, Nico Fricke, Yonggang Liu, Jaime Agudo-Canalejo, Andrea Grafmüller, Reinhard Lipowsky

1215-Pos Board B192
INTERNALIZATION OF CARBON NANOTUBES IN BIOLOGICAL MEMBRANES. **Verónica Pérez Luna**, Mildred Quintana Ruiz, Said Eduardo Aranda Espinoza, Carlos Alejandro Moreno Aguilar, José Luis Arauz Lara

1216-Pos Board B193
BIPOLAR NANOSECOND PULSES MITIGATE MEMBRANE NANOPORATION. **Erick K. Moen**, Bennett L. Ibey, Hope T. Beier, Andrea M. Armani

1217-Pos Board B194
THE NONLINEAR RESPONSE OF LIPID MEMBRANES TO VOLTAGE PERTURBATIONS AS AN ALTERNATIVE EXPLANATION OF ELECTROPHYSIOLOGICAL DATA. **Karis Amata Zecchi**, Lars Dalskov Mosgaard, Thomas Heimburg, Rima Budvytyte

1218-Pos Board B195
BURIED CHARGES AND THEIR EFFECT ON ION CHANNEL SELECTIVITY. ANALYTICAL SOLUTIONS, NUMERICAL CALCULATIONS AND MD SIMULATIONS. **María Queralt-Martín**, Antonio Alcaraz, Marcel Aguilella-Arzo, Vicente M. Aguilella

1219-Pos Board B196
STRUCTURAL DETERMINANTS OF THE IF-OF TRANSITION IN HUMAN GLUCOSE TRANSPORTER GLUT1. **Mrinal Shekhar**, Javier Baylon, Emad Tajkhorshid

1220-Pos Board B197
BILAYER MODIFYING EFFECTS OF ANTIPSYCHOTICS OF DIFFERENT GENERATIONS. **R. Lea Sanford**, Olaf S. Andersen

1221-Pos Board B198
CHOLESTEROL INFLUENCE ON THE INTERACTION OF CELL PENETRATING PEPTIDES (CPPS) WITH MODEL MEMBRANES. **Viviana E. Silva**, Fanny Guzmán, Patricio Sotomayor, Luis F. Aguilar

1222-Pos Board B199 **INTERNATIONAL TRAVEL AWARDEE**
UNRAVELING THE OUTER MEMBRANE TRANSLOCATION MECHANISM OF A PROTEIN ANTIBIOTIC USING SINGLE-MOLECULE MICROBIOLOGY AND COMPUTATIONAL BIOPHYSICS. **Patrice Rassam**, Kathleen R. Long, David J. Williams, Matthieu Chavent, Anna Duncan, Mark Sansom, Colin Kleanthous, Christoph G. Baumann

1223-Pos Board B200
ANTIMICROBIAL PEPTIDE IMPACTS THE LATERAL DIFFUSION AND BENDING RIGIDITY OF PHOSPHOLIPID MEMBRANE. **Veerendrak K. Sharma**, E Mamontov, D. B. Anunciado, M. Ohl, H. O'Neill, V. S. Urban

1224-Pos Board B201
SOLID STATE NMR INVESTIGATIONS OF LIPID BILAYERS IN INTERACTION WITH AMPHIPHILIC TRIBLOCK COPOLYMERS. **Ruth Bärenwald**, Anja Achilles, Mark Jbeily, Jörg Kressler, Kay Saalwächter

1225-Pos Board B202
INTERACTION OF POLOXAMERS WITH LIPID BILAYER: MOLECULAR DYNAMICS SIMULATIONS USING UNITED ATOM AND COARSE-GRAINED FORCE FIELDS. **Upendra Adhikari**, Ardeshir Goliaei, Max L. Berkowitz

1226-Pos Board B203
INVESTIGATION OF ENCAPSULATED LIPOSOMAL ANTITUBERCULOTICS AND EFFECTS ON IN VITRO MODEL SYSTEMS. **Nikoletta Kosa**, Barnabas Bocskei-Antal, Kata Horváti, Szilvia Bosze, Levente Herenyi, Istvan Voszka

1227-Pos Board B204
A COMPUTATIONAL AND EXPERIMENTAL STUDY OF CATIONIC-ANIONIC LIPID INTERACTIONS: XTC2-DSPS AS A CASE STUDY. **Mohsen Ramezanpour**, Linda Wang, Jason Wang, Mohammad Ashtari, Sherry S.W. Leung, Karelia H. Delgado-Magnero, Bashe Bashe, Jenifer Thewalt, D. Peter Tieleman

1228-Pos Board B205 **CPOW TRAVEL AWARDEE**
DEVELOPMENT OF LIPID-BASED DRUG DELIVERY SYSTEMS FOR GENE THERAPY: PHYSICOCHEMICAL CHARACTERIZATION OF CHARGED LIPID INTERACTIONS. Bashe Y. Bashe, **Sherry S. W. Leung**, Karelia H. Delgado-Magnero, Mohsen Ramezanpour, Pieter R. Cullis, D. Peter Tieleman, Jenifer Thewalt

1229-Pos Board B206
PREFERENTIAL DELIVERY OF BPM 31510 INTO TUMORIGENIC CELLS BASED ON BIOPHYSICAL INTERACTIONS. **Sumit Garg**, Vandana Swaminathan, Sirisha Dhavala, Rangaprasad Sarangarajan, Michael Kiebish, Niven Narain

1230-Pos Board B207
EFFECT OF MICRO-STIRRING ON ENZYMATIC REACTION KINETICS INSIDE A BIOMIMETIC CONTAINER. **Irep Gözen**, Viva Horowitz, Zachary Chambers, Vinothan N. Manoharan

Membrane Fusion and Non-Bilayer Structures (Boards B208 - B226)

1231-Pos Board B208
LIPID MODULATION OF LC3/GABARAP-MEDIATED AUTOPHAGOSOMAL ELONGATION. **Alicia Alonso**, Ane Landajuela, Javier H. Hervas, Zurine Anton, L. Ruth Montes, David Gil, Mikel Valle, J. Francisco Rodriguez, Felix M. Goni

1232-Pos Board B209
ALCOHOL SIGNIFICANTLY ALTERS FUSIGENICITY OF VESICLES IN A MODEL MEMBRANE SYSTEM. **Jason R. Paxman**, Sam Zarbock, Brady Hunt, Dixon J. Woodbury

1233-Pos Board B210
SYNAPSE ON A CHIP: SNARE-MEDIATED MEMBRANE FUSION IN PLANAR PORE-SPANNING MEMBRANES. **Raphael Hubrich**, Lando L. G. Schwenen, Dragomir Milovanovic, Reinhard Jahn, Claudia Steinem

1234-Pos Board B211
FLIC MICROSCOPY REVEALS DIFFERENT CONFORMATIONAL STATES OF SYNTAXIN 1A IN SUPPORTED LIPID BILAYERS. **Volker Kiessling**, Binyong Liang, Lukas K. Tamm

1235-Pos Board B212
UNCOVERING THE MECHANISM OF MITOFUSIN 1 THROUGH STRUCTURAL STUDIES. **Marisa A. Rubio**, Jeanne Morin-Leisk, Jenny E. Hinshaw

1236-Pos Board B213
CONTROL OF INFLUENZA VIRUS BINDING BY TARGET MEMBRANE COMPOSITION. **Isabel Goronzy**, Robert Rawle, Steven Boxer, Peter Kasson

1237-Pos Board B214
NEW IN VITRO HEMAGGLUTININ INHIBITOR SCREENING SYSTEM BASED ON SINGLE VESICLE FUSION ASSAY. **Hanki Lee**

1238-Pos Board B215
FORMATION AND MECHANICAL PROPERTIES OF CALCIUM-STABILIZED MEMBRANE ROLLS. **Tamas Bozo**, Imre Derényi, Richard Brecska, Miklos Kellermayer

1239-Pos Board B216
SINGLE-PARTICLE TRACKING OF HIV-1 VIRIONS BEARING AN EXTRA-VIRAL FLUORESCENT PH SENSOR REVEALS VIRAL ENTRY OCCURS AFTER TRAFFICKING TO AN ACIDIC CELLULAR COMPARTMENT. **Chetan Sood**, Mariana Marin, Caleb S. Mason, Gregory B. Melikyan

1240-Pos Board B217
DYNAMICS AND ENERGETICS OF SNARE ZIPPERING IN MEMBRANE FUSION. **Zhe Wu**, Klaus Schulten

1241-Pos Board B218
EFFECTS OF STEROL SUBSTITUTION ON INFLUENZA VIRAL MEMBRANE FUSION. **Katarzyna E. Zawada**, Dominik Wrona, Peter M. Kasson

1242-Pos Board B219
MEMBRANE FUSION VIA SNARE MIMETICS SPATIALLY CONFINED TO INTRAMEMBRANE DOMAINS. **Tom Robinson**, Bastian Kubsch, Philippe Bastiaens, Reinhard Lipowsky, Rumiana Dimova

1243-Pos Board B220
SNARE-MEDIATED TRANSIENT FUSION OF LIPOSOMES TO SUPPORTED BILAYERS PROBED BY TWO-COLOR PTIRFM. **Joerg Nikolaus**, Benjamin S. Stratton, Jason M. Warner, Zhenyong Wu, George Wei, Emma Wagnon, David Baddeley, Ben O'Shaughnessy, Erdem Karatekin

1244-Pos Board B221
USING SINGLE-VIRION FUSION ASSAY TO STUDY HEMIFUSION KINECTICS OF INFLUENZA A VIRUSES AND INFLUENZA PSEUDOTYPES. **Hung-Lun Hsu**, Jean k. Millet, Costello A. Deirdre, Susan Daniel, Gary R. Whittaker

1245-Pos Board B222
USING GIANT PLASMA MEMBRANE VESICLES FROM CELLS TO FORM SUPPORTED LIPID BILAYERS. **PoChieh Chiang**

1246-Pos Board B223
STRUCTURAL ANALYSIS OF HEMAGGLUTININ-INDUCED HEMIFUSION BY VOLTA PHASE-PLATE CRYO-ELECTRON TOMOGRAPHY. **Petr Chlanda**, Elena Mekhedov, Hang Waters, Cindi L. Schwartz, Elizabeth R. Fischer, Rolf J. Ryham, Fredric S. Cohen, Paul S. Blank, Joshua Zimmerberg

1247-Pos Board B224
ASSEMBLY AND COMPARISON OF PLASMA MEMBRANE SNARE ACCEPTOR COMPLEXES. **Alex J. B. Kreutzberger**, Binyong Liang, Volker Kiessling, Lukas K. Tamm

1248-Pos Board B225
DISENTANGLING VIRAL MEMBRANE FUSION FROM RECEPTOR BINDING BY USING SYNTHETIC DNA-LIPID CONJUGATES TO TETHER INFLUENZA VIRUS TO MODEL LIPID MEMBRANES. **Robert Rawle**, Peter Kasson, Steven Boxer

1249-Pos Board B226
DRUG DELIVERY VIA CELL MEMBRANE FUSION USING LIPOPEPTIDE MODIFIED LIPOSOMES. **Alexander Kros**

Protein-Lipid Interactions I (Boards B227 - B257)

1250-Pos Board B227
SOLID-STATE NMR INVESTIGATIONS OF A TRANSMEMBRANE PEPTIDE HAVING INTERFACIAL HISTIDINE RESIDUES. **Fahmida Afrose**, Denise V. Greathouse, Roger E. Koeppe II

1251-Pos Board B228
CHOLESTEROL INFLUENCE ON ARGININE-CONTAINING TRANSMEMBRANE PEPTIDES. **Jordana K. Thibado**, Ashley N. Martfeld, Denise V. Greathouse, Roger E. Koeppe II

1252-Pos Board B229
USE OF TRANSMEMBRANE PEPTIDES TO UNDERSTAND IONIZATION PROPERTIES OF HISTIDINE RESIDUES IN LIPID BILAYERS. **Ashley N. Martfeld**, Denise V. Greathouse, Roger E. Koeppe II

1253-Pos Board B230
VARIED APPROACHES TO THE IONIZATION BEHAVIOR OF SPECIFIC GLU RESIDUES THAT FACE THE LIPIDS IN TRANSMEMBRANE HELICES. **Venkatesan Rajagopalan**, Denise V. Greathouse, Roger E. Koeppe

1254-Pos Board B231
EFFECTS OF LIPID MEMBRANE CURVATURES ON BINDING, SECONDARY STRUCTURE, AND AGGREGATION OF AMYLOID-BETA PROTEIN. Yuuki Sugiura, **Keisuke Ikeda**, Minoru Nakano

1255-Pos Board B232
LACTOFERRICIN PEPTIDES: THE IMPORTANCE OF METHYL-TRYPTOPHAN AND GLUTAMINE FOR STRUCTURE AND ACTIVITY. **Alexandrea H. Kim**, Denise V. Greathouse

1256-Pos Board B233 **CID Travel Awardee**
A NOVEL SOLUBLE PEPTIDE WITH PH-RESPONSIVE MEMBRANE INSERTION. **Vanessa P. Nguyen**, Daiane S. Alves, Haden L. Scott, Forrest L. Davis, Francisco N. Barrera

1257-Pos Board B234
LIPID ENVIRONMENT OF AQUAPORIN Z. **Victoria Schmidt**, Marlon Sidore, Frédéric Carrière, Jean-Pierre Duneau, James N. Sturgis

1258-Pos Board B235 **Education Travel Awardee**
MECHANISM OF STRONG MEMBRANE BINDING BY SYNAPTOTAGMIN 7 C2A DOMAIN: INSIGHT FROM MUTATION AND LIPID COMPOSITION DEPENDENCE. **Favinn A. Maynard**, Beatriz Salazar, Jefferson D. Knight

1259-Pos Board B236
HELIX FRAYING MAY STABILIZE TRANSMEMBRANE ALPHA HELICES. **Armin Mortazavi**, Venkatesan Rajagopalan, Denise V. Greathouse, Roger E. Koeppe II

1260-Pos Board B237
INVESTIGATING POSSIBLE INTERACTIONS BETWEEN IONIZABLE RESIDUES IN MODEL TRANSMEMBRANE PEPTIDES. **Ryan M. Wendt**, Venkatesan Rajagopalan, Denise V. Greathouse, Roger E. Koeppe II

1261-Pos Board B238
DIFFERENCES IN MEMBRANE BINDING COOPERATIVITY BETWEEN THE TANDEM C2 DOMAINS OF SYNAPTOTAGMIN 1 AND SYNAPTOTAGMIN 7. **Hai T. Tran**, Daniel T. Giardina, Kan Chantranuvatana, Matthew D. Coffman, Joseph K. Vasquez, Jefferson Knight

1262-Pos Board B239
COMPUTER SIMULATIONS ON INTERACTIONS BETWEEN CYTOSKELETON-ANCHORED PEPTIDES AND PLASMA MEMBRANES. **Qing Liang**

1263-Pos Board B240
GANGLIOSIDE AND PROTEIN-GANGLIOSIDE INTERACTIONS IN MARTINI AND ATOMISTIC MOLECULAR DYNAMICS SIMULATIONS. **Ruo-Xu Gu**, Helgi I. Ingolfsson, Alex H. de Vries, Siewert J. Marrink, D. Peter Tieleman

1264-Pos Board B241
STRUCTURAL ANALYSIS OF TIM PROTEINS AS MODEL PROTEIN-MEMBRANE SYSTEM USING X-RAY SCATTERING. **Daniel Kerr**, Greg T. Tietjen, Simon Kit Sang Chu, Zhiliang Gong, J. Michael Henderson, Charles Heffern, Binhua Lin, Mati Meron, Mark Schlossman, Erin J. Adams, Ka Yee C. Lee

1265-Pos Board B242
PMD-MEMBRANE: A TOOL TO DETERMINE ALLOSTERIC BINDING POCKETS IN MEMBRANE-BOUND BIOMOLECULES. **Priyanka Prakash**, Abdallah Sayyed-Ahmad, Alemayehu A. Gorfe

1266-Pos Board B243
INFLUENZA M2 TRANSMEMBRANE DOMAIN INTERACTING WITH LIPID MEMBRANES: AN ATOMIC FORCE MICROSCOPY AND FLUORESCENCE MICROSCOPY STUDY. Chian Sing Ho, Nawal K. Khakda, Fengyu She, Jianfeng Cai, **Jianjun Pan**

1267-Pos Board B244
LIPID-DEPENDENT MODULATION OF MEMBRANE RECRUITMENT AND PROTEIN-PROTEIN INTERACTIONS IN BCL-2 FAMILY OF APOPTOTIC REGULATORS. **Victor Vasquez-Montes**, Mauricio Vargas-Uribe, Mykola V. Rodnin, Alexey Ladokhin

1268-Pos Board B245
IONIC INTERACTIONS OF THE C-TERMINAL DOMAIN OF APOLIPOPROTEIN A-I ARE RESPONSIBLE FOR OLIGOMERIZATION. **Lukas A. Fuentes**, Kan Cong, Paul M.M. Weers

1269-Pos Board B246
EXAMINING PROPERTIES OF THE C-TERMINAL DOMAIN OF HUMAN APOLIPOPROTEIN A-I UTILIZING A CHIMERIC APOLIPOPROTEIN. **Rachel A. Ellena**, James V. C. Horn, Jesse Tran, Vasanthy Narayanaswami, Paul M. Weers

1270-Pos Board B247
CONTRIBUTION OF LOW-AFFINITY SITES TO STRONG MULTIVALENT PROTEIN-MEMBRANE BINDING: DETECTION USING SINGLE-MOLECULE TIRF MICROSCOPY. **Marissa DeLima**, Daniel T. Giardina, Jefferson Knight

1271-Pos Board B248 **International Travel Awardee**
STRUCTURAL EFFECTS OF HIGH HYDROSTATIC PRESSURE ON HUMAN LOW DENSITY LIPOPROTEIN REVEALED BY SMALL ANGLE X-RAY AND NEUTRON SCATTERING. **Bernhard Lehofer**, Maksym Golub, Karin Kornmueller, Manfred Kriechbaum, Nicolas Martinez, Heinz Amenitsch, Judith Peters, Ruth Prassl

1272-Pos Board B249
MD SIMULATIONS AND FREE ENERGY CALCULATION OF SYNTHETIC COILED-COIL PEPTIDES WITH LIPID BILAYERS. **Sun Young Woo**, Hwankyu Lee

1273-Pos Board B250
EFFECT OF RESVERATROL AND DERIVATIVES ON INTERACTIONS BETWEEN ALZHEIMER'S DISEASE ASSOCIATED Aβ PROTEIN OLIGOMERS AND LIPID MEMBRANES: A QUARTZ CRYSTAL MICROBALANCE ANALYSIS. **Yiying Wang**, Melissa A. Moss

1274-Pos Board B251
INTERACTION OF PKCα-C2 DOMAIN WITH LIPID BILAYER: A MOLECULAR DYNAMICS STUDY. **Mohammad Alwarawrah**, Jeff Wereszczynski

1275-Pos Board B252
FREE ENERGIES OF INTERACTION OF LIPIDS WITH REGULATORY BINDING SITES ON THE TRANSMEMBRANE DOMAIN OF THE EGF RECEPTOR. **George Hedger**, Heidi Koldsoe, Mark S. P. Sansom

1276-Pos Board B253
INTERACTION OF THE LPS-BINDING PROTEIN WITH HOST CELL MEMBRANES: SPECIFICITY AND BIOLOGICAL IMPLICATIONS. Franziska Kopp, Sarah Kupsch, Laura Paulowski, Uwe Mamat, Manfred Rössle, Thomas Gutsmann, **Andra B. Schromm**

1277-Pos Board B254
GENERAL STERIC TRAPPING STRATEGY REVEALS AN INTRICATE COOPERATIVITY NETWORK IN THE INTRAMEMBRANE PROTEASE GLPG UNDER NATIVE CONDITIONS. Ruiqiong Guo, Kristen Gaffney, Zhongyu Yang, Miyeon Kim, Suttipun Sungsuwan, Xuefei Huang, Wayne L. Hubbell, **Heedeok Hong**

1278-Pos Board B255
IN CELL FOOTPRINTING COUPLED WITH MASS SPECTROMETRY FOR THE STRUCTURAL CHARACTERIZATION OF A MEMBRANE PROTEIN. Emily Hart, Clark Wells, **Lisa M. Jones**

1279-Pos Board B256 **Education Travel Awardee**
COMPUTATIONAL AND EXPERIMENTAL STUDIES OF LIPID-PROTEIN INTERACTIONS IN BIOMEMRANE FUNCTION. **Rami Musharrafieh**, Udeep Chawla, Wan Zheng, Liangju Kaung, Suchithranga M. D. C. Perera, Thomas Knowles, Annie Huang, Michael C. Pitman, Jun Wang, Hongjun Liang, Michael F. Brown

1280-Pos Board B257
ANALYSIS OF UNFOLDING OF APOLIPOPROTEIN E OFFERS INSIGHTS INTO LIPID BINDING MECHANISM. **Alexandra Donovan**, Roy V. Hernandez, Charina Fabilane, Patricia Nguyen, Tuyen N. Tran, Vasanthy Narayanaswami

Calcium Signaling (Boards B258 - B292)

1281-Pos Board B258
BIOELECTRIC SIGNALS AND CALCIUM WAVES COORDINATE SKIN PROGENITOR CELL MOVEMENT PATTERNS DURING THE POLARIZATION OF FEATHER BUDS. **Ang Li**, Jung-Hwa Cho, Brian Reid, Min Zhao, Robert H. Chow, Cheng-Ming Chuong

1282-Pos Board B259
PROTEOMIC MAPPING AND OPTOGENETIC CONTROL OF ER-PM JUNCTIONS IN LIVING CELLS. **Ji Jing**, Lian He, Aomin Sun, Ariel Quintana, Yuehe Ding, Guolin Ma, Peng Tan, Liangyi Chen, Shenyuan Zhang, Yun Huang, Meng-Qiu Dong, Cheryl Walker, Patrick Hogan, Youjun Wang, Yubin Zhou

1283-Pos Board B260
COLLECTIVE CALCIUM DYNAMICS IN NETWORKS OF COMMUNICATING CELLS. **Tommy A. Byrd**, Garrett D. Potter, Bo Sun, Andrew Mugler

1284-Pos Board B261
THE C. ELEGANS SPERMATHECA AS A MODEL SYSTEM FOR CALCIUM SIGNALING IN A CONTRACTILE TUBE. **Jeff Bouffard**, Anand R. Asthagiri, Erin J. Cram

1285-Pos Board B262
ER CALCIUM LEVELS HELP REGULATE K(ATP) CHANNEL TRAFFICKING TO THE PLASMA MEMBRANE OF PANCREATIC BETA CELLS. **Suryakiran Vadrevu**, Leslie S. Satin

1286-Pos Board B263
RECEPTOR-LOCALIZED CA^{2+} SIGNALING ACTIVATES P2X2 RECEPTOR CHANGING CYTOSKELETAL MORPHOLOGY. **Anam Qudrat**, Kevin Truong

1287-Pos Board B264
A NOVEL RATIOMETRIC FLUORESCENCE CALCIUM INDICATOR FOR FUNCTIONAL ANALYSIS OF GPCRS AND CALCIUM CHANNEL TARGETS. **Zhenjun Diwu**, Qin Zhao, Zhen Luo, Qinglin Meng, Jixiang Liu, Jinfang Liao

1288-Pos Board B265
CHARACTERIZATION OF MITOCHONDRIAL CALCIUM UPTAKE IN SKELETAL MUSCLE. **Valentina Debattisti**, Melanie Paillard, Gyorgy Csordas, Erin Seifert, Gyorgy Hajnoczky

1289-Pos Board B266
INTERPLAY OF MEMBRANE AND CALCIUM OSCILLATORS IN CARDIAC PACEMAKER CELLS. Nikolay Zorin, Alexander Ryvkin, **Alexander Moskvin**, Olga Solovyova

1290-Pos Board B267
SPONTANEOUS, LOCAL DIASTOLIC SUBSARCOLEMMAL CA^{2+} RELEASES (LCRS) IN SINGLE ISOLATED GUINEA-PIG SINOATRIAL NODAL CELLS (SANC) ARE LINKED TO THEIR SPONTANEOUS AP FIRING. **Syevda Sirenko**, Dongmei Yang, Edward G. Lakatta

1291-Pos Board B268 **CPOW TRAVEL AWARDEE**
NEW TARGETED CA^{2+} PROBES REVEAL MITOCHONDRIAL CA^{2+} SIGNALING PLAYS A CRITICAL ROLE IN RAT SINOATRIAL (SA) NODAL PACING. **Xiaohua Zhang**, Christine Couch, Katalin Torok, Martin Morad

1292-Pos Board B269
PREVELEGED CA^{2+} SIGNALING PATHWAY BETWEEN MEMBRANE NCX AND MITOCHONDRIA IN CARDIAC MYOCYTES. **Xiaohua Zhang**, Naohiro Yamaguchi, Lars Cleemann, Martin Morad

1293-Pos Board B270
BINDING SITES OF THE CA/NA EXCHANGER NCX ANALYZED WITH POISSON FERMI THEORY. Jinn-Liang Liu, **Robert S. Eisenberg**

1294-Pos Board B271
NEURONAL INTRACELLULAR CA^{2+} AND NA^{+} DYSHOMEOSTASIS IN THE MDX MOUSE. **Jose R. Lopez**, Juan Kolster, Jose Adams

1295-Pos Board B272
ROLE OF INORGANIC POLYPHOSPHATE (POLYP) IN PHYSIOLOGICAL AND PATHOPHYSIOLOGICAL RESPONSE TO GLUTAMATE IN MAMMALIAN NEURONS. **Plamena R. Angelova**, Andrey Y. Abramov

1296-Pos Board B273
CORTEX PHELLODENDRI EXTRACT RELAXES MOUSE AIRWAY SMOOTH MUSCLE. Weiwei Chen, Qui-Ju Jiang, Meng-Fei Yu, **Qing-Hua Liu**

1297-Pos Board B274
R-CEPIA1ER AS A NEW TOOL TO DIRECTLY MEASURE [CA] IN THE SARCOPLASMIC RETICULUM OF VENTRICULAR MYOCYTES. **Elisa Bovo**, Aleksey V. Zima, Jody L. Martin, Pieter P. de Tombe

1298-Pos Board B275
SIMULATIONS OF SUBCELLULAR HETEROGENEITY IN CALCIUM BLINK KINETICS. **Elisa Nunez Acosta**, Eva Polakova, Eric A. Sobie

1299-Pos Board B276
DYADIC REMODELING AS A CAUSE OF IMPAIRED E-C COUPLING IN EARLY STAGES OF MYOCARDIAL INJURY. **Alexandra jr. Zahradnikova**, Marta Novotova, Katarina Mackova, Ivan Zahradnik, Alexandra Zahradnikova

1300-Pos Board B277
VENTRICULAR NA^{+}-HCO3- COTRANSPORTER ACTIVITY AND INTRACELLULAR H^{+} MOBILITY ARE REMODELED IN CARDIAC HYPERTROPHY AND HEART FAILURE. **Kerrie L. Ford**, Carolina D. Garciarena, Yanwen Wang, Yatong Li, Michael Lawless, Ming Lei, Andrew Trafford, Pawel Swietach, Richard D. Vaughan-Jones

1301-Pos Board B278
INTRACELLULAR CD38 MEDIATES CARDIAC SYNTHESIS OF NAADP AND CADPR. **Wee Khang Lin**, Emma Bolton, Matylda Maciejewska, Yanwen Wang, Wilian Cortopassi, Fiona O'Brien, Margarida Ruas, Ming Lei, Rebecca Sitsapesan, Antony Galione, Derek Terrar

1302-Pos Board B279
THE ROLE OF MITOPHAGY IN CARDIOMYOCYTE ARRHYTHMOGENESIS. **Kevin R. Murphy**, Yichun Lu, Dmitry Terentyev, Gideon Koren

1303-Pos Board B280
ELECTRON-CONFORMATIONAL TRANSFORMATIONS GOVERN THE TEMPERATURE DEPENDENCE OF THE RYR2 GATING. **Bogdan Iaparov**, Alexander Moskvin, Alexander Ryvkin, Olga Solovyova

1304-Pos Board B281
CORRELATION OF MOLECULAR DYNAMICS ANALYSIS AND CALCIUM SIGNALING IN MUTANT RYANODINE RECEPTORS. **Toshiko Yamazawa**, Takashi Murayama, Hideto Oyamada, Junji Suzuki, Nagomi Kurebayashi, Kazunori Kanemaru, Maki Yamaguchi, Chikara Sato, Masamitsu Iino

1305-Pos Board B282
HUMAN INDUCED PLURIPOTENT STEM CELLS-DERIVED CARDIOMYOCYTES CARRYING CALM1-F142L MUTATION RECAPITULATE LQTS PHENOTYPE IN VITRO. **Marcella Rocchetti**, Luca Sala, Lisa Dreizehnter, Manuela Mura, Claudia Altomare, Joyce Bernardi, Carlotta Ronchi, Stefano Severi, Alfred L. George, Peter J. Schwartz, Daniel Sinnecker, Massimiliano Gnecchi, Lia Crotti, Alessandra Moretti, Antonio Zaza

1306-Pos Board B283 **INTERNATIONAL TRAVEL AWARDEE**
LOCAL CHARACTER OF RELEASE-DEPENDENT INACTIVATION OF L-TYPE CALCIUM CURRENT. **Barbora Hoffmannova**, Eva Polakova, Alexandra jr. Zahradnikova, Alexandra Zahradnikova, Ivan Zahradnik

1307-Pos Board B284
SUPPRESSION OF CARDIAC ICA AND CA^{2+} RELEASE BY ACUTE HYPOXIA AND ACIDIFICATION. **Jose Carlos Fernandez-Morales**, Xiao Hua Zhang, Lars Cleemann, Martin Morad

1308-Pos Board B285
STIM-ORAI INTERACTION IN SCHISTOSOMA MANSONI INDICATES THE EXISTENCE OF FUNCTIONAL STORE-OPERATED CALCIUM ENTRY IN THE PARASITE. **Ana Eliza Zeraik**, Marina Gabriel Fontes, Jose Luiz Souza Lopes, Ana Paula Ulian Araujo, Ricardo DeMarco

1309-Pos Board B286
INHIBITOR OF STORE-OPERATED CALCIUM ENTRY YM58483 SHOWS SIMILAR PHARMACOLOGICAL PROFILE TO NON-STEROIDAL ANTI-INFLAMMATORY DRUG CELECOXIB. **Alexandra S. Gherghina**, Aurelien Boillat, Shihab Shah, Nikita Gamper

1310-Pos Board B287
ZINC INHIBITS ORAI1-MEDIATED CALCIUM SIGNALS IN ESOPHAGEAL CANCER CELLS. Sangyong Choi, Chaochu Cui, Yanhong Luo, Sun Hee Kim, Jae-Kyun Ko, Jianjie Ma, Irina Korichneva, **Zui Pan**

1311-Pos Board B288
ORAI1 CONCATEMERS REVEAL A HEXAMERIC ORAI1 CHANNEL ASSEMBLY. **Xiangyu Cai**, Yandong Zhou, Xianming Wang, Natalia Loktionova, Robert Nwokonko, Mohamed Trebak, Donald Gill

1312-Pos Board B289
STIM1-INDUCED CLUSTERING OF ORAI1 CHANNELS. **Robert Nwokonko**, Yandong Zhou, Xiangyu Cai, Natalia Loktionova, Xianming Wang, Donald Gill

1313-Pos Board B290
ACTIVATION MECHANISM OF THE CALCIUM RELEASE-ACTIVATED CALCIUM CHANNEL REVEALED BY THE GATING COMPETENCE OF CONSTITUTIVELY OPEN ORAI MUTANTS. **Hao Dong**

1314-Pos Board B291
MOLECULAR MECHANISMS OF STIM1-MEDIATED ORAI-1 CHANNEL ACTIVATION. **Zainab Haydari**, Hengameh Shams, Mohammad R K Mofrad

1315-Pos Board B292
IMPACT OF STIM1 R304W MUTANT ON INTRA- AND INTERMOLECULAR CYTOSOLIC COILED-COIL INTERACTIONS. **Marc Fahrner**, Michael Stadlbauer, Martin Muik, Christoph Romanin

Intracellular Calcium Channels and Calcium Sparks and Waves I (Boards B293 - B313)

1316-Pos Board B293
DIFFERENTIAL EFFECTS OF TEMPERATURE AND LIPIDS ON THE GATING OF RYR AND SR K^{+} CHANNELS. **Sam El-Ajouz**, Elisa Venturi, Rebecca Sitsapesan

1317-Pos Board B294
DAMPENED ACTIVITY OF SINGLE RYANODINE RECEPTOR CHANNELS IN MICE DEVOID OF TRIC-A. **Katja Witschas**, Fiona O'Brien, Elisa Venturi, Sam El-Ajouz, Matthew Beech, David Eberhardt, Tsunaki Iida, Miyuki Nishi, Hiroshi Takeshima, Rebecca Sitsapesan

1318-Pos Board B295
SIMVASTATIN ACTIVATES SINGLE SKELETAL RYR1 CHANNELS BUT EXERTS MORE COMPLEX REGULATION OF THE CARDIAC ISOFORM, RYR2. **Elisa Venturi**, Katja Witschas, Sabine J. Lotteau, Emma Steer, Derek S. Steele, Sarah C. Calaghan, Rebecca Sitsapesan

1319-Pos Board B296 **CPOW TRAVEL AWARDEE**
SIMVASTATIN HAS PROFOUND EFFECTS ON SARCOPLASMIC RETICULUM CA^{2+} LEAK IN SKELETAL BUT NOT CARDIAC MUSCLE: A MECHANISM FOR MYOPATHY. **Sabine Lotteau**, Zhaokang Yang, Elisa Venturi, Emma Steer, Katja Witschas, Rebecca Sitsapesan, Derek Steele, Sarah Calaghan

1320-Pos Board B297
AXIAL MEMBRANE TUBULES IN ATRIAL CARDIOMYOCYTES CONFINE ULTRARAPID INTRACELLULAR CALCIUM SIGNALS THROUGH A NEW SUPER-HUB MECHANISM. Sören Brandenburg, Tobias Kohl, George S.B. Williams, Konstantin Gusev, Eva Wagner, Elke Hebisch, Christopher W. Ward, W. J. Lederer, **Stephan E. Lehnart**

1321-Pos Board B298
CARDIAC PACEMAKER CELL FUNCTION AT A SUPER-RESOLUTION SCALE OF SIM: DISTRIBUTION OF RYRS, CALCIUM DYNAMICS, AND NUMERICAL MODELING. **Victor A. Maltsev**, Alexander V. Maltsev, Magdalena Juhaszova, Syevda Sirenko, Oliver Monfredi, Hari Shroff, Andrew York, Steven J. Sollott, Edward G. Lakatta, Michael D. Stern

1322-Pos Board B299
RELATIVE CONTRIBUTION OF LOCAL CA^{2+} RELEASES (LCRS) AND AP-INDUCED CA^{2+} TRANSIENT DECAY TO DIASTOLIC DEPOLARIZATION IN RABBIT SA NODE CELLS. **Oliver J. Monfredi**, Alexander Maltsev, Sean Parsons, Bruce Ziman, Edward Lakatta, Michael D. Stern, Victor A. Maltsev

1323-Pos Board B300
ENHANCED RYR2 CHANNEL ACTIVITY BUT REDUCED CA^{2+} SPARK OCCURRENCE IN FAILING MICE CARDIOMYOCYTES. **Linwei Li**, Gema Ruiz-Hurtado, Maria Fernandez-Velasco, Angelica Rueda, Florence Lefebvre, Yue Yi Wang, Philippe Mateo, Cecile Cassan, Barnabas Gellen, Jean Pierre Benitah, Ana M. Gomez

1324-Pos Board B301
CHARACTERIZATION OF CA^{2+}-INDUCED CA^{2+} RELEASE VIA RYR2 CARRYING ARRHYTHMOGENIC MUTATIONS. **Nagomi Kurebayashi**, Takashi Murayama, Junji Suzuki, Kazunori Kanemaru, Masamitsu Iino, Takashi Sakurai

1325-Pos Board B302
INHIBITION OF RYR2 ACTIVITY BY INTRACELLULAR FLECAINIDE EFFECTIVELY SUPPRESSES ARRHYTHMOGENIC CA WAVES IN INTACT VENTRICULAR MYOCYTES FROM CASQ2 -/- MICE. **Dmytro Kryshtal**, Björn C. Knollmann

1326-Pos Board B303
MANIPULATION OF RYANODINE RECEPTOR ACTIVITY MODULATES AUTOIMMUNE RESPONSES IN MICE. Natalia C. Osipchuk, Paul D. Allen, Lillian Cruz-Orengo, Athena Soulika, **Alla Fomina**

1327-Pos Board B304
HIGH-THROUGHPUT SCREENS TO DISCOVER INHIBITORS OF LEAKY RYANODINE RECEPTOR CALCIUM CHANNELS. Robyn T. Rebbeck, Florentin R. Nitu, David D. Thomas, Donald M. Bers, **Razvan L. Cornea**

1328-Pos Board B305
FLUORESCENCE-LABELED IMPERACALCIN BINDS TO OPEN RYR2 CHANNELS IN MOUSE VENTRICULAR MYOCYTES. **Liang Xiao**, Yi Yang, Geogina B. Gurrola, Florentin R. Nitu, José Luis Puglisi, Liming Zhang, Razvan L. Cornea, Donald M. Bers, Héctor H. Valdivia

1329-Pos Board B306
STRUCTURAL DYNAMICS OF CALMODULIN IN REGULATION OF CARDIAC CALCIUM RELEASE IN HEALTH AND DISEASE. **Megan R. McCarthy**, Robyn T. Rebbeck, Razvan L. Cornea, David D. Thomas

1330-Pos Board B307
CARDIAC RYANODINE RECEPTOR CHANNEL GATING IS MODIFIED DURING BLOCKER-INDUCED CHANGES IN ION PERMEATION. **Saptarshi Mukherjee**, Nia L. Thomas, Alan J. Williams

1331-Pos Board B308
FRET-BASED MAPPING OF CALMODULIN WITHIN THE RYANODINE RECEPTOR. **Robyn T. Rebbeck**, Bengt Svensson, Florentin R. Nitu, Montserrat Samso, Donald M. Bers, David D. Thomas, Razvan L. Cornea

1332-Pos Board B309
CALMODULIN REGULATION OF RYANODINE RECEPTORS (RYR2) DIFFERS IN FAILING AND NON-FALING HUMAN HEARTS DUE TO DIFFERENCES IN RYR2 PHOSPHORYLATION. **Derek R. Laver**, Kafa Walweel, Ye Win Oo, Dirk van Helden, Cris dos Remedios, Peter Molenaar

1333-Pos Board B310
PROTEIN PHOSPHATASE-1 INCREASES CALCIUM SPARK FREQUENCY IN MURINE CARDIOMYOCYTES VIA MODULATION OF RYR2 PHOSPHORYLATION. **Duilio Michele Potenza**, Miguel Fernandez-Tenorio, Ernst Niggli

1334-Pos Board B311
ABLATION OF TWO MAJOR PHOSPHORYLATION SITES IN RYR2 ALTER SARCOPLAMIC RETICULUM CALCIUM HANDLING AND INCREASES THE PROPENSITY TO ATRIAL FIBRILLATION. **Roberto Ramos Mondragon**, Emmanuel M. Camors, Yangyang Bao, Cicero B. Willis, Carmen Valdivia, Lori Isom, Jose Jalife, Hector H. Valdivia

1335-Pos Board B312
NITROSYLATION OF RYR2 PREVENTS ACTIVATION OF CA WAVES INDUCED BY REDOX-MEDIATED INTERSUBUNIT CROSS-LINKING. Elisa Bovo, Stefan R. Mazurek, Jody L. Martin, Pieter P. de Tombe, **Aleksey V. Zima**

1336-Pos Board B313
ZINC MODULATES SKELETAL RYANODINE RECEPTOR FUNCTION RESULTING IN ALTERED SARCOPLASMIC RETICULUM CALCIUM RELEASE. **Gavin B. Robertson**, Benedict Reilly-O'Donnell, Craig Balmforth, Samantha J. Pitt

Cardiac Smooth and Skeletal Muscle Electrophysiology I (Boards B314 - B335)

1337-Pos Board B314
ELECTROPHYSIOLOGICAL PROPERTIES OF HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES CULTURED ON A FLEXIBLE MATRIGEL SUBSTRATE. **Lili Wang**, Tromondae K. Feaster, Dmytro O. Kryshtal, Charles C. Hong, Bjorn C. Knollmann

1338-Pos Board B315
VARIABILITY OF THE FIELD POTENTIAL DURATION OF STEM CELL-DERIVED CARDIOMYOCYTES IS A PROARRHYTHMIC INDICATOR. **Andrew Bruening-Wright**, Carlos A. Obejero-Paz, James Kramer, Arthur M. Brown

1339-Pos Board B316
IMPEDANCE AND COMBINED EXTRACELLULAR FIELD POTENTIAL RECORDINGS OF CIPA REFERENCE COMPOUNDS ON IPS CARDIOMYOCYTES. **Corina Bot**, Sonja Stoelzle-Feix, Nadine Becker, Krisztina Juhasz, Ulrich Thomas, Leo Doerr, Rodolfo Haedo, Matthias Beckler, Joerg Oestreich, Michael George, Andrea Brüggemann, Niels Fertig

1340-Pos Board B317 **EDUCATION TRAVEL AWARDEE**
MODELING ELECTROPHYSIOLOGICAL INTERACTIONS BETWEEN MESENCHYMAL STEM CELLS AND CARDIOMYOCYTES FOR IMPROVED CELL DELIVERY CARDIOTHERAPEUTICS. **Joshua Mayourian**, Ruben M. Savizky, Eric A. Sobie, Kevin D. Costa

1341-Pos Board B318
L-TYPE CALCIUM AND NCX CURRENTS DURING ISCHEMIA AND REPERFUSION IN INTACT MOUSE HEARTS. Yuriana Aguilar-Sanchez, Myrian Zavalza, Victoria To, Alicia R. Mattiazzi, **Josefina Ramos-Franco**, Ariel L. Escobar

1342-Pos Board B319
DOWN REGULATION OF L-TYPE CALCIUM CURRENT IN RAT ATRIAL MYOCYTES DURING HEART FAILURE. **Andrew F. James**, Richard C. Bond, Simon M. Bryant, Judy J. Watson, Jules C. Hancox, Clive H. Orchard

1343-Pos Board B320
ROSCOVITINE AS THE ARCHETYPAL MEMBER OF A NOVEL CLASS OF ANTIARRHYTHMICS TARGETING LATE $I_{CA,L}$. **Marina Angelini**, Arash Pezhouman, Nicoletta Savalli, Antonios Pantazis, Araz Melkonian, James N. Weiss, Hrayr S. Karagueuzian, Riccardo Olcese

1344-Pos Board B321
TRANSIENT OUTWARD POTASSIUM CURRENT AND ITS ARRHYTHMOGENIC DYNAMICS IN CARDIAC MYOCYTES. **Julian W. Landaw**, Alan Garfinkel, James N. Weiss, Zhilin Qu

1345-Pos Board B322
AN INVESTIGATION ON ELECTRICAL ACTIVITY AND SARCOLEMMAL K^+ CHANNELS IN CARDIOMYOCYTES FROM INSULIN-RESISTANT RAT HEART. **Aysegul Toy**, YUSUF OLGAR, Sinan Degirmenci, Erkan Tuncay, BELMA TURAN

1346-Pos Board B323
BOTH HYPERGLYCEMIA AND HYPERINSULINEMIA INDUCE CHANGES IN VOLTAGE-DEPENDENT K^+ CHANNEL CURRENTS IN H9C2 VENTRICULAR CELLS. **Sinan Degirmenci**, Yusuf Olgar, Ayesgul Toy, Belman Turan

1347-Pos Board B324 Education Travel Awardee
CAMKII INHIBITOR KN-93 DIRECTLY BLOCKS IKR IN CARDIAC MYOCYTES. **Bence Hegyi**, Ye Chen-Izu, Zhong Jian, Rafael Shimkunas, Leighton T. Izu, Tamas Banyasz

1348-Pos Board B325
MODULATION OF HERG 1A TRAFFICKING BY HERG 1B SUBUNITS IN HEART. Kelly A. Aromolaran, Donald D. Chang, R. Suzanne Zukin, Henry M. Colecraft, Mohamed Chahine, Mohamed Boutjdir, **Ademuyiwa Aromolaran**

1349-Pos Board B326
BLOCKADE OF CALCIUM/CALMODULIN-DEPENDENT KINASE II (CAMKII) INDUCES HETEROGENEOUS DEPRESSION OF CONDUCTION AND PROMOTES ISCHEMIC VENTRICULAR FIBRILLATION (VF). **Mark Warren**, Katie J. Sciuto, Junko Shibayama, Alexey V. Zaitsev

1350-Pos Board B327
CONCURRENT PDE3 AND PDE4 ACTIVATION SUPPRESSES LOCAL CA^{2+} RELEASES (LCR) TO REGULATE NORMAL SPONTANEOUS FIRING OF SINOATRIAL NODE CELLS (SANC). **Tatiana M. Vinogradova**, Yevgeniya Lukyanenko, Kirill V. Tarasov, Syevda Sirenko, Alexey E. Lyashkov, Yue Li, Edward G. Lakatta

1351-Pos Board B328
HETEROGENEITY IN BEATING AND RESPONSE TO BETA ADRENERGIC RECEPTOR STIMULATION IN ISOLATED SINGLE SINOATRIAL NODAL CELLS (SANC). **Kenta Tsutsui**, Oliver J. Monfredi, Ashley N. Wirth, Mary S. Kim, Rostislav Bychkov, Victor A. Maltsev, Edward G. Lakatta

1352-Pos Board B329
SMALL-CONDUCTANCE CA^{2+}-ACTIVATED K^+ CURRENT IN ATRIAL FIBRILLATION: BOTH FRIEND AND FOE. **Stefano Morotti**, Jussi T. Koivumäki, Mary M. Maleckar, Nipavan Chiamvimonvat, Eleonora Grandi

1353-Pos Board B330
ARRHYTHMIA TRIGGERS IN 1D STRANDS OF VENTRICULAR MYOCYTES. **Shankar Iyer**, Minu Madhvani, Brian Nguyen, Nicole Nguyen, Beshoy Iskander, Jie Li, Thao P. Nguyen

1354-Pos Board B331
ATRIAL EARLY AFTERDEPOLARIZATION: AN EMERGING PROPERTY OF THE FIBROTIC ATRIA? **Neha Singh**, Binh Nguyen, Himani Madnawat, Mojdeh Dooraghi, Shankar Iyer, Thao P. Nguyen

1355-Pos Board B332
DOWN REGULATION OF ATRIAL GAP JUNCTION IN METABOLIC SYNDROME IS ASSOCIATED WITH VLDL-INDUCED O-LINKED GLYCOSYLATION. **Hsiang-Chun Lee**, Hsin-Ting Lin, Yi-Lin Hsiao, Sheng-Hsiung Sheu, Chu-Huang Chen, Wen-Ter Lai, Bin-Nan Wu

1356-Pos Board B333
VENTRICULAR MYOCYTES ELECTRICALLY COUPLE WITH NONMYOCYTES IN THE INFARCTED MOUSE HEART. **Michael Rubart**, Wen Tao, Xiao-long Lu, Shien-Fong Lin, Mark Soonpaa

1357-Pos Board B334
EPHAPTIC SELF-ATTENUATION CONCEALS EARLY AFTERDEPOLARIZATIONS ASSOCIATED WITH LONG QT-3 SYNDROME. Steven Poelzing, Amara Greer-Short, Donald K. Jessup, **Seth H. Weinberg**

1358-Pos Board B335
A NOVEL TARGET FOR ANTIARRHYTHMIC THERAPY: ENHANCEMENT OF CARDIAC CONDUCTION BY IONIC MODULATION OF EPHAPTIC COUPLING. **Sharon George**, Morten Nielsen, Steven Poelzing

Muscle Regulation (Boards B336 - B339)

1359-Pos Board B336
MAGNESIUM INFLUX IN PRIMARY CULTURED VENTRICULAR MYOCYTES OF ADULT RATS. **Michiko Tashiro**, Hana Inoue, Shinobu Tai, Masato Konishi

1360-Pos Board B337
MICE WITH DOUBLE KNOCKOUT OF CALPONIN 1 AND CALPONIN 2 GENES DEMONSTRATE CONTRACTILITY MODIFICATIONS IN VASCULAR SMOOTH MUSCLE. **Han-Zhong Feng**, Katsuhito Takahashi, Jian-Ping Jing

1361-Pos Board B338
BIOCHEMICAL COMPARISON OF RABBIT SKELETAL MUSCLE ALPHA AND BETA TROPOMYOSIN ISOFORMS. **David H. Heeley**, Elke M. Lohmeier-Vogel

1362-Pos Board B339
CONSEQUENCES OF REDUCED TROPONIN-C CALCIUM BINDING AFFINITY ON SLOW SKELETAL MUSCLE. **Peter J. Reiser**, Natalya Belevych, Svetlana Tikunova

Voltage-gated K Channels, Mechanisms of Voltage Sensing and Gating II (Boards B340 - B369)

1363-Pos Board B340
CHARACTERIZATION OF THE σ-PORE IN MUTANT HKV1.3 POTASSIUM CHANNELS. **Pavel Yurievitch Tyutyaev**, Stephan Grissmer

1364-Pos Board B341
A NEAR-IR FLUORESCENT SENSOR FOR DETECTING CELLULAR POTASSIUM EFFLUX. **Dhammika Bandara**, Zhengmao Hua, Steven Pauff, Stephen Miller, Elizabeth Colby Davie, William Kobertz

1365-Pos Board B342
A NON-CANONICAL VOLTAGE SENSOR CONTROLS GATING IN K2P K^+ CHANNELS. **Marcus Schewe**, Ehsan Nematian-Ardestani, Han Sun, Marianne Musinszki, Sönke Cordeiro, Giovanna Bucci, Bert L. de Groot, Stephen J. Tucker, Markus Rapedius, Thomas Baukrowitz

1366-Pos Board B343
VARIABLE ELECTROSTATIC REPULSION MODEL OF ION-CHANNEL ACTIVATION VS. GATED PORE WITH "NEUTRALIZED" S4 SEGMENTS. **H. Richard Leuchtag**

1367-Pos Board B344
IDENTIFICATION OF RESIDUES IMPORTANT FOR THE PUFA SENSITIVITY OF IKS. **Johan E. Larsson**, H Peter Larsson, Sara I. Liin

1368-Pos Board B345
RELAXATION OF THE VOLTAGE SENSING MODULES OF EXCITATION-CONTRACTION (EC) COUPLING IN MAMMALIAN SKELETAL MUSCLE. **Juan Ferreira**, German Pequera, Carlo Manno, Eduardo Rios, Gustavo Brum

1369-Pos Board B346
EFFECT OF 2-AMINOETHYLMETHANETHIOSULPHONATE (MTSEA) ON THE HKV1.3_L346C AND THE HKV1.3_L346C_L418C MUTANT CHANNELS. **Ann-Kathrin Diesch**, Stephan Grissmer

1370-Pos Board B347 Education Travel Awardee
ELUCIDATION OF MOLECULAR MECHANISM UNDERLYING KCSA'S HYSTERETIC GATING BEHAVIOR. **Cholpon Tilegenova**, D. Marien Cortes, Luis G. Cuello

1371-Pos Board B348
GINSENOSIDE RG3 ACTIVATES HUMAN EAG FAMILY OF K^+ CHANNELS VIA ALLOSTERIC MODIFICATION OF GATING. **Wei Wu**, Alison Gardner, Michael Sanguinetti

1372-Pos Board B349
HERG S4-S5 ACTS AS A VOLTAGE-DEPENDENT LIGAND BINDING THE ACTIVATION GATE AND LOCKING IT IN A CLOSED STATE. **Olfat Malak**, Gildas Loussouarn, Zeineb Es-Salah-Lamoureux

1373-Pos Board B350
7-DEHYDROCHOLESTEROL MODIFIES THE OPERATION OF KV1.3 CHANNELS IN T CELLS ISOLATED FROM SMITH-LEMLI-OPITZ SYNDROME PATIENTS. **Andras Balajthy**, Zoltan Petho, Sandor Somodi, Zoltan Varga, Maria Peter, Laszlo Vígh, Gabriella P. Szabó, Gyorgy Paragh, Gyorgy Panyi, Peter Hajdu

1374-Pos Board B351
KV 7.4 CHANNEL ACTIVITY IS DEPENDENT UPON PIP2 AND Gβγ SUBUNITS. **Oleksandr Povstyan**, Jennifer Stott, Vincenzo Barrese, Iain Greenwood

1375-Pos Board B352
MOUSE CARDIAC MITOBK_{CA} ASSOCIATES WITH β1 SUBUNIT FAVORING CHANNEL EXPRESSION AND ACTIVITY. **Enrique Balderas Angeles**, Riccardo Olcese, Ligia Toro, Enrico Stefani

1376-Pos Board B353
BK CHANNEL SUBPROTEOME INCLUDES NOVEL MITOCHONDRIAL PARTNERS: ADP/ATP CARRIER AND TOM 22 IMPORT RECEPTOR. **Jin Zhang**, Zhu Zhang, Ronghui Zhu, Min Li, Rong Lu, Yong Wu, Riccardo Olcese, Enrico Stefani, Ligia Toro

1377-Pos Board B354
DIFFERENTIAL EXPRESSION OF BK CHANNEL ALPHA AND BETA1 SUBUNITS IN RAT CEREBRAL ARTERIES. **Guruprasad Kuntamallappanavar**, Shivantika Bisen, Anna N. Bukiya, Alex M. Dopico

1378-Pos Board B355
BK AND CAV1.3 CHANNELS ORGANIZE IN CLUSTERS THAT CONTROL EXCITABILITY IN NEURONS. **Oscar Vivas**, Claudia M. Moreno, Luis F. Santana, Bertil Hille

1379-Pos Board B356
FUNCTIONAL IMPACT OF P320 IN HSLO1 BK CHANNEL GATING. **Guido Gessner**, Toshinori Hoshi, Stefan H. Heinemann

1380-Pos Board B357
BK CHANNEL C-LINKER AND AC REGION ARE CRUCIAL FOR AUXILIARY β2 SUBUNIT REGULATIONS. Zhenzhen Yan, Bin Hu, Xiying Guo, Anxi Weng, Ling Zhong, Feng Xiao, Jiuping Ding, **Panpan Hou**

1381-Pos Board B358
EFFECTS OF SINGLE NUCLEOTIDE POLYMORPHISMS (SNPS) ON BK K^+ CHANNEL PROPERTIES. **Amber E. Plante**, Michael H. Lai, Andrea L. Meredith

1382-Pos Board B359
17B-ESTRADIOL BINDS AND MODULATES BK CHANNEL THROUGH ITS B1 AUXILIARY SUBUNIT. **Sara T. Granados**, Felipe Bravo, Romina Sepúlveda, Danilo González-Nilo, Janneth Gonzalez, Ramón Latorre, Yolima Torres

1383-Pos Board B360
REGULATION OF KV11.1 C-TERMINAL ISOFORM EXPRESSION BY HU PROTEINS. Qiuming Gong, Matthew R. Stump, **Zhengfeng Zhou**

1384-Pos Board B361
CALCIUM MODULATES HERG FUNCTION BY ACTING AT TWO DISTINCT BINDING SITES. Davindeep Brar, Seth Ching, Kristoffer Chin, Andrew Nguyen, **Alan Miller**

1385-Pos Board B362
ENERGETIC CONTRIBUTIONS OF AROMATIC RESIDUES IN HV1 BLOCK BY 2-GUANIDINOIMIDAZOLES AND IN HV1 VOLTAGE-DEPENDENT ACTIVATION. **Liang Hong**, Jason D. Galpin, Christopher A. Ahern, Francesco Tombola

1386-Pos Board B363
EXPLORATION OF THE LAST, CHANNEL OPENING TRANSITION OF THE VOLTAGE SENSOR S4 IN A POTASSIUM CHANNEL. **Jakob Renhorn**, Luca Conti, Fredrik Elinder

1387-Pos Board B364
LIPOSOME-BASED IN VITRO BIOSYNTHESIS OF TWO-PORE DOMAIN POTASSIUM CHANNELS FOR FUNCTIONAL STUDIES. **Marianne A. Musinszki**, Thomas Baukrowitz

1388-Pos Board B365
A CHARGED RESIDUE IN THE HCN CHANNEL C-LINKER STABILIZES THE OPEN STATE. **Dana A. Page**, Edgar C. Young

1389-Pos Board B366
CRYSTAL STRUCTURE OF THE UNLIGANDED FORM OF CYCLIC NUCLEOTIDE BINDING DOMAIN (CNBD) FROM HCN2 CHANNEL. **Vadim A. Klenchin**, Claudia P. Alvarez-Baron, John Cowgill, Qiang Cui, Baron Chanda

1390-Pos Board B367
HYDRATION OF CRITICAL RESIDUES IN THE SHAKER KV CHANNEL GOVERNS THE ENERGY LANDSCAPE AND TEMPERATURE DEPENDENCE OF CHANNEL GATING. **Sandipan Chowdhury**, Brian W. Jarecki, Baron Chanda

1391-Pos Board B368
THE ROLE OF ION BINDING SITES IN C-TYPE INACTIVATION OF A K CHANNEL. Kim Matulef, **Francis Valiyaveetil**

1392-Pos Board B369
MULTI-MICROSECOND MOLECULAR DYNAMICS SIMULATIONS OF THE HV1 PROTON CHANNEL. **Andrew Geragotelis**, Mona L. Wood, Hendrik Goeddeke, Saleh Riahi, Scott A. Hollingsworth, J. Alfredo Freites, Francesco Tombola, Douglas J. Tobias

TRP Channels I (Boards B370 - B392)

1393-Pos Board B370
INFLUX-OPERATED CA^{2+} ENTRY VIA PKD2-L1/PKD1-L3 CHANNELS FACILITATES SENSORY RESPONSES TO POLYMODAL TRANSIENT STIMULI. Yuxia Liu, **Xiaodong Liu**

1394-Pos Board B371
TEMPERATURE SENSITIVITY OF FRUIT FLY GUSTATORY RECEPTORS. **Kayla Miguel**, Autoosa Salari, Benjamin Zars, Troy Zars, Lorin S. Milescu, Mirela Milescu

1395-Pos Board B372
ROLES OF THE N- AND C-TERMINI IN THE FUNCTION OF THE YVC1P SACCHAROMYCES CEREVISIAE TRP CHANNEL. Samantha Ho, **Lise Thomas**

1396-Pos Board B373
MODULATION OF THERMO-TRP CHANNELS BY TEMPERATURE IN PLANAR LIPID BILAYERS. **Mohamed Kreir**, Matthias Beckler, Alison Obergrussberger, Ilka Rinke, Sonja Stoelze-Feix, Michael George, Andrea Brüggemann, Niels Fertig

1397-Pos Board B374
BROAD SENSITIVITY OF DROSOPHILA MELANOGASTER TRPA1 TO NOXIOUS CHEMICALS. **Brett Boonen**, Yeranddy Alpizar, Alessia Soldano, Alejandro Lopez Requena, Bassem Hassan, Thomas Voets, Karel Talavera

1398-Pos Board B375
PUNGENT AND NON-PUNGENT GENERAL ANESTHETICS INTERACT WITH TRPA1 VIA DISTINCT BINDING POCKET IN THE PORE DOMAIN REGION. **Hoai T. Ton**, Jacqueline Smith, Thieu X. Phan, Milton Brown, Gerard P. Ahern

1399-Pos Board B376
STRUCTURAL CHARACTERIZATION OF LIGAND-SPECIFIC INTERACTIONS IN TRPV1 CHANNEL: GATING MECHANISM BY CAPSAICIN AND CAPSAZEPINE. **Fernando D. Gonzalez-Nilo**, Javier Caceres-Molina, Felipe Bravo-Moraga, Romina Sepulveda, Ignacio Diaz-Franulic

1400-Pos Board B377
EXTRACELLULAR SODIUM IS REQUIRED FOR TEMPERATURE-DEPENDENT GATING IN TRPV1 CHANNELS. **Andres Jara-Oseguera**, Chanhyung Bae, Kenton J. Swartz

1401-Pos Board B378
A PAIN-INDUCING CENTIPEDE TOXIN TARGETS THE HEAT ACTIVATION MACHINERY OF NOCICEPTOR TRPV1. Shilong Yang, **Fan Yang**, Ningning Wei, Jing Hong, Bowen Li, Lei Luo, Mingqiang Rong, Vladimir Yarov-Yarovoy, Jie Zheng, KeWei Wang, Ren Lai

1402-Pos Board B379
CYSTEINE-FREE MINITRPV1 IS A PLATFORM FOR STRUCTURE-FUNCTION ANALYSIS OF TRPV1. **Mario G. Rosasco**, Gilbert Q. Martinez, Erin M. Williams, Luke D. Cody, Sharona E. Gordon

1403-Pos Board B380
INHIBITION OF TRPV1 BY AN UNSATURATED FATTY ACID. **Sara L. Morales-Lázaro**, Itzel Llorente, Félix Sierra, Ana E. López-Romero, León D. Islas, Sidney A. Simon, Tamara Rosenbaum

1404-Pos Board B381
LIGHT-CONTROLLED PI3K ACTIVATION MIMICS TRPV1 POTENTIATION BY NGF. **Anastasiia Stratiievska**, Sharona E. Gordon

1405-Pos Board B382
SELECTIVE ACTIVATION OF NOCICEPTOR TRPV1 CHANNEL AND REVERSAL OF INFLAMMATORY PAIN IN MICE BY A NOVEL COUMARIN DERIVATIVE MURALATIN L FROM MURRAYA ALATA. **Ningning Wei**, Haining Lv, Yang Wu, Shilong Yang

1406-Pos Board B383
STRUCTURE OF A DOUBLE-KNOT TARANTULA TOXIN BOUND TO THE TRPV1 CHANNEL AT THE PROTEIN-LIPID INTERFACE. **Chanhyung Bae**, Claudio Anselmi, Jeet Kalia, Andres Jara-Oseguera, Charles D. Schwieters, Dmitriy Krepkiy, Chul Won Lee, Jae Il Kim, José D. Faraldo-Gómez, Kenton J. Swartz

1407-Pos Board B384
CELL UNROOFING ENHANCES TRPV1 MOBILITY IN THE PLASMA MEMBRANE. **Eric N. Senning**, Sharona E. Gordon

1408-Pos Board B385
TRPV1 EXPRESSED IN HEK293T/17 CELLS IS NOT REGULATED BY PLASMA MEMBRANE CHOLESTEROL CONTENT. **Sharona E. Gordon**, Marcus D. Collins, Moshe T. Gordon

1409-Pos Board B386
SEQUENTIAL EVENTS DURING CAPSAICIN-INDUCED TRPV1 ACTIVATION. **Xian Xiao**, Fan Yang, Jie Zheng

1410-Pos Board B387
TOLL-LIKE RECEPTOR 4 ACTIVATION BY LPS STIMULATES TRPV2 CHANNEL ACTIVITY IN MICROGLIA. **Tuoxin Cao**, Ian S. Ramsey

1411-Pos Board B388
ENGINEERING VANILLOID-SENSITIVITY INTO THE TRPV2 CHANNEL. **Feng Zhang**, Sonya M. Hanson, Larry Pearce, Dmitriy Krepkiy, Andres Jara-Oseguera, Peter M. Blumberg, Simon Newstead, Kenton J Swartz

1412-Pos Board B389
THE ROLE OF INTERACTING PROTEINS IN TRPV4 CHANNELOPATHIES. **Laura Vangeel**, Sam Lievens, Jan Tavernier, Thomas Voets

1413-Pos Board B390 **CPOW TRAVEL AWARDEE**
A LIPID-EXPOSED RESIDUE AT THE START OF S4-S5 LINKER CONTROLS TRPV4 GATING. **Jinfeng Teng**, Stephen H. Loukin, Andriy Anishkin, Paul Blount, Ching Kung

1414-Pos Board B391
STUDYING THE EFFECTS OF BIOACTIVE LIPIDS ON TRPV4 ACTIVATION. **Valeria Vasquez**, Phanindra Velisetty, Julio F. Cordero-Morales

1415-Pos Board B392
CONVERSION OF THE PIP2 DEPENDENT TRPV6 CHANNEL FROM LOW TO HIGH PHOSPHOINOSITIDE AFFINITY BY A CHARGE REINTRODUCTION MUTATION. Phanindra Velisetty, Istvan Borbiro, Marina Kasimova, Luyu Liu, Vincenzo Carnevale, **Tibor Rohacs**

Ligand-gated Channels I (Boards B393 - B416)

1416-Pos Board B393
EXPRESSION LEVEL DEPENDENCE OF THE GATING AND PERMEATION PROPERTIES OF P2X RECEPTOR CHANNELS. **Mufeng Li**, Shai D. Silberberg, Kenton J. Swartz

1417-Pos Board B394
MOLECULAR DETERMINANTS FOR LIGAND RECOGNITION IN P2X RECEPTORS. **Federica Gasparri**, Stephan A. Pless

1418-Pos Board B395
ROLE OF G338 OF THE SECOND TRANSMEMBRANE DOMAIN IN GATING OF THE HUMAN P2X7 RECEPTOR. Nancy Zipfel, Achim Kless, Anja Pippel, Michaela Stolz, Guenther Schmalzing, **Fritz Markwardt**

1419-Pos Board B396
PLANT GLUTAMATE RECEPTORS: ELECTROPHYSIOLOGICAL CHARACTERIZATION AND EVOLUTIONARY PERSPECTIVES. **Erwan Michard**, Michael M. Wudick, Michael A. Lizzio, Carlos Ortiz Ramírez, Cláudia Campos, José A. Feijó

1420-Pos Board B397
FUNCTIONAL ROLES OF A CONSERVED TRYPTOPHAN AT SUBUNIT-SUBUNIT INTERFACES IN NMDA RECEPTOR MEMBRANE REGIONS. **Madeleine R. Wilcox**, Nathan G. Glasgow, Jon W. Johnson

1421-Pos Board B398
INTRA AND INTERDOMAIN MOTIONS OF THE NMDA RECEPTOR USING SINGLE MOLECULE FRET. **Drew Dolino**, Sudeshna Chatterjee, David Cooper, Henriette Jaurich, Swarna Ramaswamy, Soheila Rezaei Adariani, Hugo Sanabria, Christy Landes, Vasanthi Jayaraman

1422-Pos Board B399
MPX-004: A NEW PHARMACOLOGICAL TOOL TO STUDY THE PHYSIOLOGY OF NMDA RECEPTORS CONTAINING THE GLUN2A SUBUNIT. Robert A. Volkmann, **Christopher Fanger**, David R. Anderson, Frank S. Menniti

1423-Pos Board B400
STRUCTURAL AND FUNCTIONAL COUPLING BETWEEN BK CHANNELS AND NMDA RECEPTORS. **Jiyuan Zhang**, Qin Li, Xin Guan, Hui-Lin Pan, Jiusheng Yan

1424-Pos Board B401
LOCAL CA^{2+} NANODOMAINS INITIATE CA^{2+}/CALMODULIN-DEPENDENT INACTIVATION OF NMDA RECEPTORS. **Gary Iacobucci**

1425-Pos Board B402
MODULATION OF GLUTAMATE RECEPTORS BY AUXILIARY PROTEINS A STRUCTURAL INVESTIGATION. **Douglas B. Litwin**, Garam Lee, David Maclean, Vasanthi Jayaraman

1426-Pos Board B403
FUNCTIONAL AND STRUCTURAL CHARACTERIZATION OF THE GLUK2/GLUK5 HETEROTETRAMER GATING MECHANISM. **Teresa Paramo**, Patricia M.G.E. Brown, Mark R. P. Aurousseau, Maria Musgaard, Derek Bowie, Philip C. Biggin

1427-Pos Board B404
CONFORMATIONAL DYNAMICS OF THE GLUK2 LIGAND-BINDING DOMAIN. **Tyler J. Wied**, Albert Y. Lau

1428-Pos Board B405 **CID TRAVEL AWARDEE**
IDENTIFICATION OF FUNCTIONAL DETERMINANTS OF KAINATE RECEPTOR MODULATION BY AUXILIARY PROTEIN NETO2. **Theanne N. Griffith**, Geoffrey T. Swanson

1429-Pos Board B406
MECHANISMS OF GLUTAMATE CAPTURE BY A CLAMSHELL BINDING DOMAIN. **Alvin Yu**, Héctor Salazar, Andrew J. R. Plested, Albert Y. Lau

1430-Pos Board B407
COMPUTATIONAL STUDY OF THE IMPACT OF THE L483Y MUTATION ON THE DESENSITIZATION OF THE AMPA RECEPTOR. **Rémi Cuchillo**, Philip C. Biggin

1431-Pos Board B408
STRUCTURAL EFFECTS OF PHOSPHORYLATION ON C-TERMINAL SEGMENT OF AMPA RECEPTOR. **Caitlin E. Nurik**, Sudeshna Chattergee, Suma Devi, David R. Cooper, Swarna S. Ramaswamy, Christy Landes, James Howe, Vasanthi Jayaraman

1432-Pos Board B409
ACTIVATING INDIVIDUAL SUBUNITS OF TMEM16A CALCIUM-ACTIVATED CHLORIDE CHANNELS. Grace Jeng, Muskaan Aggarwal, Wei-Ping Yu, **Tsung-Yu Chen**

1433-Pos Board B410
MOLECULAR MECHANISMS OF PERMEATION IN TMEM16B CA^{2+}-ACTIVATED CL^- CHANNEL. **Simone Pifferi**

1434-Pos Board B411
SIZING UP THE LIPID PATHWAY IN A TMEM16 PHOSPHOLIPID SCRAMBLASE. **Mattia Malvezzi**, Rabia Iqbal, Ashley Brown, Anant Menon, Alessio Accardi

1435-Pos Board B412
STRUCTURES OF THE MG^{2+} CHANNEL CORA IN THE OPEN STATE BY CRYO ELECTRON MICROSCOPY. Doreen Matthies, Olivier Dalmas, Mario Borgnia, Pawel Dominik, Alan Merk, Prashant Rao, Bharat Reddy, Shahidul Islam, Alberto Bartesaghi, **Eduardo Perozo**, Sriram Subramaniam

1436-Pos Board B413
CRYSTAL STRUCTURE AND ASYMMETRIC CONFORMATION OF A K^+ CHANNEL RCK DOMAIN. Victor P. Pau, Karin Abarca-Heidemann, Eunan Hendron, Marc Stezzi, Gino Cingolani, **Brad S. Rothberg**

1437-Pos Board B414
CONFORMATIONAL DYNAMICS OF THE CLOSED STATE OF KCSA IN LIPID BICELLES. **Dorothy M. Kim**, Igor Dikiy, Vikrant Upadhyay, David Posson, David Eliezer, Crina Nimigean

1438-Pos Board B415
REGULATION OF CNGA1 CHANNEL GATING BY INTERACTIONS WITH THE MEMBRANE. **Teresa K. Aman**, Sharona E. Gordon, William N. Zagotta

1439-Pos Board B416
DOES BIMODAL AGONISM IN CYCLIC NUCLEOTIDE-GATED (CNG) CHANNELS PRESERVE THE CLASSICAL BINDING SITE AND PORE STRUCTURE? Robynn Lester, **Edgar C. Young**

Cardiac Muscle Mechanics and Structure I (Boards B417 - B444)

1440-Pos Board B417
DEVELOPMENT OF HIGH AFFINITY ANTI-S2 PEPTIDES FOR STABILIZING THE MYOSIN COILED COIL. Negar Aboonasrshiraz, Ashley Huang, Cynthia Y. Ma, **Douglas D. Root**

1441-Pos Board B418
COMPETITIVE BINDING TO MYOSIN S2 BY C-PROTEIN, ANTI-S2 PEPTIDES, AND ANTIBODIES MODULATE MYOSIN COILED COIL STABILITY AND MYOFIBRIL CONTRACTILITY. **Rohit Singh**, Veronica J. Zheng, Cynthia Y. Ma, Douglas D. Root

1442-Pos Board B419
THE N-TERMINAL DOMAINS OF MYBPC3 RESTRICT ACTIN DYNAMICS AND INCREASE RESILIENCE IN A PHOSPHORYLATION-DEPENDENT MANNER. Brett A. Colson, **Alfred Gallegos**, Brian Lin, Sakthivel Sadayappan, David D. Thomas

1443-Pos Board B420
PHOSPHORYLATION AND CALCIUM ANTAGONISTICALLY TUNE MYOSIN-BINDING PROTEIN C'S MOLECULAR STRUCTURE AND FUNCTION. **Michael J. Previs**, Ji Young Mun, Arthur J. Michalek, Samantha Beck Previs, James Gulick, Jeffrey Robbins, David M. Warshaw, Roger Craig

1444-Pos Board B421
STRUCTURAL MEASUREMENTS WITHIN THE M-DOMAIN REVEAL UNIQUE DETAILS OF CARDIAC MYOSIN BINDING PROTEIN-C PHOSPHORYLATION. **Brett A. Colson**, L. Michel Espinoza-Fonseca, David D. Thomas

1445-Pos Board B422
REGULATION OF THE SUPER-RELAXED STATE OF MYOSIN BY CARDIAC MYOSIN BINDING PROTEIN-C. **James W. McNamara**, Amy Li, Sean Lal, Johan M. Bos, Michael J. Ackerman, Cristobal G. dos Remedios, Samantha P. Harris, Roger Cooke

1446-Pos Board B423
MATURATION TOWARDS PURE β-MYOSIN PROTEIN EXPRESSION AND CORRESPONDING FUNCTIONAL PROPERTIES OF INDIVIDUAL HESC-CARDIOMYOCYTES. **Natalie Weber**, Meike Wendland, Stephan Greten, Kristin Schwanke, Bogdan Iorga, Martin Fischer, Cornelia Geers-Knörr, Jan Hegermann, Christoph Wrede, Ulrich Martin, Bernhard Brenner, Robert Zweigerdt, Theresia Kraft

1447-Pos Board B424
A TUNED TENSION REGULATES THE CONTRACTILITY OF CARDIOMYOCYTES DIFFERENTIATED FROM INDUCED PLURIPOTENT STEM CELLS. **Alexandre J. Ribeiro**, Yen-Sin Ang, Robin E. Wilson, Renee N. Rivas, Deepak Srivastava, Beth L. Pruitt

1448-Pos Board B425
CONTRACTILE FUNCTION OF PERMEABILIZED HUMAN EMBRYONIC STEM CELL-DERIVED CARDIOMYOCYTES WITH DEFINED MYOSIN PROTEIN ISOFORM EXPRESSION. Bogdan Iorga, Meike Wendland, Natalie Weber, Stephan Greten, Kristin Schwanke, Ulrich Martin, Robert Zweigerdt, Theresia Kraft, **Bernhard Brenner**

1449-Pos Board B426
CROSS-BRIDGE KINETICS IN RAT PAPILLARY MUSCLE FIBERS THAT CARRY α-MHC AND β-MHC BY SINUSOIDAL ANALYSIS. Tarek S. Karam, John J. Michael, Chandra Murali, **Masataka Kawai**

1450-Pos Board B427
CROSSBRIDGE RECRUITMENT DYNAMICS ARE DIVERGENTLY AFFECTED BY α/β-MYOSIN HEAVY CHAIN ISOFORMS IN CARDIAC MUSCLE FIBERS CONTAINING THE HYPERTROPHIC CARDIOMYOPATHY MUTATION (A30V) AND PROTEIN KINASE C PHOSPHOMIMETIC (T203E) IN MOUSE CARDIAC TROPONIN T. **Alexis Mickelson**, Sampath Gollapudi, Murali Chandra

1451-Pos Board B428
INTERPLAY BETWEEN THE EFFECTS OF DILATED CARDIOMYOPATHY MUTATION (R206L) AND THE PROTEIN KINASE C PHOSPHOMIMIC (T204E) OF RAT CARDIAC TROPONIN T ARE DIFFERENTLY MODULATED BY α- AND β-MYOSIN HEAVY CHAIN ISOFORMS. **John J. Michael**, Murali Chandra

1452-Pos Board B429
THE EFFECT OF PEDIATRIC SPECIFIC HYPERTROPHIC CARDIOMYOPATHY MUTATIONS ON THE BIOMECHANICS OF BETA CARDIAC MYOSIN. **Arjun S. Adhikari**, Kristina Bezold Kooiker, Shirley Sutton, Daniel Bernstein, Leslie A. Leinwand, Kathleen M. Ruppel, James A. Spudich

1453-Pos Board B430
ADP-STIMULATED CONTRACTION: A PREDICTOR OF THIN-FILAMENT ACTIVATION IN CARDIAC DISEASE. **Vasco Sequeira**, Aref Najafi, Paul J. M. Wijnker, Cris dos Remedios, Michelle Michels, Diederik W.D. Kuster, Jolanda van der Velden

1454-Pos Board B431
CARDIAC FIBROSIS ALTERS CALCIUM SENSITIVITY AND MYOFILAMENT RELAXATION. **Farid Moussavi-Harami**, Maria V. Razumova, Stephen Farris, Galina V. Flint, Soley Olafsson, Sonette Steczina, Yuanhua Cheng Cheng, Alice W. Racca, April Stempien-Otero, Michael Regnier

1455-Pos Board B432
PRELOAD-INDUCED CHANGES IN SYSTOLIC AND DIASTOLIC PERFORMANCE IN THE YOUNG AND AGED MURINE HEART. **Adam B. Veteto**, Kerry S. McDonald, Timothy L. Domeier

1456-Pos Board B433 **CID TRAVEL AWARDEE**
MYOCARDIUM FROM THE LEFT AND RIGHT VENTRICLES OF HUMAN HEARTS HAVE SIMILAR MECHANICAL PROPERTIES. **Cheavar A. Blair**, Maya E. Guglin, Arnold Stromberg, Kenneth S. Campbell

1457-Pos Board B434 **EDUCATION TRAVEL AWARDEE**
CONTRACTILE DIFFERENCES IN LEFT AND RIGHT VENTRICLES OF HEALTHY HUMAN HEARTS. **Divya Duggal**, Janhavi Nagwekar, Sangram Raut, Ryan Rich, Hriday Das, Zygmunt Gryczynski, Ignacy Gryczynski, Julian Borejdo

1458-Pos Board B435
STRUCTURAL AND BIOCHEMICAL KINETICS OF CARDIAC MYOSIN AND ITS PERTURBATION BY A KNOWN HEART FAILURE DRUG INVESTIGATED WITH TRANSIENT TIME-RESOLVED FRET. **John A. Rohde**, David D. Thomas, Joseph M. Muretta

1459-Pos Board B436
OMECAMTIV MECARBIL ENHANCES ACTIN AFFINITY AND SLOWS FORCE PRODUCTION IN HUMAN β-CARDIAC MYOSIN. Anja M. Swenson, Cheavar Blair, Christopher Fetrow, William C. Unrath, Wanjian Tian, Maya Guglin Guglin, Kenneth S. Campbell, **Christopher M. Yengo**

1460-Pos Board B437
EFFECT OF RLC N-TERMINAL TAILS ON THE STRUCTURE AND DYNAMICS OF CARDIAC MYOSIN. **Arianna Fornili**, Elena Rostkova, Franca Fraternali, Mark Pfuhl

1461-Pos Board B438
CARDIOMYOPATHY MUTATION IN VENTRICULAR ESSENTIAL LIGHT CHAIN OF CARDIAC MYOSIN ALTERS STRUCTURAL AND FUNCTIONAL INTERACTION WITH ACTIN. **Piyali Guhathakurta**, Ewa Prochniewicz, David D. Thomas

1462-Pos Board B439
EFFECTS OF MYOSIN LIGHT CHAIN PHOSPHORYLATION ON LENGTH-DEPENDENT MYOSIN KINETICS IN RAT CARDIAC VENTRICLES. **Bertrand CW Tanner**, Hannah C. Pulcastro, Peter O. Awinda, Jason J. Breithaupt

1463-Pos Board B440
EFFECTS OF IVS6-1 MUTATION IN MYL2 ASSOCIATED WITH CARDIOSKELETAL MYOPATHY AND EARLY CARDIAC DEATH OF INFANTS. **Zhiqun Zhou**, Wenrui Huang, Jingsheng liang, Danuta Szczesna-Cordary

1464-Pos Board B441
RARE CARDIOMYOPATHY PHENOTYPES ASSOCIATED WITH MUTATIONS IN MYOSIN LIGHT CHAINS. **Chen-Ching Yuan**, Jingsheng Liang, Katarzyna Kazmierczak, Zhiqun Zhou, Rosemeire Kanashiro-Takeuch, Joshua M. Hare, Thomas C. Irving, Danuta Szczesna-Cordary

1465-Pos Board B442
UPREGULATING COMPLIANT TITIN IN THE HEART ATTENUATES LEFT VENTRICULAR STIFFNESS IN A MOUSE MODEL WITH DIASTOLIC DYSFUNCTION. **Mei Methawasin**, Joshua G. Strom, Vanessa Fernandez, Chandra Saripalli, John E. Smith III, Henk L. Granzier

1466-Pos Board B443
EXERCISE MITIGATES INCREASED DIASTOLIC STIFFNESS IN THE TITIN IA KO MOUSE. **Rebecca E. Slater**, Mei Methawasin, Josh Strom, Chandra Saripalli, Henk L. Granzier

1467-Pos Board B444
A NOVEL ROLE FOR PP5 IN REGULATING TITIN PHOSPHORYLATION AND FUNCTION IN THE HEART. Judith Krysiak, Andreas Unger, Nazha Hamdani, Peter Boknik, **Wolfgang A. Linke**

Skeletal Muscle Mechanics, Structure, and Regulation (Boards B445 - B469)

1468-Pos Board B445
COMPLIANCE ACCELERATES RELAXATION IN STRIATED MUSCLE BY ALLOWING MYOSIN HEADS TO MOVE RELATIVE TO ACTIN. **Kenneth S. Campbell**

1469-Pos Board B446
MYOSIN BINDING TO ACTIN IN THE 3D SARCOMERE LATTICE. **Srboljub M. Mijailovich**, Boban Stojanovic, Djordje Nedic, Michael A. Geeves

1470-Pos Board B447
DYNAMIC TRANSIENT RESPONSES OF MUSCLE FIBERS WITH A HETEROGENEOUS POPULATIONS OF ISOFORMS AND MUTATION. Srboljub M. Mijailovich, Djordje Nedic, Marina Svicevic, Boban Stojanovic, Michael Regnier, **Michael A. Geeves**

1471-Pos Board B448
DIRECT MEASUREMENTS OF LOCAL COUPLING BETWEEN MYOSIN MOLECULES ARE CONSISTENT WITH A MODEL OF MUSCLE ACTIVATION. **Sam Walcott**, Neil M. Kad

1472-Pos Board B449
ASSUMING THAT MYOSIN-BINDING PROTEIN C INTERACTS WITH BOTH MYOSIN AND ACTIN CAN EXPLAIN ITS ROLE IN SKINNED FIBER MECHANICS. **Jonas Schwan**, Clinton Wang, Stuart G. Campbell

1473-Pos Board B450
ESSENTIAL ROLES OF WATER IN ACTIN-MYOSIN BINDING. **Hiraku Oshima**, Tomohiko Hayashi, Masahiro Kinoshita

1474-Pos Board B451
REGENERATION OF ACTIN FILAMENTS IN ACTIN-EXTRACTED BUMBLEBEE FLIGHT MUSCLE FIBERS AS PROBED BY X-RAY DIFFRACTION. **Hiroyuki Iwamoto**

1475-Pos Board B452
THE STRUCTURE OF THE RELAXED THICK FILAMENTS FROM LETHOCERUS ASYNCHRONOUS FLIGHT MUSCLE. **Zhongjun Hu**, Dianne W. Taylor, Michael K. Reedy, Robert J. Perz-Edwards, Kenneth A. Taylor

1476-Pos Board B453
THE STRUCTURE OF THE RELAXED THICK FILAMENTS FROM LETHOCERUS ASYNCHRONOUS FLIGHT MUSCLE - IMPLICATIONS FOR STRETCH ACTIVATION. **Kenneth A. Taylor**, Zhongjun Hu, Dianne W. Taylor, Michael K. Reedy, Robert J. Perz-Edwards

1477-Pos Board B454
THE AGE ASSOCIATED ALTERATION IN ECCENTRIC CONTRACTION PROPERTIES DURING A STRETCH SHORTENING CYCLE IN FAST AND SLOW TWITCH MOUSE MUSCLES. **Anthony L. Hessel**, Kiisa C. Nishikawa

1478-Pos Board B455
EFFECT OF ACTIVE SHORTENING AND STRETCHING ON LATTICE SPACING AND CROSS-BRIDGE BINDING IN SKINNED MUSCLE FIBRES. **Venus Joumaa**, Ian C. Smith, Tim R. Leonard, Olga Antipova, Thomas C. Irving, Walter Herzog

1479-Pos Board B456
MYOSIN MGADP RELEASE RATE DECREASES WITH GREATER SARCOMERE LENGTH AND REDUCED THICK-TO-THIN FILAMENT SPACING IN SKINNED SOLEUS MUSCLE FIBERS FROM RATS. **Axel J. Fenwick**, Shelby R. Leighton, Bertrand C.W. Tanner

1480-Pos Board B457
SARCOMERE LENGTH AND PASSIVE SARCOMERE LENGTHENING ARE LOCATION-DEPENDENT IN LIVE MOUSE TIBIALIS ANTERIOR MUSCLE. **Eng Kuan Moo**, Rafael Fortuna, Ziad Abusara, Walter Herzog

1481-Pos Board B458
DYNAMICS OF TRANSITIONS THROUGH THE MOLTEN-GLOBULE STATE ENHANCE CONTRACTILITY OF TITIN. **Zsolt Martonfalvi**, Pasquale Bianco, Gyorgy Ferenczy, Katalin Naftz, Miklos Kellermayer

1482-Pos Board B459
THE PEVK REGION OF TITIN: DECIPHERING THE MOLECULAR INTERACTIONS OF ELASTICITY. **Sudarshi Premawardhana**, Matthew J. Gage

1483-Pos Board B460
ASSESSING THE FUNCTIONAL ROLE OF TITIN N2A-PEVK REGION IN ACTIVE MUSCLE CONTRACTION. **Humra Athar**, Matthew J. Gage

1484-Pos Board B461
I-BAND TITIN INTERACTION WITH MYOSIN IN THE MUSCLE SARCOMERE DURING ECCENTRIC CONTRACTION: THE TITIN ENTANGLEMENT HYPOTHESIS. **Mike DuVall**, Azim Jinha, Gudrun Schappacher-Tilp, Tim Leonard, Walter Herzog

1485-Pos Board B462
USING SINGLE MYOSIN AND SMALL MYOSIN ENSEMBLES TO EXAMINE THIN FILAMENT ACTIVATION IN A LASER TRAP ASSAY. **Thomas Longyear**, Matt Unger, Ling Xin, Sam Walcott, Edward P. Debold

1486-Pos Board B463
THE RELATIVE INFLUENCE OF ACTIN-MYOSIN ATTACHMENT AND DETACHMENT KINETICS ON ACTIN SLIDING VELOCITIES IS MODULATED BY MYOSIN DENSITY. **Josh E. Baker**, Travis J. Stewart, Samuel P. Dugan, Christine R. Cremo

1487-Pos Board B464
THE ACIDOSIS-INDUCED SLOWING OF REGULATED THIN FILAMENT VELOCITY IN A MOTILITY ASSAY DISAPPEARS AT LOW ATP. **Edward Debold**, Mattew Unger, Thomas Longyear

1488-Pos Board B465
DESR349P MUTATION RESULTS IN ULTRASTRUCTURAL DISRUPTIONS AND COMPROMISE OF SKELETAL MUSCLE BIOMECHANICS ALREADY AT PRECLINICAL STAGES IN YOUNG MICE BEFORE THE ONSET OF PROTEIN AGGREGATION. S Diermeier, M. Haug, B. Reischl, A Buttgereit, S Schürmann, M Spörrer, **W H. Goldmann**, B Fabry, F Elhimine, R Stehle, G. Pfitzer, L. Winter, C Clemen, R Schröder, O Friedrich

1489-Pos Board B466
NEBULIN DEFICIENCY IN ADULT MUSCLE CAUSES SARCOMERIC DEFECTS AND MUSCLE-TYPE DEPENDENT CHANGES IN TROPHICITY - NOVEL INSIGHTS IN NEMALINE MYOPATHY. **Frank W. Li**

1490-Pos Board B467
EFFECTS OF ACE INHBITORS AND ANTI-MINERALOCORTICOIDS ON KINETIC PARAMETERS OF STRIATED MUSCLE CONTRACTION AND RELAXATION AS WELL AS MEASUREMENTS OF FATIGABILITY IN MURINE MODELS OF DUCHENNE MUSCULAR DYSTROPHY. **Eric Schultz**

1491-Pos Board B468
THE SUPER-RELAXED STATE OF MYOSIN IS ALTERED BY ESTRADIOL IN SKELETAL MUSCLE OF AGED FEMALE MICE. Brett A. Colson, Karl J. Petersen, **Thomas A. Bunch**, Brittany C. Collins, David D. Thomas, Dawn A. Lowe

1492-Pos Board B469
DESTABILIZING THE SUPER RELAXED STATE OF SKELETAL MUSCLE MYOSIN TO TREAT OBESITY AND TYPE 2 DIABETES. Leonardo Nogara, Nariman Naber, Marcella Canton, Carlo Reggiani, Edward Pate, **Roger Cooke**

Cell Mechanics, Mechanosensing, and Motility II (Boards B470 - B494)

1493-Pos Board B470
SPACE AND TIME IN LEUKOCYTE MIGRATION. **Donald M. Guu**, Thomas Quast, Luis Alvarez, U. Benjamin Kaupp, Waldemar Kolanus

1494-Pos Board B471
BAYESIAN PARAMETER ESTIMATION AND MODEL SELECTION FOR BIOPHYSICAL MODELS OF LEUKOCYTE ROLLING. **Mats L. Moskopp**, Andreas Deussen, Triantafyllos Chavakis, Peter Dieterich

1495-Pos Board B472
FORWARD AND INVERSE APPROACHES TO CHARACTERIZING CELLULAR TRACTION FORCES. **Ankur H. Kulkarni**, Prasenjit Ghosh, Nagaraj Balasubramanian, Namrata Gundiah

1496-Pos Board B473
BALANCE OF ISOTROPIC AND DIRECTED FORCES DETERMINES CELL SHAPE. **Wim Pomp**, Koen K. Schakenraad, Hedde van Hoorn, Hayri E. Balcıoğlu, Erik H J Danen, Luca Giomi, Thomas Schmidt

1497-Pos Board B474
A COMPUTATIONAL MODEL OF CELL-GENERATED TRACTION FORCES AND FIBRONECTIN ASSEMBLY. **Devin B. Mair**, Thomas J. Petet, Lewis E. Scott, Seth H. Weinberg, Christopher A. Lemmon

1498-Pos Board B475
DELETION OF CALPONIN 2 IN MACROPHAGES IS ANTI-INFLAMMATORY AND ATTENUATES THE DEVELOPMENT OF ATHEROSCLEROSIS. **Rong Liu**, Jian-Ping Jin

1499-Pos Board B476
PROVISIONAL MATRIX CITRULLINATION CONTRIBUTES TO ENHANCED FIBROBLAST MIGRATION. **Victoria L. Stefanelli**, Thomas H. Barker

1500-Pos Board B477
ACTIVE DYNAMIC MECHANICS OF BLOOD CLOT CONTRACTION. **Valerie Tutwiler**, Hailong Wang, Rustem I. Litvinov, John W. Weisel, Vivek Shenoy

1501-Pos Board B478
ON THE INFLUENCE OF THE LOCAL CELL WALL ELASTICITY ON THE CELL SHAPE DURING YEAST MATING MORPHOGENESIS. **Björn Goldenbogen**, Wolfgang Giese, Andreas Herrmann, Edda Klipp

1502-Pos Board B479
FRACTAL HETEROGENEITY IN MINIMAL MATRIX MODELS OF SCARS MODULATES STIFF-NICHE STEM-CELL RESPONSES VIA NUCLEAR EXIT OF A MECHANOREPRESSOR. P. C. Dave P. Dingal, Yuntao Xia, **Dennis E. Discher**

1503-Pos Board B480
EMERGENT COLLECTIVE CHEMOTAXIS WITHOUT SINGLE-CELL GRADIENT SENSING. **Brian Camley**, Juliane Zimmermann, Herbert Levine, Wouter-Jan Rappel

1504-Pos Board B481
COMPLEX MECHANICS OF COLLAGEN MATRICES AND THEIR IMPACT ON REMOTE INTERCELLULAR COMMUNICATION. **Hamid Mohammadi**, Anton Zilman, Christopher McCulloch

1505-Pos Board B482
IN FISSION YEAST THE CONSTRICTION RATE IS NOT SET BY THE CYTOKINETIC RING, BUT BY THE SEPTUM GROWTH MACHINERY. **Sathish Thiyagarajan**, Emilia Laura Munteanu, Rajesh Arasada, Thomas Dean Pollard, Ben O'Shaughnessy

1506-Pos Board B483
MULTI-SCALE COMPUTATIONAL MODEL OF EPITHELIAL CELL PROLIFERATION AND MECHANICS. Ali Nematbakhsh, Pavel Brodskiy, Zhiliang Xu, Jeremiah J. Zartman, **Mark Alber**

1507-Pos Board B484
INTACT IMMUNOTAXIS COMPRISES AN INTRICATE SPATIOTEMPORAL HIERARCHY OF DISTINCT CHEMOTACTIC PROCESSES - A NEW PARADIGM. **Volkmar Heinrich**

1508-Pos Board B485
MODELING THE EFFECTS OF FOCAL ADHESION SIZE RESTRICTION ON CELL SHAPE DURING SPREADING. **Magdalena Stolarska**, Kara Huyett, Aravind Rammohan

1509-Pos Board B486
ROTATION TRACKING AND ADHESION FOOTPRINTING REVEAL ASYMMETRIC ROLLING ADHESION MECHANISM. **Isaac T.S. Li**, Taekjip Ha, Yann R. Chemla

1510-Pos Board B487
CELL-SUBSTRATE INTERACTION DETERMINES CELLULAR VOLUME AND SHAPE. **Jiaxiang Tao**, Sean Sun

1511-Pos Board B488 **International Travel Awardee**
MODELING IMMUNE CELL MIGRATION. **Hélène Lyrmann**, Marc Neef, Christian Backes, Markus Hoth, Karsten Kruse, Carsten Kummerow

1512-Pos Board B489
THREE-DIMENSIONAL VERTEX SIMULATION ON SMOOTH SURFACE MAINTENANCE OF GROWING EPITHELIAL TISSUE BASED ON INTERCELLULAR MECHANO-FEEDBACK. **Yoshihide Enomoto**, Yasuhiro Inoue, Shigenobu Yonemura, Taiji Adachi

1513-Pos Board B490
NANOSCALE MAPPING OF THE BIOMECHANICAL BEHAVIOR IN HEALTHY AND PATHOLOGICAL ERYTHROCYTES. **Massimiliano Papi**, Gabriele Ciasca, Giuseppe Maulucci, Valentina Palmieri, Marco De Spirito

1514-Pos Board B491
A STATISTICAL MECHANICAL BASIS OF CELLULAR MOTILITY. **Henry G. Zot**, Javier E. Hasbun, Nguyen Van Minh

1515-Pos Board B492
DECIPHERING THE EFFECT OF SUBSTRATE VISCOELASTICITY ON HEPATIC STELLATE CELL FUNCTION AND DIFFERENTIATION IN THE CONTEXT OF LIVER FIBROSIS. **Elisabeth E. Charrier**, Rebecca G. Wells, Paul A. Janmey

1516-Pos Board B493
CELL SURFACE MECHANOCHEMISTRY AND THE DETERMINANTS OF BLEB FORMATION, HEALING AND TRAVEL VELOCITY. **Kathryn Manakova**, Jun Allard

1517-Pos Board B494
VALIDATION OF A NOVEL EXPERIMENTAL AND COMPUTATIONAL METHODOLOGY TO MEASURE INTERCELLULAR FORCES DURING TISSUE MORPHOGENESIS. **Ernesto Criado-Hidalgo**, Ricardo Serrano, Marta Garcia-Diez, Yi-Ting Yeh, Javier Rodriguez-Rodriguez, Juan Carlos del Alamo, Juan Lasheras

Mitochondrial Permeability (Boards B495 - B508)

1518-Pos Board B495 **Education Travel Awardee**
PERMEABILITY TRANSITION PORE CLOSURE INCREASES MITOCHONDRIAL MATURATION AND MYOCYTE DIFFERENTIATION IN THE NEONATAL HEART. **Jayson V. Lingan**, George A. Porter, Jr

1519-Pos Board B496
CYCLOPHILIN D REGULATES THE FORMATION OF SUPERCOMPLEXES IN HEART MITOCHONDRIA. Gisela Beutner, **George A. Porter, Jr.**

1520-Pos Board B497
SPG7 IS AN ESSENTIAL AND CONSERVED COMPONENT OF THE MITOCHONDRIAL PERMEABILITY TRANSITION PORE. **Santhanam Shanmughapriya**, Sudarsan Rajan, Nicholas E. Hoffman, Dhanendra Tomar, Neeharika Nemani, Muniswamy Madesh

1521-Pos Board B498
A NOVEL ION CHANNEL IN ATP SYNTHASE C-SUBUNIT RING: GATEKEEPER OF LIFE AND DEATH. **Nelli Mnatsakanyan**, Han-A Park, Jing Wu, Paige Miranda, Elizabeth A. Jonas

1522-Pos Board B499
IS THE C-SUBUNIT RING OF THE F1FO ATP SYNTHASE THE ELUSIVE MITOCHONDRIAL PERMEABILITY TRANSITION PORE? **Wenchang Zhou**, Corrine Nief, José D. Faraldo-Gómez

1523-Pos Board B500
MITOCHONDRIAL PERMEABILITY TRANSITION PORE (MPTP) FORMATION REQUIRES THE PARTICIPATION OF C-SUBUNIT OF ATP-SYNTHASE, POLYHYDROXYBUTYRATE (PHB) AND INORGANIC POLYPHOSPHATE (POLYP). **Pia A. Elustondo**, Nelli Mnatsakanyan, Zakharian Eleonora, Elizabeth A. Jonas, Evgeny Pavlov

1524-Pos Board B501 Education Travel Awardee
CONTRIBUTION OF INORGANIC POLYPHOSPHATE TOWARDS REGULATION OF MITOCHONDRIAL FREE CALCIUM. **M. de la Encarnacion Solesio Torregrosa**, Lusine Demirkhanyan, Eleonora Zakharian, Evgeny Pavlov

1525-Pos Board B502
FORMATION OF POLYPHOSPHATE-POLY-BETA-HYDROXYBUTYRATE GRANULE-LIKE COMPLEXES IN HEART FAILURE MYOCYTES. Lusine Demirkhanyan, Ian P. Palmer, Walter Boyd, Claus S. Sondergaard, Kristin Grimsrud, Leigh G. Griffiths, Julie Bossuyt, Donald M. Bers, Eleonora Zakharian, **Elena N. Dedkova**

1526-Pos Board B503
ABSENCE OF PHYSIOLOGICAL CALCIUM TRANSIENTS TRIGGERS MITOCHONDRIAL ROS PRODUCTION IN SKELETAL MUSCLE FOLLOWING DENERVATION. Chehade Karam, Jianxun Yi, Carlos Manno, Heping Cheng, Jianjie Ma, **Jingsong Zhou**

1527-Pos Board B504
IMPAIRED MITOCHONDRIAL FUNCTION DUE TO FAMILIAL ALZHEIMERS DISEASE-CAUSING PRESENILINS MUTANTS VIA CALCIUM DISRUPTIONS. **Patrick T. Toglia**, Ghanim Ullah

1528-Pos Board B505
MICU1, THE CA^{2+} SENSING REGULATOR OF THE MITOCHONDRIAL CA^{2+} UNIPORTER IS REQUIRED FOR ADAPTATION TO POSTNATAL LIFE. **Melanie Paillard**, Anil N. Antony, Cynthia Moffat, Egle Juskeviciute, Brad Bolon, Emanuel Rubin, György Csordás, Erin L. Seifert, Jan B. Hoek, György Hajnóczky

1529-Pos Board B506
MICU1 REGULATION OF MITOCHONDRIAL CALCIUM UPTAKE IS CRUCIAL FOR LIVER REGENERATION. **Anil N. Antony**, Melanie Paillard, Cynthia Moffat, Egle Juskeviciute, Emanuel Rubin, Gyorgy Csordas, Erin Seifert, Gyorgy Hajnoczky, Jan B. Hoek

1530-Pos Board B507
STRATEGIC COMPOSITION AND ENRICHMENT OF THE MITOCHONDRIAL CA^{2+} UNIPORTER AT MITOCHONDRIA-SR ASSOCIATIONS CREATES HOTSPOTS FOR MITOCHONDRIAL CA^{2+} UPTAKE IN THE CARDIAC MUSCLE. **Sergio De la Fuente**, Caitlin Vail, Elorm J. Agra, Kira Holmstrom, Junhui Sun, Jyotsna Mishra, Toren Finkel, Elisabeth Murphy, Suresh K. Joseph, Shey-Shing Sheu, Gyorgy Csordas

1531-Pos Board B508
STUDY OF THE CAPACITY OF EACH IP3 RECEPTOR ISOFORM TO SUPPORT ER-MITOCHONDRIAL CALCIUM TRANSFER. **Adam Bartok**, Tünde Golenár, Száva Bánsághi, David Weaver, Kamil J. Alzayady, Suresh K. Joseph, David I. Yule, György Csordás, György Hajnóczky

Energy and Light Transducing Complexes (Boards B509 - B524)

1532-Pos Board B509
A POTENTIAL ROTATIONAL MECHANISM OF THE γ- SUBUNIT OF F1 – ATPASE - TORQUE GENERATION THROUGH THE RANDOM MOVEMENT OF AN ASYMMETRIC ROTOR. **Ya-chang Chou**, Yi-Feng Hsiao

1533-Pos Board B510
MECHANISM OF ENERGY CONVERSION DURING THE ROTARY CATALYTIC CYCLE OF F1-ATPASE. **Jacek Czub**, Milosz Wieczor, Mateusz Dutkiewicz, Helmut Grubmueller

1534-Pos Board B511
ATP SYNTHASE: ADVANTAGES OF THE ROTARY MECHANISM UNDER DIVERSE CONDITIONS. Zining Zhang, **Ramu Anandakrishnan**, Rory Donovan, Daniel Zuckerman

1535-Pos Board B512
A NEW GROUP OF EUBACTERIAL LIGHT-DRIVEN PROTON PUMPS LACKING THE CARBOXYLIC PROTON DONOR. Andrew Harris, Milena Ljumovic, Ana-Nicoleta Bondar, Yohei Shibata, Yuto Suzuki, Shota Ito, Keiichi Inoue, Hideki Kandori, **Leonid Brown**

1536-Pos Board B513
PHOTO-CURRENT AND TEM IMAGING CHARACTERIZATION OF LIGHT-GATED ION PUMP PROTEINS IN LIPID MEMBRANES. **Joel Kamwa**, Surendra Singh, Jiali Li

1537-Pos Board B514
A DNA-BASED BUILDING BLOCK FOR DESIGNER EXCITONIC CIRCUITS. Etienne Boulais, Nicolas Sawaya, **Rémi Veneziano**, Alessio Andreoni, Su Lin, Neal Woodbury, Hao Yan, Alan Aspuru-Guzik, Mark Bathe

1538-Pos Board B515
PHOTOINDUCED ELECTRON TRANSFER FROM PORPHYRINS TO QUINONES RANDOMLY DISPERSED IN A POLYMERIC MEDIUM. **Marcelo K. K. Nakaema**, Rosemary Sanches

1539-Pos Board B516
THE ROLE OF PROTEIN CONFORMATIONAL CHANGES IN TUNING THE FLUORESCENCE STATE OF LIGHT-HARVESTING COMPLEXES. **Nicoletta Liguori**, Xavier Periole, Laura M. Roy, Yarah Bot, Siewert J. Marrink, Roberta Croce

1540-Pos Board B517
PHOTO-INDUCED CHARGE AND ENERGY IN COMPLEXES OF C-TYPE CYTOCHROMES WITH WATER-SOLUBLE PORPHYRINS. **Oleksandr Kokhan**, C. Alexander Hudson, Daniel R. Marzolf, Aidan M. McKenzie

1541-Pos Board B518
CHARACTERIZATIONS OF SUBSTRATE DELIVERY PATHWAYS IN THE NITRIC OXIDE REDUCTASE. **Paween Mahinthichaichan**, Robert B. Gennis, Emad Tajkhorshid

1542-Pos Board B519
MULTIHEME CYTOCHROMES AND THE BACTERIAL NANOWIRES OF SHEWANELLA ONEIDENSIS MR-1: REGULATION, STRUCTURE, AND EXTRACELLULAR ELECTRON TRANSPORT MECHANISMS. **Sahand Pirbadian**, Sarah E. Barchinger, Poorna Subramanian, Christine M. Sambles, Carol S. Baker, Nigel J. Burroughs, Grant J. Jensen, John H. Golbeck, Mohamed Y. El-Naggar

1543-Pos Board B520
DIVIDE-CONQUER-RECOMBINE KINETIC MONTE CARLO SIMULATIONS OF ELECTRON TRANSFER IN THE EXTRACELLULAR REDOX NETWORK OF SHEWANELLA ONEIDENSIS MR-1. **Hye Suk Byun**, C. Masato Nakano, Heng Ma, Sahand Pirbadian, Aiichiro Nakano, Tao Wei, Mohamed Y. El-Naggar

1544-Pos Board B521
EFFECT OF DIFFERENT SUBSTRATES ON GROWTH AND REDOX POTENTIAL KINETICS OF ESCHERICHIA COLI WILD TYPE AND HYDROGENASES LACKING MUTANT. **Anna Poladyan**, Satenik Mirzoyan, Armen Trchounian

1545-Pos Board B522
COMPARISON OF DICYCLOHEXYLCARBODIIMIDE (DCCD)-INDUCED EFFECTS ON STRUCTURE AND ACTIVITY IN CYTOCHROME C OXIDASE (COX) FROM BOVINE HEART AND RHODOBACTER SPHAEROIDES. **Lawrence J. Prochaska**, Kelli N. Fisher, Christine N. Pokalsky

1546-Pos Board B523
DEBARYOMYCES HANSENII: ADAPTATION MECHANISMS TO DIFFERENT CARBON SOURCES AND OXYGEN CONCENTRATIONS. Alfredo Cabrera Orefice, Rocío Maldonado-Guzmán, Natalia Chiquete-Félix, **Salvador Uribe-Carvajal**

1547-Pos Board B524
REGULATION OF THE REACTION BETWEEN CYTOCHROME C AND CYTOCHROME OXIDASE. **Jennifer Silva-Nash**, Francis Millett, Martha Scharlau

Genetic Regulatory Systems (Boards B525 - B530)

1548-Pos Board B525
THE COMPUTATIONAL DETERMINATION OF SMALL RNA BINDING CONSTANT TO CLARIFY THE SYNTHETIC REGULATORY CIRCUIT IN ESCHERICHIA COLI. Cheng-Ping Jheng, Shih-Wei Wang, Kuan-Ling Chen, Tzu-Han Chen, Shang-Yu Chou, Wan-Sheng Su, **Po-Han Lee**, Cheng-I Lee

1549-Pos Board B526
HIGH PRESSURE INDUCED DNA DAMAGE IN ESCHERICHIA COLI INVOLVES PRESSURE-MEDIATED DISSOCIATION OF THE TETRAMERIC MRR RESTRICTION ENDONUCLEASE. **Anais Bourges**, Anirban Ghosh, Nathalie Declerck, Abram Aertsen, Catherine Royer

1550-Pos Board B527
STOCHASTIC FOCUSING AND DEFOCUSING IN BIOLOGICAL REACTION NETWORKS: LESSONS LEARNED FROM ACCURATE CHEMICAL MASTER EQUATION (ACME) SOLUTIONS. **Gamze Gürsoy**, Anna Terebus, Youfang Cao, Jie Liang

1551-Pos Board B528
SHARED TRANSCRIPTION FACTORS HELP ENCODE THE TIMING OF GENE ACTIVATION. **Prithiviraj Chellamuthu**, Shane Jackson, James Boedicker

1552-Pos Board B529
EXACT COMPUTATION OF VELOCITY FIELD AND PROBABILITY FLUX OF TIME-EVOLVING PROBABILITY LANDSCAPE OF STOCHASTIC NETWORKS. **Anna Terebus**, Chun Liu, Jie Liang

1553-Pos Board B530
THE ENERGY LANDSCAPE OF THE MOUSE CARGOME: A MECHANICALLY SENSITIVE FAMILY OF GENES. **Dwight M. Chambers**, Thomas H. Barker

Emerging Techniques and Synthetic Biology (Boards B531 - B537)

1554-Pos Board B531
OPTOGENETIC CONTROL OF MOLECULAR MOTORS AND ORGANELLE DISTRIBUTIONS IN CELLS. **Liting Duan**

1555-Pos Board B532
RATIONAL DESIGN OF A PHOTOACTIVATABLE COFILIN ANALOG USING A NOVEL LOV-BINDING PROTEIN. **Orrin J. Stone**, Hui Wang, Ved P. Sharma, Robert J. Eddy, Rihe Liu, John S. Condeelis, Klaus M. Hahn

1556-Pos Board B533
DEVELOPMENT OF SYNTHETIC GENE CIRCUITS TO AMPLIFY THE PRODUCTION OF BIOMATERIALS, CELLULASES, AND LENTIVIRUS. **Toru Matsu-ura**, Andrey Dovzhenok, Sookyung Lim, Christian I. Hong

1557-Pos Board B534
AUTOMATED HIGH-THROUGHPUT QUANTIFICATION REVEALS MORPHOLOGICAL HETEROGENEITY IN MAMMALIAN CELL POPULATIONS. **Amy Y. Chang**, Steven C. Chen, Morgan L. Truitt, Davide Ruggero, Wallace F. Marshall

1558-Pos Board B535
DYNAMICS OF EPIGENETIC REGULATION AT THE SINGLE-CELL LEVEL. **Lacramioara Bintu**

1559-Pos Board B536
ATOMISTIC AND REACTION-KINETIC MODELLING FOR ENGINEERING OF FATTY ACID SYNTHASE. **Floris Buelens**, Helmut Grubmuller

1560-Pos Board B537
ENGINEERING BACTERIAL MICROCOMPARTMENTS: ASSEMBLY, PERMEABILITY, AND CARGO TARGETING. **Cheryl Kerfeld**

Molecular and Cellular Neuroscience (Boards B538 - B555)

1561-Pos Board B538 **Education Travel Awardee**
MOLECULAR MECHANISM OF THE SYNAPTOTAGMIN-SNARE COMPLEX THAT IS ESSENTIAL FOR SYNCHRONOUS SYNAPTIC NEUROTRANSMITTER RELEASE. **Qiangjun Zhou**, Axel T. Brunger

1562-Pos Board B539
LATENCY OF QUANTAL DA RELEASE FROM SOMA OF DOPAMINE NEURONS IN MIDBRAIN SLICES. **Zhuan Zhou**, Li Wang, Ruiying Jiao, Feipeng Zhu, Xiaoxuan Sun, Quanfeng Zhang, Li Zhou, Mingli Li, Bing Liu, Qinglong Wang, Suhua Sun, Yang Lu, Xuanyang Chen, Bin Liu, Changhe Wang

1563-Pos Board B540
PROBING THE CONTRIBUTION OF NAV1.7 AND NAV1.8 TO COLD TOLERANCE IN HIBERNATORS. **Lydia J. Hoffstaetter**, Karen J. Tonsfeldt, Vanessa Matos-Cruz, Slav N. Bagriantsev, Elena O. Gracheva

1564-Pos Board B541
EXPRESSION AND CONTRIBUTIONS OF THE KIR2.1 INWARD-RECTIFIER K^+ CHANNEL TO PROLIFERATION, MIGRATION AND CHEMOTAXIS OF MICROGLIA IN UNSTIMULATED AND ANTI-INFLAMMATORY STATES. **Doris Lam**, Lyanne Schlichter

1565-Pos Board B542
FLUORESCENCE MICRO-SPECTROSCOPY ASSESSMENT OF THE IN VITRO DIMERIZATION OF BACE1-GFP FUSION PROTEIN IN CULTURED CELLS. Spencer Gardeen, Joseph L. Johnson, **Ahmed Heikal**

1566-Pos Board B543 **International Travel Awardee**
STRUCTURAL STUDY OF WHIRLIN, A CRUCIAL PDZ CONTAINING PROTEIN INVOLVED IN THE MECHANOTRANSDUCTION OF AUDITORY HAIR CELLS. **Florent Delhommel**, Florence Cordier, Bertrand Raynal, Amel El Bahloul-Jaziri, Christine Petit, Muriel Delepierre, Nicolas Wolff

1567-Pos Board B544
RESOLVING THE MOLECULAR MECHANISMS OF INHERITED DEAFNESS CAUSED BY MISSENSE MUTATIONS IN CADHERIN-23. **Adrienne Thornburg**, Marcos Sotomayor

1568-Pos Board B545 **CPOW Travel Awardee**
FRAGILE X~ASSOCIATED TREMOR~ATAXIA SYNDROME: LINKING CA^{2+} DYSREGULATION AND DNA DAMAGE RESPONSES. **Gaelle Robin**, José R. López, Susan Hulsizer, Paul J. Hagerman, Isaac N. Pessah

1569-Pos Board B546
ALTERED ER HOMEOSTASIS AND MITOCHONDRIA ER NETWORK IN PINK1 DEFICIENT PARKINSON'S DISEASE MODELS. **Zhi Yao**, Fernando Bartolome, Andrey Abramov, Sonia Gandhi

1570-Pos Board B547
MICROCAVITATION AS A NEURONAL DAMAGE MECHANISM IN BLAST TRAUMATIC BRAIN INJURY. **Jonathan B. Estrada**, Mark T. Scimone, Alexander K. Landauer, Christian Franck

1571-Pos Board B548
STRAIN AND RATE-DEPENDENT DIFFUSE AXONAL INJURY OF 3D NEURON CULTURES UNDER COMPRESSION. Eyal Bar-Kochba, Mark Scimone, Jonathan Estrada, **Christian Franck**

1572-Pos Board B549
MECHANISM OF AXONAL CONTRACTILITY IN EMBRYONIC DROSOPHILA MOTOR NEURONS IN VIVO. **Anthony Fan**, Alireza Tofangchi, Taher Saif

1573-Pos Board B550
CALIBRATION OF SUB-THRESHOLD EVOKED EPSPS IN DENDRITIC SPINES USING VOLTAGE-SENSITIVE DYES. **Corey D. Acker**, Erika Hoyos, Leslie Loew

1574-Pos Board B551
CAGED NEUROACTIVE AMINO ACIDS FOR TWO-PHOTON PHOTOLYSIS OR TP-PHOTOSTIMULATION/INHIBITION. **David Ogden**, Christine Tran, Peter I. Dalko

1575-Pos Board B552
APPLICATION OF FLUORESCENCE CORRELATION SPECTROSCOPY TO STUDY DYNAMICS OF PROTEINS INVOLVED IN NEURONAL SYNAPSE-TO-NUCLEUS SIGNALING. **Kevin C. Crosby**, William A. Sather, Mark L. Dell'Acqua

1576-Pos Board B553
CELLULAR TAXONOMY OF THE MOUSE STRIATUM AS REVEALED BY SINGLE CELL RNA SEQUENCING. **Geoffrey Stanley**, Ozgun Gokce, Barbara Treutlein, Thomas C. Sudhof, Stephen Quake

1577-Pos Board B554
SINGLE-CELL RNA-SEQ OF NEURONS IN THE HUMAN NERVOUS SYSTEM. **Ming-Yi Lin**, Reymundo Dominguez, Jae M. Kim, Tade Souaiaia, Christopher Walker, Camarena Adrian, Joseph Nguyen, Jennifer Herstein, Maite Christi Francois, William J. Mack, Charles Liu, Oleg V. Evgrafov, James A. Knowles, Robert H. Chow

1578-Pos Board B555
THE EMERGENCE OF Y-JUNCTIONS IN THE ZEBRAFISH CONE MOSAIC. **Kamirah Demouchet**, Mikiko Nagashima, Jeremy Hadidjojo, Alicides Gonzalez, Linda Barthel, David Lubensky, Pamela Raymond

Molecular Dynamics I (Boards B556 - B583)

1579-Pos Board B556
INNER AND OUTER COORDINATION SHELLS OF MG^{2+} IN CORA SELECTIVITY FILTER FROM MOLECULAR DYNAMICS SIMULATIONS. Sunan Kitjaruwankul, Panisak Boonamnaj, **Pornthep Sompornpisut**

1580-Pos Board B557
BASES OF SODIUM CHANNEL SELECTIVITY AMONG ORGANIC CATIONS. **Yibo Wang**, Rocio K. Finol-Urdaneta, Sergei Yu Noskov, Robert J. French

1581-Pos Board B558
PROBING CONFORMATIONAL CHANGES OF SECONDARY ACTIVE TRANSPORT PROTEINS. **Xiaohong Zhuang**, Jeffery B. Klauda

1582-Pos Board B559
ROLE OF INFLUENZA M2 PROTEIN CLUSTERING ON THE INDUCED CURVATURE OF MODEL MEMBRANES. **Eduardo Mendez-Villuendas**, D. Peter Tieleman

1583-Pos Board B560
IS THERE A LO+LD COEXISTENCE PHASE IN THE POPC-CHOL MIXTURE? AN INSIGHT THROUGH MOLECULAR DYNAMICS SIMULATIONS. **Fernando Favela-Rosales**, César Millan-Pacheco, Jorge Hernández-Cobos, Mauricio D. Carvajal-Tinoco, Iván Ortega-Blake

1584-Pos Board B561
MOLECULAR DYNAMICS SIMULATIONS OF 41 TYPES OF GANGLIOSIDE IN MEMBRANE BILAYERS. **Steve Kim**, Wonpil Im

1585-Pos Board B562
MOLECULAR DYNAMICS STUDY OF GANGLIOSIDE GM3/DPPC MEMBRANE BY USING COARSE-GRAINED MODEL. **Kento Inoue**, Eiji Ymamoto, Daisuke Takaiwa, Kenji Yasuoka, Masuhiro Mikami

1586-Pos Board B563
MOLECULAR DYNAMICS SIMULATION STUDIES OF LIPOPOLYSACCHARIDE MICELLES. **Pushpa Itagi**, Wonpil Im

1587-Pos Board B564
MOLECULAR DYNAMICS SIMULATION STUDIES OF MEMBRANE BILAYERS OF LIPID A FROM VARIOUS GRAM-NEGATIVE BACTERIA. **Seonghoon Kim**, Wonpil Im

1588-Pos Board B565
SELF ASSEMBLY OF DISORDERED FOLDED MULTIPHASE PROTEINS BY COMPUTER SIMULATIONS. **Eduardo R. Cruz-Chu**, Konstantinos Gkagkas, Frauke Graeter

1589-Pos Board B566 **Education Travel Awardee**
RATIONAL METHODS TO PHARMACOLOGICALLY TARGET IDPS: DEVELOPING MODULATORS OF TAU AGGREGATION. **David W. Baggett**

1590-Pos Board B567
STRUCTURAL STUDIES OF FIBRIL FORMATIONS OF TETRAPEPTIDES USING REPLICA EXCHANGE MOLECULAR DYNAMICS SIMULATIONS. **Yoshitake Sakae**, Yuko Okamoto

1591-Pos Board B568
PROBING THE DYNAMICS OF THE HEXAMERIC PILUS RETRACTION MOTOR PILT WITH MOLECULAR DYNAMICS SIMULATION. **Joseph L. Baker**

1592-Pos Board B569 **Education Travel Awardee**
A GATED SUBSTRATE CHANNEL REVEALED IN NITROGENASE THROUGH A COMBINED IR AND MOLECULAR DYNAMICS STUDY. **Leland B. Gee**, Igor Leontyev, Alexei Stuchebrukhov, Aubrey D. Scott, Stephen P. Cramer

1593-Pos Board B570
PLEXINA3 TRANS- AND JUXTAMEMBRANE DIMER HELIX ASSOCIATION. Indrani Bera, Pouyan Khakbaz, **Jeffery B. Klauda**

1594-Pos Board B571
IN SILICO CHARACTERIZATION OF DOUBLE KNOT TOXIN BINDING TO TRPV1 CHANNEL. **Romina Sepúlveda**, Melissa Alegría-Arcos, Ignacio Diaz-Franulic, Fernando D. González-Nilo

1595-Pos Board B572
BRIDGING THE GAP BETWEEN COMPUTATION AND EXPERIMENTS IN GPCRS. **Chaya D. Stern**, Jose M. Perez-Aguilar, Scott C. Blanchard, Harel Weinstein, John D. Chodera

1596-Pos Board B573
POTENTIAL OF MEAN FORCE CALCULATIONS AND ISOTHERMAL TITRATION CALORIMETRY MEASUREMENTS OF THE HUMAN CARDIAC TROPONIN C / CALCIUM INTERACTION REVEAL AFFINITY CHANGES AS A FUNCTION OF FAMILIAL HYPERTROPHIC CARDIOMYOPATHY ASSOCIATED MUTATIONS. **Charles M. Stevens**, Kaveh Rayani, Gurpreet Singh, D. Peter Tieleman, Glen F. Tibbits

1597-Pos Board B574
COMPUTATIONAL EVALUATION OF MUTATIONAL EFFECTS ON KINASE DYNAMICS. **Mohammad M. Sultan**, Vijay Pande

1598-Pos Board B575
DYNAMICS OF C-TERMINUS MOTION OF NORWALK VIRUS CAPSID BY MOLECULAR DYNAMICS (ALL-ATOM & COARSE GRAINED) SIMULATION. **Mahendra B. Thapa**, Jarek Meller, Mark Rance

1599-Pos Board B576
CONFORMATIONAL CHANGES IN ANTIGEN-ANTIBODY BINDING:MOLECULAR DYNAMICS STUDY. **Keiko Shinoda**, Hideaki Fujitani

1600-Pos Board B577
NON-EQUILIBRIUM MOLECULAR DYNAMICS TO SIMULATE SHEAR STRESS ON ANGIOTENSIN II TYPE 1 (AT1) RECEPTOR. **Matheus Malta de Sa**, Silvestre Massimo Modestia, Carlota Oliveira Rangel-Yagui, José Eduardo Krieger

1601-Pos Board B578
COMPUTATIONAL STUDY ON FLEXIBLE DYNAMICS OF HISTONE TAILS. **Sotaro Fuchigami**

1602-Pos Board B579
VISUALIZING THE DYNAMICS OF NEURONAL SIGNALING. **Katrine K. Skeby**, Gaël McGill

1603-Pos Board B580
A SIMPLE METHOD FOR PREDICTING CANCER SPECIFIC CELL SURFACE EPITOPES. **Xubiao Peng**, Will C. Guest, Neil R. Cashman, Steven S. Plotkin

1604-Pos Board B581
DIPOLE MOMENT AND BINDING ENERGY OF WATER IN PROTEINS FROM CRYSTALLOGRAPHY ANALYSIS. **Aleksandr Morozenko**

1605-Pos Board B582
CARBON NANOPARTICLES AND THEIR DIFFERENTIAL ASSOCIATION WITH THE MEMBRANES OF E. COLI: A COARSE-GRAINED MOLECULAR DYNAMICS SIMULATION STUDY. **Pin-Chia Hsu**, Damien Jefferies, Benjamin A. Hall, Syma Khalid

1606-Pos Board B583
GRAPHENE NANOPORES FOR PROTEIN SEQUENCING. **James Wilson**, Leila Sloman, Zhiren He, Aleksei Aksimentiev

Computational Methods and Bioinformatics I (Boards B584 - B610)

1607-Pos Board B584
ESTIMATION OF ENTROPY CHANGES DUE TO CONFORMATIONAL CHANGES IN MOLECULAR BINDING. **Yuly E. Sanchez**, Julian A. Aguilar

1608-Pos Board B585
RIGID DOCKING BASED PROTEIN-PROTEIN INTERACTION PREDICTION USING HIGH SCORING DOCKING MODELS. **Yuri Matsuzaki**, Jaak Simm

1609-Pos Board B586
MEGADOCK 4.0. AN ULTRA-HIGH-PERFORMANCE PROTEIN-PROTEIN DOCKING SOFTWARE FOR HETEROGENEOUS SUPERCOMPUTERS. **Masahito Ohue**, Yuri Matsuzaki, Nobuyuki Uchikoga, Takashi Ishida, Yutaka Akiyama

1610-Pos Board B587
ANALYSIS OF PHYSICO-CHEMICAL PROPERTIES OF PROTEIN DOCKING DECOYS GENERATED BY RIGID-BODY DOCKING. **Nobuyuki Uchikoga**, Yuri Matsuzaki, Masahito Ohue, Yutaka Akiyama

1611-Pos Board B588
DRUDE POLARIZABLE FORCE FIELD FOR MODELING DIVALENT CATIONS IN BIOLOGICAL SYSTEMS. **Hui Li**, Abhi Singharoy, Benoit Roux, Alexander MacKerell

1612-Pos Board B589
CALCIUM PARAMETERS IN CHARMM FORCE FIELD REVISITED. **Mohsen Pourmousa**, Richard M. Venable, Richard W. Pastor

1613-Pos Board B590
CHARMM-GUI MOLECULAR DYNAMICS SIMULATIONS OF THE NEO-LACTO SERIES IN A POPC BILAYER. **Venkata Malladi**, Wonpil Im

1614-Pos Board B591
CHARMM MOLECULAR DYNAMICS OF THE BLOOD GROUP GLYCOLIPIDS IN POPC LIPID BILAYER. **Jaeki Shin**, Wonpil Im

1615-Pos Board B592
CHARMM-GUI 10 YEARS FOR BIOMOLECULAR MODELING AND SIMULATION. **Wonpil Im**

1616-Pos Board B593
THE BROMOCEA CODE: AN IMPROVED GRAND CANONICAL MONTE CARLO/BROWNIAN DYNAMICS ALGORITHM INCLUDING EXPLICIT ATOMS. **Carlos J. Fernandez Solano**

1617-Pos Board B594
ACCURATE ATOM-BY-ATOM PREDICTIONS OF SOLVATION ELECTROSTATICS USING A HYDRATION-SHELL POISSON-BOLTZMANN MODEL. **Jaydeep P. Bardhan**, Matthew G. Knepley

1618-Pos Board B595
AN ACCURATE AND EFFICIENT, COMPUTATIONAL METHOD FOR THE HYDRATION FREE ENERGY OF LARGE AND COMPLEX MOLECULES. Takashi Yoshidome, **Toru Ekimoto**, Nobuyuki Matubayasi, Yuichi Harano, Masahiro Kinoshita, Mitsunori Ikeguchi

1619-Pos Board B596
THE INTERNAL FRICTION AND ANOMALOUS CONFORMATIONAL DIFFUSION OF PROTEINS. **Robert Deak**, Imre Derenyi

1620-Pos Board B597
UNIVERSAL SCALING OF CAVITY VOLUME PATHWAYS IN GLOBULAR PROTEINS. Sheridan B. Green, **Jenny Farmer**, Donald J. Jacobs

1621-Pos Board B598
A RIGOROUS APPROACH TO DERIVE ANALYTICAL EXPRESSIONS IN COARSE-GRAINED FORCE FIELDS. Adam K. Sieradzan, Agnieszka G. Lipska, Robert Ganzynkowicz, Michał Głuski, **Jozef A. Liwo**

1622-Pos Board B599
FLUCTUATING FINITE ELEMENT ANALYSIS: DEVELOPMENT AND APPLICATIONS TO CYTOPLASMIC DYNEIN. **Ben Hanson**, Sarah Harris, Daniel Read, Oliver Harlen

1623-Pos Board B600
RNA CONFORMATIONAL FLUCTUATIONS FROM ELASTIC NETWORK MODELS: A COMPARISON WITH MOLECULAR DYNAMICS AND SHAPE EXPERIMENTS. **Giovanni Pinamonti**, Sandro Bottaro, Cristian Micheletti, Giovanni Bussi

1624-Pos Board B601
PREDICTING A DRUG'S MEMBRANE PERMEABILITY: EVOLUTION OF A COMPUTATIONAL MODEL VALIDATED WITH IN VITRO PERMEABILITY ASSAY DATA. **Timothy S. Carpenter**, M. Windy McNerney, Nicholas A. Be, Victoria Lao, Emma M. Carlson, Brian J. Bennion, Felice C. Lightstone, Carlos A. Valdez

1625-Pos Board B602
TRAVELLING WAVE SOLUTIONS FOR A REACTION-DIFFUSION MODELS OF CELL GROWTH. **Brian W. Williams**

1626-Pos Board B603
QUANTITATIVE ANALYSIS OF CORTICAL ACTIN-MEMBRANE MICROCLUSTER INTERACTIONS. **Anthony R. Vega**, Jonathon A. Ditlev, Michael K. Rosen, Khuloud Jaqaman

1627-Pos Board B604
THREE-DIMENSIONAL MONOLAYER STRESS MICROSCOPY. **Ricardo Serrano**, Aereas Aung, Shyni Varghese, Juan C. del Álamo

1628-Pos Board B605
IMPLICATIONS OF KIR/NAV1.5 RECIPROCITY FOR PROPAGATING ACTION POTENTIALS IN CARDIAC CELLS. **Anthony Varghese**

1629-Pos Board B606
ACCESSIBLE, FEATURE-RICH SOFTWARE FOR RIGOROUS MODEL FITTING USING MAXIMUM LIKELIHOOD ESTIMATION. **Michael S. Woody**, John H. Lewis, Michael J. Greenberg, Yale E. Goldman, E. Michael Ostap

1630-Pos Board B607
IMPROVING FAR-UV CD PREDICTION WITH THE DIPOLE INTERACTION MODEL. **Akongnwi Jungong**, Rahul Nori, Igor Uporov, Felix N. Ngassa, Ethan Austhof, Emily Holt, Kathryn A. Thomasson

1631-Pos Board B608
A NEW ITERATIVE DEEP NEURAL NETWORK ALGORITHM TO SIGNIFICANTLY IMPROVE IMAGE SEGMENTATION. **Xundong Wu**, Yong Wu, Riccardo Olcese, Ligia Toro, Enrico Stefani

1632-Pos Board B609
EFFECT OF DATA PRE-PROCESSING ON SUPER-RESOLUTION RECONSTRUCTION AND PATTERN RECOGNITION. **Maximilano Giuliani**, Adriano Vissa, Amine Driouchi, Christopher M. Yip

1633-Pos Board B610
ACCELERATING ANALYSIS OF BIOLOGICAL TARGETS FROM RAW SOLID-STATE MICROPORE DATA. MADIHA HANIF, Yusuf Suleman, Abdul Hafeez, M. Mustafa Rafique, Ali R. Butt, **Samir M. Iqbal**

Biosensors I (Boards B611 - B640)

1634-Pos Board B611
BIOAFFINITY DETECTION OF BIOMOLECULES IN COMPLEX MATRICES: REAL TIME DETECTION OF DNA/RNA-HYBRIDIZATION IN CELL EXTRACT VIA ELECTROCHEMICAL IMPEDANCE SPECTROSCOPY MEASUREMENTS. **Loredana Casalis**, Pietro Capaldo, Pietro Parisse, Alessandro Bosco

1635-Pos Board B612
SELECTIVE DETECTION OF PROTEIN HOMOLOGUES IN SERUM USING AN OMPG NANOPORE. Monifa A. Fahie, **Min Chen**

1636-Pos Board B613
A PIXEL CHARGE SENSOR FOR BIOLOGICAL PROCESSES. **Mikyung Han**, Yuan Mei

1637-Pos Board B614
PH SENSING WITH SILICON NANORIBBON DEVICES MODIFIED WITH CARBON NANOTUBE PORINS. **Huanan Zhang**, Scott Dhuey, Ramya Tunuguntla, Aleksandr Noy

1638-Pos Board B615
CREATING ROBUST AND REVERSIBLE CELL-GEL NETWORKS USING BORONIC ACID CHEMISTRY. **Adrienne C. Greene**, David R. Wheeler, Erik D. Spoerke, George D. Bachand, Brad H. Jones

1639-Pos Board B616
NANOPORE SUBANGSTROM-RESOLUTION SINGLE-MOLECULE TOOL. Ian M. Derrington, Jonathan M. Craig, Eric Stava, Andrew H. Laszlo, Brian C. Ross, Henry Brinkerhoff, Ian C. Nova, Kenji Doering, Benjamin I. Tickman, Jeff G. Mandell, Kevin L. Gunderson, **Jens H. Gundlach**

1640-Pos Board B617 **Education Travel Awardee**
MONITORING LESION DEVELOPMENT DURING IRREVERSIBLE ELECTROPORATION TREATMENT USING ELECTRICAL IMPEDANCE SPECTROSCOPY. **Mohammad Bonakdar**, Eduardo Latouche, rafael V. Davalos

1641-Pos Board B618
SIMULTANEOUS IMAGING OF RHO GTPASE AND RHOGEF ACTIVATION USING NOVEL GEF BIOSENSORS REVEALS RELATIONSHIPS BETWEEN GEF AND GTPASE ACTIVATION IN CELL MOTILITY. **Daniel J. Marston**, Marco Vilela, George Glekas, Gaudenz Danuser, John Sondek, Klaus M. Hahn

1642-Pos Board B619
STRUCTURE PREDICTION AND 3D MODELING OF SINGLE STRANDED DNA FROM SEQUENCE FOR APTAMER-BASED BIOSENSORS. Iman Jeddi, **Leonor Saiz**

1643-Pos Board B620
SINGLE MOLECULE MEASUREMENTS OF SMALL MOLECULE INTERACTIONS WITH METALLIC NANOCLUSTERS. **Arvind Balijepalli**, John Kasianowicz, Jessica Ettedgui

1644-Pos Board B621
SOLID-STATE NANOPORE DETECTION OF DIVERSE NUCLEIC ACID BIOMARKERS WITH DRAG-REGULATED NANOPORE TRANSLOCATION. **Osama K. Zahid**, Fanny Wang, Jan A. Ruzicka, Ethan W. Taylor, Adam R. Hall

1645-Pos Board B622
CRITICAL TEST OF NANOPORE-BASED SEQUENCING-BY-SYNTHESIS: CAPTURE OF NUCLEIC ACID TAGS. **Jacob Forstater**, Jessica Ettedgui, Minchien Chen, Shiv Kumar, Sergey Kalachikov, James Russo, Jingyue Ju, John Kasianowicz

1646-Pos Board B623
QUANTIFYING PROTEIN CONCENTRATION USING DESIGNED DNA CARRIERS AND SOLID-STATE NANOPORES. **Jinglin Kong**, Nicholas Bell, Ulrich Keyser

1647-Pos Board B624
A MICROFLUIDIC-CHANNEL REGULATED, ELECTROLYTE-GATED GRAPHENE FET BIOSENSOR ARRAY FOR REPEATABLE AND RECALIBRATED DETECTION OF THROMBIN. **Jaebin Choi**, Chaehyun Lim, Youngmo Jung, Dong Heon Shin, Sukang Bae, Sang Kyung Kim, Chulki Kim

1648-Pos Board B625
SONTANEOUS AND RESPONSE STOCHASTIC DYNAMICS OF SACCULAR HAIR CELLS. **Rami M. Amro**, Dolores Bozovic, Alexander B. Neiman

1649-Pos Board B626
HOW TO MAKE A SWEET SENSOR. **Lily S. Cheung**, Taylor M. Chavez, Wolf B. Frommer

1650-Pos Board B627
NANO-DOSING AND DETECTION TO PROBE NEURODEGENERATIVE DISEASE INDUCED BY OLIGOMERS OF BETA AMYLOID. **Wei-Hsin Chen**

1651-Pos Board B628
LIVE CELL IMAGING OF CYTOSOLIC NADH/NAD^+ RATIO IN HEPATOCYTES USING THE FLUORESCENT SENSOR PEREDOX. **Ricard Masia**, William J. McCarty, Carolina Lahmann, Jay Luther, Raymond T. Chung, Martin L. Yarmush, Gary Yellen

1652-Pos Board B629
SYNONYMOUS MODIFICATION ENABLES HIGH FIDELITY EXPRESSION OF BIOSENSORS AND PROBES WITH REPETITIVE PROTEIN AND NUCLEOTIDE SEQUENCES. **Bin Wu**, Veronika Miskolci, Louis Hodgson, Robert H. Singer

1653-Pos Board B630
BIOMIMETIC NANOPORES FOR STUDYING YEAST NUCLEAR PORE TRANSPORT. **Adithya N. Ananth**, Roderick Versloot, Aravind Dwarkasing, Steffen Frey, Dirk Goerlich, Cees Dekker

1654-Pos Board B631
THEORETICAL SIMULATION AND EXPERIMENTAL INVESTIGATION FOR THE IDENTIFICATION AND ANALYSIS OF BIPHASIC SURFACE PLASMON RESONANCE DATA. **Purushottam Tiwari**, Yesim Darici, Jin He, Xuewen Wang, Aykut Uren

1655-Pos Board B632
OPTICAL DETECTION OF BIOLOGICAL ACTIVITY, ONE MOLECULE AT A TIME. **Markita P. Landry**, Jingqing Zhang, Paul W. Barone, Jong-Ho Kim, Michael S. Strano

1656-Pos Board B633
THE SECRETORY PATHWAY CA^{2+}/MN^{2+}-ATPASE SPCA2 REGULATES MN^{2+}-DEPENDENT CELL CYCLE PROGRESSION IN 3D CULTURE OF COLON CANCER CELLS. **James Jenkins**, Ruslan Dmitriev, Dmitri Papkovsky

1657-Pos Board B634
DETECTION OF E2 ACTIVITY AS A TUMOR MARKER USING AN ARTIFICIAL RING FINGER. **Kazuhide Miyamoto**

1658-Pos Board B635
PROBING SURFACE HYDROPHOBICITY OF INDIVIDUAL PROTEIN AT SINGLE-MOLECULE RESOLUTION USING SOLID-STATE NANOPORES. **Ji Li**

1659-Pos Board B636
A NEW CLASS OF TARGETABLE, GENETICALLY ENCODED SINGLE-COLOR BIOSENSORS FOR MULTIPLEXED MONITORING OF PHOSPHOINOSITIDES. **Fabian Hertel**, Jin Zhang

1660-Pos Board B637
OPTIMIZATION OF PARAMETERS FOR NANOPORE RESISTIVE PULSE SENSING OF MICRORNA. **Josip Ivica**, Philip T.F. Williamson, Maurits R.R. de Planque

1661-Pos Board B638
NANOPORE AS A SENSOR BASED ON AVIDIN-BIOTIN SYSTEM. **Mathilde Lepoitevin**, Mikhael Bechelany, Emmanuel Balanzat, Jean-Marc Janot, Sebastien Balme

1662-Pos Board B639
FLUORESCENT BIOSENSOR FOR HYALURONIDASE: INTENSITY BASED RATIOMETRIC SENSING AND TIME-GATED DETECTION USING A LONG LIFETIME AZADIOXATRIANGULENIUM (ADOTA) FLUOROPHORE. **Rahul Chib**, Mark Mummert, Ilkay Bora, Sunil Shah, Bo Wegge Laursen, Thomas Just Sorensen, Ignacy Gryczynski, Julian Borejdo, Zygmunt Gryczynski, Rafal Fudala

1663-Pos Board B640
THE ROLE OF CONSERVED POLAR AMINO ACIDS AT THE TRANSMEMBRANE LOOP REGONS OF A GENETICALLY ENCODED VOLTAGE SENSOR. **Masoud Sepehri Rad**

Biomaterials & Biosurfaces (Boards B6411 - B661)

1664-Pos Board B641
A FACILE NOVEL METHOD TO CONTROL SURFACE TOPOGRAPHY OF CONDUCTING POLYMER FOR IMPROVED CORONARY STENT PERFORMANCE. **Sahebzadeh Mohammed Nabeeluddin**

1665-Pos Board B642
DESIGN OF AN AMYLOID-LIKE NANOSHEET WITH TUNABLE FUNCTIONALITY AS BIO-NANOMATERIALS. **Cong Liu**

1666-Pos Board B643
ULTRA-FAST PROTON TRANSPORT IN SUB-1-NM DIAMETER CARBON NANOTUBE PORINS. **Ramya Tunuguntla**, Frances Allen, Kyunghoon Kim, Allison Belliveau, Aleksandr Noy

1667-Pos Board B644
ELECTROSTATIC DEPENDENT ELASTIC BEHAVIOR OF HYALURONIC ACID. **John P. Berezney**, Omar A. Saleh

1668-Pos Board B645
MECHANICALLY-TUNABLE, PROTEIN-BASED MATERIALS CAN BE FUNCTIONALIZED WITH OTHER PROTEINS AND WITH DNA. David Howell, Shang-Pu Tsai, Kelly Churion, Jan Patterson, Kayla Bayless, **Sarah E. Bondos**

1669-Pos Board B646
COMPRESSIVE MECHANICS OF COLLAGEN-FIBRIN COMPOSITES AND THEIR STRUCTURAL ALTERATIONS. **Oleg V. Kim**, Rustem I. Litvinov, John W. Weisel, Mark S. Alber

1670-Pos Board B647
POLYMERSOME MEMBRANE PERMEABILITY AND IONIC TRANSPORT PROPERTIES IN THE PRESENCE OF SUB-2NM CARBON NANOTUBE PORINS. **Jeremy Sanborn**, Ramya Tunuguntla, Atul Parikh, Aleksandr Noy

1671-Pos Board B648
IMPACT OF PENDANT FUNCTIONAL GROUPS AND METHOD OF PREPARATION ON AGGREGATION BEHAVIOUR OF PEGYLATED COPOLYMERS. **Amy Won**, Frantz Le Devedec, Christine Allen, Christopher M. Yip

1672-Pos Board B649
WETTABILITY SWITCH OF ANODIC TITANIUM DIOXIDE NANOTUBES WITH VARIOUS DIAMETERS. **Mukta Kulkarni**, Ita Junkar, Harinarayanan Puliyalil, Ales Iglic

1673-Pos Board B650
A MINIMALISTIC IN VITRO 3D MODEL TO STUDY F98 RAT BRAIN TUMOR GROWTH. **Emilie Gontran**, Marjorie Juchaux, Christophe Deroulers, Mathilde Badoual, Olivier Seksek

1674-Pos Board B651
CAF1 OF YERSINIA PESTIS FORMS COMPLEX HIGHLY STABLE PROTEIN POLYMERS AND HYDROGEL SCAFFOLDS. **Helen Waller**, Yakup Ulusu, Jeremy H. Lakey

1675-Pos Board B652
ADSORPTION OF DNA AND RECA TO CONJUGATES OF SINGLE-WALLED CARBON NANOTUBES AND POLY(N-ISOPROPYLACRYLAMIDE) MOLECULES. **Katsuki Izumi**, Yoshikazu Kumashiro, Kazuo Umemura

1676-Pos Board B653
CELLULAR SEMICONDUCTOR FACTORIES: CONTROLLED BACTERIAL SYNTHESIS OF CHALCOGENIDE NANOMATERIALS. **Lindsay Bassman**, Francis Tran, Mohamed El-Naggar, James Boedicker

1677-Pos Board B654
ALIGNMENT AND DIAMETER OF ELECTROSPUN PEO FIBERS. Killian McGiboney, Thyra Tanos, **Christine Helms**

1678-Pos Board B655
BRAIN-MIMETIC MICROENVIRONMENTS FOR CULTURE OF PRIMARY GLIOBLASTOMA MULTIFORME CELLS. **Weikun Xiao**, Stephanie K. Seidlits, Lisa Ta, David Nathanson

1679-Pos Board B656
ADHESION PROPERTIES OF DEFORMABLE ULTRA-LOW CROSSLINKED MICROGEL PARTICLES ON SURFACES. **Michelle Gaines**, Thomas Barker, Alberto Fernandez-Nieves

1680-Pos Board B657
BEHAVIOR OF WATER IN 3-D CONFINEMENT: IMPLICATIONS FOR MACROMOLECULAR FUNCTION. Amir Barati-Farimani, Emad Tajkhorshid, Naryana Aluru, **Eric Jakobsson**

1681-Pos Board B658
UNDERSTANDING THE INTERACTION BETWEEN BIOMOLECULES AND SILVER NANOPARTICLES. **Horacio Poblete**, Anirudh Agarwal, Suma S. Thomas, Cornelia Bohne, R. Ranjithkumar, Jaywant Phospase, Emilio I. Alarcon, Jeffrey Comer

1682-Pos Board B659
DYNAMIC STABILIZATION OF EXPRESSED PROTEINS IN ENGINEERED DIATOM BIOSILICA. Yijia Xiong, Nicole R. Ford, Karen A. Hecht, Guritno Roesijadi, **Thomas C. Squier**

1683-Pos **Board B660**
SECONDARY STRUCTURE AND FOLDING STABILITY OF PROTEINS ADSORBED ON SILICA - PRESSURE VERSUS TEMPERATURE DENATURATION. **Claus Czeslik**, Süleyman Cinar

1684-Pos **Board B661**
SQUID'S SUCKERIN PROTEINS IN BITS & BYTES. **Akshita Kumar**, Srinivasaraghavan Kannan, Julien Lescar, Chandra Verma, Ali Miserez

Tuesday, March 1, 2016

Daily Program Summary

All rooms are located in the *Los Angeles Convention Center* unless noted otherwise.

7:30 AM–5:00 PM	**Registration/Information**	**West Lobby**
8:00 AM–9:00 AM	**Biophysical Society Business Meeting**	**Room 404AB**
8:00 AM–4:30 PM	**Poster Viewing**	**West Hall**
8:15 AM–10:15 AM	**Symposium: Emerging Techniques for Study of Cell Mechanics** **Chair:** *Amy Rowat, University of California, Los Angeles* THE PHYSICS OF SELF-ASSEMBLING CYTOSKELETAL NETWORKS. *R. Dyche Mullins* FEELING FOR CELL FUNCTION - MECHANICAL PHENOTYPING AT 1,000 CELLS/SEC. *Jochen Guck* BIOMECHANICAL IDENTIFICATION AND SORTING OF SINGLE CELLS. *Todd Sulchek* CANCER CELL MECHANOTYPING: FROM SCREENING TO DISEASE BIOPHYSICS. *Amy Rowat*	**Petree Hall C**
8:15 AM–10:15 AM	**Symposium: Multiscale Biophysics of Membranes** **ChairL** *Felix Goñi, Basque Country University, Spain* INTERACTIONS AT THE MEMBRANE-FLUID INTERFACE. *Suzanne P. Jarvis* CERAMIDE STUDIES FROM THE NANO TO THE MICROSCALE. Felix M Goñi LIPID STRUCTURE AND CONTROL OF MEMBRANE ORDERED DOMAIN FORMATION AND SIZE BY LIPID COMPOSITION AND ASYMMETRY IN VITRO AND IN VIVO. *Erwin London* THE BIOPHYSICS OF LIVING MEMBRANES: PROTEIN PARTITIONING AND FUNCTIONAL DIFFERENTIATION IN ORDERED PLASMA MEMBRANE DOMAINS. *Ilya Levental*	**Petree Hall D**
8:15 AM–10:15 AM	**Platform: Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating II**	**Room 502A**
8:15 AM–10:15 AM	**Platform: Protein Structure, Prediction, and Design**	**Room 502B**
8:15 AM–10:15 AM	**Platform: Protein Assemblies**	**Room 515A**
8:15 AM–10:15 AM	**Platform: Mechanosensation**	**Room 515B**
8:15 AM–10:15 AM	**Platform: Networks and Synthetic Biology**	**Room 501ABC**
8:15 AM–10:15 AM	**Platform: Ribosomes and Translation**	**Room 511ABC**
9:00 AM–10:30 AM	**Subgroup Chairs Meeting**	**Room 510**
9:30 AM–10:30 AM	**Career Center Workshop** **Career Planning and Job Searching for Science Professionals: Academic Opportunities**	**Room 518**
10:00 AM–4:30 PM	**Exhibits**	**West Hall**
10:15 AM–11:00 AM	**Coffee Break**	**West Hall**
10:45 AM–12:45 PM	**Symposium: Awards** **Chair:** *Edward Egelman, University of Virginia, Society President* TWENTY-EIGHT YEARS, AND STILL (OPTICALLY) TRAPPED! SINGLE MOLECULE BIOPHYSICS COMES OF AGE. *Steven M. Block* ELEVATOR MECHANISM OF GLUTAMATE TRANSPORTERS. *Olga Boudker* MECHANICAL ARCHITECTURE OF CELL DIVISION. *Sophie Dumont* HOW A TAIL WAGS ITS SPERM: REGULATION OF FLAGELLAR MOTILITY BY BIOACTIVE LIPID SIGNALING. *Polina V. Lishko* X-RAYS AND ELECTRONS ILLUMINATE NEUROTRANSMITTER RECEPTOR STRUCTURE AND MECHANISM. *Eric Gouaux* CHOLESTEROL, THE MOLECULE YOU THOUGHT YOU KNEW. *Philip Yeagle*	**Petree Hall C**
10:45 AM–12:45 PM	**Platform: Other Channels**	**Petree Hall D**
10:45 AM–12:45 PM	**Platform: Actin and Microtubules: Structure and Dynamics**	**Room 502A**
10:45 AM–12:45 PM	**Platform: Protein-Lipid Interactions II**	**Room 502B**

10:45 AM–12:45 PM	**Platform: Intrinsically Disordered Proteins (IDP) and Aggregates II**	**Room 515A**
10:45 AM–12:45 PM	**Platform: Calcium Signaling**	**Room 515B**
10:45 AM–12:45 PM	**Platform: Protein-Dynamics and Allostery I**	**Room 501ABC**
10:45 AM–12:45 PM	**Platform: RNA Structure and Dynamics**	**Room 511ABC**
11:30 AM–1:00 PM	**Exhibitor Presentation: Bruker Nano Surfaces** **Bioscope Resolve BioFM- Unrivalled AFM Biomechanics and Resolution**	**Room 505**
12:00 PM–1:30 PM	**Research Programs at PUIs: Founding, Establishing, and Maintaining a Research Laboratory**	**Room 408A**
12:00 PM–2:00 PM	**Postdoc to Faculty Q&A: Transitions Forum and Luncheon**	**Room 510/512**
12:30 PM–2:00 PM	**Exhibitor Presentation: Nanion Technologies GmbH** **Measure More Membrane: Cells, Bilayers and Transporter Activity**	**Room 513**
1:00 PM–3:00 PM	**Industry and Agency Opportunities Fair**	**West Hall**
1:30 PM–3:00 PM	**GMOs, Severe Weather, and Public Opinion**	**Room 403A**
1:45 PM–3:00 PM	**Snack Break**	**West Hall**
1:45 PM–3:45 PM	**Poster Presentations and Late Posters**	**West Hall**
2:30 PM–3:30 PM	**Career Center Workshop** **Creating and Using an Effective CV/Résumé**	**Room 518**
2:30 PM–4:00 PM	**Postdoc to Faculty: Setting Up a Lab**	**Room 403B**
3:00 PM–4:00 PM	**Committee on Inclusion and Diversity Networking Event: Resources and Opportunities**	**Room 404AB**
3:00 PM–5:00 PM	**Education Committee Meeting**	**Room 506**
4:00 PM–6:00 PM	**Symposium: Optogenetics in Neuroscience** **Petree Hall C** **Chair:** *Edward Boyden, MIT* TOOLS FOR ANALYZING AND REPAIRING COMPLEX BIOLOGICAL SYSTEMS. *Edward S. Boyden* CONTROLLING BIOLOGICAL PATHWAYS WITH PHOTOPHARMACOLOGY. *Dirk Trauner* TOOLS FOR ANATOMICAL AND FUNCTIONAL ANALYSIS OF WIDELY DISTRIBUTED BRAIN NETWORKS. *Viviana Gradinaru* NATURAL ANION CHANNEL RHODOPSINS: A NEW FAMILY OF TOOLS FOR OPTOGENETIC NEURAL INHIBITION. *John L. Spudich*	
4:00 PM–6:00 PM	**Symposium: p-ATPases: Structure, Mechanism, and Disease** **Petree Hall D** **Chair:** *David Gadsby, Rockefeller University* HYBRID FUNCTION OF THE NA/K-ATPASE: PROTON IMPORT ACCOMPANYING NA/K EXCHANGE. *David Gadsby* SNAPSHOTS OF P-TYPE ATPASES - FROM CRYSTAL STRUCTURES TO SINGLE-MOLECULE STUDIES. *Poul Nissen* THE NEW KIDS IN THE BLOCK: FE^{2+} TRANSPORT P-ATPASES. *José M. Argüello* SECRETORY PATHWAY CALCIUM ATPASES IN BREAST CANCER. *Rajini Rao*	
4:00 PM–6:00 PM	**Platform: Cardiac Muscle Mechanics and Structure**	**Room 502A**
4:00 PM–6:00 PM	**Platform: Protein Stability, Folding, and Chaperones II**	**Room 502B**
4:00 PM–6:00 PM	**Platform: Membrane Physical Chemistry III**	**Room 515A**
4:00 PM–6:00 PM	**Platform: Molecular, Cellular, and Experimental Neuroscience:** **Reception, Plasticity, and New Approaches**	**Room 515B**
4:00 PM–6:00 PM	**Platform: Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence**	**Room 501ABC**
7:30 PM–9:30 PM	**Workshop: Time-resolved Crystallography** **Room 502A** **Chair:** *Philip Anfinrud, NIH* TIME-RESOLVED CRYSTALLOGRAPHY WITH SYNCHROTRON AND FREE ELECTRON LASER SOURCES. *Keith Moffat* STRUCTURAL DYNAMICS OF PHOTOACTIVE YELLOW PROTEIN INVESTIGATED BY TIME RESOLVED SERIAL FEMTOSECOND CRYSTALLOGRAPHY. *Marius Schmidt* TIME-RESOLVED FEMTOSECOND CRYSTALLOGRAPHY: TOWARDS MOLECULAR MOVIES OF MOLECULES IN ACTION. *Petra Fromme* WATCHING PROTEINS FUNCTION WITH TIME-RESOLVED X-RAY DIFFRACTION. *Philip Anfinrud*	

7:30 PM–9:30 PM	**Workshop: Frontiers in Biophysical Instrumentation** **Room 502B** **Chair:** *Joerg Bewersdorf, Yale University* STUDYING CELL DYNAMICS USING QUANTITATIVE PHASE IMAGING. *Gabriel Popescu* PROBING SINGLE INDIVIDUAL PROTEINS UNFOLD AND REFOLD WITH 1-µs RESOLUTION: IMPROVED AFM-BASED SINGLE MOLECULE FORCE SPECTROSCOPY. *Thomas T. Perkins* ELUCIDATION OF THE MOLECULAR MACHINERY IN PHOTOSYNTHETIC LIGHT HARVESTING. *Gabriela Schlau-Cohen* LIVE-CELL OPTICAL MICROSCOPY BEYOND THE DIFFRACTION LIMIT. *Joerg Bewersdorf*
7:30 PM–9:30 PM	**Workshop: Computational Methods for Ion Permeation and Selection** **Room 515A** **Chair:** *Maria Kurnikova, Carnegie Mellon University* WHAT CAN BE LEARNED ABOUT ION CHANNELS FROM MOLECULAR DYNAMICS SIMULATIONS.*Benoit Roux* CONTINUUM THEORY OF CALCIUM CHANNELS: FUNDAMENTAL INSIGHTS FROM SIMPLIFIED MODELS. *Dirk Gillespie* COMPUTATIONAL ELECTROPHYSIOLOGY: CLOSE-UPS OF ION PERMEATION AND MIGRATION IN MEMBRANE PROTEINS. *Ulrich Zachariae* WILL IT PERMEATE? PREDICTING ION CHANNEL ION SELECTIVITY, PERMITTIVITY AND BLOCK MECHANISMS. *Maria Kurnikova*
7:30 PM–9:30 PM	**Workshop: Methods for Tracking Single Biomolecule Mobility, Clustering, and Conformational State** **Room 515B** **Chair:** *Keith Lidke, University of New Mexico* MULTI-COLOR SINGLE PARTICLE TRACKING FOR DETERMINING PROTEIN INTERACTION LIFETIMES. *Keith A. Lidke* TRACKING SUBCELLULAR DYNAMICS WITH MULTIFOCAL PLANE MICROSCOPY. *Raimund J. Ober* SINGLE MOLECULES IN THE AGE OF BIG DATA. *Maxime Dahan* INVESTIGATING HOW MOLECULES COME TO LIFE USING SINGLE MOLECULE FLUORESCENCE TECHNOLOGIES. *Taekjip Ha*
6:00 PM–10:00 PM	**Publications Committee Meeting** **J.W. Marriott, Olympic II**
8:00 PM–10:00 PM	**SOBLA (The Society for Latinoamerican Biophysicists) Meeting** **Room 409AB**

Tuesday, March 1

Registration/Information

7:30 AM - 5:00 PM, WEST LOBBY

Biophysical Society Business Meeting

8:00 AM - 9:00 AM, ROOM 404AB

Poster Viewing

8:00 AM - 4:30 PM, WEST HALL

Symposium
Emerging Techniques for Study of Cell Mechanics

8:15 AM - 10:15 AM, PETREE HALL C

Chair
Amy Rowat, University of California, Los Angeles

NO ABSTRACT **8:15 AM**
THE PHYSICS OF SELF-ASSEMBLING CYTOSKELETAL NETWORKS. **R. Dyche Mullins**

1685-SYMP **8:45 AM**
FEELING FOR CELL FUNCTION - MECHANICAL PHENOTYPING AT 1,000 CELLS/SEC. **Jochen Guck**

1686-SYMP **9:15 AM**
BIOMECHANICAL IDENTIFICATION AND SORTING OF SINGLE CELLS. **Todd Sulchek**

1687-SYMP **9:45 AM**
CANCER CELL MECHANOTYPING: FROM SCREENING TO DISEASE BIOPHYSICS. **Amy Rowat**

Symposium
Multiscale Biophysics of Membranes

8:15 AM - 10:15 AM, PETREE HALL D

Chair
Felix Goñi, Basque Country University, Spain

1688-SYMP **8:15 AM**
INTERACTIONS AT THE MEMBRANE-FLUID INTERFACE. **Suzanne P. Jarvis**

1689-SYMP **8:45 AM**
CERAMIDE STUDIES FROM THE NANO TO THE MICROSCALE. **Felix M. Goñi**, Alicia Alonso

1690-SYMP **9:15 AM**
LIPID STRUCTURE AND CONTROL OF MEMBRANE ORDERED DOMAIN FORMATION AND SIZE BY LIPID COMPOSITION AND ASYMMETRY IN VITRO AND IN VIVO. **Erwin London**, Deborah A. Brown, Zhen Huang, JiHyun Kim, Guangtao Li, Johnna St.Clair, Qing Wang

1691-SYMP **9:45 AM**
THE BIOPHYSICS OF LIVING MEMBRANES: PROTEIN PARTITIONING AND FUNCTIONAL DIFFERENTIATION IN ORDERED PLASMA MEMBRANE DOMAINS. **Ilya Levental**

Platform
Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating II

8:15 AM - 10:15 AM, ROOM 502A

Co-Chairs
Glena Bett, State University of New York
Brad Rothberg, Temple University School of Medicine

1692-PLAT **8:15 AM**
MOLECULAR DYNAMICS SIMULATIONS OF HYDROPHOBIC MATCHING IN KCSA. **Karen M. Callahan**, Benoit Mondou, Louis Sasseville, Jean-Louis Schwartz, Jurgen Sygusch, Nazzareno D'Avanzo

1693-PLAT **8:30 AM**
INSIGHTS INTO ION CHANNEL SELECTIVITY WITH IONIC COULOMB BLOCKADE. **William A.T. Gibby**, Dmitri G. Luchinsky, Igor Kh Kaufman, Peter V.E. McClintock, Aneta Stefanovska, Robert S. Eisenberg

1694-PLAT **8:45 AM**
IONIC BASIS OF REPOLARIZATION OF ATRIAL AND VENTRICULAR SPECIFIC CELL TYPES DERIVED FROM HUMAN INDUCED PLURIPOTENT STEM CELLS. Aaron D. Kaplan, **Randall L. Rasmusson**, Glenna CL Bett

1695-PLAT **9:00 AM**
SHAKER-IR K CHANNEL GATING IN HEAVY WATER: ROLE OF STRUCTURAL WATER MOLECULES IN INACTIVATION. Tibor G. Szanto, Szabolcs M. Gaal, Zoltan Varga, **Gyorgy Panyi**

1696-PLAT **9:15 AM**
AN INTRINSIC LIGAND MEDIATES N- AND C-TERMINAL INTERACTIONS WITH THE KCNH GATING MACHINERY. **Yaxian Zhao**, Joao H. Morais-Cabral, Andreia Sousa Fernandes, Gail A. Robertson

1697-PLAT **9:30 AM**
TARGETED ENHANCEMENT OF HERG K^+ CHANNEL ACTIVITY WITH SCFV ANTIBODY FRAGMENTS. **Greg Starek**, Carol A. Harley, David K. Jones, Gail A. Robertson, João H. Morais-Cabral

1698-PLAT **9:45 AM**
FUNCTIONAL AND CRYSTALLOGRAPHIC STUDIES OF HETERO-MULTIMERIC K^+ CHANNELS. Spandana Vemulapally, D. Marien Cortes, **Luis G. Cuello**

1699-PLAT **10:00 AM**
OPTICAL RECORDING OF VOLTAGE ACTIVATION OF ENDOGENOUS POTASSIUM CHANNELS. **Mark W. Lillya**, Laxmi K. Parajuli, Sebastian Fletcher-Taylor, Joyce Huang, Bruce E. Cohen, Karen Zito, Jon T. Sack

Platform
Protein Structure, Prediction, and Design

8:15 AM - 10:15 AM, ROOM 502B

Co-Chairs
Evelyne Deplazes, The University of Queensland, Australia
Edward Lemke, European Molecular Biology Laboratory, Germany

1700-PLAT **8:15 AM**
COMBINING PHYSICS AND KNOWLEDGE IN BLIND PROTEIN STRUCTURE PREDICTION. **Alberto Perez**, Emiliano Brini, Joseph Morrone, Jason Wagoner, Justin MacCallum, Ken Dill

1701-PLAT **8:30 AM**
A NEW TOOL FOR CUSTOM PROTEIN DESIGN AND ENGINEERING - DH10 BAC-TAG. **Christine Koehler**, Paul Sauter, Mirella Wawryszyn, Gemma Estrada Girona, Markus H. Fritz, Moritz Biskup, Hueseyin Besir, Imre Berger, Vladimir Benes, Jan Korbel, Stefan Braese, Edward A. Lemke

1702-PLAT 8:45 AM
CRYOEM-GUIDED ITERATIVE MOLECULAR DYNAMICS - ROSETTA PROTEIN STRUCTURE REFINEMENT PROTOCOL IMPROVES PROTEIN MODEL QUALITY. **Steffen Lindert**, Melanie Marlett

1703-PLAT 9:00 AM
STRUCTURE-BASED PREDICTION OF PROTEASE MULTISPECIFICITY USING COMPUTATIONAL PROTEIN DESIGN. **Sagar D. Khare**, Aliza Rubenstein, Manasi Pethe

1704-PLAT 9:15 AM
PROTEIN SEQUENCE OPTIMIZATION WITH A POLARIZABLE FORCE FIELD: INSIGHTS FROM PDZ DOMAINS. Jacob M. Litman, Young Joo Sun, Titus Hou, Stephen D. LuCore, Nicolas Panel, Thomas Simonson, Ernesto J. Fuentes, **Michael J. Schnieders**

1705-PLAT 9:30 AM
DE NOVO DESIGN AND BIOPHYSICAL CHARACTERIZATION OF AN AFFINITY-ENHANCED PROTEIN DISPLAYING THE STRUCTURE OF THE BROADLY NEUTRALIZING HIV-1 2F5 ANTIBODY EPITOPE. **Isabelle Freire Tabosa Viana**, Eduardo Nascimento, Jodi Craigo, Marco Krieger, Robbie Mailliard, Rafael Dhalia, Roberto Lins, Ernesto TA Marques

1706-PLAT 9:45 AM
A TOOL TO INTEGRATE USER EXPERTISE INTO BUILDING ATOMIC LEVEL MODELS FOR LARGE BIOMOLECULAR SYSTEMS. **Till Rudack**, Ryan McGreevy, Marc Siggel, Klaus Schulten

1707-PLAT 10:00 AM
RESIDUE ENVIRONMENT SCORE FOR SELECTING PROTEIN STRUCTURE MODELS AND PROTEIN-PROTEIN DOCKING MODELS. **HyungRae Kim**

Platform
Protein Assemblies

8:15 AM - 10:15 AM, ROOM 515A

Co-Chairs
James Cole, University of Connecticut
Alasdair Steven, NIH

1708-PLAT 8:15 AM
SPECIFIC INTERACTION OF A NATURALLY OCCURRING AMYLOIDOGENIC FRAGMENT OF STREPTOCOCCUS MUTANS ADHESIN P1 WITH INTACT P1 ON THE CELL SURFACE MEASURED BY SOLID STATE NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY. **Joanna Long**, Wenxing Tang, Paula Crowley, L. Jeannine Brady

1709-PLAT 8:30 AM
REGULATION OF PKR BY RNA: FORMATION OF ACTIVE AND INACTIVE DIMERS. Bushra Husain, Stephen Hesler, **James Cole**

1710-PLAT 8:45 AM **EDUCATION TRAVEL AWARDEE**
GOVERNING PRINCIPLES OF MULTIPROTEIN COMPLEX FORMATION ON THE CELL MEMBRANES: AN INVESTIGATION USING SINGLE-MOLECULE RESOLUTION SPATIO-TEMPORAL STOCHASTIC COMPUTER SIMULATIONS AND ANALYTICAL CALCULATIONS. **Osman N. Yogurtcu**, Margaret E. Johnson

1711-PLAT 9:00 AM
CHARACTERIZATION OF NOVEL SPLIT-FLUORESCENT PROTEINS AND QUANTITATIVE ANALYSIS OF THEIR SELF-ASSEMBLY PROCESS. **Tugba Koker**, Anthony Fernandez, Arunima Kolekar, Fabien Pinaud

1712-PLAT 9:15 AM
A NEW DIMENSION OF DETECTION IN ANALYTICAL ULTRACENTRIFUGATION WITH FLUORESCENCE DETECTION USING PHOTOSWITCHABLE FPS AS TIME DOMAIN PROBES. **Huaying Zhao**, George Patterson, Peter Schuck

1713-PLAT 9:30 AM
MOLECULAR ARCHITECTURE OF THE NUP82 COMPLEX, THE CYTOPLASMIC MRNA EXPORT PLATFORM IN THE NUCLEAR PORE COMPLEX. **Seung Joong Kim**, Javier Fernandez-Martinez, Yi Shi, Paula Upla, Riccardo Pellarin, Ilan E. Chemmama, Ilona Nudelman, David L. Stokes, Brian T. Chait, Andrej Sali, Michael P. Rout

1714-PLAT 9:45 AM
LOCAL GEOMETRY AND EVOLUTIONARY CONSERVATION OF PROTEIN SURFACES REVEAL THE MULTIPLE RECOGNITION PATCHES IN PROTEIN-PROTEIN INTERACTIONS. **Elodie Laine**, Hugues Ripoche, Alessandra Carbone

1715-PLAT 10:00 AM
RETINOSCHISIN AT 4 Å RESOLUTION FROM CRYO-EM: A JUNCTIONAL MODEL OF BACK-TO-BACK OCTAMERS FOR ADHESION IN THE RETINA. Gökhan Tolun, Camasamudram Vijayasarathy, Rick Huang, Yong Zeng, Yan Li, Paul A. Sieving, J. Bernard Heymann, **Alasdair C. Steven**

Platform
Mechanosensation

8:15 AM - 10:15 AM, ROOM 515B

Co-Chairs
Dolores Bozovic, University of California, Los Angeles
Hongxia Fu, Harvard Medical School

1716-PLAT 8:15 AM
SINGLE-MOLECULE ACTIVATION BY FLOW: FORCE-INDUCED CONFORMATIONAL TRANSITIONS REGULATE THE LIGAND BINDING AFFINITY OF A LARGE, POLYMERIC MECHANOSENSOR PROTEIN. **Hongxia Fu**, Yan Jiang, Darren Yang, Wesley P. Wong, Timothy A. Springer

1717-PLAT 8:30 AM
BILAYER-MEDIATED STRUCTURAL TRANSITIONS IN THE TREK-2 MECHANOSENSITIVE K2P CHANNEL. **Prafulla Aryal**, Viwan Jarerattanachat, Stephen J. Tucker, Mark S.P. Sansom

1718-PLAT 8:45 AM
MAGNETIC NANOPARTICLE STIMULATION FOR DETECTION OF HIGH-ORDER MODE-LOCKING IN HAIR CELLS OF THE INNER EAR. **Dolores Bozovic**, Michael Levy

1719-PLAT 9:00 AM
STRETCH-GATED ION CHANNELS IN NEURONAL MECHANORECEPTORS. **Slav N. Bagriantsev**, Eve R. Schneider, Evan O. Anderson, Jon Matson, Elena O. Gracheva

1720-PLAT 9:15 AM
BIOPHYSICAL FACTORS THAT PROMOTE MECHANICALLY-INDUCED ACTION POTENTIALS IN NEOCORTICAL AND HIPPOCAMPAL PYRAMIDAL NEURONS. Yury A. Nikolaev, Peter J. Dosen, Derek R. Laver, Dirk F. Van Helden, **Owen P. Hamill**

1721-PLAT 9:30 AM **CPOW TRAVEL AWARDEE**
INFLAMMATORY CYTOKINE IL-1α UP-REGULATES PIEZO1 AND HYPERSENSITIZES CHONDROCYTES TO COMPRESSION. **Whasil Lee**, Holly Leddy, Amy McNulty, Farshid Guilak, Wolfgang Liedtke

1722-PLAT 9:45 AM
STRUCTURAL AND FUNCTIONAL CHARACTERIZATIONS OF THE MECHANOSENSITIVE PIEZO CHANNEL. **Bailong Xiao**

1723-PLAT 10:00 AM
BENDING PIEZO1: THE EFFECT OF AMPHIPATHS ON THE GATING OF A MECHANOSENSITIVE CHANNEL. **Charles D. Cox**, Boris Martinac

Platform
Networks and Synthetic Biology

8:15 AM - 10:15 AM, ROOM 501ABC

Co-Chairs
Andrew Mugler, Purdue University
Chandran Sabanayagam, University of Delaware

1724-PLAT 8:15 AM
THE NONEQUILIBRIUM STATISTICAL THERMODYNAMICS OF BIOLOGICAL CYCLES. **Jason A. Wagoner**, Ken Dill

1725-PLAT 8:30 AM
STATISTICAL MECHANICAL FRAMEWORK FOR PREDICTING CELLULAR RESPONSES FROM SINGLE-CELL DATA. **Lila Forte**, Connie Y. Wang, Thomas F. Miller III

1726-PLAT 8:45 AM
FUNDAMENTAL LIMITS TO THE PRECISION OF MULTICELLULAR SENSING. Sean Fancher, Andre Levchenko, Ilya Nemenman, **Andrew Mugler**

1727-PLAT 9:00 AM **EDUCATION TRAVEL AWARDEE**
MULTI-SCALE SPATIO-TEMPORAL DYNAMICS OF HISTONE MODIFICATIONS. **Irem Celen**, Jung Doh, Chandran Sabanayagam

1728-PLAT 9:15 AM
DYNAMIC SIMULATIONS OF CELL MIGRATION WITH APPLICATIONS TO BRAIN DEVELOPMENT. **Claude Sinner**, Ines Reinartz, Bernadett Bösze, Steffen Scholpp, Alexander Schug

1729-PLAT 9:30 AM
OPTICAL CONTROL OF CANCER INITIATION IN ZEBRAFISH. **Zhiping Feng**

1730-PLAT 9:45 AM
IN VITRO CONSTRUCTION OF 3D MICROTUBULE NETWORKS AND APPLICATIONS OF BASIC ARTIFICIAL CYTOSKELETON FOR BIOPHYSICAL STUDIES. **Michael D. Vershinin**, Jared Bergman, Olaolu Osunbayo

1731-PLAT 10:00 AM
FROM ION-CHANNELS TO PORINS: ENGINEERING DNA-BASED SYNTHETIC COUNTERPARTS. **Kerstin Göpfrich**, Alexander Ohmann, Satya P. Bhamidimarri, Madhavi V.S.V. Duvvuri, Cristiana I. Bercea, Bertalan Gyenes, Mathias Winterhalter, Ulrich F. Keyser

Platform
Ribosomes and Translation

8:15 AM - 10:15 AM, ROOM 511ABC

Co-Chairs
Rubin Gonzalez, Columbia University, USA
Magnus Johansson, Uppsala University, Sweden

1732-PLAT 8:15 AM
IN VIVO MEASUREMENTS OF PROTEIN SYNTHESIS KINETICS USING SINGLE-MOLECULE TRACKING OF E.COLI TRNAS. Ivan Volkov, Javier Aguirre, Martin Lindén, Johan Elf, **Magnus Johansson**

1733-PLAT 8:30 AM
CODON POSITIONS THAT STRONGLY INFLUENCE COTRANSLATIONAL FOLDING ARE FAR FROM EQUILIBRIUM: A FRAMEWORK FOR CONTROLLING NASCENT-PROTEIN FOLDING. Ajeet Sharma, **Edward P. O'Brien**

1734-PLAT 8:45 AM
FOLLOWING TRANSLATION AND FOLDING OF INDIVIDUAL PROTEINS BY SINGLE RIBOSOMES IN REAL-TIME USING OPTICAL TWEEZERS. **Alexandros Katranidis**, Florian Wruck, Knud H. Nierhaus, Georg Büldt, Martin Hegner

1735-PLAT 9:00 AM
THE DYNAMIC PATHWAYS OF PROKARYOTIC TRANSLATION TERMINATION AND RECYCLING. **Arjun Prabhakar**, Jin Chen, Joseph D. Puglisi

1736-PLAT 9:15 AM
IN VITRO OPTIMIZATION OF TRANSLATIONAL ACTIVITY WITH MODIFIED RIBOSOMES. **Noémie M. Kempf**, Cristina Remes, Daryan Kempe, Alexandros Katranidis, Jörg Fitter

1737-PLAT 9:30 AM
FUNCTIONAL PROFILING OF RIBOSOMAL RNA MODIFICATIONS USING QUANTITATIVE MASS SPECTROMETRY. **Anna Popova**, James Williamson

1738-PLAT 9:45 AM
SINGLE-MOLECULE ELECTRONIC MEASUREMENTS OF DNA POLYMERASE I. **Denys O. Marushchak**, Kaitlin M. Pugliese, Mackenzie W. Turvey, O. Tolga Gul, Arith J. Rajapakse, Gregory A. Weiss, Philip G. Collins

1739-PLAT 10:00 AM
QUANTIFYING THE ENERGY LANDSCAPE OF RIBOSOME FUNCTION. **Paul C. Whitford**

Subgroup Chairs Meeting

9:00 AM - 10:30 AM, ROOM 510

Career Center Workshop
Career Planning and Job Searching for Science Professionals: Academic Opportunities

9:30 AM - 10:30 AM, ROOM 518

Learn how to create a flexible career plan for yourself, and identify and leverage your skills, expertise and experience to find a career (not just a job) that is right for you. Special emphasis will be placed on tips for finding and launching a career in academia, but we will also incorporate the development of a contingency plan for the unexpected twists and turns in life.

Exhibits

10:00 AM - 4:30 PM, WEST HALL

Coffee Break

10:15 AM - 11:00 AM, WEST HALL

Symposium
Awards

10:45 AM - 12:45 PM, PETREE HALL C

Chair
Edward Egelman, University of Virginia, Society President

NO ABSTRACT 10:45 AM
TWENTY-EIGHT YEARS, AND STILL (OPTICALLY) TRAPPED! SINGLE MOLECULE BIOPHYSICS COMES OF AGE. **Steven M. Block**

NO ABSTRACT 11:02 AM
ELEVATOR MECHANISM OF GLUTAMATE TRANSPORTERS. **Olga Boudker**

NO ABSTRACT 11:19 AM
MECHANICAL ARCHITECTURE OF CELL DIVISION. **Sophie Dumont**

NO ABSTRACT 11:36 PM
HOW A TAIL WAGS ITS SPERM: REGULATION OF FLAGELLAR MOTILITY BY BIOACTIVE LIPID SIGNALING. **Polina V. Lishko**

No Abstract **11:53 pm**
X-RAYS AND ELECTRONS ILLUMINATE NEUROTRANSMITTER RECEPTOR STRUCTURE AND MECHANISM. **Eric Gouaux**

No Abstract **12:10 pm**
CHOLESTEROL, THE MOLECULE YOU THOUGHT YOU KNEW. **Philip Yeagle**

No Abstract **12:27 pm**
INTERPRETATION OF SOLUTION X-RAY SCATTERING BY EXPLICIT-SOLVENT MOLECULAR DYNAMICS. **Jochen Hub**

Platform
Other Channels

10:45 am - 12:45 pm, Petree Hall D

Co-Chairs
Jorge Arreola, Universidad Autónoma de San Luis Potosí Inicio, Mexico
Peter Pohl, Johannes Kepler University, Australia

1740-Plat **10:45 am**
MOLECULAR DETERMINANTS UNDERLYING THE PATHOGENIC MECHANISM OF KID SYNDROME ELICITED BY CX26G12R MUTATION. **Isaac E. García**, Gustavo Contreras, Amaury Pupo, Bernardo Pinto, Ramón Latorre, Jorge E. Contreras, Agustín D. Martínez, Carlos González

1741-Plat **11:00 am**
THREE-DIMENSIONAL STRUCTURE OF INNEXIN GAP JUNCTION CHANNELS STUDIED BY ELECTRON CRYSTALLOGRAPHY. **Atsunori Oshima**, Tomohiro Matsuzawa, Kazuyoshi Murata, Kazutoshi Tani, Yoshinori Fujiyoshi

1742-Plat **11:15 am**
ACCESS OF METAL IONS AND METHANETHIOSULFONATE REAGENTS TO THE CALCIUM-GATED CONNEXIN HEMICHANNEL PORE: IMPLICATIONS FOR THE LOCATION OF THE GATE. **William I. Lopez**, Jaya Ramachandran, Andrew L. Harris, Jorge E. Contreras

1743-Plat **11:30 am**
MEASURING PROTON DEPLETION IN THE VICINITY OF PROTON CHANNELS. **Leon D. Islas**, Victor De la Rosa-Jimenez, Esteban Suarez, Gisela Rangel

1744-Plat **11:45 am**
ACID-INDUCED CHLORIDE CURRENT IN DISTAL CONVOLUTED TUBULE. William C. Valinsky, Rhian M. Touyz, **Alvin Shrier**

1745-Plat **12:00 pm**
MODULATION OF THE CALCIUM-DEPENDENT CHLORIDE CHANNEL TMEM16A BY EXTRACELLULAR PROTONS. **Silvia Cruz-Rangel**, José J. De Jesús-Pérez, Criss Hartzell, Patricia Pérez-Cornejo, Jorge Arreola

1746-Plat **12:15 pm**
UNUSUAL ION PATHWAY ARCHITECTURE OF THE DUAL-TOPOLOGY FLUORIDE CHANNEL FLUC. **Nicholas B. Last**, Christopher Miller

1747-Plat **12:30 pm**
VOLTAGE SENSITIVITY OF THE BACTERIAL PROTEIN TRANSLOCATION CHANNEL. **Denis G. Knyazev**, Roland Kuttner, Christine Siligan, Lukas Winter, Peter Pohl

Platform
Actin and Microtubules: Structure and Dynamics

10:45 am - 12:45 pm, Room 502A

Co-Chairs
David Sept, University of Michigan
Megan Valentine, University of California, Santa Barbara

1748-Plat **10:45 am**
MOLECULAR EFFECTS OF DEAFNESS MUTATIONS IN ACTIN. Lauren Jepsen, Karina Kruth, Peter Rubenstein, **David Sept**

1749-Plat **11:00 am**
TARGETED ACTIN DISASSEMBLY BY MICAL AND COFILIN. **Elena E. Grintsevich**, Hunkar Gizem Yesilyurt, Shannon K. Rich, Ruei-Jiun Hung, Jonathan R. Terman, Emil Reisler

1750-Plat **11:15 am**
F-ACTIN FRAGMENTATION INDUCES DISTINCT MECHANISMS OF STRESS RELAXATION IN THE ACTIN CYTOSKELETON. Wonyeong Jung, Michael P. Murrell, **Taeyoon Kim**

1751-Plat **11:30 am**
THE EFFECT OF MULTIVALENT CATIONS ON MICROTUBULE-PROTEIN TAU ORDERING. **Chaeyeon Song**, Peter Chung, Herbert P. Miller, Youli Li, Stuart C. Feinstein, Leslie Wilson, Cyrus R. Safinya

1752-Plat **11:45 am**
NOVEL MECHANISM OF REGULATION OF MICROTUBULE DYNAMICS BY TAU. Rehan Ali, **Christopher L. Berger**

1753-Plat **12:00 pm**
SUPER-RESOLUTION IMAGING OF SLOWLY DEPOLYMERIZING MICROTUBULES REVEALS NO CURVED PROTOFILAMENTS WITH A LIFETIME LONGER THAN SECONDS. **Douglas S. Martin**, Nicholas J. Carter, Robert A. Cross

1754-Plat **12:15 pm**
LOCAL ANCHORAGE OF KINETOCHORE-FIBERS TO THE MAMMALIAN SPINDLE PROVIDES MECHANICAL ISOLATION AND LOAD-BEARING REDUNDANCY. **Mary W. Elting**, Dylan B. Udy, Sophie Dumont

1755-Plat **12:30 pm**
SINGLE-MOLECULE INVESTIGATION OF THE DIFFUSIVE MICROTUBULE +TIP TRACKING PROTEIN EB1. Benjamin J. Lopez, **Megan T. Valentine**

Platform
Protein-Lipid Interactions II

10:45 am - 12:45 pm, Room 502B

Co-Chairs
Zhiming Chen, University of Pennsylvania
Durba Sengupta, National Chemical Laboratory, Germany

1756-Plat **10:45 am**
CROSSLINKING/MS STUDIES OF CHOLESTEROL INTERACTIONS WITH HUMAN α1 GLYCINE RECEPTOR. **Nicholas Ferraro**, Emily Benner, Jeffry Madura, Michael Cascio

1757-Plat **11:00 am**
A THERMODYNAMIC STUDY OF THE EFFECTS OF CHOLESTEROL ON THE ACTIVITY OF ANTIMICROBIAL PEPTIDE PROTEGRIN-1. **Nishanth S. Iyengar**, J. Michael Henderson, Tiffany Suwatthee, Indroneil Roy, Alan J. Waring, Ka Yee C. Lee

1758-Plat **11:15 am**
CONFORMATIONAL DYNAMICS OF GPCR DIMERS IS DEPENDENT ON MEMBRANE CHOLESTEROL. **Durba Sengupta**, Xavier Prasanna, Amitabha Chattopadhyay

1759-Plat **11:30 am**
CHOLESTEROL PROMOTES THE PERIPHERAL BINDING OF RETROVIRAL PROTEINS TO LIPID BILAYERS. **Milka Doktorova**, Robert Dick, Frederick A. Heberle, Gerald W. Feigenson, Volker M. Vogt

1760-Plat **11:45 am**
ASSESSING THE MECHANISM BY WHICH A CHOLESTEROL RECOGNITION AMINO ACID CONSENSUS (CRAC) MOTIF RECOGNIZES MEMBRANE CHOLESTEROL. **Evan Koufos**, Angela C. Brown

1761-Plat 12:00 pm
MISMATCH DEPENDENT TILT OF AMPHIPATHIC α-HELICAL ANTIMICROBIAL PEPTIDES INSERTED IN POSITIVE SPONTANEOUS CURVATURE LIPID MEMBRANES. **Erik Strandberg**, Jonathan Zerweck, Ariadna Grau-Campistany, Marie-Claude Gagnon, Parvesh Wadhwani, Johannes Reichert, Jochen Bürck, Jean-Francois Paquin, Michele Auger, Francesc Rabanal, Anne S. Ulrich

1762-Plat 12:15 pm
TN-RAS, SYNAPTOTAGMIN1 C2AB, ANNEXINB12 AND AMPHIPHYSIN NBAR CAN DISCRIMINATE SPHERICAL FROM CYLINDRICAL MEMBRANE CURVATURE. **Artu' Breuer**, Jannik Larsen, Kadla Røskva Rosholm, Søren L. Pedersenb, Henrik K. Munch, Vadym Tkach, John J. Sakon, Thomas Bjørnholm, Keith R. Weninger, Poul M. Bendix, Knud J. Jensen, Mark J. Uline, Nikos S. Hatzakis, Dimitrios Stamou

1763-Plat 12:30 pm
BAR DOMAIN PROTEINS CAN DIFFER SUBSTANTIALLY IN THEIR CAPACITY TO GENERATE MEMBRANE CURVATURE. **Zhiming Chen**, Zheng Shi, Katarzyna I. Jankowska, Tobias Baumgart

Platform
Intrinsically Disordered Proteins (IDP) and Aggregates II

10:45 am - 12:45 pm, Room 515A

Co-Chairs
Edward Lemke, European Molecular Biology Laboratory, Germany
Sudipta Maiti, Tata Institute of Fundamental Research, India

1764-Plat 10:45 am
PLASTICITY OF NUCLEOPORIN NUCLEAR TRANSPORT RECEPTOR INTERACTIONS - MOLECULAR DESCRIPTION OF A HIGHLY DYNAMIC, ULTRAFAST INTERACTION MECHANISM. **Iker Valle Aramburu**, Davide Mercadante, Sigrid Milles, Malene Ringkjøbing, Niccolò Banterle, Christine Koehler, Swati Tyagi, Jane Clarke, Sarah L. Shammas, Martin Blackledge, Frauke Gräter, Edward A. Lemke

1765-Plat 11:00 am
A HIDDEN STRUCTURAL TRANSITION ACCOMPANIES THE PROGRESSION OF AMYLOID-BETA OLIGOMERS TO MATURE FIBRILS. Bappaditya Chandra, Debanjan Bhowmik, Barun K. Maity, Debabrata Dhara, Kaustubh Mote, Ravindra Venkatramani, Perunthiruthy K. Madhu, **Sudipta Maiti**

1766-Plat 11:15 am
REGULATION OF MAMMALIAN DYNEIN INTERMEDIATE CHAIN. **Jing Jie**, Elisar Barbar

1767-Plat 11:30 am
INTRINSICALLY DISORDERED PROTEINS: GATEKEEPERS OF THE NUCLEAR PORE COMPLEX. Ali Ghavami, Liesbeth M. Veenhoff, Erik Van der Giessen, **Patrick R. Onck**

1768-Plat 11:45 am
CHARGE PATTERNED SEQUENCES FORM HELICAL STRUCTURES THROUGH CHARGE NEUTRALIZATION. **Tyler S. Harmon**, Rohit V. Pappu

1769-Plat 12:00 pm
STRUCTURAL ENSEMBLES OF INTRINSICALLY DISORDERED PROTEINS DEPEND STRONGLY ON FORCE FIELD: A COMPARISON TO EXPERIMENT. **Sarah Rauscher**, Vytautas Gapsys, Man Zhou, Qui Van, Michal Gajda, Markus Zweckstetter, Joerg Enderlein, Bert L. de Groot, Helmut Grubmüller

1770-Plat 12:15 pm
FACTORS MODULATING THE INTERACTION OF HUNTINGTIN WITH LIPID MEMBRANES: IMPLICATIONS FOR HUNTINGTON'S DISEASE. **Justin Legleiter**, James R. Arndt, Maxmore Chaibva, Xiang Gao, Pranav Jain, Olivia Sarver, Stephen Valentine

1771-Plat 12:30 pm
ELECTROSTATIC CONTRIBUTIONS TO CALMODULIN INTERACTIONS WITH CALCINEURIN. **Trevor P. Creamer**, Erik C. Cook

Platform
Calcium Signaling

10:45 am - 12:45 pm, Room 515B

Co-Chairs
Anne Carlson, University of Pittsburgh
Yubin Zhou, Texas A&M University

1772-Plat 10:45 am
CALCIUM SIGNALING REQUIRED FOR THE FAST POLYSPERMY BLOCK IN XENOPUS LAEVIS. Katherine L. Wozniak, **Anne E. Carlson**

1773-Plat 11:00 am
REGULATION OF THE CARDIAC L-TYPE CALCIUM CHANNEL BY THE CYCLIC NUCLEOTIDE CROSS-TALK SIGNALING NETWORK. **Claire Y. Zhao**, Joseph L. Greenstein, Raimond L. Winslow

1774-Plat 11:15 am
SR CONTRIBUTION TO CALCIUM CYCLING IN SINO-ATRIAL NODE CELLS: AS SEEN FROM NANOSCALE ELECTRON MICROSCOPY AND NUMERICAL MODELING. **V.Ramesh Iyer**, Oliver Monfredi, Victor Maltsev, Manuela Lavorato, Michael Stern, Clara Franzini-Armstrong

1775-Plat 11:30 am
A C-TERMINAL SWITCH GATES THE ORAI1 CHANNEL. **Yandong Zhou**, Xiangyu Cai, xianming wang, Natalia A. Loktionova, Xizhuo Wang, Robert M. Nwokonko, Mohamed Trebak, Donald L. Gill

1776-Plat 11:45 am
HIGH-SPEED CONFOCAL IMAGING REVEALS COMPLEX CALCIUM TRANSIENTS IN PLATELES. **János Vincze**, Renáta Hudák, János Kappelmayer, László Csernoch

1777-Plat 12:00 pm
NEAR-INFRARED PHOTOACTIVATABLE CONTROL OF CALCIUM SIGNALING. Lian He, Yuanwei Zhang, Guolin Ma, Peng Tan, Youjun Wang, Yun Huang, Patrick Hogan, Gang Han, **Yubin Zhou**

1778-Plat 12:15 pm
THE FUNCTION OF STROMAL INTERACTION MOLECULE 1 (STIM1) IN HEART. **Guiling Zhao**, Hengtao Zhang, Tianyu Li, Didier X. P. Brochet, Paul Rosenberg, W. Jonathan Lederer

1779-Plat 12:30 pm
COMPLEMENT-MEDIATED PURE CHEMOTAXIS OF HUMAN NEUTROPHILS NEITHER REQUIRES NOR CAUSES BURSTS IN INTRACELLULAR CALCIUM LEVELS. **Emmet A. Francis**, Volkmar Heinrich

Platform
Protein-Dynamics and Allostery I

10:45 am - 12:45 pm, Room 501ABC

Co-Chairs
Alessandro Cembran, University of Minnesota Duluth
Blake Mertz, West Virginia University

1780-Plat 10:45 am
DYNAMIC HETEROGENEITY AND THE ROLE OF NON-NATIVE CONTACTS IN THE PROTEIN FOLDING/UNFOLDING TRANSITIONS. **Toshifumi Mori**, Shinji Saito

1781-Plat 11:00 am
NIPAH VIRUS ENTRY INTO HOST CELL: INTER-MONOMER REARRANGEMENT SIGNALED BY RECEPTOR BINDING AT ALLOSTERIC SITE. **Priyanka Dutta**, Sameer Varma

1782-PLAT 11:15 AM
LIGAND-SPECIFIC CONFORMATIONAL CHANGES IN CCR7 COUPLED TO SELECTING DIFFERENT SIGNALING PATHWAYS UPON CCL19 AND CCL21 LIGAND BINDING. **Zied Gaieb**, David D. Lo, Dimitrios Morikis

1783-PLAT 11:30 AM
PROTEORHODOPSIN ACTIVATION CAPTURED BY MOLECULAR DYNAMICS SIMULATIONS. **Jun Feng**, Blake Mertz

1784-PLAT 11:45 AM
COORDINATED DYNAMICS ORCHESTRATING THE DNA RE-LIGATION BY DE-POISONED TOPOISOMERASE II. **Nan-Lan Huang**, Jung-Hsin Lin

1785-PLAT 12:00 PM
FROM PHYSICS TO PHENOTYPE: NEW INSIGHTS INTO ALLOSTERIC TRANSPORT MECHANISMS IN LEUT. **Michael V. LeVine**, Michel A. Cuendet, George Khelashvili, Harel Weinstein

1786-PLAT 12:15 PM
PLEIOTROPIC ROLE PLAYED BY THE PDZ DOMAIN IN NEURONAL SIGNALING PATHWAYS. Célia Caillet-Saguy, Pierre Maisonneuve, Florent Delhommel, Henri Buc, Monique Lafon, Muriel Delepierre, Florence Cordier, **Nicolas Wolff**

1787-PLAT 12:30 PM
HYDROPHOBIC INTERACTIONS ELICIT COOPERATIVE RESPONSE IN DYSTROPHIN. **Alessandro Cembran**, Anne Hinderliter, Benjamin T. Horn, Caitlin T. Pederson, Katie L. Schneider, Jesse A. Skogstad

Platform
RNA Structure and Dynamics

10:45 AM - 12:45 PM, ROOM 511ABC

Co-Chairs
Ruben Gonzalez, Columbia University
Luis Marky, University of Nebraska Medical Center

1788-PLAT 10:45 AM
INTERROGATION OF CRISPR DYNAMICS WITH FLUORESCENT SINGLE GUIDE RNAS IN LIVE CELLS. Hanhui Ma, Li-Chun Tu, Ardalan Naseri, Shaojie Zhang, Maximilliaan Huisman, **David Grunwald**, Thoru Pederson

1789-PLAT 11:00 AM
DECIPHERING THE INFLUENZA A MULTI-SEGMENT GENOME COMPLEX PACKAGING USING SINGLE CELL HIGHLY MULTIPLEXED FISH DATA. **Simon Prisner**, Ivan Haralampiev, Matthias Schade, Jasmine Chamiolo, Fabian Jolmes, Oliver Seitz, Andreas Herrmann

1790-PLAT 11:15 AM
EXPLORING THE LIMITS OF A KNOWLEDGE-BASED COARSE-GRAINED MODEL FOR RNA. **Simon Poblete**

1791-PLAT 11:30 AM
HIGH THROUGHPUT CHARACTERIZATION OF RNA TERTIARY ELEMENTS. **Sarah Denny**, Namita Bisaria, Joseph Yesselman, Rhiju Das, Daniel Herschlag, William Greenleaf

1792-PLAT 11:45 AM
LABEL-FREE, HIGH-TIME-RESOLUTION, SINGLE-MOLECULE STUDIES OF RIBOSWITCH FOLDING. Nathan S. Daly, Jason J. Hon, Steven B. Warren, Scott M. Trocchia, Colin Nuckolls, Kenneth L. Shepard, **Ruben L. Gonzalez Jr**

1793-PLAT 12:00 PM
A COMPARATIVE INVESTIGATION OF THE STABILITY OF DNA AND RNA PSEUDOKNOTS. Calliste Reiling-Steffensmeier, **Luis A. Marky**

1794-PLAT 12:15 PM
RNA SECONDARY AND TERTIARY STRUCTURE PREDICTION BY TRACING NUCLEOTIDE CO-EVOLUTION WITH DIRECT COUPLING ANALYSIS. Eleonora De Leonardis, Benjamin Lutz, Sebastian Ratz, Cocco Simona, Remi Monasson, Martin Weigt, **Alexander Schug**

1795-PLAT 12:30 PM
MECHANICAL FORCE AND SALT EFFECTS ON THE THERMODYNAMICS OF A FRAMESHIFTING RNA PSEUDOKNOT. **Naoto Hori**, Natalia A. Denesyuk, D. Thirumalai

Exhibitor Presentation
Bruker Nano Surfaces

11:30 AM - 1:00 PM, ROOM 505

BioScope Resolve BioAFM – Unrivalled AFM Biomechanics and Resolution
In this presentation we will introduce new capabilities for cell mechanobiology and highest resolution cell and molecular imaging available on the BioScope Resolve BioAFM. We will explain how innovations in force control and instrument design have enabled BioScope Resolve to be the first AFM to image microvilli on live cells and to consistently resolve the double helix of DNA, while on the inverted microscope. To enable highest resolution and accurate cell mechanics data, the entire AFM mechanical loop of BioScope Resolve has been designed for stability, specifically on biological samples, with biological sample carriers, and when mounted on the inverted microscope. Designed for Bruker's exclusive PeakForce Tapping, BioScope Resolve eliminates the need for fluid cantilever tuning entirely with ScanAsyst and provides quantifiable pN force control for imaging and force mapping. The combination of PeakForce Tapping and FASTForce Volume provides the broadest range of frequencies for mechanical characterization, with a new no-touch calibration method guaranteeing accurate calibration. As we will show in the presentation, BioScope Resolve also features synchronization of these unique mechanical measurements with fluorescence, enabling new kinds of correlative studies.
Speaker
Marcin Walkiewicz, Applications Scientist, Bruker – Atomic Force Microscopy Business

Research Programs at PUIs
Founding, Establishing, and Maintaining a Research Laboratory

12:00 PM - 1:30 PM, ROOM 408A

This session, sponsored by the Education Committee, provides guidance on founding, establishing, and maintaining a research laboratory at Primarily Undergraduate Institutions.
Panelists
Ashley R. Carter, Amherst College
Christine P. Piro, Franklin and Marshall College
Alex Small, California State Polytechnic University, Pomona
Paul Urayama, Miami University

Moderator
Scott Brewer, Franklin and Marshall College

Postdoc to Faculty Q&A
Transitions Forum and Luncheon

12:00 PM - 2:00 PM, ROOM 510/512

This question-and-answer luncheon, sponsored by the Committee for Professional Opportunities for Women (CPOW), is designed for 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 department chairs and/or part of faculty

search committees. Topics for discussion include how to prepare the curriculum vitae, the interview process, networking, how to negotiate the job offer, and advice for new faculty as they balance research with their department obligations. Pre-registration was required for lunch. If you are interested in attending and did not register in advance, you are welcome to participate in the discussion on a space-available basis.
Speakers
Sarah Bondos, Texas A&M
Shelli Frey, Gettysburg College
Fatemeh Khalili-Araghi, University of Illinois at Chicago
Susy Kohout, Montana State University
Benjamin L. Stottrup, Augsburg College
Valeria Vasquez, University of Tennessee, Memphis
Pernilla Wittung-Stafshede, Chalmers University of Technology, Sweden

Exhibitor Presentation
Nanion Technologies GmbH

12:30 PM - 2:00 PM, ROOM 513

Measure More Membrane: Cells, Bilayers and Transporter Activity
As the title suggests, this workshop has one common denominator: membranes and the measurements thereof. We will showcase four versatile products: the *Port-a-Patch*, the world's smallest patch clamp rig, the *Orbit* product family, for parallel lipid bilayer recordings of reconstituted ion channels, and the *SURFE2R* product family, for label-free and direct measurements of transporter protein activity.

The *Port-a-Patch*, on the market since 2003, is still the smallest patch clamp rig in the world, and supports high quality patch clamp recordings; attainable without months or years of training. Giga-seal recordings and the excellent voltage-clamp of the cellular membrane ensure high quality data, and the versatile add-ons allow unprecedented experimental freedom, way beyond the possibilities of conventional patch clamping.

The *Orbit 16* supports the parallel formation of and recordings from up to 16 lipid bilayers, accommodating reconstituted ion channels or nanopores. Using Micro Electrode Cavity Array (MECA, Ionera) recording substrates, containing a 4 x 4 array of circular micro-cavities, the bilayers are automatically formed by remotely actuated painting (Ionera- SPREAD), which will be demonstrated during this session. Relying on the same principle, however with the possibility of active cooling and heating, the recently introduced *Orbit mini*, a minimal footprint, turn-key system, allows 4 parallel lipid bilayer recordings, also using MECA-chips.

Join this workshop for hands-on experiments and information about three outstanding platforms: Port-a-Patch, Orbit 16, and Orbit mini.
Speakers
Andrea Brüggemann, Nanion Technologies GmbH
Niels Fertig, Nanion Technologies GmbH
Gerhard Baaken, Ionera
Ekaterina Zaitseva, Ionera

Industry and Agency Opportunities Fair

1:00 PM - 3:00 PM, WEST HALL

This fair will introduce attendees to companies and agencies that have employment and funding opportunities outside of academia. Stop by the fair to learn about the variety of opportunities available to scientists in industry and government and to talk one-on-one with representatives from participating organizations.

GMOs, Severe Weather, and Public Opinion

1:30 PM - 3:00 PM, ROOM 403A

Genetically modified organisms are big news in the popular press, with articles often focused on food safety, related regulations, and labelling. What gets less coverage is the role GMOs can play in protecting our food supply and specific plant economies. This session will take a look at the role GMOs have played in these areas and public policy, as well as the press's coverage of this scientific area.
Panelists
Sean Cutler, UC Riverside
Karen Kaplan, *Los Angeles Times*
Alan McHughen, UC Riverside

Snack Break

1:45 PM - 3:00 PM, WEST HALL

Poster Presentations and Late Posters

1:45 PM - 3:45 PM, WEST HALL

Career Center Workshop
Creating and Using an Effective CV/Résumé

2:30 PM - 3:30 PM, ROOM 518

The CV and Résumé are critical components of any effective job search, regardless of function, level, or industry. In this workshop, we will look at what constitutes a good résumé or CV, what makes the two documents different, as well as what makes them similar. We will examine sample documents (both good and bad) and discuss which document to use, when to use it, and how to most effectively use it when conducting your job search.

Postdoc to Faculty: Setting Up a Lab

2:30 PM – 4:00 PM, ROOM 403B

This panel, sponsored by the Early Careers Committee, will offer advice on the challenge of setting up your own lab as a new faculty member. Panelists who have recently established independent labs will share their experiences and answer questions about the transition to a tenure-track faculty position.
Panelists
Slav Bagriantsev, Yale University
Alexander Dunn, Stanford University
Susy Kohout, Montana State University

Committee on Inclusion and Diversity Networking Event: Resources and Opportunities

3:00 PM - 4:00 PM, ROOM 404AB

This networking event, sponsored by the Committee for Inclusion and Diversity, provides minority and underrepresented students and scientists the opportunity to network and discuss challenges and resources with other minority biophysicists.

Education Committee Meeting

3:00 PM - 5:00 PM, ROOM 506

Symposium
Optogenetics in Neuroscience

4:00 PM - 6:00 PM, PETREE HALL C

Chair
Edward S. Boyden, MIT

1796-SYMP 4:00 PM
TOOLS FOR ANALYZING AND REPAIRING COMPLEX BIOLOGICAL SYSTEMS. **Edward Boyden**

1797-SYMP 4:30 PM
CONTROLLING BIOLOGICAL PATHWAYS WITH PHOTOPHARMACOLOGY. **Dirk Trauner**

1798-SYMP 5:00 PM
TOOLS FOR ANATOMICAL AND FUNCTIONAL ANALYSIS OF WIDELY DISTRIBUTED BRAIN NETWORKS. **Viviana Gradinaru**

1799-SYMP 5:30 PM
NATURAL ANION CHANNEL RHODOPSINS: A NEW FAMILY OF TOOLS FOR OPTOGENETIC NEURAL INHIBITION. **John L. Spudich**

Symposium
p-ATPases: Structure, Mechanism, and Disease

4:00 PM - 6:00 PM, PETREE HALL D

Chair
David Gadsby, Rockefeller University

1800-SYMP 4:00 PM
HYBRID FUNCTION OF THE NA/K-ATPASE: PROTON IMPORT ACCOMPANYING NA/K EXCHANGE. **David Gadsby**, Natascia Vedovato

1801-SYMP 4:30 PM
SNAPSHOTS OF P-TYPE ATPASES - FROM CRYSTAL STRUCTURES TO SINGLE-MOLECULE STUDIES. **Poul Nissen**

1802-SYMP 5:00 PM
THE NEW KIDS IN THE BLOCK: FE^{2+} TRANSPORT P-ATPASES. **José M. Argüello**

1803-SYMP 5:30 PM
SECRETORY PATHWAY CALCIUM ATPASES IN BREAST CANCER. **Rajini Rao**, Donna Dang, José P. Llongueras

Platform
Cardiac Muscle Mechanics and Structure

4:00 PM - 6:00 PM, ROOM 502A

Co-Chairs
Clara Franzini-Armstrong, University of Pennsylvania
Howard Young, University of Alberta, Canada

1804-PLAT 4:00 PM
FUNCTIONAL IMBALANCE AMONG INDIVIDUAL CARDIOMYOCYTES CAUSED BY CELL-TO-CELL VARIATION IN MUTANT MRNA EXPRESSION. A POSSIBLE TRIGGER FOR HYPERTROPHIC CARDIOMYOPATHY. Theresia Kraft, Mirza Makul, Julia Beck, Judith Montag, Ante Radocaj, Andreas Perrot, Antonio Francino, Francesc Navarro-Lopéz, Cristobal G. dos Remedios, **Bernhard Brenner**

1805-PLAT 4:15 PM
DIFFERENTIAL EFFECTS OF CAMKII ACTIVITY IN HCM-LINKED TNT MUTATIONS. **Sarah J. Lehman**, Lauren Tal-Grinspan, Melissa Lynn, Mark E. Anderson, Jil C. Tardiff

1806-PLAT 4:30 PM
UNDERSTANDING VISCOELASTICITY CHANGES IN SINGLE CELLS USING VARIABLE INDENTATION-RATE VISCOELASTIC ANALYSIS. **Matthew A. Caporizzo**, Patrick Robison, Alexey Bogush, Benjamin L. Prosser, David M. Eckmann, Russell J. Composto

1807-PLAT 4:45 PM
CELLULAR STRESS AFFECTS THE NUCLEOSKELETON IN DILATED CARDIOMYOPATHY. Marlene Pluess, Thomas Iskratsch, Pauline Bennett, Joseph Dwyer, Pragati Pandey, Cristobal dos Remedios, **Elisabeth Ehler**

1808-PLAT 5:00 PM
SIMULTANEOUS HIGH-PRECISION IMAGING OF LOCAL CALCIUM AND SINGLE SARCOMERE LENGTH IN RAT NEONATAL CARDIOMYOCYTES VIA EXPRESSION OF YELLOW CAMELEON-NANO140 IN Z-DISCS. Seiichi Tsukamoto, **Kotaro Oyama**, Teruyuki Fujii, Fuyu Kobirumaki-Shimozawa, Togo Shimozawa, Seine A. Shintani, Shin'ichi Ishiwata, Norio Fukuda

1809-PLAT 5:15 PM
ELECTRON TOMOGRAPHY OF MITOCHONDRIAL NANOTUNNELS IN A CPVT MODEL WITH RYR2 LOSS-OF-FUNCTION MUTATION. **Manuela Lavorato**, V.Ramesh Iyer, Yang-Ting Zhao, Hector Valdivia, Clara Franzini-Armstrong

1810-PLAT 5:30 PM
CORRELATING STRUCTURE AND FUNCTION IN HUMAN GENETIC VARIANTS OF PHOSPHOLAMBAN AND SARCOLIPIN. Joseph O. Primeau, Gareth P. Armanious, Jessica L. Gifford, Catharine A. Trieber, **Howard S. Young**

1811-PLAT 5:45 PM
THE N-TERMINI OF SARCOLIPIN AND PHOSPHOLAMBAN PLAY AN IMPORTANT ROLE IN DISTINCT REGULATION OF SARCO-ENDOPLASMIC RETICULUM CA^{2+} ATPASE (SERCA) FUNCTION. **Sanjayaka K. Sahoo**, Sana A. Shaikh, Danesh H. Sopariwala, Naresh C. Bal, Dennis S. Bruhn, Wojciech Kopec, Himanshu Khandelia, Muthu Periasamy

Platform
Protein Stability, Folding, and Chaperones II

4:00 PM - 6:00 PM, ROOM 502B

Co-Chairs
Logan Ahlstrom, University of Michigan
Patrick Wintrode, University of Maryland

1812-PLAT 4:00 PM
OVERCOMING HETEROGENEITY TO STUDY THE STRUCTURE AND ASSEMBLY OF SMALL HEAT-SHOCK PROTEIN CHAPERONES WITH NON-AGGREGATING CLIENTS. **Miranda Collier**, Justin Benesch

1813-PLAT 4:15 PM **INTERNATIONAL TRAVEL AWARDEE**
STRUCTURE AND STABILITY OF HSP60 AND GROEL IN SOLUTION. **Caterina Ricci**, Giampaolo Barone, Donatella Bulone, Giosalba Burgio, Rita Carrotta, Fabio Librizzi, Antonella Marino Gammazza, Maria Rosalia Mangione, Antonio Palumbo Piccionello, Pier Luigi San Biagio, Angelo Spinello, Francesco Spinozzi, Silvia Vilasi, Maria Grazia Ortore

1814-PLAT 4:30 PM
QUANTIFICATION OF MACROMOLECULAR CROWDING IN LIVING CELLS. **Arnold Boersma**, Boqun Liu, Christoffer Aberg, Bert Poolman

1815-PLAT 4:45 PM
INSIGHTS FROM THE FIRST PRINCIPLES BASED LARGE SCALE PROTEIN THERMOSTABILITY CALCULATIONS. **Vytautas Gapsys**, Servaas Michielssens, Daniel Seeliger, Bert L. de Groot

1816-PLAT 5:00 PM
HIGHLY CHARGED PROTEINS ARE THE ACHILLES' HEEL OF AGING PROTEOMES. **Adam M. R. de Graff**, Michael J. Hazoglou, Ken A. Dill

1817-PLAT 5:15 PM
EVOLUTION UNDER DRUG PRESSURE REMODELS THE FOLDING FREE-ENERGY LANDSCAPE OF HIV-1 PROTEASE. **Julien Roche**

1818-PLAT 5:30 PM
FOLDING MECHANISM OF A METASTABLE SERPIN AT ATOMIC RESOLUTION. Fang Wang, Haiping Ke, Silvio a Beccara, Anne Gershenson, Pietro Faccioli, **Patrick Wintrode**

1819-PLAT 5:45 PM
NMR-INFORMED MOLECULAR MODELING UNCOVERS THE CONFORMATIONAL LANDSCAPE OF CHAPERONE BINDING WITH UNFOLDED SUBSTRATE. **Logan S. Ahlstrom**, Loïc Salmon, Scott Horowitz, Alex Dickson, Charles L. Brooks III, James C.A. Bardwell

Platform
Membrane Physical Chemistry III

4:00 PM - 6:00 PM, ROOM 515A

Co-Chairs
Padmini Rangamani, University of California, San Diego
Joseph Zasadzinski, University of Minnesota

1820-PLAT 4:00 PM
ELASTIC DEFORMATION AND COLLECTIVE DYNAMICS IN LIPID MEMBRANES: A SOLID-STATE ^{2}H NMR RELAXATION STUDY. **Soohyun K. Lee**, Trivikram R. Molugu, K.J. Mallikarjunaiah, Michael F. Brown

1821-PLAT 4:15 PM
CHOLESTEROL EFFECT ON THE ELASTIC PROPERTIES OF UNSATURATED LIPID BILAYERS. **Pavel Bashkirov**, Ksenia Chekashkina, Ariana Velasco del Olmo, Piotr Kuzmin, Anna Shnyrova, Vadim Frolov

1822-PLAT 4:30 PM
QUANTITATIVE RELATIONSHIP BETWEEN MONOLAYER DOMAIN STRUCTURE AND INTERFACIAL SHEAR RHEOLOGY. **Joseph A. Zasadzinski**

1823-PLAT 4:45 PM
TWO-POINT MICRORHEOLOGY OF PHASE SEPARATED DOMAINS IN LIPID BILAYERS. **Tristan Hormel**, Matthew A. Reyer, Raghuveer Parthasarathy

1824-PLAT 5:00 PM
IN SILICO MEASUREMENT OF THE MECHANICAL PROPERTIES OF REALISTIC BACTERIAL INNER AND OUTER MEMBRANES. **Hyea Hwang**, James C. Gumbart

1825-PLAT 5:15 PM
CAN WE TRUST HYDRODYNAMIC MODELS TO DETERMINE THE BILAYER VISCOSITY EXPERIENCED BY TRANSMEMBRANE PROTEINS? **Vladimir Adrien**, Ksenia Astafyeva, Marina Kuimova, Wladimir Urbach, Nicolas Taulier

1826-PLAT 5:30 PM
COMBINING FLUORESCENCE MICROSCOPY ON FREESTANDING LIPID BILAYERS WITH ELECTRICAL MEASUREMENTS. **Corianne C. van den Akker**, Steven G. Boxer

1827-PLAT 5:45 PM
IRREVERSIBLE THERMODYNAMICS OF LIPID VESICLES UNDER OSMOTIC STRESS. **Morgan Chabanon**, James Ho, Atul N. Parikh, Padmini Rangamani

Platform
Molecular, Cellular, and Experimental Neuroscience: Reception, Plasticity, and New Approaches

4:00 PM - 6:00 PM, ROOM 515B

Co-Chairs
Laura Marchetti, Center for Nanotechnology Innovation, Italy
Katalin Torok, St. George's, University of London, United Kingdom

1828-PLAT 4:00 PM
SINGLE MOLECULE IMAGING AND TRACKING OF NEUROTROPHINS AND THEIR RECEPTORS IN LIVING NEURONAL CELLS. **Laura Marchetti**, Teresa De Nadai, Rosy Amodeo, Carmine Di Rienzo, Fulvio Bonsignore, Francesco Gobbo, Fabio Beltram, Stefano Luin, Antonino Cattaneo

1829-PLAT 4:15 PM
SINGLE MOLECULAR OBSERVATION OF DIFFUSIVE DYNAMICS OF NMDA RECEPTORS IN LIVE NEURONS USING SUPER-RESOLUTION IMAGING AND TRACKING. **Sang Hak Lee**, En Cai, Pinghua Ge, Kai Wen Teng, Okunola Jeyifous, Sung Soo Jang, Hee-Jung Chung, William Green, Paul R. Selvin

1830-PLAT 4:30 PM
STOCHASTIC SINGLE-MOLECULE DYNAMICS OF SYNAPTIC RECEPTOR DOMAINS. **Yiwei Li**, Osman Kahraman, Christoph Haselwandter

1831-PLAT 4:45 PM
PARADOXICAL SIGNALING REGULATES STRUCTURAL PLASTICITY IN DENDRITIC SPINES. **Padmini Rangamani**, Michael Levy, Shahid Khan, George Oster

1832-PLAT 5:00 PM
NANO-MECHANICAL PROBING OF SYNAPTIC ACTIVITY AT DENDRITIC SPINES. **John A. Jones Molina**, Nicola Mandriota, Duckhoe Kim, Ju Yang, Rafael Yuste, Ozgur Sahin

1833-PLAT 5:15 PM
DEVELOPMENT OF FAST-RESPONSE GCAMP6 CALCIUM SENSORS FOR MONITORING NEURONAL ACTION POTENTIAL. Nordine Helassa, Borbala Podor, Alan Fine, **Katalin Torok**

1834-PLAT 5:30 PM
OPTOMEA: A PLATFORM FOR ANALYZING SIGNALING EFFICIENCY OF NEURONAL CIRCUITS USING MULTI-LOCATION EXTRACELLULAR ELECTROPHYSIOLOGY, OPTICAL IMAGING AND OPTOGENETICS. Kimberly Sam, Minqi Wang, Yuan-Zhi Liu, Paritosh Pande, Stephen A. Boppart, **Parijat Sengupta**

1835-PLAT 5:45 PM
LIGHT SHEET MICROSCOPY FOR FUNCTIONAL IMAGING OF BRAIN ACTIVITY EVOKED BY NATURAL SENSORY STIMULI. **Andrey Andreev**, Thai Truong, Scott E. Fraser

Platform
Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence

4:00 PM - 6:00 PM, ROOM 501ABC

Co-Chairs
Mark Bowen, Stony Brook University
David Thomas, University of Minnesota

1836-PLAT 4:00 PM
FLUORESCENT PROTEIN FRET AS A PROBE OF PROTEIN CONFORMATION IN VIVO AND IN VITRO. Laura Dougherty, Zhuojun Guo, Fang Wu, **Mark E. Bowen**

1837-Plat 4:15 pm
QUANTITATIVE FLUORESCENCE MICROSCOPY REVEALS FIBROBLAST GROWTH FACTOR RECEPTOR 5 SIGNALING COMPLEX FORMATION. **Pamuditha N. Silva**, Romario Regeenes, Nicholas K. Wang, Dawn M. Kilkenny, Jonathan V. Rocheleau

1838-Plat 4:30 pm
SUPR: SPECTRAL UNMIXINIG PLATE READER FOR LIVE-CELL FRET BIOSENSOR DRUG SCREENING. **Tory M. Schaaf**, Ji Li, Samantha L. Yuen, Prachi Bawaskar, Benjamin D. Grant, Kurt C. Peterson, David D. Thomas, Greg G. Gillispie

1839-Plat 4:45 pm
APPLICATION OF FT-IR MICROSPECTROSCOPY IN THE INVESTIGATION OF THE STRATUM CORNEUM BARRIER FUNCTION. **Enam A. Khalil**, Randa Mansour, Al-Sayed A. Sallam, Imad Hamdan, Ibraheem Yousef

1840-Plat 5:00 pm
ION-PROTEIN INTERACTIONS BETWEEN A POTASSIUM CHANNEL AND ALKALI METAL CATIONS STUDIED BY ATR-FTIR SPECTROSCOPY. **Yuji Furutani**

1841-Plat 5:15 pm
INVESTIGATION OF M2 PROTON CHANNEL IN MEMBRANE BY RAPID LASER PH-JUMP TECHNIQUE WITH TRP FLUORESCENCE AS A PROBE. **Ban-Seok Jeong**

1842-Plat 5:30 pm
SPECTROSCOPIC STUDIES AS A BIOPHYSICAL TOOLBOX FOR PHARMACOKINETIC DRUG PROFILING. **Marlene Lúcio**

1843-Plat 5:45 pm
FLUORESCENT VISUALIZATION OF CELLULAR ION FLUXES. **Lejie Zhang**, William Kobertz

Workshop
Time-resolved Crystallography

7:30 pm - 9:30 pm, Room 502A

Chair
Philip Anfinrud, NIH

1844-Wkshp 7:30 pm
TIME-RESOLVED CRYSTALLOGRAPHY WITH SYNCHROTRON AND FREE ELECTRON LASER SOURCES. **Keith Moffat**

1845-Wkshp 8:00 pm
STRUCTURAL DYNAMICS OF PHOTOACTIVE YELLOW PROTEIN INVESTIGATED BY TIME RESOLVED SERIAL FEMTOSECOND CRYSTALLOGRAPHY. **Marius Schmidt**

No Abstract 8:30 pm
TIME-RESOLVED FEMTOSECOND CRYSTALLOGRAPHY: TOWARDS MOLECULAR MOVIES OF MOLECULES IN ACTION. **Petra Fromme**

1846-Wkshp 9:00 pm
WATCHING PROTEINS FUNCTION WITH TIME-RESOLVED X-RAY DIFFRACTION. **Philip Anfinrud**, Friedrich Schotte, Hyun Sun Cho

Workshop
Frontiers in Biophysical Instrumentation

7:30 pm - 9:30 pm, Room 502B

Chair
Joerg Bewersdorf, Yale University

1847-Wkshp 7:30 pm
STUDYING CELL DYNAMICS USING QUANTITATIVE PHASE IMAGING. **Gabriel Popescu**

1848-Wkshp 8:00 pm
PROBING SINGLE INDIVIDUAL PROTEINS UNFOLD AND REFOLD WITH 1-μS RESOLUTION: IMPROVED AFM-BASED SINGLE MOLECULE FORCE SPECTROSCOPY. **Thomas T. Perkins**

1849-Wkshp 8:30 pm
ELUCIDATION OF THE MOLECULAR MACHINERY IN PHOTOSYNTHETIC LIGHT HARVESTING. **Gabriela Schlau-Cohen**

1850-Wkshp 9:00 pm
LIVE-CELL OPTICAL MICROSCOPY BEYOND THE DIFFRACTION LIMIT. **Joerg Bewersdorf**

Workshop
Computational Methods for Ion Permeation and Selection

7:30 pm - 9:30 pm, Room 515A

Chair
Maria Kurnikova, Carnegie Mellon University

No Abstract 7:30 pm
WHAT CAN BE LEARNED ABOUT ION CHANNELS FROM MOLECULAR DYNAMICS SIMULATIONS. **Benoit Roux**

1851-Wkshp 8:00 pm
CONTINUUM THEORY OF CALCIUM CHANNELS: FUNDAMENTAL INSIGHTS FROM SIMPLIFIED MODELS. **Dirk Gillespie**

1852-Wkshp 8:30 pm
COMPUTATIONAL ELECTROPHYSIOLOGY: CLOSE-UPS OF ION PERMEATION AND MIGRATION IN MEMBRANE PROTEINS. **Ulrich Zachariae**

1853-Wkshp 9:00 pm
WILL IT PERMEATE? PREDICTING ION CHANNEL ION SELECTIVITY, PERMITTIVITY AND BLOCK MECHANISMS. **Maria Kurnikova**

Workshop
Methods for Tracking Single Biomolecule Mobility, Clustering, and Conformational State

7:30 pm - 9:30 pm, Room 515B

Chair
Keith Lidke, University of New Mexico

1854-Wkshp 7:30 pm
MULTI-COLOR SINGLE PARTICLE TRACKING FOR DETERMINING PROTEIN INTERACTION LIFETIMES. **Keith A. Lidke**

1855-Wkshp 8:00 pm
TRACKING SUBCELLULAR DYNAMICS WITH MULTIFOCAL PLANE MICROSCOPY. **Raimund J. Ober**

1856-Wkshp 8:30 pm
SINGLE MOLECULES IN THE AGE OF BIG DATA. **Maxime Dahan**

No Abstract 9:00 pm
INVESTIGATING HOW MOLECULES COME TO LIFE USING SINGLE MOLECULE FLUORESCENCE TECHNOLOGIES. **Taekjip Ha**

Publications Committee Meeting

6:00 pm - 10:00 pm, J.W. Marriott, Olympic II

SOBLA (The Society for Latinoamerican Biophysicists) Meeting

8:00 pm - 10:00 pm, Room 409AB

TUESDAY POSTER SESSIONS

1:45 PM–3:45 PM, WEST HALL

Below is the list of poster presentations of abstracts submitted by October 1.
The list of late abstracts scheduled for Tuesday is available in the Program addendum and the posters can be viewed on boards beginning with L.
All abstracts are available through the desktop planner and mobile app.

Posters should be mounted beginning at 6:00 PM on Monday and must be removed NO LATER THAN 4:30 PM on Tuesday evening. Posters will be on view until 10:00 PM on Monday, before presentation. Poster numbers shown refer to the program order of abstracts as they appear in the online Abstracts Issue. Board numbers indicate where boards are located in the Exhibit Hall.

On Tuesday the Exhibit Hall will close completely at 4:30 PM to accommodate the tear down of exhibits. **ALL POSTERS MUST BE REMOVED BY THIS TIME.** Posters remaining on boards after that time will be discarded. Posters being presented on Wednesday may be mounted beginning at 7:00 AM on Wednesday.

ODD-NUMBERED BOARDS 1:45 PM–2:45 PM | EVEN-NUMBERED BOARDS 2:45 PM–3:45 PM

Board Numbers	Category
B1 – B21	Protein Structure and Conformation III
B22 – B39	Protein Dynamics and Allostery III
B40 – B56	Protein Assemblies II
B57 – B89	Protein Stability, Folding, and Chaperones II
B90 – B102	Membrane Protein Structure and Folding III
B103 – B109	Enzyme Regulatory Strategies
B110 – B131	Intirinsically Disordered Proteins (IDP) and Aggregates: Aggregation and Assemblies
B132 – B160	DNA Structure and Dynamics I
B161 – B175	RNA Structure and Dynamics
B176 – B192	Membrane Physical Chemistry II
B193 – B217	Membrane-active Peptides and Toxins II
B218 – B247	Protein-Lipid Interactions II
B248 – B267	Membrane Receptors and Signal Transduction II
B268 – B285	Exocytosis and Endocytosis I
B286 – B304	Intracellular Calcium Channels and Calcium Sparks and Waves II
B305 – B314	Voltage-gated Na Channels II
B315 – B341	Voltage-gated Ca Channels
B342 – B377	Ion Channels, Pharmacology, and Disease
B378 – B398	Ligand-gated Channels II
B399 – B423	Kinesins, Dyneins, and Other Microtubule-based Motors
B424 – B436	Cardiac Muscle Mechanics and Structure II
B437 – B444	Cytoskeletal-based Intracellular Transport
B445 – B458	Bacterial Mechanics, Cytoskeleton, and Motility
B459 – B484	Mitochondrial Cell Life and Death
B485 – B507	Systems Biology and Disease
B508 – B516	System and Sensory Neuroscience
B517 – B550	Optical Microscopy and Super-Resolution Imaging II
B551 – B579	Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence
B580 – B588	Computational Methods and Bioinformatics II
B589 – B616	Force Spectroscopy and Scanning Probe Microscopy
B617 – B646	Micro- and Nanotechnology I
B647 – B656	Biosensors II

It is the responsibility of the poster presenters to remove print materials from the board after their presentations. Please do not leave materials or belongings under poster boards or in the poster area. Posters will not be collected or stored for pick-up at a later time. The Biophysical Society is not responsible for any articles left in the poster area.

Protein Structure and Conformation III (Boards B1 - B21)

1857-Pos Board B1
PHOTO-ISOMERIZATION OF PROLYCOPENE IN CHLOROPLAST OCCURS THROUGH THE TRIPLET STATE: IMPLICATIONS ON CAROTENOID BIOSYNTHESIS. **Vijaya Lakshmi Kanchustambham**

1858-Pos Board B2
FUNCTION OF TYR185 IN STABILIZING THE ISOMERIZATION EQUILIBRIUM OF THE RETINAL CHROMOPHORE IN THE BACTERIORHODOPSIN GROUND STATE. Xiaoyan Ding, Bo Peng, Yujiao Gao, Haolin Cui, Dinu Iuga, Peter Judge, Anthony Watts, **Xin Zhao**

1859-Pos Board B3
TRYTOPHAN MUTANTS PROBE THE STRUCTURAL AND FUNCTIONAL STATUS OF A COPPER BINDING, CYTOCHROME C OXIDASE ASSEMBLY PROTEIN FROM BACILLUS SUBTILIS (I.E., BSSCO). **Bruce C. Hill**, Shina Hussain, Diann Andrews

1860-Pos Board B4
PRESSURE-INDUCED SPECTRAL SHIFTS IN GFP MUTANTS EXPLAINED BY MOLECULAR DYNAMICS SIMULATIONS. Emanuela Jacchetti, Edi Gabellieri, Patrizia Cioni, Ranieri Bizzarri, **Riccardo Nifosi**

1861-Pos Board B5
ON THE ORIGIN OF THE EXTENDED STOKE'S SHIFTS IN FLUORESCENT PROTEINS. **Prem Chapagain**, Chola Regmi, Bernard Gerstman

1862-Pos Board B6 Education Travel Awardee
INTERDOMAIN INTERACTIONS AND THE MECHANISM OF STRUCTURAL TRANSFORMATION IN RFAH. **Jeevan B. Gc**, Bernard S. Gerstman, Prem P. Chapagain

1863-Pos Board B7
TOOLKIT FOR MULTI-CONFORMATION BIOMOLECULAR STRUCTURE DETERMINATION BY HIGH-PRECISION FRET AND MOLECULAR SIMULATIONS. **Mykola Dimura**, Stanislav Kalinin, Thomas Peulen, Holger Gohlke, Claus A. M. Seidel

1864-Pos Board B8
UNDERSTANDING SECONDARY STRUCTURE HYDROGEN BONDS OF PEPTIDES USING STEERED MOLECULAR DYNAMICS SIMULATIONS (SMD). **Ferdiemar C. Guinto**, C. Michael McCallum

1865-Pos Board B9
WHY DOES NATURE TIE-UP PROTEINS? STRUCTURAL INSIGHTS FROM SOLUTION STUDIES OF A KNOTTED METHYLTRANSFERASE. **David J. Burban**, Patricia A. Jennings

1866-Pos Board B10
BUILDING GRAPHS TO DESCRIBE DYNAMICS, KINETICS AND ENERGETICS IN THE D-ALA:D-LAC LIGASE VANA. Guillaume Bouvier, Nathalie Duclert-Savatier, Michael Nilges, **Thérèse E. Malliavin**

1867-Pos Board B11
COMPLEX LASSO: NEW ENTANGLED MOTIFS IN PROTEINS. **Joanna I. Sulkowska**

1868-Pos Board B12
COARSE MASTER EQUATION-BASED ANALYSIS OF N-METHYLATION AND TEMPERATURE EFFECTS ON THE DYNAMICS OF CYCLIC PEPTIDES. Aoife Crowe, Goar Sánchez-Sanz, Bartlomiej Tywoniuk, Denis C. Shields, **Nicolae-Viorel Buchete**

1869-Pos Board B13
INSIGHT INTO THE STRUCTURE OF LUNG SURFACTANT PROTEIN B (SP-B). **Tadiwos G. Asrat**, Dr.Valeri Booth

1870-Pos Board B14
STRUCTURAL ANALYSIS OF LIPOCALIN-TYPE PROSTAGLANDIN D SYNTHASE COMPLEXED WITH PROSTAGLANDIN J_2. **Shigeru Shimamoto**, Yuta Nakahata, Yusuke Nakagawa, Yutaro Fukuda, Kosuke Aritake, Yoshihiro Urade, Yuji Hidaka

1871-Pos Board B15
THE BIO3D PROJECT: INTERACTIVE TOOLS FOR STRUCTURAL BIOINFORMATICS. **Lars Skjærven**, Shashank Jariwala, Xin-Qiu Yao, Julien Idé, Barry J. Grant

1872-Pos Board B16
PROBING LOCAL ENVIRONMENTS OF AN OXYGEN-BINDING HEME-PROTEIN USING A SPECTROSCOPICALLY ACTIVE UNNATURAL AMINO ACID. **Daniyal Tariq**

1873-Pos Board B17
STRUCTURAL INSIGHT INTO SPLIT GREEN FLUORESCENT PROTEIN. **Alan Deng**, Steven G. Boxer

1874-Pos Board B18
STRUCTURAL AND DYNAMICAL ASPECTS OF ELECTROSTATIC INTERACTIONS BY APPLYING ASPHERICAL ATOM MODEL IN HIV-1 PROTEASE. **Prashant Kumar**, Paulina Maria Dominiak

1875-Pos Board B19
PROBING THE ELASTIC PROPERTIES OF ALPHA HELICES VIA BUCKLING SIMULATIONS. **Nicholas Jin**, Markus Deserno

1876-Pos Board B20
HETEROTRIMERIC G-PROTEIN ALPHA (α) SUBUNIT FROM A. THALIANA FORMS TRIMERIC STRUCTURES IN SOLUTION. **Ersoy Cholak**, Ines Karmous, Bihter Avşar, Zehra Sayers

1877-Pos Board B21
PROTONATION AND DEPROTONATION REACTION OF ASPARTIC ACID SIDE CHAIN MODULATED BY THE SURROUNDING DIELECTRIC MEDIUM - AB INITIO QUANTUM CHEMICAL STUDIES ON ASPARTIC ACID IN SIXTEEN DIFFERENT SOLVENTS AND TWO PROTEIN STRUCTURES. **Akshay Bhatnagar**, Sruthi Varanasi, Dhruv Pramod Ghiya, Chaitanya Gali Sai Ganesh, Debashree Bandyopadhyay

Protein Dynamics and Allostery III (Boards B22 - B39)

1878-Pos Board B22
OXIDATION EFFECTS ON THE VON WILLEBRAND FACTOR A2 DOMAIN INVESTIGATED BY MOLECULAR DYNAMICS SIMULATIONS. **Gianluca Interlandi**

1879-Pos Board B23
INSIGHT INTO A RAPID HEME TRANSFER REACTION BETWEEN NEAR TRANSPORTER DOMAINS OF STAPHYLOCOCCUS AUREUS: A THEORETICAL STUDY USING QM/MM AND MD SIMULATIONS. **Yoshitaka Moriwaki**, Tohru Terada, Kouhei Tsumoto, Kentaro Shimizu

1880-Pos Board B24
THE COUPLING OF ATP HYDROLYSIS TO RNA TRANSLOCATION IN DENGUE VIRUS NS3 HELICASE: INSIGHTS FROM MOLECULAR DYNAMICS. **Martin McCullagh**, Russell Davidson

1881-Pos Board B25
ALLOSTERIC NETWORKS IN THE NUCLEOSOME CORE PARTICLE. **Samuel Bowerman**, Jeff Wereszczynski

1882-Pos Board B26
INVESTIGATING DYNAMICS OF HLA MOLECULES BY ENERGY DISSIPATION. Elif Naz Bingol, Onur Sercinoglu, **Pemra Ozbek**

1883-Pos Board B27
DYNAMIC NETWORK ANALYSIS OF DREAM PROTEIN DIMER INTERFACE. **Maurizio A. Diaz**, Walter G. Gonzalez, Joseph Hernandez, Jaroslava Miksovska

1884-Pos Board B28
GLOBAL CHANGES INDUCED BY LOCAL PERTURBATIONS TO THE HIV-1 CAPSID. **Shana Bergman**, Timothy R. Lezon

1885-Pos Board B29
THE EFFECT OF EBOLA GLYCOPROTEIN EVOLUTION ON PROTEIN FLEXIBILITY. **Christopher Mirabzadeh**

1886-Pos Board B30
UNDERSTANDING THE EFFECT OF POLYUNSATURATED FATTY ACIDS ON RHODOPSIN USING ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS. **Letty Salas**, Nicholas Leioatts, Tod D. Romo, Alan Grossfield

1887-Pos Board B31
GLOBAL DYNAMICS OF INTACT AMPA AND NMDA RECEPTORS USING ELASTIC NETWORK MODELS. **Ji Young Lee**, Anindita Dutta, James Krieger, Javier Garcia-Nafria, Ingo Greger, Ivet Bahar

1888-Pos Board B32
AN ARGININE-RICH LOOP IS CRITICAL FOR THE MODULATION OF THE WATER PERMEABILITY OF AQUAPORIN 0. **James B. Fields**, Karinne Németh-Cahalan, J. Alfredo Freites, James E. Hall, Douglas J. Tobias

1889-Pos Board B33
ELECTROSTATIC AND ALLOSTERIC RESPONSE OF MYOSIN UPON ATP BINDING. **Takato Sato**, Jun Ohnuki, Mitsunori Takano

1890-Pos Board B34
ALLOSTERIC REGULATION MECHANISM OF TRIMERIC MEMBRANE. **Yuhang Wang**, Abhi Singharoy, Klaus Schulten, Emad Tajkhorshid

1891-Pos Board B35
ALLOSTERIC REGULATION OF RAC1-PAK1 BINDING AFFINITY BY MUTANT RESIDUES THROUGH MOLECULAR SIMULATIONS AND AFM. **Saliha Ece Acuner-Ozbabacan**, Fidan Sumbul, Hamdi Torun, Turkan Haliloglu

1892-Pos Board B36
ELUCIDATING THE STRUCTURE, DYNAMICS AND FUNCTIONS OF AN IMMATURE RETROVIRUS IN ATOMISTIC DETAIL. **Boon Chong Goh**, Juan R. Perilla, Katrina J. Heyrana, Matthew R. England, Rebecca C. Craven, Klaus Schulten

1893-Pos Board B37
STRUCTURE AND DYNAMICS OF THE LPS INSERTASE LPTD/E IN A REALISTIC OUTER-MEMBRANE MODEL. **Karl Lundquist**, Stephen J. Mayclin, Susan K. Buchanan, James C. Gumbart

1894-Pos Board B38
NOVEL ALLOSTERIC MUTATIONS INCREASING CEPHALOSPORIN RESISTANCE OF CTX-M9 BETA LACTAMASES. **Malgorzata J. Latallo**, George A. Cortina, Peter M. Kasson

1895-Pos Board B39
INVESTIGATING HIV VIF INTERACTIONS WITH HOST PROTEINS. **K. Aurelia Ball**, John Gross, Matthew Jacobson

Protein Assemblies II (Boards B40 - B56)

1896-Pos Board B40
STUDY MOLECULAR INTERACTIONS IN WHOLE CELL EXTRACTS BY FLUORESCENCE-DETECTED ANALYTICAL ULTRACENTRIFUGATION. **Jia Ma**, Huaying Zhao, Kristin Rainey, George Patterson, Peter Schuck

1897-Pos Board B41
GRAVITATIONAL SWEEP SEDIMENTATION VELOCITY. Jia Ma, Huaying Zhao, Julia Sandmaier, J. Alexander Liddle, **Peter Schuck**

1898-Pos Board B42
ANALYTICAL ULTRACENTRIFUGE STUDIES OF A CYTOKINE, SOLUBLE RECEPTOR INTERACTION: COMPARISON OF SIMULATIONS AND EXPERIMENTS. **Robert Wright**, Peter Sherwood, Walter Stafford, John J. Correia

1899-Pos Board B43
A MICROFLUIDIC APPROACH TO THE STUDY OF Z-RING DYNAMICS FORMATION IN LIPOSOMES. **Federico Fanalista**, Siddharth Deshpande, Yaron Caspi, Mercedes Jimenez, German Rivas, Cees Dekker

1900-Pos Board B44
FORCE SPECTROSCOPY OF INTERACTIONS OF THE INTEGRIN ALPHAIIB-BETA3 WITH FIBRIN AND FIBRINOGEN. **Rustem I. Litvinov**, Peter Höök, David H. Farrell, Mark Alber, Joel S. Bennett, John W. Weisel

1901-Pos Board B45
SMALL ANGLE NEUTRON SCATTERING OF FIBRINOGEN POLYMERIZATION KINETICS. **Luis A. Palacio**, Christopher B. Stanley, Lucas Burke, Ryan Lybarger, Horia I. Petrache

1902-Pos Board B46
THE BINDING INTERFACE BETWEEN HUMAN APOBEC3F AND HIV-1 VIF ELUCIDATED BY GENETIC AND COMPUTATIONAL APPROACHES. **Ozlem Demir**, Christopher Richards, John S. Albin, Nadine M. Shaban, Brett D. Anderson, Rommie E. Amaro, Reuben S. Harris

1903-Pos Board B47
CHARACTERIZING BIOPHYSICAL FEATURES DRIVING THE SELF-ASSEMBLY OF MICROTUBULE NANO-ARRAYS. **Adrienne C. Greene**, Marlene Bachand, Andrew Gomez, George D. Bachand

1904-Pos Board B48
QUANTIFYING CROWDING EFFECTS ON TRANSIENT ENCOUNTER COMPLEX FORMATION DURING PROTEIN BINDING. **Youngchan Kim**, Jeetain Mittal

1905-Pos Board B49
TOWARD MICROSCOPIC SIMULATIONS OF PROTEINS IN CELL-LIKE ENVIRONMENTS. **Fabio Sterpone**, Philippe Derreumaux, Simone Melchionna

1906-Pos Board B50
RELATIONSHIPS BETWEEN MECHANOSTABILITY, AGGREGATION RATE AND BINDING AFFINITY OF PEPTIDES: INSIGHTS FROM ALL-ATOM MODELING IN EXPLICIT SOLVENT. Maksim Kouza, Anirban Banerji, Andrzej Kolinski, Irina Buhimschi, **Andrzej Kloczkowski**

1907-Pos Board B51
MODELING INTERPROTEIN INTERACTIONS IN CONCENTRATED SOLUTIONS OF WILD-TYPE AND CATARACT-RELATED VARIANTS OF γD- AND γS-CRYSTALLINS. **Vera D. Prytkova**, Matthias B. Heyden, Eric Wong, Juan A. Freites, Douglas J. Tobias

1908-Pos Board B52
A FAST METHOD FOR COMPUTING CHEMICAL POTENTIALS AND PHASE EQUILIBRIA OF MACROMOLECULAR MIXTURES. **Sanbo Qin**, Huan-Xiang Zhou

1909-Pos Board B53
A MULTI-SCALE MODEL FOR THE ASSEMBLING KINETICS OF PROTEIN COMPLEXES. **Yinghao Wu**

1910-Pos Board B54
TWO STUDIES USING CIRCULAR VARIANCE FOR PROTEIN STRUCTURE CHARACTERIZATION. **Mihaly Mezei**

1911-Pos Board B55
AN AMINO ACID CODE TO PROTEIN QUATERNARY STRUCTURE. **Keith J. Fraga**, Hyun Joo, Jerry Tsai

1912-Pos Board B56
TOWARDS THREE-COLOR LIVE-CELL IMAGING OF SPLICEOSOME ASSEMBLY. **Caitlin M. Davis**, Irisbel Guzman, Martin Gruebele

Protein Stability, Folding, and Chaperones II (Boards B57 - B89)

1913-Pos Board B57
WT HUMAN γD CRYSTALLIN PROMOTES AGGREGATION OF ITS OXIDATION-MIMICKING MUTANTS. **Eugene Serebryany**

1914-Pos Board B58
ELUCIDATING THE COORDINATION FEATURES ASSOCIATED TO COPPER AND ZINC INDUCED AGGREGATION OF HUMAN γ-D CRYSTALLIN. **Jose A. Dominguez-Calva**, Eugene Serebryany, Cammeron Haase-Pettingell, Jonathan A. King, Liliana Quintanar

1915-Pos Board B59
FUSION PROTEIN TM-TM INTERACTIONS: MODULATORS OF PRE-FUSION PROTEIN STABILITY. **Stacy Webb**, Rebecca Dutch

1916-Pos Board B60
ASSESSMENT OF NICOTINIC ACETYLCHOLINE RECEPTOR DETERGENT COMPLEXES PURITY AND STABILITY FOR STRUCTURAL STUDIES. **Bianca N. Valdés Fernández**, Jose A. Lasalde-Dominicci

1917-Pos Board B61
THE TWO STEPS UNFOLDING PROCESS OF THE ANTIBIOTIC PROTEIN COLICIN A PORE FORMING DOMAIN. **Yan Huang**

1918-Pos Board B62
DIMER STABILITY OF ALS-ASSOCIATED MUTANTS OF SUPEROXIDE DISMUTASE PROTEINS. **Daniel Lusebrink**, Mona Habibi, Steven Plotkin

1919-Pos Board B63
USING INNER-EAR CADHERINS TO TEST HIGH-THROUGHPUT THERMAL SCREENING ASSAYS FOR PROTEIN-PROTEIN INTERACTIONS. **Deepanshu Choudhary**, Anusha Kumar, Thomas J. Magliery, Marcos Sotomayor

1920-Pos Board B64
AN ILBP FAMILY MEMBER DOMAIN SWAPPED DIMER IS EVIDENCE FOR A HIGHLY ORDERED FOLDING INTERMEDIATE. **Zahra Assar**, Zahra Nossoni, Wenjing Wang, Babak Borhan, James H. Geiger

1921-Pos Board B65
INCREASE IN DOMAIN SWAPPING OF THE DNA-BINDING DOMAIN OF HUMAN FOXP1 IS RELATED TO A DECREASE IN MONOMER FOLDING STABILITY. **Exequiel Medina**, Cristóbal Córdova, Javiera Reyes, César A. Ramírez-Sarmiento, Jorge Babul

1922-Pos Board B66
COILED-COIL PROBES IDENTIFIED THE UNFOLDING PATHWAY OF YEAST PHOSPHOGLYCERATE KINASE. **Qing Li**, Zackary N. Scholl, Piotr E. Marszalek

1923-Pos Board B67
FOLDING ANALYSES OF THE MAJOR FOLDING INTERMEDIATE OF PROUROGUANYLIN USING DELETION MUTANTS. **Kenta Hattori**, Masaki Okumura, Shigeru Shimamoto, Yuji Hidaka

1924-Pos Board B68
INTERDOMAIN CONTACTS AND RNA POLYMERASE CONTROL NATIVE STATE INTERCONVERSION OF THE TRANSFORMER PROTEIN RFAH ON A DUAL-FUNNELED LANDSCAPE. **César A. Ramírez-Sarmiento**, Jeffrey K. Noel, Sandro L. Valenzuela, Irina Artsimovitch

1925-Pos Board B69
FAST CLOSUER OF LONG LOOPS AT THE INITIATION OF A PROTEIN FOLDING PATHWAY. **Elisha Haas**, Dan Amir, Tomer Orevi, Gil Rahamim, Sagar Kathuria, Robert C. Matthews, Osman Bilsel

1926-Pos Board B70
EXAMINING THE VECTORIAL FOLDING PATHWAY OF THE β-HELICAL PEPTIDE, PERTACTIN, USING MOLECULAR DYNAMICS SIMULATIONS. **Anthony Hazel**, James C. Gumbart

1927-Pos Board B71
RESOLVING THE HETEROGENEITY OF THE ENSEMBLE OF UNFOLDED STATES BY A COMBINATION OF FLUORESCENCE SPECTROSCOPIC METHODS. **Katherina Hemmen**, Dmitro Rodnin, Igor Markovic, Suren Felekyan, Ralf Kuehnemuth, Hugo Sanabria, Claus A. Seidel

1928-Pos Board B72 **Education Travel Awardee**
KEY ROLES OF TRANSLOCATING LOOPS IN THE MECHANOCHEMICAL COUPLING AND POWER PRODUCTION OF A AAA^+ PROTEASE MACHINE. **Piere Rodriguez-Aliaga**, Luis Ramirez, Frank Kim, Carlos Bustamante, Andreas Martin

1929-Pos Board B73
MOLECULAR MODULATION OF PROTEIN ENERGY LANDSCAPES. **David N. Bunck**, Katrine Museth, Beatriz Atsavapranee, James R. Heath

1930-Pos Board B74
ANCESTRAL SEQUENCE RECONSTRUCTION REVEALS THE EVOLUTIONARY HISTORY OF THE FOLDING PATHWAY AND LANDSCAPE OF RIBONUCLEASES H. **Shion A. Lim**, Eric R. Bolin, Michael J. Harms, Kathryn M. Hart, Joseph W. Thornton, Susan Marqusee

1931-Pos Board B75
ENGINEERING THE STRUCTURE OF HUMAN ACIDIC FIBROBLAST GROWTH FACTOR THROUGH SITE DIRECTED MUTAGENESIS FOR INCREASED PROTEIN STABILITY. **Julie B. Davis**, Thallapuranam K. Suresh Kumar, Srinivas Jayanthi

1932-Pos Board B76
STRUCTURAL BASIS FOR INCREASED THERMAL STABILITY OF LOCAL STRUCTURAL ENTROPY-OPTIMIZED ADENYLATE KINASE VARIANTS. Sojin Moon, **Euiyoung Bae**

1933-Pos Board B77
INVESTIGATION OF PRESSURE-INDUCED PROTEIN UNFOLDING WITH COARSE-GRAINED MOLECULAR SIMULATION. **Dirar M. Homouz**, Andrei G. Gasic, Jianfa Chen, Margaret S. Cheung

1934-Pos Board B78
EXPLORING FOLDING COOPERATIVITY OF A REPEAT PROTEIN FOLDING BY 2D-NMR DETECTED PRESSURE PERTURBATION. **Martin J. Fossat**, Angel Garcia, Doug Barrick, Christian Roumestand, Catherine A. Royer

1935-Pos Board B79
DEVELOPMENT AND APPLICATION OF A HIGH THROUGHPUT PROTEIN UNFOLDING KINETIC ASSAY. Qiang Wang, Nicklas Waterhouse, Olusegun Feyijimni, Matthew Dominguez, Zoey Sharp, Rachel Service, Jameson Boothe, **Elliott J. Stollar**

1936-Pos Board B80
KINETIC COMPENSATION BETWEEN ESTER-BOND CLEAVAGE, FOLDING AND RELEASE FROM THE RIBOSOME IN PROTEIN BIOGENESIS. **Rayna M. Addabbo**, Hon Nam Lam, Brian Arnold, Silvia Cavagnero

1937-Pos Board B81
THE EFFECT OF THE RIBOSOME ON NASCENT CHAIN ENERGY LANDSCAPES. **Madeleine K. Jensen**, Kambiz Hamadani, Avi J. Samelson, Jamie H. Cate, Susan Marqusee

1938-Pos Board B82
A NEW TOOL TO MEASURE BIOPHYSICAL PROPERTIES OF RIBOSOME NASCENT CHAINS. **Avi Samelson**, Randy Soto, Madeleine K. Jensen, Susan Marqusee

1939-Pos Board B83
CHAPERONE-MEDIATED MECHANICAL PROTEIN FOLDING AT THE SINGLE MOLECULE LEVEL. **Judit Perales-Calvo**, David Giganti, Sergi Garcia-Manyes

1940-Pos Board B84 **Education Travel Awardee**
DIRECT OBSERVATION OF MULTIMER STABILIZATION IN THE MECHANICAL UNFOLDING PATHWAY OF A PROTEIN UNDERGOING OLIGOMERIZATION. **Zackary N. Scholl**, Weitao Yang, Piotr Marszalek

1941-Pos Board B85
SINGLE-MOLECULE FORCE-SPECTROSCOPY REVEALS THE CALCIUM DEPENDENCY OF FOLDING INTERMEDIATES IN THE MULTIDOMAIN PROTEIN S. **Zackary N. Scholl**, Qing Li, Weitao Yang, Piotr Marszalek

1942-Pos Board B86
THE SCIENCE OF STRETCHING: MECHANICAL ANISOTROPY IN TITIN IG DOMAINS. **Edward C. Eckels**, Jaime Andres Rivas-Pardo, Jessica Valle-Orero, Ionel Popa, Julio M. Fernandez

1943-Pos Board B87
USING SINGLE MOLECULE CHEMO-MECHANICAL UNFOLDING TO PROBE THE EFFECT OF ENVIRONMENTAL CONDITIONS ON THE PROTEIN FOLDING PATHWAY. **Emily J. Guinn**, Bharat Jagannathan, Susan Marqusee

1944-Pos Board B88
SIMULATED FORCE SPECTROSCOPY OF A BADLY-BEHAVED PROTEIN: ON THE RELIABILITY OF PROTEIN COARSE-GRAINED MODELS. **Mona Habibi**, Joerg Rottler, Steven S. Plotkin

1945-Pos Board B89
EXPLORING PROTEIN STABILITY BY NANODSF. **Wyatt Strutz**

Membrane Protein Structure and Folding III (Boards B90 - B102)

1946-Pos Board B90
DISSECTING THE FOLDING PATHWAY OF POTASSIUM CHANNEL PORE DOMAINS. **Kevin Song**, Benoît Roux, Tobin Sosnick

1947-Pos Board B91
TRANSMEMBRANE SUBSTRATE UNFOLDING IN INTRAMEMBRANE PROTEOLYSIS. Mia Brown, Alaa Abdine, Jose Chavez, Bryan Lada, Renee D. JiJi, Roman Osman, **Jason W. Cooley**, Iban Ubarretxena-Bilandia

1948-Pos Board B92
DEEP-UV RESONANCE RAMAN SPECTRAL PROPERTIES OF MEMBRANE PROTEINS. Anahita Zare, Michael Eagleburger, Mia C. Brown, Christopher Halsey, Carol Roach, Olayinka O. Oshokoya, Jeremy King, Jason W. Cooley, **Renee D. JiJi**

1949-Pos Board B93
SELECTIVE PRESSURE FOR RAPID MEMBRANE INTEGRATION CONSTRAINS THE SEQUENCE OF BACTERIAL OUTER MEMBRANE PROTEINS. **Ashlee M. Plummer**, Janine H. Peterson, Harris D. Bernstein, Karen G. Fleming

1950-Pos Board B94
HAX-1 STRUCTURAL STUDIES AND INTERACTIONS WITH THE SERCA/PHOSPHOLAMBAN COMPLEX. **Kailey J. Soller**, Caitlin Walker, Sarah Nelson, Michael T. Bowser, Gianluigi Veglia

1951-Pos Board B95
THE EFFECTS OF SARCOLIPIN PHOSPHORYLATION ON SERCA REGULATION. **Alysha A. Dicke**, Tata Gopinath, Vitaly V. Vostrikov, Gianluigi Veglia

1952-Pos Board B96
STRUCTURAL ANALYSIS OF KCNE1 TRANSMEMBRANE MUTANT YIELDING KCNE3-LIKE FUNCTION. **Cheryl L. Law**, Charles R. Sanders

1953-Pos Board B97
BIOCHEMICAL CHARACTERIZATION AND STRUCTURE DETERMINATION OF THE CLASS C TAS1R SUBFAMILY OF CHEMOSENSORY RECEPTORS. **Kate L. White**, Tiffany Lian, Raymond C. Stevens

1954-Pos Board B98
A SMALL LOOP IN THE SERCA N-DOMAIN FACILITATES THE TRANSITION TO A COMPACT CONFORMATION. **Olga N. Raguimova**, Nikolai Smolin, Seth L. Robia

1955-Pos Board B99
DEVELOPMENT OF A NOVEL FRET ASSAY TO CHARACTERIZE THE OLIGOMERIZATION STATE OF SELF-ASSOCIATING TRANSMEMBRANE HELICES. **Philipp Johann Heckmeier**, Mark George Teese, Dieter Langosch

1956-Pos Board B100
SINGLE-MOLECULE MEASUREMENT OF MEMBRANE PROTEIN STABILITY. **Robert Jefferson**, Yu-Chu Chang, Eitan Lerner, Shimon Weiss, James Bowie

1957-Pos Board B101
COMBINING SOLUTION AND SOLID STATE NMR TECHNIQUES IN THE ANALYSIS OF ARG TO CYS MUTATIONS IN PHOSPHOLAMBAN ASSOCIATED WITH DILATED CARDIOMYOPATHY. **Sarah E. D. Nelson**, Vitaly V. Vostrikov, Kim N. Ha, Kailey Soller, Tata Gopinath, Gianluigi Veglia

1958-Pos Board B102
EFFECTIVE APPLICATION OF BICELLES FOR CONFORMATIONAL ANALYSIS OF G PROTEIN-COUPLED RECEPTORS BY HYDROGEN/DEUTERIUM EXCHANGE MASS SPECTROMETRY. **Nguyen Minh Duc**, Yang Du, Su-Youn Lee, Cheng Zhang, Brian K. Kobilka, Ka-Young Chung

Enzyme Regulatory Strategies (Boards B103 - B109)

1959-Pos Board B103
CHEMICALLY MODIFIED SURFACES AFFECT THE ACTIVATION VOLUME OF ADSORBED ENZYMES. **Vitor D. Schuabb**, Claus Czeslik

1960-Pos Board B104
ALLOSTERIC POTENTIATION OF PEPTIDASE NEUROLYSIN BY SMALL MOLECULES. Srinidhi Jayaraman, Rui Zhu, Naomi J. Wangler, Yehia Mechref, Thomas J. Abbruscato, David A. Ostrov, **Vardan T. Karamyan**

1961-Pos Board B105
LINKS OF CONFORMATIONAL SAMPLING TO FUNCTIONAL PLASTICITY AND CLINICAL PHENOTYPES BY SINGLE MOLECULE STUDIES. Matias E. Moses, Sara Thodberg, Krutika Bavishi, Stine Eiersholt, Darui Li, Dimitrios Stamou, Birger L. Moller, Tomas Laursen, **Nikos S. Hatzakis**

1962-Pos Board B106
QUANTIFYING THE MOLECULAR CONSTRAINTS DRIVING THE TRIMETHOPRIM RESISTANCE IN ESCHERICHIA COLI. **Yusuf T. Tamer**

1963-Pos Board B107
THE CATALYTIC DETERMINANTS OF STREPTOCOCCAL PNEUMONIAE IGA1 PROTEASE ARE FORMED BY MULTIPLE DOMAINS. **Ying-Chih Chi**, Agnieszka A. Kendrick, Jeremy Rahkola, Edward N. Janoff, Elan Z. Eisenmesser

1964-Pos Board B108
PRESSURE MODULATION OF THE ENZYMATIC ACTIVITY OF PHOSPHOLIPASE A2 - A PUTATIVE MEMBRANE-ASSOCIATED PRESSURE SENSOR. Saba Suladze, **Roland Winter**

1965-Pos Board B109
KINETIC CHARACTERIZATION OF HUMAN LIVER PHOSPHOFRUCTOKINASE. **Amanda J. Tindall**, Gregory D. Reinhart

Intirinsically Disordered Proteins (IDP) and Aggregates: Aggregation and Assemblies (Boards B110 - B131)

1966-Pos Board B110 **International Travel Awardee**
WATER IN AMYLOIDOGENIC INTRINSICALLY DISORDERED PROTEINS: INTERPLAY OF CONFORMATIONAL PREFERENCE AND AMYLOID AGGREGATION. **Shruti Arya**, Samrat Mukhopadhyay

1967-Pos Board B111 **CPOW TRVEL AWARDEE**
ILL-POSED? NOT A PROBLEM: INFERRING MECHANISMS OF ACTION FROM AMYLOID FORMATION KINETICS USING APPROXIMATE BAYESIAN COMPUTATION. **Eri Nakatani-Webster**, Abhinav Nath

1968-Pos Board B112
FRUSTRATION OF CRYSTALLIZATION BY LOCAL POLYMORPHISM: ROLES OF CORE SHAPE AND ENTROPY. **Thomas G. Mason**, Kun Zhao

1969-Pos Board B113
MECHANISM OF LIGHT CHAIN AMYLOID FIBRIL FORMATION: SEEDING-NUCLEATION AND POLYMERIZATION AMYLOID FORMATION AND THE CROSS-SEEDING PHENOMENON. **Luis M. Blancas-Mejia**, Marina Ramirez-Alvarado

1970-Pos Board B114
RESOLVING THE STRUCTURAL CONVERSION, AGGREGATION AND NEUROTOXICITY OF PRION PROTEINS AT THE SINGLE MOLECULE LEVEL. **Sanjeevi Sivasankar**, Chi-Fu Yen, Dilshan S. Harischandra, Anumantha Kanthasamy

1971-Pos Board B115
MEMBRANE-MEDIATED MISFOLDING OF ISLET AMYLOID POLYPEPTIDE IS A SHARED MECHANISM AMONG TYPE 2 DIABETIC RISK FACTORS. **Alan K. Okada**, Kazuki Teranishi, Robert H. Chow, Ralf Langen

1972-Pos Board B116
PROFILIN BINDING MODULATES THE AGGREGATION AND PHASE SEPARATION OF HUNTINGTIN N-TERMINAL FRAGMENTS VIA POLYPHASIC LINKAGE. **Ammon E. Posey**, Kiersten M. Ruff, Tyler S. Harmon, Alex S. Holehouse, Rohit V. Pappu

1973-Pos Board B117
AMORPHOUS AGGREGATION OF CYTOCHROME C WITH INHERENTLY LOW AMYLOIDOGENICITY IS CHARACTERIZED BY THE METASTABILITY OF SUPERSATURATION AND THE PHASE DIAGRAM. **Yuxi Lin**, József Kardos, Koichiro Ishimori, Yuji Goto, Young-Ho Lee

1974-Pos Board B118
PROTEIN AGGREGATION AND PORE-FORMATION OF A NEURODEGENERATIVE PROTEIN FRAGMENT. **Charles H. Chen**, Ayesha Khan, Joseph Jen-Tse Huang, Martin B. Ulmschneider

1975-Pos Board B119
TIP-ENHANCED RAMAN SCATTERING REVEALS HETEROGENEITY OF SECONDARY STRUCTURES IN AMYLOID FIBRILS FORMED BY PEPTIDE CGNNQQNY. **Alexey Krasnoslobodtsev**, Joseph Smolsky, Tanja Deckert-Gaudig, Yuliang Zhang, Volker Deckert, Yuri Lyubchenko

1976-Pos Board B120
MOLECULAR STUDY OF HIV-TAT AGGREGATION. **Alina Popescu Hategan**, Elena Karnaukhova, Emilios K. Dimitriadis, Mario A. Bianchet, Avindra Nath

1977-Pos Board B121
EVALUATING FREE ENERGIES OF DIMERIZATION OF SHORT POLYGLUTAMINE PEPTIDES WITH MOLECULAR DYNAMICS SIMULATIONS. **Riley J. Workman**, Jeffry D. Madura

1978-Pos Board B122
THE FORMATION OF AMYLOID FIBRIL ON TWO-DIMENSIONAL SURFACE. **Yichih Lin**, E. James Petersson, Zahra Fakhraai

1979-Pos Board B123
LIGHT CHAIN AMYLOID FIBRILS ACT AS A RECRUITMENT POINT FOR SOLUBLE PROTEIN AND REVEAL THEIR CYTOTOXIC POTENTIAL IN HUMAN CARDIOMYOCYTES. **Marta Marin-Argany**, Yi Lin, Jonathan S. Wall, Laura R. Elsbernd, Megan McClure, Marina Ramirez-Alvarado

1980-Pos Board B124
INSIGHTS INTO THE GENESIS OF LIGHT CHAIN AMYLOID ASSEMBLY. **Pinaki P. Misra**, Luis M. Blancas-Mejia, Marina Ramirez-Alvarado

1981-Pos Board B125
MITOCHONDRIALLY-DERIVED PEPTIDES AS DEFENSE AGAINST AMYLOID PROTEIN MISFOLDING. **Kazuki Teranishi**, Alan Okada, Kelvin Yen, Pinchas Cohen, Ralf Langen

1982-Pos Board B126
BIOPHYSICS OF TARDIGRADE SURVIVAL. **Samantha Piszkiewicz**, Aakash Mehta, Thomas Boothby, Bob Goldstein, Gary Pielak

1983-Pos Board B127
TUBULIN TAILS ARE INTRINSICALLY DISORDERED POLYANIONS THAT REGULATE BINDING TO OTHER PROTEINS BY SEQUENCE AS WELL AS CHARGE. **Dan L. Sackett**

1984-Pos Board B128
F ACTIN BUNDLING DYNAMICS AND STIFFNESS OF THE TRIOBP-4 F ACTIN BUNDLE. **Justin J. Raupp**, Laura K. Gunther, Yuwen Mei, Alexander Pattyn, Takeshi Sakamoto

1985-Pos Board B129
ROLE OF OSMOLYTES ON THE THERMODYNAMIC AND AGGREGATION PROPERTIES OF AN ELP-DRUG CARRIER. **Valeria Zai-Rose**

1986-Pos Board B130
GLOBAL AND LOCAL CONFORMATIONAL HETEROGENIETY GOVERNS THE PRE-NUCLEATION PHASE IN AMYLOIDOGENIC SELF-ASSEMBLY. **Dirk Matthes**, Vytautas Gapsys, Julian T. Brennecke, Bert L. de Groot

1987-Pos Board B131
CONFORMATIONAL POLYMORPHISM IN CONDITIONALLY DISORDERED NUCLEOPHOSMIN: FROM SINGLE-MOLECULES TO LIQUID DROPLETS. **Priya R. Banerjee**, Diana M. Mitrea, Richard W. Kriwacki, Ashok Deniz

DNA Structure and Dynamics I (Boards B132 - B160)

1988-Pos Board B132
LONG-TERM MULTICOLOR TRACKING OF GENOMIC LOCI BY MODIFIED SGRNAS OF THE CRISPR/CAS9 SYSTEM. **Shipeng Shao**

1989-Pos Board B133
SINGLE MOLECULE ANALYSIS OF CHROMATIN STRUCTURE. **Michal Levy-Sakin**, Catherine Chu, Chin Lin

1990-Pos Board B134
DEPENDENCE OF DNA PERSISTENCE LENGTH ON IONIC STRENGTH OF SOLUTIONS WITH MONOVALENT AND DIVALENT SALTS: A JOINT THEORY–EXPERIMENT STUDY. Annaël BRUNET, **Catherine Tardin**, Laurence Salome, Philippe Rousseau, Nicolas Destainville, Manoel Manghi

1991-Pos Board B135
EFFECTS OF HYDRATION ON THE PHOTOIONIZATION THRESHOLD ENERGY OF DNA COMPONENTS AND ON THE ACTIVATION BARRIERS FOR GUANINE METHYLATION BY DIMETHYL SULFATE. **George A. Papadantonakis**, Daniel R. Eichler, Haley A. Hamann, Katherine A. Harte

1992-Pos Board B136
DNA FLEXIBILITY DOES NOT SHOW APPRECIABLE TEMPERATURE DEPENDENCE. **Tunc Kayikcioglu**, Taekjip Ha

1993-Pos Board B137
STRUCTURAL CHARACTERIZATION OF DSDNA NANOCOMPLEXES BASED ON AMMONIUM GEMINI SURFACTANTS. **Weronika J. Andrzejewska**, Michalina Skupin, Andrzej Skrzypczak, Maciej Kozak

1994-Pos Board B138
CAN MARKOV CHAIN MODELS PREDICT NUCLEOSOME POSITIONING? **Marco Tompitak**, Behrouz Eslami Mossalam, Gerard T. Barkema, Helmut Schiessel

1995-Pos Board B139
CONTINUOUSLY SCANNING DNA WITH NANOPORE MSPA. **Matthew T. Noakes**, Ian M. Derrington, Kyle W. Langford, Henry D. Brinkerhoff, Elizabeth Manrao, Andrew H. Laszlo, Joshua Bartlett, Benjamin I. Tickman, Jackie Blum, Jens H. Gundlach

1996-Pos Board B140
IMAGING AND TRACING MULTIPLE GENETIC ELEMENTS VIA MULTIPLEXED CRISPR IMAGING. **Narendra Chaudhary**, Hayoon Cho, Narangerel Gantumur, Hajin Kim

1997-Pos Board B141
STRUCTURAL FEATURES OF DNA INTERACTION WITH AMINO ACID CONJUGATED DAUNORUBICIN DERIVATIVES. **Ádám Orosz**, Péter Horváth, Gábor Mező, Gabriella Csík

1998-Pos Board B142
MOLECULAR DYNAMICS INVESTIGATIONS OF Z[WC] DNA AND ITS POTENTIAL ROLE IN THE B TO Z-DNA TRANSITION. **Ashutosh Rai**, Micaela E. Bush, Alma Gracic, Jinhee Kim, Michael G. Lerner, Alexander K. Seewald, Benjamin L. Yee

1999-Pos Board B143
CALCULATING WATSON-CRICK TO HOOGSTEEN TRANSITION KINETICS IN DNA WITH LANGEVIN DYNAMICS AND FOKKER-PLANCK DIFFUSION IN REDUCED CONFIGURATION SPACE. **Gianmarc Grazioli**, Ioan Andricioaei

2000-Pos Board B144 **EDUCATION TRAVEL AWARDEE**
LINKER HISTONES AND THE DYNAMIC CHROMATIN FIBER. **Stefjord Todolli**, Nicolas Clauvelin, Wilma K. Olson

2001-Pos Board B145
ENTROPY CALCULATIONS OF HOOGSTEEN AND WATSON-CRICK CONFORMATIONS. **James McSally**, Ioan Andricioaei

2002-Pos Board B146
USE OF NUNCHUK NANOSTRUCTURES FOR DYNAMIC DSDNA BEND ANGLE MEASUREMENTS BY FLUORESCENCE MICROSCOPY. Lourdes Velazquez, **Deborah Clayton-Warwick**, Deborah Fygenson

2003-Pos Board B147
DYNAMIC RELEASE OF BENDING STRESS IN SHORT DOUBLE-STRANDED DNA BY TWO TYPES OF DEFORMATION. **CheolHee Kim**, O-Chul Lee, Jae-Yeol Kim, Wookyung Sung, Nam Ki Lee

2004-Pos Board B148
NUCLEOSOME DYNAMICS AT MICROSECOND TIMESCALE: DNA-PROTEIN INTERACTIONS, WATER-MEDIATED INTERACTIONS AND NUCLEOSOME FORMATION. **Alexey K. Shaytan**, Grigory A. Armeev, Alexander Goncearenco, Victor B. Zhurkin, David Landsman, Anna R. Panchenko

2005-Pos Board B149
EFFECTS OF SALT ON THE STABILITY OF A G-QUADRUPLEX FROM THE HUMAN C-MYC PROMOTER. **Byul Kim**

2006-Pos Board B150
SINGLE MOLECULE STUDIES OF OXIDATIVE DAMAGE ON HUMAN TELOMERE. **Hui-Ting Lee**, Grace Kim, Patricia Opresko, Sua Myong

2007-Pos Board B151
COUNTERION CONDENSATION VS. ZETA POTENTIAL: CAN EITHER THEORY DESCRIBE THE ELECTROPHORESIS OF DNA AND OTHER POLYIONS? **Nancy C. Stellwagen**

2008-Pos Board B152
LOCAL COMPRESSIBILITY: GROUND-STATE PREDICTIONS OF QUANTUM YIELD TRENDS IN AZOBENZENE-MODIFIED DNA. **Addie Kingsland**, Soumyadyuti Samai, Yunqi Yan, David Ginger, Lutz Maibaum

2009-Pos Board B153
PROBING THE FOLDING DYNAMICS OF HUMAN TELOMERIC G-QUADRUPLEX WITH SINGLE-MOLECULE FRET. **Mikayel Aznauryan**, Siri Søndergaard, Sofie Noer, Birgit Schiøtt, Victoria Birkedal

2010-Pos Board B154
DNA-ORIGAMI NANOTUBES AND THEIR INTERACTION WITH MEMBRANES: INSIGHTS THROUGH MULTISCALE MOLECULAR DYNAMICS SIMULATIONS. **Vishal Maingi**, Jaakko J. Uusitalo, Mickaël Lelimousin, Stefan Howorka, Siewert J. Marrink, Mark S.P. Sansom

2011-Pos Board B155
HYDRATION CHANGES ACCOMPANYING HELIX-TO-COIL DNA TRANSITIONS. **Ikbae Son**, Yuen Lai Shek, David N. Dubins, Tigran V. Chalikian

2012-Pos Board B156
STABILITY AND ION DISTRIBUTIONS AROUND LEFT- AND RIGHT-HANDED DNA AND RNA DUPLEXES: A COMPARATIVE STUDY. **Feng Pan**, Viet H. Man, Christopher Roland, Celeste Sagui

2013-Pos Board B157
KINETICS AND THERMODYNAMICS OF NON-CANONICAL DNA. **Micah J. McCauley**, Caitlin J. Cain, Leah Furman, Catherine A. Dietrich, Sally Ruderman, Diana Seminario-McCormick, Grace Ferris, Megan E. Nunez, Mark C. Williams

2014-Pos Board B158
ACCURATE DATA PROCESS FOR FOR ANALYZING NANOPORE DATA. **Zhen Gu**

2015-Pos Board B159
MECHANISTIC INFLUENCE OF NANOMETER LENGTH-SCALE SURFACE CHEMISTRY ON DNA HYBRIDIZATION. **Payel Das**, Sufi Zafar

2016-Pos Board B160
TOPOLOGICAL DIVERSITY OF CHROMATIN FIBERS: INTERPLAY BETWEEN NUCLEOSOME REPEAT LENGTH, DNA LINKING NUMBER AND THE LEVEL OF TRANSCRIPTION. **Davood Norouzi**, Ataur Katebi, Tatiana Nikitina, Victor Zhurkin

RNA Structure and Dynamics (Boards B161 - B175)

2017-Pos Board B161
CHARACTERIZING THE STRUCTURAL AND ENERGETIC PROPERTIES OF TRNA DURING TRANSLOCATION THROUGH A NANOPORE. **Prasad Bandarkar**, Huan Yang, Meni Wanunu, Paul Whitford

2018-Pos Board B162
SYNONYMOUS MUTATIONS REDUCE GENOME COMPACTNESS IN ICOSAHEDRAL SSRNA VIRUSES. **Luca Tubiana**, Anze L. Bozic, Cristian Micheletti, Rudolph Podgornik

2019-Pos Board B163
MIMICKING RIBOSOMAL VECTORIAL UNFOLDING OF RNA PSEUDOKNOT IN A PROTEIN CHANNEL. **Xinyue Zhang**, Xiaojun Xu, Zhiyu Yang, Andrew J. Burcke, Kent S. Gates, Shi-Jie Chen, Li-Qun Gu

2020-Pos Board B164
JUNCTION TOPOLOGICAL CONSTRAINTS IN HAIRPIN RIBOZYME FOLDING. **Alex Morriss-Andrews**, Anthony M. Mustoe, Charles L. Brooks, III

2021-Pos Board B165
A COMBINED MOLECULAR DOCKING/DYNAMICS APPROACH TO STUDY SELECTIVITY AND BINDING AFFINITY OF L-STEREOISOMER RNA APTAMER TOWARDS CCL2 AND RELATED CHEMOKINES. **Senthilkumar Kailasam**

2022-Pos Board B166
CONDENSATION OF NUCLEIC ACIDS BY MULTIVALENT IONS: SEQUENCE DEPENDENCE AND THE CURIOUS CASE OF RNA. **Igor S. Tolokh**, Aleksander Drozdetski, Suzette A. Pabit, Andrea M. Katz, Lois Pollack, Nathan A. Baker, Alexey V. Onufriev

2023-Pos Board B167
ENTROPIC DETERMINANTS AND BARRIERS IN THE FORMATION OF RNA SECONDARY STRUCTURES. **Chi H. Mak**, Christine Ferry

2024-Pos Board B168
ACCURATE DETERMINATION OF THE RNA JUNCTIONS VIA SINGLE-MOLECULE HIGH-PRECISION FRET MEASUREMENTS. **Olga Doroshenko**, Hayk Vardanyan, Sascha Fröbel, Stanislav Kalinin, Simon Sindbert, Oleg Opanasyuk, Christian Hanke, Sabine Müller, Holger Gohlke, Claus A.M. Seidel

2025-Pos Board B169
LABEL-FREE, HIGH-TIME-RESOLUTION, SINGLE-MOLECULE STUDIES OF RIBOSWITCH FOLDING. **Nathan S. Daly**, Jason J. Hon, Steven B. Warren, Scott M. Trocchia, Colin Nuckolls, Kenneth L. Shepard, Ruben L. Gonzalez Jr.

2026-Pos Board B170
EXPLORING THE EFFECTS OF TEMPERATURE AND PRESSURE ON THE STRUCTURE AND STABILITY OF A SMALL RNA HAIRPIN. **Caroline M P Schuabb**, Salomé Pataraia, Roland Winter

2027-Pos Board B171
VFOLDCPX SERVER FOR RNA/RNA COMPLEX STRUCTURE PREDICTION. **Xiaojun Xu**, Shi-Jie Chen

2028-Pos Board B172
FOLDING AND CATALYSIS OF THE GLMS RIBOZYME RIBOSWITCH STUDIED AT THE SINGLE-MOLECULE LEVEL. **Andrew Savinov**, Steven M. Block

2029-Pos Board B173
KINETIC MODEL OF MG^{2+} INDUCED RNA TERTIARY FOLDING FROM STOPPED FLOW FLUORESCENCE DATA. **Robb Welty**, Michael J. Rau, Kathleen B. Hall

2030-Pos Board B174
CRYSTAL STRUCTURE OF GROUP II INTRON DOMAIN 1 REVEALS A TEMPLATE FOR RNA ASSEMBLY. **Chen Zhao**, Marco Marcia, Kanagalaghatta R. Rajashankar, Anna Marie Pyle

2031-Pos Board B175
THERMODYNAMIC STABILITIES OF MULTIBRANCH LOOPS IN BACTERIOPHAGE PACKAGING RNA. **Alyssa Hill**, Susan Schroeder

Membrane Physical Chemistry II (Boards B176 - B192)

2032-Pos Board B176
CROSS-VALIDATION OF SIMULATION AND EPR OXIMETRY APPROACHES: MEMBRANE CHOLESTEROL REDUCES OXYGEN FLUX. **Gary Angles**, Casey R. Smith, Kristina Bueche, Sally C. Pias

2033-Pos Board B177
MEMBRANE CHOLESTEROL SUBSTANTIALLY ALTERS THE FREE ENERGY TOPOLOGY OF OXYGEN TRANSPORT. Casey R. Smith, Kristina Bueche, Gary Angles, **Sally C. Pias**

2034-Pos Board B178
INTERACTION OF RESVERATROL WITH LIPID MEMBRANES. Saima Nur, Fariah Nur, Abdelaziz Alsamarah, Payal Chatterjee, Saadia Nur, Jonathan Moreno, Lyna Luo, **Maria Lambros**

2035-Pos Board B179
SELECTIVE ASSOCIATION OF COQ10 WITH LOW DENSITY LIPID MEMBRANES. **Sumit Garg**, Vandana Swaminathan, Sirisha Dhavala, Rangaprasad Sarangarajan, Michael Kiebish, Niven Narain

2036-Pos Board B180
GENERAL ANESTHETICS RAISE THE MISCIBILITY TRANSITION TEMPERATURE OF MODEL MEMBRANES. **Caitlin Cornell**, Sarah L. Keller

2037-Pos Board B181
INTERACTION OF ADENOSINE TRIPHOSPHATE WITH PHOSPHATIDYLCHOLINE LIPID BILAYERS. **Abhinav Ramkumar**, Xiaoling Leng, Ryan Z. Lybarger, Horia I. Petrache

2038-Pos Board B182
THE PARTITIONING BEHAVIOR OF FREE AMINO ACIDS INTO LIPID MEMBRANES. **Merrell A. Johnson**, Sui H. Tial, Bruce D. Ray, Soenke Seifert, Horia I. Petrache

2039-Pos Board B183
INFLUENCE OF VITAMIN E ON DOMAIN STRUCTURE AND ELASTIC FLUCTUATIONS IN LIPID MIXTURES. **Drew Marquardt**, Michal Belicka, Thad A. Harroun, Georg Pabst

2040-Pos Board B184
SIMULATED BIOPHYSICAL EXPERIMENTAL TECHNIQUES FOR CHLORHEXIDINE IN DMPC/CHOLESTEROL SYSTEMS. **Brad J. Van Oosten**, Thad A. Harroun

2041-Pos Board B185
THEORY FOR THE CHARGE DEPENDENCE OF POPG:POPC LIPOSOME REPULSIONS IN DEIONIZED WATER. **Joel A. Cohen**, Ming-Tzo Wei, H. Daniel Ou-Yang

2042-Pos Board B186
THERMODYNAMIC MODELLING OF PHASE SEPARATED LIPID MIXTURES INDUCED BY PROTEIN CROWDING. **Wade F. Zeno**, Subhash H. Risbud, Marjorie L. Longo

2043-Pos Board B187
LIPID DOMAINS IN ZWITTERIONIC-ANIONIC LIPID MIXTURES INDUCED BY COMBINED EFFECT OF MONOVALENT AND DIVALENT IONS. **Hongcheng Xu**, Sai Ganesan, Silvina Matysiak

2044-Pos Board B188
MIXED PHOSPHOINOSITIDE/LIPID LANGMUIR FILMS IN THE PRESENCE OF BIVALENT CATIONS. **Katrice E. King**, Arne Gericke

2045-Pos Board B189
PRESENCE OF SALT AND SOLUTION ASYMMETRY ACROSS CHARGED MEMBRANES INFLUENCES THEIR PHASE STATE. **Bastian Kubsch**, Tom Robinson, Reinhard Lipowsky, Rumiana Dimova

2046-Pos Board B190
INFLUENCE OF CHARGE ON THE ELASTIC PROPERTIES OF LIPID MEMBRANES. **Elizabeth G. Kelley**, Michihiro Nagao, Robert D. Bradbury, Paul D. Butler

2047-Pos Board B191
MOLECULAR SIMULATION OF LIPIDS AND WATER: ATOMISTIC, COARSE-GRAINED, AND MIXED RESOLUTIONS. **Mario Orsi**, Wei Ding, Michail Palaiokostas, Wen Wang

2048-Pos Board B192
STRUCTURE AND DYNAMICS OF BIO-MEMBRANES AND THEIR HYDRATION WATER IN WATER SOLUTION OF ROOM TEMPERATURE IONIC LIQUIDS: AN EXPERIMENTAL AND COMPUTATIONAL STUDY. **Antonio Benedetto**, Pietro Ballone

Membrane-active Peptides and Toxins II (Boards B193 - B217)

2049-Pos Board B193
STUDYING ANTIBIOTIC-MEMBRANE INTERACTIONS VIA X-RAY DIFFRACTION AND FLUORESCENCE MICROSCOPY. Yi-Ting Sun, Ping-Yuan Huang, Cheng-Hao Lin, Kuan-Rong Lee, **Ming-Tao Lee**

2050-Pos Board B194
LANCING LIPOSOMES: UNLOCKING THE MECHANISM OF SHORT AMPHIPHILIC BETA SHEET FORMING PEPTIDES. **Jalen Hoehn**

2051-Pos Board B195
TOWARDS THE DELIVERY OF CARGO ACROSS BIOLOGICAL BARRIERS. **Alexander Komin**, Ran Lin, Honggang Cui, Peter C. Searson, Kalina Hristova

2052-Pos Board B196
STRUCTURAL AND MECHANISTIC STUDIES OF ANDROPIN, A MEMBRANE-SELECTIVE ANTIMICROBIAL PEPTIDE. **Meghan K. McCaskey**, Larry R. Masterson

2053-Pos Board B197
CHARACTERIZATION OF PA CHANNELS IN ANTHRAX TOXIN USING TRP PEPTIDES. **Koyel J. Ghosal**, Bryan A. Krantz

2054-Pos Board B198
DESIGN OF PH TRIGGERED, MACROMOLECULAR PORE FORMING PEPTIDES FOR ENDOSOMAL ESCAPE. **Sarah Y. Kim**, Gregory Wiedman, Lucy Li, William C. Wimley, Kalina Hristova

2055-Pos Board B199
INTERACTIONS OF HISTIDINE-RICH ANTIMICROBIAL PEPTIDES, GAD-1 AND GAD-2, WITH MODEL MEMBRANES AT LOW AND HIGH PH. **Gagandeep K. Sandhu**, Michael R. Morrow, Valeire Booth

2056-Pos Board B200
MOLECULAR BASIS FOR THE ROLE OF CATIONIC RESIDUES IN ANTIMICROBIAL PEPTIDE INTERACTIONS. **Amy Rice**, Jeff Wereszczynski

2057-Pos Board B201
OPTIMIZING A SPONTANEOUS MEMBRANE TRANSLOCATING PEPTDE. **Taylor Fuselier**, William C. Wimley

2058-Pos Board B202
SINGLE-MOLECULE IMAGING OF PERFRINGOLYSIN O BINDING AND ASSEMBLY ON MODEL MEMBRANES. Michael J. Senior, **Carina Monico**, Alejandro P. Heuck, Robert J. C. Gilbert, Mark I. Wallace

2059-Pos Board B203
INVESTIGATING THE RELATIONSHIP BETWEEN HELICITY AND ACTIVITY IN ANTIMICROBIAL PEPTIDES WITH STABILIZED α-HELICAL STRUCTURES. **Amy Yuan**, Rida Mourtada, Donald E. Elmore, Loren D. Walensky

2060-Pos Board B204
ADAPTATION OF ESCHERICHIA COLI SPHEROPLASTS TO THE CHARACTERIZATION OF ANTIMICROBIAL PEPTIDES. **Lei Wei**, Donald E. Elmore

2061-Pos Board B205
THE ROLE OF ARGININE AND LYSINE IN HISTONE DERIVED ANTIMICROBIAL PEPTIDES. **Dania Figueroa**, Carla Perez, Donald E. Elmore

2062-Pos Board B206
USING MOLECULAR DYNAMICS SIMULATIONS TO CHARACTERIZE THE ROLE PLAYED BY BASIC RESIDUES IN INTERACTIONS OF HDAPS AND BACTERIAL LIPID MEMBRANES. **Sung Hyun Lee**, Donald E. Elmore

2063-Pos Board B207
MIMICKING AND UNDERSTANDING THE AGGLUTINATION EFFECT OF THE ANTIMICROBIAL PEPTIDE THANATIN USING MODEL PHOSPHOLIPID VESICLES. Émile Robert, Thierry Lefèvre, Matthieu Fillion, Benjamin Martial, Justine Dionne, **Michèle Auger**

2064-Pos Board B208
2H NMR STUDIES OF LIVING BACTERIA INTERACTING WITH ANTIMICROBIAL PEPTIDES. **Nury P. Santisteban**, Michael R. Morrow, Valerie Booth

2065-Pos Board B209
SELECTIVE MEMBRANE DISRUPTION MECHANISM OF AN ANTIBACTERIAL γ-AAPEPTIDE DEFINED BY EPR SPECTROSCOPY. Pavanjeet Kaur, Yaqiong Li, Jianfeng Cai, **Likai Song**

2066-Pos Board B210
SELECTIVITY OF ANTIMICROBIAL PEPTIDES: ASSOCIATION TO BACTERIAL AND EUKARYOTIC CELLS AND CELL-DENSITY DEPENDENCE. **Filippo Savini**, Vincenzo Luca, Daniela Roversi, Alessio Boccedi, Renato Massoud, Yoon-kyung Park, Maria Luisa Mangoni, Lorenzo Stella

2067-Pos Board B211
PSD1 ANTIMICROBIAL ACTIVITY AGAINST CANDIDA ALBICANS PLANKTONIC CELLS AND BIOFILMS. **Sónia Gonçalves**, Patrícia M. Silva, Mário R. Felício, Luciano N. de Medeiros, Eleonora Kurtenbach, Nuno C. Santos

2068-Pos Board B212
SELF-ASSEMBLING AND ION TRANSPORT PROPERTIES OF MEMBRANE ACTIVE PEPTIDES DRIVEN BY FORMATION OF A FLUOROUS INTERFACE. **Normand Voyer**, Raphaël Godbout, Sébastien Légaré, Maud SV Auger, François Otis, Claudia Carpentier, Patrick Lagüe, Michèle Auger

2069-Pos Board B213
DAPTOMYCIN BINDS BUT DOES NOT TRANSLOCATE ACROSS PC:PG MEMBRANES. **Mark Kreutzberger**, Antje Pokorny, Paulo F. Almeida

2070-Pos Board B214
ARE LEUCINE AND ISOLEUCINE EQUIVALENT IN BINDING OF AMPHIPATHIC PEPTIDES TO MEMBRANES. Mia A. Rosenfeld, Shatima Stokes, Jonathan H. Diaz, Paulo F. Almeida, **Antje Pokorny**

2071-Pos Board B215
PHLIP®: USES IN MEASURING CELL SURFACE PH, IMAGING TUMORS, AND DELIVERING THERAPEUTICS. **Donald Engelman**, Yana K. Reshetnyak, Oleg A. Andreev

2072-Pos Board B216
THE ROLE OF MULTIVALENCY IN INHIBITION OF BACILLUS ANTHRACIS AND CLOSTRIDIUM BOTULINUM BINARY TOXINS BY CATIONIC PAMAM DENDRIMERS. **Goli Yamini**, Veronica Wright, Holger Barth, Ekaterina M. Nestorovich

2073-Pos Board B217
ORDERING EFFECT INDUCED BY SARS-COV FUSION PEPTIDES ON MEMBRANES CONTAINING NEGATIVELY CHARGED LIPIDS MIGHT BE IMPORTANT TO MEMBRANE FUSION. **Luis GM Basso**, Morteza Jafarabadi, Alex I. Smirnov, Antonio J. Costa-Filho

Protein-Lipid Interactions II (Boards B218 - B247)

2074-Pos Board B218
INVESTIGATING LIPID-PROTEIN INTERACTIONS IN A COMPLEX BIOLOGICAL MEMBRANE MODEL. **Karelia H. Delgado-Magnero**, Gurpreet Singh, Valentina Corradi, D. Peter Tieleman

2075-Pos Board B219
ACTIVATION OF INTEGRIN: A MULTISCALE COMPUTATIONAL STUDY. **Anirban Polley**, Anand Srivastava, Gregory A. Voth

2076-Pos Board B220
THE INTERACTION OF PROTEINS WITH ASYMMETRIC LIPID BILAYERS. **Milka Doktorova**, Gerald W. Feigenson, Harel Weinstein

2077-Pos Board B221
CONFORMATIONAL DYNAMICS OF PRION PROTEINS AT THE MEMBRANE INTERFACE. **Jesse Woo**, Chad Nieri, Roger Gonzalez, Jason C. Bartz, Patricia Soto

2078-Pos Board B222
STRUCTURAL ANALYSIS OF THE INTERACTION OF THE FUNCTIONAL AMYLOID FORMING PROTEIN ORB2A WITH LIPIDS. **Maria A. Conrad-Soria**, Silvia A. Cervantes, Alexander S. Falk, Thalia H. Bajakian, Ansgar B. Siemer

2079-Pos Board B223
INTERACTION OF A MODEL AMPHIPATHIC α-HELIX BUNDLE PROTEIN WITH AN AQUEOUS-GLYCEROPHOSPHOLIPID-OIL INTERFACE. **Mona Sadat Mirheydari**, Edgar E. Kooijman, Elizabeth K. Mann

2080-Pos Board B224
COMPUTATIONAL PREDICTION OF LIPID BINDING PROFILES FOR SEC14-LIKE DOMAINS. **Lauren C. Heller**, Mwangala Akamandisa, Donald E. Elmore

2081-Pos Board B225
MODULATION OF GEL PHASE MODEL MEMBRANES BY VITAMIN D-RELATED PROTEINS. Sidra Rashid, Robert V. Law, Abdel F. Isakovic, Vivian Stojanoff, **Deborah L. Gater**

2082-Pos Board B226
EFFECT OF THE NOVEL AMYLOID INHIBITOR "ANLE145C" ON AGGREGATION OF ISLET AMYLOID POLYPEPTIDE AND HOW IT IS MODULATED BY MEMBRANES. **Saravanan Manikam Sadasivam**, Sergey Ryazanov, Andrei Leonov, Steven Roeters, Sander Wouterson, Armin Giese, Christian Griesinger, J Antoinette Killian

2083-Pos Board B227
STRUCTURE AND LIPID BINDING PREFERENCES OF THE ALTERNATIVELY TRANSLATED REGION OF PTEN-LONG. **Anne-Marie Bryant**

2084-Pos Board B228
SOLUBILIZED NICOTINIC ACETYLCHOLINE RECEPTOR: LIPID COMPOSITION AND REQUIREMENTS FOR ACTIVITY. **Juan C. Mercado**, José A. Lasalde Dominicci, Orestes Quesada, José O. Colón

2085-Pos Board B229
DETERGENT-FREE ISOLATION, CHARACTERIZATION AND FUNCTIONAL RECONSTITUTION OF A K^+ CHANNEL: THE POWER OF NATIVE NANODISCS. **Jonas M. Dörr**, Marre Schäfer, Martijn C. Koorengevel, J. Antoinette Killian

2086-Pos Board B230
ELECTROSTATIC FORCES GOVERN ASSEMBLY AND DISINTEGRATION OF THE INFLUENZA VIRUS PROTEIN SCAFFOLD TO PROVIDE TENSION FOR MEMBRANE FUSION. **Oleg V. Batishchev**, Liudmila A. Shilova, Michael V. Kachala, Vsevolod Yu. Tashkin, Valerij S. Sokolov, Natalia V. Fedorova, Liudmila A. Baratova, Denis G. Knyazev, Joshua Zimmerberg, Yury A. Chizmadzhev

2087-Pos Board B231
STOCHASTIC FLUCTUATION SENSING IN A BISTABLE PHOSPHATIDYLINOSITOL-BASED REACTION DIFFUSION SYSTEM. **Scott D. Hansen**, William Y. Huang, Young Kwang Lee, Jay T. Groves

2088-Pos Board B232
CARDIOLIPIN MEMBRANES AS PHOTOREDUCTION INHIBITORS IN FERRICYTOCHROME C: A RESONANCE RAMAN STUDY WITH SORET BAND EXCITATION. **Dmitry Malyshka**, Reinhard Schweitzer-Stenner

2089-Pos Board B233
ELUCIDATION OF ELECTROSTATIC DETERMINANTS IN CYTOCHROME C-CARDIOLIPIN BINDING. **Margaret M. Elmer-Dixon**

2091-Pos Board B235
EXPLORING OXIDATION STATE DEPENDENT CONFORMATIONAL CHANGES OF CYTOCHROME C ON CARDIOLIPIN CONTAINING LIPOSOMES. **Bridget Milorey**, Lee Serpas, Leah Pandiscia, Reinhard Schweitzer-Stenner

2092-Pos Board B236
SEQUENCE PERMUTATION OF POSITIVE CHARGES IN A MODEL PEPTIDE ANTIBIOTIC PRODUCES DIFFERING ENTHALPIC AND ENTROPIC CONTRIBUTIONS TO THE LIPID-PEPTIDE BINDING AFFINITY. **Brianna Haight**, Ellen R. Arndt, Adrienne P. Loh

2093-Pos Board B237
INDUCING A HELICAL KINK IN A MODEL PEPTIDE ANTIBIOTIC REDUCES PEPTIDE-MEMBRANE INTERACTION FAVORABILITY IN VESICLES. Riley Larson, Ellen R. Arndt, **Adrienne P. Loh**

2094-Pos Board B238 **Education Travel Awardee**
DOES LIPID COMPOSITION REGULATE ANTHRAX TOXIN UPTAKE? **Nnanya U. Kalu**, Clare Kenney, Ekaterina Nestorovich

2095-Pos Board B239
INVESTIGATION OF THE PHYSIOCHEMICAL PROPERTIES OF THE PHOSPHOLIPID CARDIOLIPIN: IMPLICATIONS FOR OXPHOS REGULATION AND BARTH SYNDROME. **Murugappan Sathappa**, Matthew Greenwood, Nathan Alder

2096-Pos Board B240
LIPID PROTEIN INTERACTIONS OF G PROTEIN COUPLED RECEPTORS. **Besian Sejdiu**, Christine DeGagne, Valentina Corradi, Peter Tieleman

2097-Pos Board B241
PROBING THE EFFECT OF LIPID BINDING ON THE MONOMER-DIMER EQUILIBRIUM OF A PROKARYOTIC SUGAR TRANSPORTER BY NATIVE MASS SPECTROMETRY. **Joseph A. C. Donlan**, Kallol Gupta, Weston B. Struwe, Joseph Gault, Carol V. Robinson

2098-Pos Board B242
ASSESSING LIPID MEMBRANE INTERACTION OF AMYLOID-FORMING PROTEINS BY MEANS OF COLORIMETRIC BIOSENSING VESICLES. **Elizabeth A. Yates**, Michael Dorsey

2099-Pos Board B243
ABSOLUTE AFFINITY CALCULATIONS FOR CHOLESTEROL BINDING TO G-PROTEIN COUPLED RECEPTORS (GPCR). **Reza Salari**, Grace Brannigan

2100-Pos Board B244
EFFECTS OF MEMBRANE MOBILITY ON MICROTUBULE GLIDING. **Joseph D. Lopes**, Dail Chapman, Linda Hirst, Jing Xu

2101-Pos Board B245
A MASS SPECTROMETRIC PLATFORM TO REVEAL LIPID MEDIATED OLIGOMERISATION OF MEMBRANE PROTEINS IN ATOMISTIC DETAIL. **Kallol Gupta**, Carol Robinson

2102-Pos **Board B246** **CID TRAVEL AWARDEE**
MOLECULAR BASIS FOR LIPID SPECIFICITY OF THE COAGULATION FACTOR X MEMBRANE-BINDING DOMAIN. **Melanie P. Muller**, Emad Tajkhorshid

2103-Pos **Board B247** **CID TRAVEL AWARDEE**
EXPLORING THE INSERTION MECHANISM OF SVS-1 β-HAIRPIN PEPTIDE INTO AN ANIONIC LIPID BILAYER. **Keon Reid**, James Kindt

Membrane Receptors and Signal Transduction II (Boards B248 - B267)

2104-Pos **Board B248**
INHIBITION OF KIR2.1 BY INTRACELLULAR ACIDIFICATION CONTRIBUTES TO SOUR TASTE TRANSDUCTION. **Wenlei Ye**, Rui B. Chang, Jeremy D. Bushman, Yu-Hsiang Tu, Eric Mulhall, Courtney E. Wilson, Alexander J. Cooper, Wallace S. Chick, David Hill-Eubanks, Mark T. Nelson, Sue C. Kinnamon, Emily R. Liman

2105-Pos **Board B249**
DECODING THE SIGNALING THROUGH HOMOMERIC AND HETEROMERIC DOPAMINE D2 AND CANNABINIOID CB1 RECEPTORS. **Guoqing Xiang**, Takeharu Kawano, Lia Baki, Diomedes E. Logothetis

2106-Pos **Board B250**
EXPERIMENTS AND SIMULATIONS OF THE INTERNALIZATION OF HETEROLOGOUSLY EXPRESSED MOUSE MELANOPSIN. **Adam Byerly**, Tahsin Khan, Juan Carlos Valdez-Lopez Jr., Kathleen Hoffman, Hye-Won Kang, Phyllis Robinson

2107-Pos **Board B251**
LANGEVIN DYNAMICS SIMULATION OF AKAP-PKA COMPLEX: RE-ENVISIONING THE LOCAL CONCENTRATION MECHANISM FOR DIRECTING PKA PHOSPHORYLATION. Marc Rigatti, Paul J. Michalski, Kimberly L. Dodge-Kafka, **Ion I. Moraru**

2108-Pos **Board B252**
CONSTRUCTION OF G ALPHA-16 CHIMERAS FOR DETECTION OF GPCR ACTIVATION. Takeharu Kawano, Apostolia Baki, Guoqing Xiang, **Diomedes E. Logothetis**

2109-Pos **Board B253**
RECEPTOR SPECIES-DEPENDENT SIGNALING OF GQPCRS CONTROLS IKS ACTIVITY. **Marie-Cecile Kienitz**, Dilyana Vladimirova, Lutz Pott, Andreas Rinne

2110-Pos **Board B254**
INTERNAL SODIUM IN GPCRS STRONGLY RESPONDS TO TRANSMEMBRANE VOLTAGE CHANGES. **Owen N. Vickery**, Jan-Phillip Machtens, Giulia Tamburrino, Daniel Seeliger, Ulrich Zachariae

2111-Pos **Board B255**
COMPARATIVE STRUCTURAL DYNAMIC ANALYSIS OF G PROTEINS. **Hongyang Li**, Xin-Qiu Yao, Barry Grant

2112-Pos **Board B256**
ANALYSIS OF RECEPTOR TYROSINE KINASE AND G-PROTEIN COUPLED RECEPTOR SIGNALING DYNAMICS ON MICRO-STRUCTURED SURFACES. Peter Lanzerstorfer, Yosuke Yoneyama, Ulrike Mueller, Renate Haselgruebler, Diana Zindel, Otmar Hoeglinger, Fumihiko Hakuno, Cornelius Krasel, Shin-Ichiro Takahashi, Moritz Buenemann, **Julian Weghuber**

2113-Pos **Board B257**
ALLOSTERIC EFFECTS OF G-PROTEIN COUPLED RECEPTOR HETEROMERIZATION: RELEVANCE TO PSYCHOSIS. **Jason Younkin**, Lia Baki, Diomedes E. Logothetis

2114-Pos **Board B258**
ACTIVATION OF A MUSCARINIC G-PROTEIN COUPLED RECEPTOR AND STRUCTURE-BASED DESIGN OF ALLOSTERIC MODULATORS. **Yinglong Miao**, J. Andrew McCammon

2115-Pos **Board B259**
GPCR HANDSHAKE IN THE SPOTLIGHT: EXPLORING THE DIMERIZATION INTERFACE OF DOPAMINE D2 RECEPTORS BY SIMULATIONS AT MULTIPLE RESOLUTIONS. **Manu Vajpai**, Ramasubbbu Sankararamakrishnan

2116-Pos **Board B260**
DYNAMIC COUPLING AND ALLOSTERIC NETWORKS IN THE ALPHA SUBUNIT OF HETEROTRIMERIC G PROTEINS. **Xin-Qiu Yao**, Rabia Malik, Nicholas W. Griggs, Lars Skjærven, John R. Traynor, Sivaraj Sivaramakrishnan, Barry J. Grant

2117-Pos **Board B261**
INVESTIGATING DIFFUSION OF RECEPTORS ON MACROPHAGE MEMBRANES USING SINGLE MOLECULE TRACKING. **Sara Makaremi**, Kyle Novakowski, Markus Rose, Dawn Bowdish, Jose Moran-Mirabal

2118-Pos **Board B262**
CAPTURING TRANSMEMBRANE DIMER STRUCTURES WITH MOBILE MEMBRANES: POINT MUTATIONS TAKE CHARGE. **Taras V. Pogorelov**, Michael J. Hallock, Yekaterina A. Golubeva

2119-Pos **Board B263**
VISUALIZATION OF STRUCTURAL CHANGES ACCOMPANYING ACTIVATION OF KAINATE RECEPTORS USING FAST-SCAN ATOMIC FORCE MICROSCOPY IMAGING. **Mohammad Fahim Kadir**, J Michael Edwardson

2120-Pos **Board B264**
UNDERSTANDING THE FRET SIGNATURES OF INTERACTING MEMBRANE PROTEINS. **Christopher R. King**, Valerica Raicu, Kalina Hristova

2121-Pos **Board B265**
IDENTIFICATION OF AN INHIBITORY ALCOHOL BINDING SITE IN GABAA RHO1. **James R. Trudell**, Cecilia M. Borghese, Carlos I. Ruiz, Ui S. Lee, Madeline A. Cullins, Edward J. Bertaccini, R. Adron Harris

2122-Pos **Board B266**
PHOTOREGULATION OF SMALL G-PROTEINS USING PHOTOCHROMIC MOLECULES. **Masahiro Kuboyama**, Kaori Masuhara, Seigo Iwata, Shinsaku Maruta

2123-Pos **Board B267**
MAPPING EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR) DIMERIZATION BY IMAGING FLUORESCENCE CROSS-CORRELATION SPECTROSCOPY. **Radek Machan**, Sibel Yavas, Thorsten Wohland

Exocytosis and Endocytosis I (Boards B268 - B285)

2124-Pos **Board B268**
LOW CROSSTALK WHOLE-CELL MEMBRANE CAPACITANCE RECORDING METHOD. **Matej Hotka**, Ivan Zahradnik

2125-Pos **Board B269**
ESTIMATING THE PARAMETERS OF AMPEROMETRIC SPIKES DETECTED USING A MATCHED-FILTER APPROACH. **Supriya Balaji Ramachandran**, Kevin D. Gillis

2126-Pos **Board B270**
DEVELOPMENT OF ULTRA-FAST NANOSTRUCTURED GLUCOSE BIOSENSOR - STOICHIOMETRY AND ACTIVITY. **Yuanmo WangG**, Ann-Sofie Cans

2127-Pos **Board B271** **EDUCATION TRAVEL AWARDEE**
INVESTIGATING PROTEIN DYNAMICS AT SITES OF EXOCYTOSIS IN LIVE CELLS. **Agila Somasundaram**, Justin W. Taraska

2128-Pos **Board B272**
STRUCTURE OF XENAPSES - PURE PRESYNAPTIC BOUTONS INDUCED ON MICROPATTERNED HOST SUBSTRATES. **Georgij Nosov**, Nataliya Glyvuk, Yaroslav Tsytsyura, Julia Trahe, Ulrike Keller, Carsten Reissner, Jacob Piehler, Markus Missler, Jurgen Klingauf

2129-Pos Board B273
SINGLE VESICLE RECORDING IN HIPPOCAMPAL 'XENAPSES' REVEALS DIFFUSIONAL DISPERSION OF SV PROTEINS AFTER FUSION. **Julia Trahe**, Ulrike Keller, Yaroslav Tsytsyura, Carsten Reissner, Jacob Piehler, Markus Missler, Jurgen Klingauf

2130-Pos Board B274
FUSION BETWEEN V-SNARE NANODISCS AND "FLIPPED" T-SNARE CELLS: CONTROL OF FUSION PORE NUCLEATION AND LIFETIMES BY SNARE PROTEIN TRANSMEMBRANE DOMAINS. Zhenyong Wu, Sarah Marie Auclair, Oscar Daniel Bello, Wensi Vennekate, Natasha Dudzinski, Shyam Sundar Krishnakumar, **Erdem Karatekin**

2131-Pos Board B275
PHYSIOLOGICAL IMPLICATIONS OF SLOW FUSION PORE EXPANSION ON PROTEIN DISCHARGE: LIKELY INHIBITION OF TISSUE PLASMINOGEN ACTIVATOR BY ITS CO-PACKAGED PROTEIN INHIBITOR. **Kevin P. Bohannon**, Mary A. Bittner, Daniel Axelrod, Ronald W. Holz

2132-Pos Board B276
MUNC18-1-REGULATED STAGE-WISE SNARE ASSEMBLY UNDERLYING SYNAPTIC EXOCYTOSIS. **Yongli Zhang**

2133-Pos Board B277
EFFECT OF TWO DISEASE-CAUSING MUTATIONS ON THE ENERGETICS AND KINETICS OF SNARE ASSEMBLY. **Aleksander A. Rebane**, Shyam Krishnakumar, James E. Rothman, Yongli Zhang

2134-Pos Board B278
ROLES OF VAMP7 IN DROSOPHILA SYNAPTIC TRANSMISSION. **Ismael D. Santiago**, Bryan Meléndez, J. Troy Littleton, Ramon Jorquera

2135-Pos Board B279
SYNAPSIN NULL INCREASES CALCIUM SENSITIVITY OF VESICLE FUSION AND ALTER SHORT-TERM SYNAPTIC MEMORY AT DROSOPHILA NMJ. **Agustin Gonzalez Ruiz**, Ramon A. Jorquera

2136-Pos Board B280
MATHEMATICAL MODELING SUPPORTS THE HYPOTHESIS THAT SYNAPTOTAGMIN RINGS CLAMP FUSION. **Jie Zhu**, Ben O'Shaughnessy, James Rothman

2137-Pos Board B281
MOLECULAR DYNAMICS SIMULATIONS OF SYNAPTOTAGMIN BINDING TO LIPID BILAYERS. **Maria Bykhovskaia**

2138-Pos Board B282
SYNAPTOTAGMIN-1 BINDS TO PIP2-CONTAINING MEMBRANE BUT NOT TO SNARES AT PHYSIOLOGICAL IONIC STRENGTH. **Yongsoo Park**

2139-Pos Board B283
INVERSION OF LIGAND BINDING PREFERENCES IN RE-ENGINEERED DYSFERLIN C2AV1. **Faraz Harsini**, Anne Rice, Kerry Fuson, R. Bryan Sutton

2140-Pos Board B284
MULTIVALENT MEMBRANE LIPID TARGETING BY THE CALCIUM-INDEPENDENT C2 DOMAINS OF GRANUPHILIN: EVIDENCE FROM COMPUTATION AND EXPERIMENT. Abena Watson-Siriboe, Jack Henderson, J. Ryan Osterberg, Daniel T. Giardina, Marissa DeLima, Hai Lin, **Jefferson Knight**

2141-Pos Board B285
IS BURSTING MORE EFFECTIVE THAN SPIKING IN EVOKING PITUITARY HORMONE SECRETION? A SPATIOTEMPORAL SIMULATION STUDY OF CALCIUM DIFFUSION AND EXOCYTOSIS. **Alessia Tagliavini**, Joel Tabak, Richard Bertram, Morten G. Pedersen

Intracellular Calcium Channels and Calcium Sparks and Waves II (Boards B286 - B304)

2142-Pos Board B286
SHG-2PF IMAGING OF LOCAL CA^{2+} AND SUB-SARCOMERE CONTRACTION IN LIVE CARDIOMYOCYTES. Samir Awasti, **Leighton T. Izu**, Ziliang Mao, Zhong Jian, Ye Chen-Izu, James W. Chan

2143-Pos Board B287
ONE AND TWO-PHOTON CALCIUM UNCAGING WITH VISIBLE LIGHT IN CARDIAC MYOCYTES. **Radoslav Janicek**, Hitesh K. Agarwal, Graham C.R. Ellis-Davies, Ernst Niggli

2144-Pos Board B288
MOLECULAR ASSEMBLY OF THE MITOCHONDRIAL CALCIUM UNIPORTER COMPLEX. **Ming-Feng Tsai**, Christopher Miller

2145-Pos Board B289
MITOCHONDRIAL PERMEABILITY TRANSITION PORE OPENING PROMOTES CALCIUM ALTERNANS AND WAVES IN VENTRICULAR MYOCYTES. **Zhen Song**, Richard Gordan, James N. Weiss, Lai-Hua Xie, Zhilin Qu

2146-Pos Board B290
MITOCHONDRIAL SK CHANNELS ATTENUATE CA-DEPENDENT ARRHYTHMIA IN HYPERTROPHIC HEARTS BY REGULATING MITO-ROS-DEPENDENT OXIDATION AND ACTIVITY OF RYR. TaeYun Kim, Weiyan Li, Radmila Terentyeva, Karim Roder, Man Liu, Ian Greener, Richard T. Clements, Samuel C. Dudley, Gideon Koren, Bum-Rak Choi, **Dmitry Terentyev**

2147-Pos Board B291
DIASTOLIC CALCIUM LEAK AND THE ROLE OF ZINC. **Benedict Reilly-O'Donnell**, Gavin B. Robertson, Angela Karumbi, Alan J. Stewart, Samantha J. Pitt

2148-Pos Board B292
ASSOCIATION BETWEEN β3-ADRENOCEPTOR ACTIVATION AND INTRACELLULAR FREE ZINC ION INCREASE CONTRIBUTES TO HYPERGLYCEMIA-INDUCED CARDIAC ER-STRESS. Erkan Tuncay, Aysegul Toy, **Belma Turan**

2149-Pos Board B293
SHEAR STRESS ENHANCES CA^{2+} SPARK OCCURRENCE IN RAT VENTRICULAR MYOCYTES VIA MITOCHONDRIAL NADPH OXIDASE-REACTIVE OXYGEN SPECIES SIGNALING. **Jun Wang**, Joon-Chul Kim, Sun-Hee Woo

2150-Pos Board B294
X-ROS SIGNALING IN ATRIAL MYOCYTES PRODUCES ARRHYTHMOGENIC CA^{2+} WAVES. **Maura Greiser**, Ramzi J. Khairallah, Chris Ward, W. Jonathan Lederer

2151-Pos Board B295
NOVEL INSIGHTS INTO SINOATRIAL NODAL CELL LOCAL CALCIUM RELEASES (LCRS) FROM AUTOMATED COMPUTER ANALYSIS IN SPONTANEOUSLY BEATING CELLS. **Alexander V. Maltsev**, Sean Parsons, Edward G. Lakatta, Michael D. Stern, Victor A. Maltsev, Oliver J. Monfredi

2152-Pos Board B296
SYNCHRONIZATION OF LOCAL CALCIUM RELEASES (LCRS) IN GUINEA PIG SINGLE, ISOLATED SA NODE CELLS CONTRIBUTES TO GENERATION OF RHYTHMIC ACTION POTENTIAL-INDUCED CA^{2+} TRANSIENTS. **Mary S. Kim**, Larissa A. Maltseva, Alexander V. Maltsev, Sean P. Parsons, Oliver Monfredi, Kenta Tsutsui, Syevda Sirenko, Bruce Ziman, Edward G. Lakatta, Victor A. Maltsev

2153-Pos Board B297
COMPUTATIONAL ANALYSIS OF HEART-FAILURE-RELATED REMODELING OF CYTOSOLIC AND NUCLEAR CALCIUM HANDLING IN THE CANINE ATRIAL CARDIOMYOCYTE. **Jordi Heijman**, Xiao Yan Qi, Dobromir Dobrev, Stanley Nattel

2154-Pos Board B298
A SYSTEMATIZED APPROACH TO INVESTIGATE CA^{2+} SYNCHRONIZATION IN IPSC-DERIVED CARDIOMYOCYTE NETWORKS. Aled R. Jones, David H. Edwards, Michael J. Cummins, Alan J. Williams, **Christopher H. George**

2155-Pos Board B299
NUCLEATION OF CALCIUM WAVES IN CARDIAC CELLS: THE ROLE OF NETWORK CONNECTIVITY. **Gonzalo Hernandez-Hernandez**, Yohannes Shiferaw, Enric Alvarez-Lacalle

2156-Pos Board B300
CATECHOLAMINERGIC STIMULATION OF NEURONAL NA^+ CHANNELS ACCOUNTS FOR TRIGGERED ARRHYTHMIA MECHANISM IN CPVT. **Przemysław B. Radwański**, Hsiang-Ting Ho, Bin Liu, Andriy Belevych, Antonis Armoundas, Wolfgang Dillmann, Bjorn Knollmann, Peter Mohler, Thomas Hund, Sándor Györke

2157-Pos Board B301
EFFECTS OF BETA-ADRENERGIC STIMULATION ON RAT FAILING CARDIOMYOCYTES. **Claudia Crocini**, Raffaele Coppini, Cecilia Ferrantini, Ping Yan, Leslie M. Loew, Elisabetta Cerbai, Corrado Poggesi, Francesco S. Pavone, Leonardo Sacconi

2158-Pos Board B302
CONDITIONS THAT PROMOTE GOLGI CA^{2+} RELEASE FACILITATE TRAFFICKING OF VEGFR-1 TO THE SURFACE MEMBRANE IN RAT VENTRICULAR MYOCYTES. **Hannah M. Kirton**, Zhaokang Yang, Derek S. Steele

2159-Pos Board B303
PROPENSITY AND SEVERITY OF CARDIAC ALTERNANS IS ENHANCED IN HEART FAILURE. **Giedrius Kanaporis**, Lothar A. Blatter

2160-Pos Board B304
NOVEL CALMODULIN MUTATION (CALM3-A103V) ASSOCIATED WITH CPVT SYNDROME ACTIVATES ARRHYTHMOGENIC CA WAVES AND SPARKS. **Nieves Gomez-Hurtado**, Dmytro O. Kryshtal, Christopher N. Johnson, Walter J. Chazin, Nicole J. Boczek, Melissa L. Will, David J. Tester, Michael J. Ackerman, Bjorn C. Knollmann

Voltage-gated Na Channels II (Boards B305 - B314)

2161-Pos Board B305 **EDUCATION TRAVEL AWARDEE**
POINT-MUTATIONS IN SKELETAL MUSCLE VOLTAGE-GATED SODIUM CHANNELS CONFER RESISTANCE TO TETRODOTOXIN: BUT AT A COST? **Robert E. del Carlo**, Normand Leblanc, Edmund D. Brodie, Jr., Chis R. Feldman

2162-Pos Board B306
INHIBITION OF A VOLTAGE-GATED SODIUM CHANNEL BY PROPOFOL INVOLVES MODULATION OF SLOW INACTIVATION. **Elaine Yang**, Vincenzo Carnevale, Manuel Covarrubias

2163-Pos Board B307
A MODIFIED NEURONAL CELL LINE FOR HIGH THROUGHPUT ANALYSIS OF VOLTAGE-GATED SODIUM CHANNELS. **Carlos G. Vanoye**, Tatiana V. Abramova, Jean-Marc L. DeKeyser, Alfred L. George

2164-Pos Board B308
DIII OF VOLTAGE-GATED NA^+ CHANNELS INTERACTS WITH INACTIVATION IN THE TIME DOMAIN OF INTERMEDIATE INACTIVATION. **Eric J. Hsu**, Wandi Zhu, Zoltan Varga, Angela R. Schubert, Jonathan R. Silva

2165-Pos Board B309
MAPPING THE NAV1.7 CHANNEL INTERACTION WITH THE CONOTOXIN KIIIA. **Ian H. Kimball**, Phuong T. Nguyen, Jon T. Sack, Vladimir Yarov-Yarovoy

2166-Pos Board B310
CLASS I ANTI-ARRHYTHMICS DIFFERENTIALLY REGULATE CARDIAC SODIUM CHANNEL VOLTAGE-SENSING DOMAINS. **Angela R. Schubert**, Wandi Zhu, Jonathan R. Silva

2167-Pos Board B311
BIOPHYSICAL CHARACTERIZATION OF TWO NAV1.4 MUTATIONS IDENTIFIED IN PATIENTS WITH COLD-INDUCED MYOTONIA AND PERIODIC PARALYSIS. Hugo Poulin, Pascal Gosselin-Badaroudine, Karima Habbout, Savine Vicart, Damien Syternberg, Serena Giuliano, Sophie Nicole, Said Bendahhou, **Mohamed Chahine**

2168-Pos Board B312
MODELING ION CHANNEL KINETICS WITH PARAMETER CONSTRAINTS. **Cynthia B. Lombardo**, Marco A. Navarro, Autoosa Salari, Lorin S. Milescu

2169-Pos Board B313 **CID TRAVEL AWARDEE**
DEFINING THE PROTEIN:PROTEIN INTERACTION INTERFACE OF FGF14:NAV1.6 COMPLEX. Aditya K. Singh, **Syed R. Ali**, Fernanda Laezza

2170-Pos Board B314
ACTIVATION DYNAMICS OF SODIUM ION CHANNEL. **Matthew Harrigan**, Vijay Pande

Voltage-gated Ca Channels (Boards B315 - B341)

2171-Pos Board B315
SWITCHABLE CARDIAC L TYPE CA^{2+} CHANNEL TRANSCRIPT BY MINERALOCORTICOID PATHWAY. Thassio Mesquita, Gaelle Auguste, Jessica Sabourin, Gema Ruiz Hurtado, Valérie Rouffiac, Florian Le-Billan, Jérôme Fagart, Florence Lefebvre, Say Viengchareun, Eric Morel, Ana Maria Gomez, Marc Lombès, **Jean Pierre Benitah**

2172-Pos Board B316
TOWARD A NEW THERAPEUTIC STRATEGY IN THE TREATMENT OF TIMOTHY SYNDROME. **Ivy E. Dick**, Rosy Joshi-Mukherjee, Wanjun Yang, Worawan B. Limpitikul, David T. Yue

2173-Pos Board B317
FUNCTIONAL RESCUE OF CALMODULINOPATHY IPSC-DERIVED CARDIOMYOCYTES -- A FORAY INTO PERSONALIZED MEDICINE. **Worawan B. Limpitikul**, Pattraranee Limphong, Ivy E. Dick, Myoung Hyun Choi, Wanjun Yang, Jennifer Babich, David J. Tester, Michael J. Ackerman, Gordon F. Tomaselli, David T. Yue

2174-Pos Board B318
TOWARDS A STRUCTURAL PERSPECTIVE OF CALCIUM REGULATION OF L-TYPE CALCIUM CHANNELS. **Rahul Banerjee**, Manu Ben-Johny, Ivy Ellen Dick, David Tuckchow Yue

2175-Pos Board B319
BLOCKING OF T-TYPE CALCIUM CHANNELS BY TTA-A2 REVEALS A CONSERVATIVE BINDING SITE FOR STATE-DEPENDENT ANTAGONISTS. Eduardo Chavez-Colorado, Zazil Herrera-Carrillo, **Juan C. Gomora**

2176-Pos Board B320
FUNCTIONAL AND MOLECULAR INTERACTION OF PHENYLALKYLAMINES AND DIHYDROPYRIDINES WITH THE MODEL CALCIUM CHANNEL CAV-AB. **Tamer M. Gamal El-Din**, Teresa M. Swanson, Lin Tang, Ning Zheng, William A. Catterall

2177-Pos Board B321
NITRIC OXIDE INHIBITS HIGH VOLTAGE-ACTIVATED CALCIUM CHANNELS THROUGH S-NITROSYLATION. **Menghua Zhou**, Alexis Bavencoffe, Hui-Lin Pan

2178-Pos Board B322
BLOCK OF RECOMBINANT T-TYPE CALCIUM CHANNELS BY GOSSYPOL, A POTENTIAL CONTRACEPTIVE. **Osbaldo Lopez-Charcas**, Zazil Herrera-Carrillo, Luis E. Montiel-Reyes, Juan C. Gomora

2179-Pos Board B323
THE ROLE OF CA2+ SIGNALING PROTEINS IN CAV1-MEDIATED EXCITATION-TRANSCRIPTION COUPLING. **Nan Liu**, Yaxiong Yang, Xiaodong Liu

2180-Pos Board B324
FUNCTIONAL ANALYSIS OF CAV1.1 L-TYPE CALCIUM CHANNELS EXPRESSED IN TSA201 CELLS. Ulises Meza, Christin F. Romberg, Ong Moua, Kurt G. Beam, **Roger A. Bannister**

2181-Pos Board B325
ROTENONE, STIMULANT OF SUPEROXIDE RELEASE FROM MITOCHONDRIAL COMPLEX I, TRANSIENTLY AUGMENTS L-TYPE CALCIUM CURRENT IN A7R5 ARTERIAL SMOOTH MUSCLE CELLS. **Rikuo Ochi**, Vidhi Dhagia, Dhara Patel, Michael S. Wolin, Sachin A. Gupte

2182-Pos Board B326
CAV1.2 INTERACTION WITH AT1R REDUCES RECEPTOR INTERNALIZATION. Tamara Hermosilla, Matias Encina, Cristian Moreno, Danna Morales, Edgardo Salamanca, Nayareth Hidalgo, Hilda Alfaro, **Diego Varela**

2183-Pos Board B327
POSTTRANSLATIONAL PROTEOLYTIC CLEAVAGE OF α2δ SUBUNITS: FUNCTIONAL IMPLICATIONS FOR HIGH VOLTAGE-GATED CALCIUM CHANNELS. **Ivan Kadurin**, Simon Rothwell, Otto Meyer, Claudia Bauer, Leon Douglas, Annette Dolphin

2184-Pos Board B328
BIN1 REGULATES CAV1.2 CHANNEL CLUSTERING IN VENTRICULAR MYOCYTES. **Rose E. Dixon**, Tingting Hong, Robin M. Shaw, Luis F. Santana

2185-Pos Board B329
MOLECULAR MIMICKING OF PHOSPHORYLATION AT S1928 AND S1700-T1704 CONFERS MODIFIED SURFACE TRAFFIC PROPERTIES TO CAV1.2 VOLTAGE GATED CALCIUM CHANNELS IN CULTURED HIPPOCAMPAL NEURONS. Alessandra Folci, Angela Steinberger, Ruslan Stanika, Marta Campiglio, Claudia Ramprecht, Gerald J. Obermair, Martin Heine, **Valentina Di Biase**

2186-Pos Board B330
THE β4 SUBUNIT OF L-TYPE CA2+ CHANNELS REGULATES TRANSCRIPTION OF ANTIVIRAL FACTORS IN A HEART CELL LINE. **Eshwar R. Tammineni**, Elba D. Carrillo, Ruben Soto, Antonio Angel-Ambrocio, Rosa M. Del Angel, Maria C. Garcia, Jorge A. Sanchez

2187-Pos Board B331
RAD IS AN AGENT OF SKELETAL MUSCLE ATROPHY. **Donald Beqollari**, Christin F. Romberg, Stefano Perni, Clara Franzini-Armstrong, Roger A. Bannister

2188-Pos Board B332
ALPHA-ACTININ PROMOTES SURFACE LOCALIZATION AND ION CONDUCTING ACTIVITY OF THE L-TYPE CA^{2+} CHANNEL BY BINDING TO THE IQ REGION OF CAV1.2. **Peter B. Henderson**, Pang-Yen Tseng, Mark Lillya, Carlota Montagut-Bordas, Johannes W. Hell, Mary C. Horne

2189-Pos Board B333
DYNAMICAL EFFECTS OF THE SLOWLY ACTIVATING DELAYED RECTIFIER CURRENT ON VOLTAGE AND CALCIUM ALTERNANS IN CARDIAC MYOCYTES. **Nathaniel-Georg S. Gutierrez**, Daisuke Sato

2190-Pos Board B334
DIFFERENT ROLES OF IS4 AND IIS4 SEGMENTS IN CAV1.2 GATING. **Stanislav Beyl**, Annette Hohaus, Stansislav Adranovits, Eugen Timin, Steffen Hering

2191-Pos Board B335
CAV2.3 MEDIATE ATP RELEASE FROM RAT TAIL ARTERY SYMPATHETIC NERVES. **Somayeh Mojard Kalkhoran**, Damon Poburko, Jag Walia, Cynthia Gershome

2192-Pos Board B336
DIRECT INTERACTION BETWEEN N AND C TERMINI OF α1C SUBUNIT OF CAV1.2 L-TYPE CALCIUM CHANNEL. Adva Benmocha Guggenheimer, **Lior Almagor**, Vladimir Tsemakhovich, Debi Ranjan Tripathy, Joel Hirsch, Nathan Dascal

2193-Pos Board B337
HIGH THROUGHPUT PHARMACOLOGY OF CARDIAC L-TYPE CA^{2+} CHANNELS: STABLE RECORDINGS OF CAV1.2 ON A HIGHLY PARALLEL AUTOMATED PATCH CLAMP SYSTEM. **Markus Rapedius**, Andrea Bruggemann, Tom Goetze, Claudia Haarmann, Ilka Rinke, Sonja Stoelzle-Feix, Joerg Oestreich, Michael George, Niels Fertig

2194-Pos Board B338
EMINENCE OF VSD I IN THE VOLTAGE-DEPENDENT INACTIVATION OF THE HUMAN $CA_V1.2$ CHANNEL. **Nicoletta Savalli**, Marina Angelini, Antonios Pantazis, Taleh Yusifov, Alan Neely, Riccardo Olcese

2195-Pos Board B339
CROSSTALK BETWEEN BETA SUBUNITS, INTRACELLULAR CA^{2+}-SIGNALING AND SNARES IN THE MODULATION OF CAV2.1 CHANNEL STEADY-STATE INACTIVATION. Selma A. Serra, Gemma G. Gené, Miguel A. Valverde, **Jose M. Fernandez-Fernandez**

2196-Pos Board B340
REGULATION OF VOLTAGE SENSING STRUCTURES OF CAV1.2 CALCIUM CHANNELS BY THE AUXILIARY β-SUBUNIT (β3). **Daniela De Giorgis**, Gustavo Contreras, Nicoletta Savalli, Nieves Navarro-Quezada, Carlos Gonzalez, Riccardo Olcese, Alan Neely

2197-Pos Board B341
VOLTAGE-SENSOR PHARMACOLOGY OF CALCIUM CHANNELS. **Autoosa Salari**, Brooklynn R. White, Timothee Pale, Vincent Baggett, Mirela Milescu

Ion Channels, Pharmacology, and Disease (Boards B342 - B377)

2198-Pos Board B342
WHAT TYPE OF ION CHANNELS ARE IDENTIFIED ON OSTEOSARCOMA CELLS MEMBRANE? **Maria B. Seabra**, Juliana P. Aguiar, Wyndly Daniel C. Gaião, Reginaldo P. Silva, Claúdio Gabriel Rodrigues

2199-Pos Board B343 **INTERNATIONAL TRAVEL AWARDEE**
THE PATHOGENIC A116V MUTATION ENHANCES THE SELECTIVE ION-CHANNEL ACTIVITY AND TOXICITY OF THE PRION PROTEIN IN LIVING CELLS. **Sabareesan Ambadi Thody**

2200-Pos Board B344
DIVALENT COPPER COMPLEXES AS INFLUENZA A M2 S31N BLOCKERS. **Kelly L. McGuire**, Spencer Wallentine, Nathan A. Gordon, Greg Mohl, Mckay D. Jensen, Roger Harrison, David D. Busath

2201-Pos Board B345
OBSERVATION OF PARTIAL AND COMPLETE BLOCK BY AMANTADINE AND RIMANTADINE IN INFLUENZA A M2 S31N BY ELECTROPHYSIOLOGY METHODS. **Kelly L. McGuire**, Mitchell L. Gleed, David D. Busath

2202-Pos Board B346
EPR AND ELECTRON MICROSCOPY STUDY OF THE INFLUENZA A M2 TRANSMEMBRANE DOMAIN ASSEMBLY AND DRUG RESPONSE. **Elka R. Georgieva**, Peter P. Borbat, Kirill Grushin, Svetla Stoilova-McPhie, Nichita J. Kulkarni, Zhichun Liang, Jack H. Freed

2203-Pos Board B347
ASSESSING THE IN VITRO CARDIOTOXICITY OF SUPERPARAMAGNETIC ION OXIDE NANOPARTICLES (SPIONS). **Roberta Gualdani**, Andrea Guerrini, Elvira Fantechi, Claudio Sangregorio, Maria Rosa Moncelli

2204-Pos Board B348
HERG ION CHANNEL ACTIVITY MEASURED IN PLANAR LIPID BILAYER ARRAYS: RECONSTITUTION FROM EUKARYOTIC CELL-FREE EXPRESSION SYSTEM AND CELLULAR MEMBRANE PREPARATIONS. **Ekaterina Zaitseva**, Juan del Rio Martinez, Srujan Kumar Dondapati, Gerhard Baaken, Sönke Petersen, Stefan Kubick, Jan C. Behrends

2205-Pos Board B349
COMPREHENSIVE CARDIAC SAFETY SCREENING: PHARMACOLOGY OF STEM CELL-DERIVED CARDIOMYOCYTES USING HIGH-THROUGHPUT AUTOMATED PATCH CLAMP. Nadine Becker, **Claudia S. Haarmann**, Sonja Stölzle-Feix, Ilka Rinke, Markus Rapedius, Tom Götze, Timo Stengel, Andrea Brueggemann, Michael George, Niels Fertig

2206-Pos Board B350
NOVEL LOCAL ANESTHETICS DEMONSTRATE ISOMER-DEPENDENT ANALGESIA IN MICE. **George Kracke**, Monika VanGordon, Kuanysh Kabytaev, Yulia Sevryugina, Satish Jalisatgi, Fred Hawthorne

2207-Pos Board B351
USE-DEPENDENT BLOCK OF HUMAN CARDIAC SODIUM CHANNELS BY GS967. **Franck Potet**, Alfred L. George, Jr

2208-Pos Board B352
CONFORMATIONAL CHANGES OF THE NMDA RECEPTORS ASSOCIATED WITH ETHANOL-INDUCED INHIBITION. **Hamid Reza Noori**, Christian Mücksch, Herbert Urbassek

2209-Pos Board B353
EXPLORING STRUCTURAL INTERACTIONS OF TARANTULA TOXINS WITH LIPID MEMBRANES USING ROSETTA AND MOLECULAR DYNAMICS SIMULATION. **Phuong T. Nguyen**, Jon T. Sack, Toby W. Allen, Vladimir Yarov-Yarovoy

2210-Pos Board B354
VALIDATION OF KCA3.1 CHANNEL SMALL MOLECULES INTERACTION SITES PREDICTED BY ROSETTA. **Hai M. Nguyen**, Latika Singh, Heike Wulff, Vladimir Yarov-Yarovoy

2211-Pos Board B355
CARDIAC SMALL CONDUCTANCE CALCIUM-ACTIVATED K CHANNELS MAINTAIN REPOLARIZATION RESERVE IN A PHARMACOLOGICAL MODEL OF TYPE 3 LONG QT SYNDROME. Jum Suk Ko, Dechun Yin, Thomas H. Everett, Zhenhui Chen, Michael Rubart, **Peng-Sheng Chen**

2212-Pos Board B356
CALCIUM-ACTIVATED POTASSIUM CHANNELS IN THE MALARIA PARASITE ERYTHROCYTE CYCLE. **Matthias Garten**, Marika M. Kachman, Svetlana Glushakova, Joshua Zimmerberg

2213-Pos Board B357
SUPPRESSION OF KV2-MEDIATED CURRENTS BY THE ANTICONVULSANT RETIGABINE. **Jeroen I. Stas**, Elke Bocksteins, Dirk J. Snyders

2214-Pos Board B358
USING VOLTAGE CLAMP FLUOROMETRY TO UNDERSTAND KCNQ CHANNEL PHARMACOLOGY. **Robin Y. Kim**, Stephan A. Pless, Harley T. Kurata

2215-Pos Board B359
A NEW KCNQ1 MUTATION AT THE S5 SEGMENT THAT IMPAIRS ITS ASSOCIATION WITH KCNE1 IS RESPONSIBLE FOR SHORT QT SYNDROME. **Alicia de la Cruz**, Cristina Moreno, Anna Oliveras, Chiara Bartolucci, Juan R. Gimeno, Stefano Severi, Antonio Felipe, Teresa Gonzalez, Pier Lambiase, Carmen Valenzuela

2216-Pos Board B360
MOLECULAR DYNAMICS SIMULATIONS OF MUTANT K CHANNELS INVOLVED IN SEVERE EARLY ONSET EPILEPSY. **Robert A. Farley**, Yi Shi, Yibo Wang, Van Ngo, Sergei Noskov

2217-Pos Board B361
A MISSENSE MUTATION IN THE SELECTIVITY FILTER OF BK AFFECTS THE CHANNEL'S POTASSIUM CONDUCTANCE. **João L. Carvalho-de-Souza**, Tomoya Kubota, Xiaofei Du, Ramon Latorre, Christopher M. Gomez, Francisco Bezanilla

2218-Pos Board B362
PHARMACOLOGY AND REGULATION OF FUNGAL K2P CHANNELS. **Ryan W. Manville**, Fernanda S. Povreslo, Andrew Corran, Anthony Lewis

2219-Pos Board B363
THE 2-PORE DOMAIN POTASSIUM CHANNEL TREK-1 REGULATES CYTOKINE SECRETION FROM HUMAN ALVEOLAR EPITHELIAL CELLS INDEPENDENTLY OF POTASSIUM CURRENTS. **Andreas Schwingshackl**, Bin Teng, Marc Borsotto, Christopher M. Waters

2220-Pos Board B364
CALCIUM CURRENT PROPERTIES AND LEAK CONDUCTANCE IN MOUSE MUSCLE FIBERS OVEREXPRESSING A TYPE 1 HYPOKALEMIC PERIODIC PARALYSIS MUTANT L-TYPE CALCIUM CHANNEL. Clarisse Fuster, Jimmy Perrot, Christine Berthier, Vincent Jacquemond, **Bruno Allard**

2221-Pos Board B365
MICRODOMAIN-SPECIFIC REMODELLING OF AUTONOMIC REGULATION OF L-TYPE CALCIUM CHANNELS REVEALED BY SUPER-RESOLUTION SCANNING PATCH CLAMP IN RAT ATRIAL MYOCYTES IN HEART FAILURE. **Alexey V. Glukhov**, Marina Balycheva, Jose L. Sanchez-Alonso, Navneet Bhogal, Ivan Diakonov, Marta Mazzola, Giuseppe Faggian, Julia Gorelik

2222-Pos Board B366
CHARACTERISING THE EFFECTS OF A PEPTIDE DIRECTED AGAINST THE L-TYPE CA^{2+} CHANNEL ON MITOCHONDRIAL FUNCTION IN HYPERTROPHIC CARDIOMYOPATHY. **Livia C. Hool**, Helena M. Viola, Victoria P.A. Johnstone, Henrietta Cserne Szappanos, Tatiana Tsoutsman, Chris Semsarian, Christine Seidman

2223-Pos Board B367
SIMULATION OF L-TYPE CALCIUM CURRENTS USING DIFFERENT EXPERIMENTAL DATA SOURCES: FROM CELL LINE TO IPS-DERIVED CARDIOMYOCYTE. **Ken Wang**, Gary Mirams, Mark Davies, Antonello Caruso, Denis Noble, Ruben Alvarez-Sanchez, Antje Christine Walz, Thierry Lave, Franz Schuler, Thomas Singer, Liudmila Polonchuk

2224-Pos Board B368
EFFECT OF FLECAINIDE DERIVATIVES ON SARCOPLASMIC RETICULUM CA^{2+} RELEASE CONFIRMS A LACK OF DIRECT ACTION ON THE CARDIAC RYANODINE RECEPTOR. **Anita Alvarez-Laviada**, Mark L. Bannister, Nia Lowri Thomas, Sammy A. Mason, Christo L. du Plessis, Abbygail T. Moran, David Neil-Hall, Hasnah Osman, Mark C. Bagley, Kenneth T. McLeod, Christopher H. George, Alan J. Williams

2225-Pos Board B369
FUNDAMENTAL GATING DEFECTS OF SUDDEN CARDIAC DEATH-LINKED MUTANT CARDIAC RYANODINE RECEPTORS DETERMINE CA^{2+} RELEASE DYNAMICS IN CELLS. **Shanna R. Hamilton**, Chloe Maxwell, Christopher H. George, Saptarshi Mukherjee, Alan J. Williams, Nia L. Thomas

2226-Pos Board B370
LOSS OF MYOCARDIAL NNOS MEDIATED BY UPREGULATION OF MIR-31 IN HUMAN ATRIA CONTRIBUTES TO BEGETTING OF ATRIAL FIBRILLATION. **Xing Liu**, Svetlana Reilly, Ricardo Carnicer, Alice Recalde, Anna Muszkiewicz, Raja Jayaram, Maria Cristina Carena, Matilde Stefanini, Rohan Wijesurendra, Oliver Lomas, Rana Sayeed, George Krasopoulos, Alfonso Bueno-Orovio, Blanca Rodriguez, Barbara Casadei

2227-Pos Board B371
ISOPIMARIC ACID - A PROMISCUOUS ION CHANNEL MODULATOR AND A POTENTIAL DRUG CANDIDATE AGAINST ATRIAL FIBRILLATION. Sajjad Salari, **Malin Silverå Ejneby**, Johan Brask, Fredrik Elinder

2228-Pos Board B372
TOWARDS A STRUCTURAL UNDERSTANDING OF CANTú DISEASE ASSOCIATED GATING PERTURBATIONS IN THE KATP POTASSIUM CHANNEL. **Eva-Maria Plessl**, Anna Stary-Weinzinger

2229-Pos Board B373
MATHEMATICAL MODELING OF HUMAN PANCREATIC ALPHA-CELLS: INSIGHT INTO THE ROLE OF SGLT2 IN GLUCAGON SECRETION. **Morten G. Pedersen**, Ingela Ahlstedt, Eva-Marie Andersson, Sven Göpel

2230-Pos Board B374
CFTR POTENTIATORS EXERT DIFFERENT EFFECTS ON HUMAN, MURINE, AND XENOPUS CFTR. **Guiying Cui**, Netaly Khazanov, Brandon B. Stauffer, Daniel T. Infield, Barry R. Imhoff, Hanoch Senderowitz, Nael A. McCarty

2231-Pos Board B375
CFTR ON AN AUTOMATED PATCH CLAMP SYSTEM. Rasmus B. Jacobsen, **Naja Møller M. Sørensen**

2232-Pos Board B376
SLC6A14 ENHANCES CFTR CHANNEL ACTIVITY IN THE CYSTIC FIBROSIS AFFECTED LUNG EPITHELIUM. **Saumel Ahmadi**, Sunny Xia, Michelle Di Paola, Wan Ip, Johanna Rommens, Tanja Gonska, Christine E. Bear

2233-Pos Board B377
IDENTIFICATION OF CARDIAC MITOCHONDRIAL CHLORIDE INTRACELLULAR CHANNEL (CLIC) PROTEINS AND THEIR PHYSIOLOGICAL FUNCTION. **Devasena Ponnalagu**, Shubha Gururaja Rao, Piotr Bednarczyk, Yansheng Feng, Jason Farber, Rushi Thanawala, Ahmed Tafsirul Hussain, Jean Chrisostome Bopassa, Adam Szewczyk, Harpreet Singh

Ligand-gated Channels II (Boards B378 - B398)

2234-Pos Board B378
CHARACTERIZATION OF THE INTERACTION OF THE INTRACELLULAR DOMAIN OF 5-HT_{3A} RECEPTORS WITH THE CHAPERONE PROTEIN RIC-3. **Elham Pirayesh**, Frankie Leung, Akash Pandhare, Michaela Jansen

2235-Pos Board B379
PENTAMERIC STRUCTURE OF THE SOLUBLE INTRACELLULAR DOMAIN OF 5-HT_{3A} RECEPTORS. **Akash Pandhare**, Petar N. Grozdanov, Michaela Jansen

2236-Pos Board B380
MASS SPECTROMETRY COUPLED WITH CROSSLINKING AS A STRUCTURAL TOOL FOR STRUCTURAL DETERMINATION OF HUMAN α1 GLYCINE RECEPTOR. **Rathna J. Veeramachaneni**, Chelsee Donelan, Michael Cascio

2237-Pos Board B381
PRINCIPAL COMPONENTS FROM LIGAND-GATED ION CHANNEL STRUCTURES ENABLE ENSEMBLE STUDIES OF MICROSECOND-SCALE TRANSITIONS. **Ozge Yoluk**, Laura Orellana, Edward J. Bertaccini, James R. Trudell, Erik Lindahl

2238-Pos Board B382
CATION-π INTERACTIONS: COMPUTATIONAL ANALYSES OF THE AROMATIC BOX MOTIF AND THE FLUORINATION STRATEGY FOR EXPERIMENTAL EVALUATION OF CYS-LOOP RECEPTORS AND RELATED STRUCTURES. **Matthew R. Davis**, Dennis A. Dougherty

2239-Pos Board B383
EXPLORING THE BINDING OF GABA TO THE INSECT RDL RECEPTOR WITH METADYNAMICS. **Federico Comitani**, Vittorio Limongelli, Carla Molteni

2240-Pos Board B384
RELATIVE AFFINITIES OF POSITIVE AND NEGATIVE MODULATORS OF HETEROMERIC GABA(A) RECEPTORS FOR PSEUDO-SYMMETRIC INTER-SUBUNIT BINDING SITES. **Sruthi Murlidaran**, Reza Salari, Jérôme Hénin, Grace Brannigan

2241-Pos Board B385
IDENTIFYING GABA-A RECEPTOR MODULATORS THAT BIND TO INTERSUBUNIT SITES IN THE GABA-A RECEPTOR TRANSMEMBRANE DOMAIN. **Selwyn S. Jayakar**, Xiaojuan Zhou, Pavel Y. Savechenkov, Karol S. Bruzik, Keith W. Miller, Jonathan B. Cohen

2242-Pos Board B386
INTERACTIONS OF A PHOTOREACTIVE STEROID ANESTHETIC (F4N3-ALPHAXALONE) WITH HUMAN α1β3γ2 GABA-A RECEPTORS. **David C. Chiara**, Pavel Y. Savechenkov, Xiaojuan Zhou, Rooma Desai, Alex T. Stern, Yinghui Zhang, Stuart A. Forman, Karol S. Bruzik, Keith W. Miller, Jonathan B. Cohen

2243-Pos Board B387
PULSED ELECTRON PARAMAGNETIC RESONANCE OF SPIN LABELED HUMAN GABA(A)RS FUNCTIONALLY RECONSTITUTED IN LIPID BILAYERS SUGGESTS THERE IS SPACE FOR LIPIDS BETWEEN THE SUBUNITS. Yinghui Zhang, Jessica L. Sarver, Xiaojuan Zhou, David S. Cafiso, **Keith W. Miller**

2244-Pos Board B388
VISIBLE-LIGHT ABSORBING, PHOTOLABILE, QUINONE-BASED PROTECTING GROUPS FOR ALCOHOLS AND AMINES. **David P. Walton**, Clinton J. Regan, Oliver S. Shafaat, Chris B. Marotta, Dennis A. Dougherty

2245-Pos Board B389
A SOLUBLE $GABA_A$ρ1 INTRACELLULAR DOMAIN CHIMERA FOR STRUCTURAL STUDIES. **Laura J. Delin**, Akash Pandhare, Katharine Jenkins, Michaela Jansen

2246-Pos Board B390
ALLOSTERIC GATING PATHWAYS FOR THE PENTAMERIC LIGAND-GATED ION CHANNEL GLIC. Bogdan Lev, Samuel Murail, Michael Thomas, Marc Baaden, Marc Delarue, **Toby W. Allen**

2247-Pos Board B391
INSIGHTS INTO GATING MOTIONS OF GLIC VIA PERTURBATION OF CRITICAL PROLINES WITH NON-CANONICAL AMINO ACID PROBES. **Matthew Rienzo**, Angela R. Rocchi, Stephanie D. Threatt, Dennis A. Dougherty, Sarah C. R. Lummis

2248-Pos Board B392
ELUCIDATING PROTON SENSITIVITY AND ACTIVATION IN THE GLOEOBACTER VIOLACEUS LIGAND-GATED ION CHANNEL. **Ákos Nemecz**, Zaineb Fourati, Haidai Hu, Pierre-Jean Corringer, Marc Delarue

2249-Pos Board B393
A SINGLE MUTATION IN GLIC REVEALS BOTH THE POTENTIATING AND THE INHIBITORY NATURE OF PROPOFOL. **Stephanie A. Heusser**, Rebecca J. Howard, Iman Pouya, Göran Klement, Cecilia Borghese, R. Adron Harris, Erik Lindahl

2250-Pos Board B394
MOLECULAR INSIGHTS INTO ALLOSTERIC MODULATION OF GLIC GATING BY MEMBRANE LIPIDS. **Sandip Basak**, Nicolaus Schmandt, Sudha Chakrapani

2251-Pos Board B395
RADIAL TILTING OF THE EXTRACELLULAR DOMAIN OF GLIC REVEALED BY EPR SPECTROSCOPY. **Varun Tiwari**, Abby M. Schuh, Candice S. Klug, Cynthia Czajkowski

2252-Pos Board B396
THE CRYSTAL STRUCTURE OF ELIC IN COMPLEX WITH CHLORPROMAZINE UNEXPECTEDLY UNVEILS AN ALLOSTERIC BINDING SITE IN THE LIGAND-BINDING DOMAIN. Mieke Nys, Ana Farinha, Eveline Wijckmans, Marijke Brams, Özge Yoluk, Magnus Andersson, Erik Lindahl, **Chris Ulens**

2253-Pos Board B397
PROBING MOLECULAR INTERACTIONS IN ERWINIA LIGAND-GATED ION CHANNEL (ELIC). Gabrielle S. Tender, Dennis A. Dougherty, **Sarah C. Lummis**

2254-Pos Board B398
ON THE ATYPICAL CATION-CONDUCTION AND GATING PROPERTIES OF ELIC. **Giovanni Gonzalez-Gutierrez**, Claudio Grosman

Kinesins, Dyneins, and Other Microtubule-based Motors (Boards B399 - B423)

2255-Pos Board B399
COMBINED POLTIRF AND SUB-PIXEL PARTICLE TRACKING OF CYTOPLASMIC DYNEIN SUPPORTS A WINCH-LIKE STEPPING MECHANISM. **Lisa G. Lippert**, Tali Dadosh, Benjamin T. Diroll, Christopher B. Murray, Erika LF Holzbaur, Samara L. Reck-Peterson, Yale E. Goldman

2256-Pos Board B400
THE MOTILITY OF AXONEMAL DYNEIN IS REGULATED BY THE TUBULIN CODE. **Joshua Alper**, Franziska Decker, Bernice Agana, Jonathon Howard

2257-Pos Board B401
DYNEIN DYNAMICS IN VIVO: A SINGLE-MOLECULE VIEW ON ITS FUNCTION IN INTRAFLAGELLAR TRANSPORT. Jona Mijalkovic, Bram Prevo, Felix Oswald, Pierre Mangeol, **Erwin J.G. Peterman**

2258-Pos Board B402
TRANSPORT BY KINESIN-1 MOTORS DIFFUSING ON A LIPID BILAYER. **Rahul Grover**, Janine Fischer, Petra Schwille, Stefan Diez

2259-Pos Board B403 **EDUCATION TRAVEL AWARDEE**
KINESIN'S FRONT HEAD IS GATED BY THE BACKWARD ORIENTATION OF ITS NECK LINKER. **Sinan Can**, Merve Yusra Dogan, Frank Cleary, Vedud Purde, Ahmet Yildiz

2260-Pos Board B404
MECHANISM OF KINSEIN-2 NAVIGATION AROUND OBSTACLES ON THE MICROUBULE SURFACE. **Gregory Hoeprich**, Keith Mickolajczyk, William O. Hancock, Christopher L. Berger

2261-Pos Board B405
ALLOSTERICALLY REGULATED STRUCTURAL FLUCTUATION AND MICROTUBULE-BINDING AFFINITY OF KIF1A --A SIMULATION STUDY OF COARSE-GRAINED MODEL. **Macoto Kikuchi**, Ryo Kanada, Fumiko Takagi

2262-Pos Board B406
MAPPING THE PROCESSIVITY DETERMINANTS OF THE KINESIN-3 MOTOR DOMAIN. **Guido Scarabelli**, Virupakshi Soppina, Xin-Qiu Yao, Joseph Atherton, Carolyn A. Moores, Kristen J. Verhey, Barry J. Grant

2263-Pos Board B407
N-TERMINAL COILED-COILS IN THE HUMAN KINESIN-5 AND KINESIN-1 STALK ARE SUFFICIENT FOR TETRAMERIC ORGANIZATION. **Rebecca S. Buckley**, Victoria Dauphin, Tomas Vanagunas, David Worthylake, Hsin-Hung Huang, Thomas M. Huckaba, Sunyoung Kim

2264-Pos Board B408
THE STRUCTURAL KINETICS OF SWITCH-1 AND THE NECK LINKER EXPLAIN THE FUNCTIONS OF KINESIN-1 AND EG5. Joseph Muretta, Yonggun Jun, Steven Gross, Jennifer Major, David Thomas, **Steven Rosenfeld**

2265-Pos Board B409
REGULATION AND POSSIBLE PHYSIOLOGICAL ROLE OF BI-DIRECTIONAL MOTILITY OF THE KINESIN-5 CIN8. Ofer Shapira, Alina Goldstein, Jawdat Al-Bassam, **Larisa Gheber**

2266-Pos Board B410 **EDUCATION TRAVEL AWARDEE**
TRAPPING THE TRANSITION STATE OF KINESIN-5 PRODUCES A DIFFERENT MULTIMOTOR FORCE OUTCOME THAN INHIBITING PRODUCT RELEASE. **Minmin Luo**, Edward Wojcik, Sunyoung Kim

2267-Pos Board B411 **CID TRAVEL AWARDEE**
NON-CANONICAL MICROTUBULE INTERACTION BY YEAST KINESIN-5, CIN8. **Kayla M. Bell**, Hyokeun Cha, Charles V. Sindelar, Jared C. Cochran

2268-Pos Board B412
HIGH-RESOLUTION CRYO-EM STUDIES ON THE YEAST MITOTIC KINESIN-5. **Hyo Keun Cha**, Kayla Bell, Jared Cochran, Charles Sindelar

2269-Pos Board B413
SYNTHESIS OF FLUORESCENT-NTA AND ITS APPLICATION TO THE LABELING OF PHOTO-CONTROLLED KINESIN EG5. **Yuki Tamura**, Kei Sadakane, Kentaro Saido, Ryoma Yamamoto, Shinsaku Maruta

2270-Pos Board B414
UNDERSTANDING THE SEQUENCE OF CHEMOMECHANICAL TRANSITIONS IN KINESIN-5. **Geng-Yuan Chen**, William O. Hancock

2271-Pos Board B415
THREE-DIMENSIONAL MOTILITY OF THE HIGHLY PROCESSIVE KINESIN-8 ALONG THE MICROTUBULE LATTICE. **Aniruddha Mitra**, Felix Ruhnow, Salvatore Girardo, Diez Stefan

2272-Pos Board B416 **EDUCATION TRAVEL AWARDEE**
CHROMOKINESINS NOD AND KID USE ALTERNATIVE NUCLEOTIDE MECHANISMS AND ONE-DIMENSIONAL DIFFUSION TO TARGET MICROTUBULE PLUS ENDS. **Benjamin C. Walker**, Caleb A. Starr, Jared C. Cochran

2273-Pos Board B417
KINETIC CHARACTERIZATION OF NOVEL RICE PLANT KINESIN E11. **Hironobu Taniguchi**, Naoto Inomoto, Shinsaku Maruta

2274-Pos Board B418
EXPLORING THE MECHANISMS OF A PHOSPHORYLATION INDUCED INHIBITION OF MICROTUBULE DEPOLYMERIZATION IN THE KINESIN 13 KLP10A. **Matthieu P.M.H. Benoit**, J. Daniel Diaz, Ana B. Asenjo, Gary J. Gerfen, David J. Sharp, Hernando J. Sosa

2275-Pos Board B419
COOPERATIVE TRANSPORT BY POPULATIONS OF FAST AND SLOW KINESINS UNCOVERS NOVEL FAMILY-DEPENDENT MOTOR CHARACTERISTICS IMPORTANT FOR IN VIVO FUNCTION. Göker Arpağ, Shankar Shastry, David Arginteanu, Stephen R. Norris, Kristen Verhey, **William O. Hancock**, Erkan Tuzel

2276-Pos Board B420
QUANTITATIVE DETERMINATION OF THE PROBABILITY OF MULTIPLE-MOTOR TRANSPORT IN BEAD-BASED ASSAYS. **Qiaochu Li**, Stephen J. King, Ajay Gopinathan, Jing Xu

2277-Pos Board B421
HOW KINESIN MOTOR PROTEINS DEAL WITH TRAFFIC JAMS. **Vandana S. Kushwaha**, Daniël M. Miedema, Dmitry V. Denisov, Seyda Acar, Bernard Nienhuis, Peter Schall, Erwin J.G. Peterman

2278-Pos Board B422
PHOTO-CONTROL OF KINESIN DIMERIZATION AND MOTOR ACTIVITY USING PHOTOCHROMIC MOLECULES. **Haruka Fujio**, Kazunori Kondo, Shinsaku Maruta

2279-Pos Board B423
APLIP1 CONTROLS THE PROCESSIVITY OF NEUREXIN AXONAL TRANSPORT. **Ulises Rey**, Mehmet Ucar, Reinhard Lipowsky, Stephan Sigrist

Cardiac Muscle Mechanics and Structure II (Boards B424 - B436)

2280-Pos Board B424
HIGH-SPEED, HIGH-PERFORMANCE REAL-TIME IMAGING OF PHYSIOLOGICAL SARCOMERE DYNAMICS IN THE BEATING MOUSE HEART IN VIVO. **Fuyu Kobirumaki-Shimozawa**, Kotaro Oyama, Togo Shimozawa, Takashi Ohki, Takako Terui, Shin'ichi Ishiwata, Norio Fukuda

2281-Pos Board B425
IMAGINGS OF SARCOMERES IN RAT NEONATAL CARDIOMYOCYTES EXPRESSING STRESS FIBER-LIKE STRUCTURES. **Teruyuki Fujii**

2282-Pos Board B426
OSCILLATORY BEHAVIOR IN MUSCLE MYOSIN. **Lorenzo Marcucci**, Takumi Washio, Toshio Yangida

2283-Pos Board B427
CROSS-BRIDGE GROUP ENSEMBLES DESCRIBING COOPERATIVITY IN THERMODYNAMICALLY CONSISTENT WAY. **Mari Kalda**, Pearu Peterson, Marko Vendelin

2284-Pos Board B428
CARDIAC LENGTH-DEPENDENT ACTIVATION: WEAK BINDING HYPOTHESIS TESTED BY A COMPUTATIONAL SARCOMERE MODEL. **William C. Hunter**, Alison L. Schroeder

2285-Pos Board B429
MODELING PREDICTS NON-MONOTONIC DEPENDENCE OF MYOFILAMENT CA^{2+} SENSITIVITY ON TROPOMYOSIN STIFFNESS. **Lorenzo R. Sewanan**, Stuart Campbell

2286-Pos Board B430
A FRET INVESTIGATION ON THE EFFECTS OF TROPOMYOSIN D230N AND CARDIAC TROPONIN T R92L MUTANTS ON THE TROPOMYOSIN OVERLAP STRUCTURE. **Mark T. McConnell**, Lauren Tal Grinspan, Benjamin Schwartz, Ofer Z. Fass, Jayant James Jayasundar, Jil C. Tardiff

2287-Pos Board B431
MOLECULAR MECHANISMS OF CARDIOMYOPATHY-CAUSING TNT MUTANTS IMPLICATED IN INTERACTIONS WITH TROPOMYOSIN. **Binnu Gangadharan**, Souhrid Mukherjee, Margaret S. Sunitha, Ashvini Dubey, R Sowdhamini, James A. Spudich, John A. Mercer

2288-Pos Board B432
CA^{2+}-SENSITIVITY AND ELEMENTARY STEPS OF THE CROSS-BRIDGE CYCLE IN PAPILLARY MUSCLE FIBERS FROM THE TROPONIN C (TNC)-A8V KNOCK-IN MOUSE, WHICH EXHIBITS HYPERTROPHIC CARDIOMYOPATHY (HCM). Masataka Kawai, Tarek Karam, **Jose R. Pinto**

2289-Pos Board B433
HCM ASSOCIATED CARDIAC TROPONIN I MUTATIONS ALTER CARDIAC TROPONIN FUNCTION, CONTRACTILE PROPERTIES AND MODULATION BY PKA MEDIATED PHOSPHORYLATION. **Yuanhua Cheng**, Lindert teffen, An-Yue Tu, Maria V Razumova, Luping Xie, Lucas Oxenford, Andrew D. McCulloch, J Andrew McCammon, Michael Regnier

2290-Pos Board B434
THE ROLE OF CALCIUM AFFINITY AND C-I INTERACTION IN LENGTH-DEPENDENT ACTIVATION. **Jordan M. Klaiman**, Maria V. Razumova, Joseph D. Powers, Cameron W. Turtle, Farid Moussavi-Harami, Todd E. Gillis, Michael Reniger

2291-Pos Board B435
SARCOMERE LENGTH DEPENDENT EFFECTS ON CA^{2+}-INDUCED TROPONIN REGULATION WITHIN CHEMICALLY SKINNED CARDIAC MUSCLE FIBERS. King-Lun Li, R. John Solaro, **Wenji Dong**

2292-Pos Board B436
DESIGNING A HIGH AFFINITY CARDIAC TROPONIN ACTIVATOR. **Fangze Cai**, Monica Li, Sandra Pineda-Sanabria, Shorena Gelozia, Steffen Lindert, J. Andrew McCammon, Frederick West, Brian Sykes, Peter Hwang

Cytoskeletal-based Intracellular Transport (Boards B437 - B444)

2293-Pos Board B437
BROWNIAN DYNAMICS SIMULATION REVEALS FREEDOM OF MOTORS IN THE CARGO MEMBRANE CAN INFLUENCE CARGO DYNAMICS. **Matthew J. Bovyn**, Steven Gross, Jun Allard

2294-Pos Board B438
CONTROLLING VESICLE MOTION IN CORTICAL NEURONS WITH MAGNETIC FORCES. **Anja Kunze**, Coleman Murray, Andy K. Tay, Dino Di Carlo

2295-Pos Board B439
THE ROLE OF THE MICROTUBULE CYTOSKELETON IN REGULATING INTRACELLULAR TRANSPORT. **Linda Balabanian**, Christopher L. Berger, Adam G. Hendricks

2296-Pos Board B440
MICROTUBULE GLIDING FORMATION ON CURVED SURFACES. **Kaylee Cortes**

2297-Pos Board B441 **INTERNATIONAL TRAVEL AWARDEE**
COLLECTIVE EFFECTS OF MOTORS AND MICROTUBULES GEOMETRY IN GLIDING ASSAYS. Neha Khetan, Kunalika Jain, Anushree R. Chaphalkar, **Chaitanya A. Athale**

2298-Pos Board B442
MYOSIN VA MOTOR TEAMS NAVIGATE VESICLE CARGOS THROUGH 3D ACTIN FILAMENT INTERSECTIONS. **Andrew T. Lombardo**, Shane Nelson, M. Yusuf Ali, Kathleen Trybus, Sam Walcott, David M. Warshaw

2299-Pos Board B443
3D MODEL OF VESICLES TRANSPORTED BY MYOSIN VA MOTOR TEAMS THROUGH ACTIN INTERSECTIONS PREDICTS EXPERIMENTAL DIRECTIONAL OUTCOMES. **Sam Walcott**, Andrew T. Lombardo, Shane Nelson, M. Yusuf Ali, David M. Warshaw

2300-Pos Board B444
FORCE GENERATION BY MEMBRANE-ASSOCIATED MYOSIN-I. Serapion Pyrpassopoulos, Goker Arpag, Elizabeth A. Feeser, Henry Shuman, **Erkan Tuzel**, E. Michael Ostap

Bacterial Mechanics, Cytoskeleton, and Motility (Boards B445 - B458)

2301-Pos Board B445
DYNAMICS OF REVERSIBILITY OF PRESSURE INDUCED CHANGES IN CELL MORPHOLOGY, CELL DIVISION, AND GENE EXPRESSION OF ESCHERICHIA COLI. **Pradeep Kumar**

2302-Pos Board B446
DYNAMICS OF PHENOTYPIC REVERSIBILITY OF BACTERIAL CELLS WITH OSCILLATING PRESSURES. **Sudip Nepal**, Pradeep Kumar

2303-Pos Board B447
INVESTIGATING THE MATERIAL PROPERTIES OF THE CAULOBACTER CRESCENTUS ADHESIVE HOLDFAST. **Alex Nyarko**, Hazel Barton, Ali Dhinojwala

2304-Pos Board B448
HETEROGENEOUS MOLECULAR DYNAMICS REVEALED THROUGH LIVE, SINGLE-CELL IMAGING. **Zachary T. Barry**, Ethan Garner, Mark Bathe

2305-Pos Board B449
COARSE-GRAINED SIMULATIONS REVEAL MECHANISMS OF BACTERIAL MORPHOGENESIS. **Lam T. Nguyen**, Matthew Swulius, James C. Gumbart, Morgan Beeby, Grant J. Jensen

2306-Pos Board B450
CAN ESCHERICHIA COLI SENSE SPATIALLY? **Richa Karmakar**, Mahesh S. Tirumkudulu, K. V. Venkatesh

2307-Pos Board B451
SODIUM-DRIVEN ENERGY CONVERSION FOR FLAGELLAR ROTATION OF THE EARLIEST DIVERGENT HYPERTHERMOPHILIC BACTERIUM. Norihiko Takekawa, **Masayoshi Nishiyama**, Tsuyoshi Kaneseki, Tamotsu Kanai, Haruyuki Atomi, Seij Kojima, Michio Homma

2308-Pos Board B452
FORCE SPECTROSCOPY OF A BACTERIAL ADHESIN WITH AN INTERNAL THIOESTER BOND. **Daniel Echelman**, Julio Fernandez

2309-Pos Board B453
ARCHITECTURE OF THE TYPE IVA PILUS MACHINE. **Yi-Wei Chang**, Lee Rettberg, Anke Treuner-Lange, Janet Iwasa, Lotte Søgaard-Andersen, Grant Jensen

2310-Pos Board B454
SWIMMING OF A NON-FLAGELLATED BACTERIUM BY A NON-ROTARY MOLECULAR MOTOR. **Matthias Koch**, Julian Roth, Alexander Rohrbach

2311-Pos Board B455
INVESTIGATION OF THE BACTERIAL FLAGELLAR MOTORS THROUGH MAGNETIC TORQUE WRENCH. **Ilyong Jung**, Maarten M. van Oene, Nynke H. Dekker

2312-Pos Board B456
ELASTIC PROPERTIES OF MAGNETOSOME CHAINS. **Bahareh Kiani**, Damien Faivre, Stefan Klumpp

2313-Pos Board B457
DIFFERENTIAL INTERACTION FORCES GOVERN BACTERIAL SORTING AND STABILITY IN EARLY BIOFILMS. **Lena Dewenter**, Enno R. Oldewurtel, Nadzeya Kouzel, Thorsten Volkmann, Katja Henseler, Berenike Maier

2314-Pos Board B458
DISTINCT MECHANICAL ROLES FOR BACTERIA-PRODUCED BIOPOLYMERS IN BIOFILM INITIATION AND STRENGTH. **Vernita Gordon**, Christopher Rodesney, BJ Cooley, Kristin Kovach, Megan Davis-Fields

Mitochondrial Cell Life and Death (Boards B459 - B484)

2315-Pos Board B459
DARK HYPERICIN AFFECTS SEVERAL SUB-CELLULAR LEVELS. **Katarina Stroffekova**, Veronika Huntosova, Marta Novotova, Zuzana Nichtova, Tibor Kozar, Pavol Miskovsky

2316-Pos Board B460
CORRELATION BETWEEN MITOCHONDRIAL MORPHOLOGY AND FUNCTIONALITY AFTER OXIDATIVE STRESS. **Zuzana Nadova**, Lenka Lenkavska, Alexandra Fragola, Stephanie Bonneau, Franck Sureau, Pavol Miskovsky

2317-Pos Board B461
OXIDATIVE STRESS AND JNK ACTIVATION CAUSE MITOCHONDRIAL DYSFUNCTION AND CELL DEATH IN HEPATOCARCINOMA AFTER VDAC-TUBULIN ANTAGONISTS. **Eduardo Maldonado**, David N. DeHart, Diana Fang, Kareem Heslop, Monika Beck Gooz, John Lemasters

2318-Pos Board B462
STUDY OF THE NIR LIGHT INDUCED EFFECTS ON NEUROBLASTOMA N2A CELLS WITH PARKINSON'S-LIKE FEATURES. **Lenka Koptasikova**, Veronika Huntosova, Emmanuel Gerelli, Pavol Miskovsky, Georges Wagnieres, Katarina Stroffekova

2319-Pos Board B463
A PHYSIOLOGICAL ROLE FOR ALPHA-SYNUCLEIN IN THE REGULATION OF ATP SYNTHESIS. **Marthe Ludtmann**, Plamena Angelova, Natalia Ninkina, Sonia Gandhi, Vladimir Buchman, Andrey Abramov

2320-Pos Board B464
MEMBRANE-BINDING PEPTIDE INHIBITS BLOCKAGE OF MITOCHONDRIAL VDAC BY ALPHA-SYNUCLEIN: IN SEARCH OF A-SYNUCLEIN TOXICITY PREVENTION. **Philip Gurnev**, David Hoogerheide, Tatiana Rostovtseva, Sergey Bezrukov

2321-Pos Board B465
STRAIN DEPENDENT EFFECTS OF ALPHA-SYNUCLEIN MUTATIONS ON MITOCHONDRIAL DYSFUNCTION. **Minee L. Choi**, Zhi Yao, Laura Tosatto, David Klenerman, Andrey Y. Abramov, Sonia Gandhi

2322-Pos Board B466
MITOCHONDRIAL TRANSFER BY PHOTOTHERMAL NANOBLADE RESTORES RESPIRATION IN MAMMALIAN CELLS WITH DYSFUNCTIONAL MITOCHONDRIA. **Alexander N. Patananan**, Ting-Hsiang Wu, Enrico Sagullo, Dana Case, Xin Zheng, Yanjing Li, Jason S. Hong, Tara TeSlaa, J. Michael McCaffery, Kayvan Niazi, Daniel Braas, Carla M. Koehler, Thomas G. Graeber, Pei-Yu Chiou, Michael A. Teitell

2323-Pos Board B467
DIVISION OF MITOCHONDRIAL NUCLEOIDS VISUALIZED BY BIPLANE FPALM / DSTORM. **Petr Jezek**, Tomas Spacek, Lukas Alan

2324-Pos Board B468
FLUORESCENCE MEASUREMENT OF PERICELLULAR OXYGEN. **Liron Boyman**, Joseph P. Y. Kao, Jennie B. Leach, W. Jonathan Lederer, George S. B. Williams

2325-Pos Board B469
TECHNIQUES FOR QUANTITATIVE ANALYSIS OF MITOCHONDRIAL DYNAMICS. **David Weaver**, Aniko Gal, Gyorgy Hajnoczky

2326-Pos Board B470
ELASTOCAPILLARY INSTABILITY IN MITOCHONDRIAL FISSION. David Gonzalez-Rodriguez, Sébastien Sart, Avin Babataheri, David Tareste, Abdul I. Barakat, Christophe Clanet, **Julien Husson**

2327-Pos Board B471
MITOCHONDRIAL NM23-H4/NDPK-D SUPPORTS CARDIOLIPIN SIGNALING TO ELIMINATE DEPOLARIZED MITOCHONDRIA BY MITOPHAGY. **Uwe Schlattner**, Jianfei Jiang, Zhentai Huang, Yulia Y. Tyurina, Céline Desbourdes, Cécile Cottet-Rousselle, Haider Dar, Manish Verma, Vladimir A. Tyurina, Alexandr A. Kapralov, Marie-Lise Lacombe, Charleen T. Chu, Rama Mallampalli, Hülya Bayir, Valerian E. Kagan

2328-Pos Board B472
THE ROLE OF LIPIDS IN REGULATION OF PROGRAMMED CELL DEATH. Martin Lidman, Artur Dingeldein, Šárka Pokorná, Radek Šachl, Tobias Sparrman, Martin Hof, **Gerhard Gröbner**

2329-Pos Board B473
MITOCHONDRIAL MECHANISMS OF SPORADIC PARKINSONISM: ROLE OF THE 18 KDA PROTEIN TSPO. **Michele Frison**

2330-Pos Board B474 **CPOW TRAVEL AWARDEE**
REGULATION OF MITOCHONDRIAL SIGNALING AND QUALITY CONTROL BY THE 18KDA TRANSLOCATOR PROTEIN (TSPO). **Jemma L. Gatliff**, Daniel East, Federico Turkheimer, Michelangelo Campanella

2331-Pos Board B475
GENERATION OF THE OUTER MEMBRANE POTENTIAL IN MITOCHONDRIA BY VDAC-KINASE COMPLEXES: THERMODYNAMIC ESTIMATIONS. **Victor V. Lemeshko**

2332-Pos Board B476
THE NEUROPROTECTIVE COORDINATION OF MITOPHAGY BY IF1. **Ivana Matic**, Danilo Faccenda, Caterina Ferraina, Francesca Di Guglielmo, Federica Rossin, Mauro Piacentini, Michelangelo Campanella

2333-Pos Board B477
UNDERSTANDING THE ROLE OF MITOCHONDRIAL PATHOPHYSIOLOGY IN FRIEDREICH'S ATAXIA. **Rosella Abeti**, Michael H. Parkinson, Iain P. Hargreaves, Mark A. Pook, Andrey Y. Abramov, Paola Giunti

2334-Pos Board B478
MITOCHONDRIAL TARGETING OF APOLLO-NADP$^+$ REVEALS THAT PALMITATE-INDUCED TOXICITY IN BETA-CELLS INVOLVES A DROP IN MITOCHONDRIAL NADPH/NADP$^+$ REDOX STATE. **William D. Cameron**, Cindy V. Bui, Jonathan V. Rocheleau

2335-Pos Board B479
NOVEL MUTATIONS IN SLC25A3 ENCODING THE MITOCHONDRIAL PHOSPHATE CARRIER. **Erin Seifert**, Aniko Gal, Michelle G. Acoba, Steven M. Claypool, Lauren Anderson-Pullinger, Peter Varnai, Cynthia Moffat, David Weaver, Neal Sondheimer, Gyorgy Hajnoczky

2336-Pos Board B480
OTOTOXIC AMINOGLYCOSIDES INHIBIT NADH METABOLISM AND INCREASE REACTIVE OXYGEN SPECIES FORMATION IN COCHLEAR CELLS. **Danielle Desa**, Erinn Riley, Michael Nichols, Heather Jensen Smith

2337-Pos Board B481
THE INFLUENCE OF ALTERNATIVE ENERGY TRANSFER SYSTEMS ON RESPIRATION IN CREATINE-DEFICIENT MOUSE CARDIOMYOCYTES. **Jelena Branovets**, Svetlana Jugai, Marko Vendelin, Rikke Birkedal

2338-Pos Board B482
PEROXYNITRITE PRODUCED VIA NITRIC OXIDE SYNTHESIS IN ISOLATED CARDIAC MITOCHONDRIA. **Harrison J. Gerdes**, Amadou K.S. Camara, James S. Heisner, David F. Stowe

2339-Pos Board B483
NUMBER OF OPEN MITOCHONDRIAL VOLTAGE-DEPENDENT ANION CHANNELS AND INTRACELLULAR DIFFUSION COEFFICIENT IN HEART MUSCLE. Päivo Simson, Natalja Jepihhina, Martin Laasmaa, Jelena Branovets, Pearu Peterson, Rikke Birkedal, **Marko Vendelin**

2340-Pos Board B484
DEPLETION OF BAK AFFECTS EMISSION OF REACTIVE OXYGEN SPECIES FROM MITOCHONDRIA. Ma Su Su Aung, Stephen Madamba, **Pablo M. Peixoto**

Systems Biology and Disease (Boards B485 - B507)

2341-Pos Board B485
FTIR STUDY OF THE BIOCHEMICAL EFFECTS INDUCED BY X-RAY IRRADIATIONS COMBINED WITH GD NANOPARTICLES IN F98 GLIOMA CELLS. Ibraheem Yousef, **Olivier Seksek**, Josep Sulé-Suso, Silvia Gil, Yolanda Prezado, Immaculada Martinez-Rovira

2342-Pos Board B486
INFLAMATION LEADS TO AN INCREASE OF CHOLESTEROL'S CHEMICAL POTENTIAL IN PLASMA MEMBRANES OF CULTURED CELLS. **Ruben M. Markosyan**, Artem G. Ayuyan, Fredric S. Cohen

2343-Pos Board B487
ONSET, TIMING, AND EXPOSURE THERAPY OF STRESS DISORDERS: MECHANISTIC INSIGHT FROM A MATHEMATICAL MODEL OF OSCILLATING NEUROENDOCRINE DYNAMICS. **Lae U. Kim**, Tom Chou, Maria Rita D'Orsogna

2344-Pos Board B488
CELL LYSING AND DNA FRAGMENTATION OF LISTERIA MONOCYTOGENES IN ONE STEP. **Tonya Santaus**

2345-Pos Board B489
DYNAMICS LIGHT SCATTERING AS A TOOL FOR ASSESSING HEALTH STATUS AND DISEASE RISK. **Ina Mishra**, Vipul Patel, Michelle D. Robinson, Katrina Gordon, Sneha Deodhar, David P. Cistola

2346-Pos Board B490
LIVE IMAGING STUDIES OF INVASION PHENOTYPES OF ERYTHROCYTES BY P. FALCIPARUM. **Yen-Chun Lin**

2347-Pos Board B491
INTEGRATED ANALYSIS FOR QUANTITATIVE PREDICTIONS OF DRUG INDUCED CARDIOTOXICITY. **Jaehee V. Shim**, Marc R. Birtwistle, Ravi Iyengar, Eric A. Sobie

2348-Pos Board B492
BUILDING AN ACCURATE CHROMOSOME SEGREGATION MACHINE IN FISSION YEAST. Hadrien Mary, Guillaume Gay, Thibault Courthéoux, Jonathan Fouchard, Reyes Céline, Sylvie Tournier, **Yannick Gachet**

2349-Pos Board B493
A SYNTHETIC KNOB FOR MODULATING ANTIBIOTIC RESISTANCE. Dilay Hazal Ayhan, Yusuf Talha Tamer, Mohammed Akbar, David E. Greenberg, **Erdal Toprak**

2350-Pos Board B494
THE EFFECTS OF POPULATION DENSITY ON ANTIBIOTIC EFFICACY IN E. FAECALIS. **Jason Karslake**, Kevin Wood

2351-Pos Board B495
RULE-BASED MODELING WITH VIRTUAL CELL: EFFECT OF UBE3A ON DENDRITIC SPINE MORPHOGENESIS. **Judy E. Bloom**, Michael L. Blinov, Leslie M. Loew

2352-Pos Board B496
DECODING THE EVOLUTION OF COMPLEX BIOLOGICAL NETWORKS- A THEORY FOR THE DYNAMICS OF MODULARITY IN POPULATIONS. **Liang R. Niestemski**, Jeong-Man Park, Michael W. Deem

2353-Pos Board B497
THE β1-ADRENERGIC RECEPTOR BLOCKER, METOPROLOL, IMPROVES SURVIVAL AND ELECTRICAL REMODELING IN RATS WITH PULMONARY ARTERY HYPERTENSION. **Eleftheria Pervolaraki**, Mark Drinkhill, Ewan Fowler, Rachel Stones, Ed White

2354-Pos Board B498
DEVELOPMENT OF PHYSIOLOGIC VERSUS PATHOLOGIC HYPERTROPHY IN MOUSE MODELS EXPRESSING MUTATIONS IN MYOSIN ESSENTIAL LIGHT CHAIN. Katarzyna Kazmierczak, Chen-Ching Yuan, Rosemeire Kanashiro-Takeuchi, Jingsheng Liang, Zhiqun Zhou, Jenice X. Cheah, Jennifer E. Gilda, Aldrin V. Gomes, Thomas C. Irving, **Danuta Szczesna-Cordary**

2355-Pos Board B499
RESOLVING AND TARGETING THE MECHANOBIOME OF PANCREATIC DUCTAL ADENOCARCINOMA. **Alexandra Surcel**, Qingfeng Zhu, Eric Schiffhauer, Robert Anders, Douglas Robinson

2356-Pos Board B500
REAL TIME TRANSPOSABLE ELEMENT ACTIVITY IN INDIVIDUAL LIVE CELLS. **Neil H. Kim**, Gloria Lee, Nicholas A. Sherer, K. Michael Martini, Nigel Goldenfeld, Thomas E. Kuhlman

2357-Pos Board B501
THE ROLE OF EXOSOME-MEDIATED CELL-CELL COMMUNICATION IN INDUCING PHENOTYPIC CHANGES. **Mingyang Lu**, Michela Capello, Herbert Levine, Samir M. Hanash, Eshel Ben-Jacob, Jose' Nelson Onuchic

2358-Pos Board B502
ON CANCER RISK AND THE HIERARCHICAL ARCHITECTURE OF TISSUES. **Imre Derenyi**, Gergely J. Szollosi

2359-Pos Board B503
PREDICTING THE ONSET OF ALTERNATING RHYTHMS IN NOISY CARDIAC SYSTEMS. **Thomas Quail**, Alvin Shrier, Leon Glass

2360-Pos Board B504
MEASUREMENT FOR A NONLINEAR DYNAMICAL THEORY OF ACUTE CELL INJURY. **Doaa T. Taha**, Fika T. Anggraini, Donald J. Degracia, Zhi-Feng Huang

2361-Pos Board B505
OPTIMIZING PROTEIN SPECIFICITY IN THE CROWDED CELL THROUGH CONCENTRATION BALANCE AND NETWORK MOTIF SELECTION. **David O. Holland**, Margaret E. Johnson

2362-Pos Board B506
AUTOMATED DIAGNOSIS OF LEUKEMIA BASED ON ENTROPY. **Jose M. G. Vilar**

2363-Pos Board B507
SPATIAL HOMOGENEITY IN METABOLIC ACTIVITY CONTROLS ELECTRICAL ACTIVITY IN PANCREATIC ISLETS. **Matthew J. Westacott**, Marina Pozzoli, Richard K.P. Benninger

System and Sensory Neuroscience (Boards B508 - B516)

2364-Pos Board B508
MAPPING CONNECTIVITY OF NETWORK BURSTING NEURONS. **Tuan D. Nguyen**, Kelly D. O'Connor, Krishna S. Sheth

2365-Pos Board B509
BEYOND CONES: COMPUTING TACTILE INPUT FORCES FROM IMPROVED MODELS OF WHISKER BENDING. **Xiyue Wang**, Vincent Huang, Jonathan Sy, Adam Schuyler, David Golomb, Samuel Andrew Hires

2366-Pos Board B510
REPRESENTATION OF MECHANOSENSORY FORCES IN SOMATOSENSORY CORTEX DURING OBJECT LOCALIZATION. **Jonathan A. Cheung**, Adam Schuyler, Mariah Kim, Jonathan Sy, Samuel Andrew Hires

2367-Pos Board B511
OPTOGENETIC SYNTHESIS OF TOUCH PERCEPTION VIA BIOMIMETIC PHOTO STIMULATION OF S1. **Samson G. King**, Monica Song, N. Mariah Kim, Isis Wyche, Adam Schuyler, S. Andrew Hires

2368-Pos Board B512
BOTH GLUTAMATERGIC AND GABAERGIC NEURONS ARE RECRUITED TO BE ASSOCIATIVE MEMORY CELLS. **Jin H. Wang**, Dangui Wang, Zilong Gao, Na Chen, Zhuofen Lei, Shan Cui, Wei Lu

2369-Pos Board B513
DO PRESTIN VARIANTS PERSIST WITHIN THE COCHLEA TO AFFECT CHARGE MOVEMENT IN VITRO?. Varun K.A. Sreenivasan, **Vivek Rajasekharan**, Brenda Farrell

2370-Pos Board B514
UNIQUE BIOPHYSICAL PROPERTIES OF AN INWARD PROTON CURRENT THAT MEDIATES SOUR TASTE TRANSDUCTION. Wenlei Ye, Jeremy Bushman, **Emily Liman**

2371-Pos Board B515
MODULATION BY OFF-FLAVORS OF CNG CHANNELS IN OLFACTORY CILIA. **Hiroko Takeuchi**, Takashi Kurahashi

2372-Pos Board B516
IMAGING PARADIGM FOR STUDYING BRAIN-WIDE ACTIVITY PATTERNS IN A DROSOPHILA NEURAL CIRCUIT. **Amicia D. Elliott**, Feici Diao, Yicong Wu, Sarav Shah, Hari Shroff, Benjamin White

Optical Microscopy and Super-Resolution Imaging II (Boards B517 - B550)

2373-Pos Board B517
APPLICATION OF THE DIVER DETECTION METHOD TO MULTIPHOTON MICROSCOPY AND FLIM. **Alexander Dvornikov**, Suman Ranjit, Enrico Gratton

2374-Pos Board B518
FLUORESCENCE ANISOTROPY IMAGING IN 3D WITH SINGLE PLANE ILLUMINATION MICROSCOPY. **Per Niklas Hedde**, Enrico Gratton

2375-Pos Board B519
LABEL FREE LINEAR AND NON-LINEAR EXCITATION NANOSCOPY. Kseniya Korobchevskaya, Chiara Peres, Francesca D'Autilia, Nirmal Mazumder, Luca Lanzano, Peter Saggau, Colin J. R. Sheppard, Alberto Diaspro, **Paolo Bianchini**

2376-Pos Board B520
POLARIZATION-RESOLVED PHASE MICROSCOPY FOR QUANTITATIVE RETARDANCE IMAGING. **Chiara Peres**, Renjie Zhou, Poorya Hosseini, Andreea F. Martin, Paolo Bianchini, Alberto Diaspro, Peter T.C. So, Zahid Yaqoob

2377-Pos Board B521
MULTIPHOTON STED AND FRET IN HUMAN SKIN: RESOLVING THE SKIN BARRIER. Jes Dreier, Jens A. Sørensen, **Jonathan R. Brewer**

2378-Pos Board B522
SNAPSHOT HYPERSPECTRAL LIGHT-SHEET IMAGING ALLOWS 5D INVESTIGATION OF PANCREATIC ISLETS. **Zeno Lavagnino**, David W. Piston

2379-Pos Board B523
LIGHT SHEET FLUORESCENCE MICROSCOPY IN INTACT BONES REVEALS SPATIAL LIMITATIONS FOR MEGAKARYOCYTE MIGRATION IN THE MURINE BONE MARROW. Judith M. van Eeuwijk, David Stegner, Oğuzhan Angay, Mari Gorelashvili, Jürgen Pinnecker, Harald Schulze, Bernhard Nieswandt, **Katrin G. Heinze**

2380-Pos Board B524
RHESUS D EXPRESSION CLASSIFICATION ON RED BLOOD CELLS USING HIGH-RESOLUTION FLUORESCENCE MICROSCOPY AND MACHINE LEARNING. **Sandra Mayr**

2381-Pos Board B525
NANOSCOPIC CELL WALL ARCHITECTURE OF AN IMMUNOGENIC LIGAND IN CANDIDA ALBICANS DURING ANTIFUNGAL DRUG TREATMENT. **Aaron K. Neumann**, Jia Lin, Michael J. Wester, Matthew S. Graus, Keith A. Lidke

2382-Pos Board B526
EXPRESSION-ENHANCED FLUORESCENT PROTEINS BASED ON EGFP FOR SUPER-RESOLUTION MICROSCOPY. Sam Duwé, Elke De Zitter, Vincent Gielen, Benjamien Moeyaert, Wim Vandenberg, Tim Grotjohann, Stefan Jakobs, Luc Van Meervelt, **Peter Dedecker**

2383-Pos Board B527
OPIOID RECEPTORS ARE ORGANIZED INTO NANODOMAINS IN THE PLASMA MEMBRANE. **Ottavia Golfetto**, Sunetra Biswas, Raphael Jorand, Huiying Zhang, Steven Jeffrey Tobin, Daniel Ganjali, Athanasios Sideris, Alexander R. Small, Vladana Vukojević, Tijana Jovanović-Talisman

2384-Pos Board B528
MAPPING CFTR CLUSTERS IN 3D VIA SINGLE MOLECULE STEP PHOTOBLEACHING ANALYSIS IN EPITHELIAL CELLS. **Paul W. Wiseman**, Jean F. Desjardins, Asmahan Abuarish, John W. Hanrahan

2385-Pos Board B529
DIFFUSION ANALYSIS OF LYMPHOCYTE SPECIFIC KINASE REVEALS IMMOBILISATION HOT SPOTS IN LIVE T-CELL PLASMA MEMBRANES. **Andreas M. Arnold**, Florian Baumgart, Gerhard J. Schuetz

2386-Pos Board B530
LCK IS RANDOMLY DISTRIBUTED ON THE T CELL PLASMA MEMBRANE. **Florian Baumgart**, Andreas Arnold, Gerhard Schütz

2387-Pos Board B531
NANOSCALE SPATIAL ORGANIZATION OF CHROMATIN IN ITS CELLULAR CONTEXT, FROM TELOMERES TO HOX. **Suliana Manley**, Kyle Douglass, Verena Pfeiffer, Aleksandra Vancevska, Pierre Fabre, Alexander Benke, Elisabeth Joye, Thi Hanh Nguyen Huynh, Denis Duboule, Joachim Lingner

2388-Pos Board B532
AN ORGANELLE SIZER BASED ON LOCAL IMAGE CORRELATION SPECTROSCOPY DETECTS CHANGES IN SUBCELLULAR MORPHOLOGY. **Lorenzo Scipioni**, Melody Di Bona, Marta D'Amora, Enrico Gratton, Alberto Diaspro, Luca Lanzanò

2389-Pos Board B533
TRACKING GOLD NANORODS IN LIVE CELLS. **Sara Carozza**, Veer I.P. Keizer, Jamie Culkin, Aimee L. Boyle, Alexander Kros, Marcel J.M. Schaaf, John van Noort

2390-Pos Board B534
SITE-SPECIFIC LABELING OF PROTEINS IN LIVE MAMMALIAN CELLS USING CLICK CHEMISTRY. **Jun Hee Kang**, Ivana Nikić, Gemma Estrada Girona, Edward A. Lemke

2391-Pos Board B535
3D SUPER-RESOLUTION IMAGING OF UNPERTURBED CELLS. **Alexander R. Carr**, James McCol;, Ana M. Santos, Ji-Eun Lee, Aleks Ponjavic, Dave Klenerman, Simon Davis, Steven F. Lee

2392-Pos Board B536
IMPROVED PHOTO PHYSICAL PROPERTIES OF MEOS3 FOR SINGLE MOLECULE TRACKING. **Lisa-Maria Needham**, Srinjan Basu, Edward Taylor, Ernest D. Laue, David Klenerman, David Lando, Steven F. Lee

2393-Pos Board B537
A PHOTOGATE MICROSCOPY TO TRACK SINGLE MOLECULES IN CROWDED ENVIRONMENTS. **Ahmet Yildiz**

2394-Pos Board B538
BACKGROUND-SUPPRESSION IN THE DETECTION OF GOLD NANOPARTICLES IN CELLS THROUGH ANTI-STOKES PHOTOLUMINESCENCE. **Aquiles Carattino**, Veer Keizer, Michel Orrit

2395-Pos Board B539
QUANTITATIVE SINGLE MOLECULE ANALYSIS OF THE NANOSCALE ORGANIZATION OF THE INHIBITORY SYNAPSE. **Francesca Pennacchietti**, Sebastiano Vascon, Christian Rosillo, Thierry Nieus, Das Sabyasachi, Alessio Del Bue, Enrica Maria Petrini, Alberto Diaspro, Andrea Barberis, Francesca Cella Zanacchi

2396-Pos Board B540 INTERNATIONAL TRAVEL AWARDEE
TRACKING THE SWITCH OF INFLUENZA RNA GENESIS BY A NOVEL MULTIPLEXED FISH METHOD IN SINGLE CELLS. **Ivan Haralampiev**, Simon Prisner, Matthias Schade, Jasmine Chamiolo, Fabian Jolmes, Oliver Seitz, Andreas Herrmann

2397-Pos Board B541
NAD(P)H-FLIM AND FRET IMAGING OF PANCREATIC ISLET OSCILLATIONS REVEALS NOVEL ACTIVATORS OF MITOCHONDRIAL RESPIRATORY COMPLEX I IN THE SETTING OF OBESITY. Trillian Gregg, Chetan Poudel, Rush Dhillon, Brian A. Schmidt, John M. Denu, Kevin W. Eliceiri, **Matthew J. Merrins**

2398-Pos Board B542
TIME-RESOLVED STUDY OF TRIPLEBODY-MEDIATED LYSIS BY NATURAL KILLER CELLS ON MICROSTRUCTURED TARGET CELL ARRAYS. **Elisavet I. Chatzopoulou**, Farzad Sekhavati, Todd A. Braciak, Georg H. Fey, Joachim O. Rädler

2399-Pos Board B543
DYNAMIC OPTICAL DISPLACEMENT SPECTROSCOPY TO QUANTIFY BIOMEMBRANE BENDING FLUCTUATIONS. Cornelia Monzel, Daniel Schmidt, Udo Seifert, Ana-Suncana Smith, Kheya Sengupta, **Rudolf Merkel**

2400-Pos Board B544
SINGLE-PARTICLE TRACKING ANALYSIS USING THE RADIUS OF GYRATION TENSOR, REVISITED. **Michael J. Saxton**

2401-Pos Board B545
QUANTITATIVE DETERMINATION OF PHOTOTOXICITY IN LIVE CELL SUPER-RESOLUTION MICROSCOPY. **Alexander Goryaynov**, Julia Neuwirth, Joerg Bewersdorf

2402-Pos Board B546
ILLUMINATING DYNAMIC PROCESSES IN THE EMBRYOGENESIS OF CAENORHABDITIS ELEGANS WITH LIGHSHEET MICROSCOPY. **Philipp Struntz**, Rolf Fickentscher, Matthias Weiss

2403-Pos Board B547
NITROGEN-VACANCY SPINS IN DIAMOND A POSSIBLE TOOL TO STUDY PROTEIN DIFFUSION AND OLIGOMERIZATION. **Sri Ranjini Arumugam**

2404-Pos Board B548
MGARNET, A FAR-RED FLUORESCENT PROTEIN FOR LIVE-CELL STED IMAGING. Anika Hense, Benedikt Prunsche, Peng Gao, Yuji Ishitsuka, **Karin Nienhaus**, G. Ulrich Nienhaus

2405-Pos Board B549
SUPER-RESOLUTION IMAGING OF PLASMA MEMBRANE LESIONS INFLICTED BY 405-NM LASER LIGHT. Lu Zhou, Volker Middel, **G. Ulrich Nienhaus**, Uwe Uwe Strähle

2406-Pos Board B550
TWO-PHOTON EXCITATION STED-FCS WITH FAR-RED DYES IN TISSUE - MEASURING DIFFUSION IN STRATUM CORNEUM. **Jes Dreier**, Jens A. Soerensen, Jonathan R. Brewer

Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence (Boards B551 - B579)

2407-Pos Board B551
SYNTHETIC OPTIMIZATION OF AN EFFECTIVE VIBRATIONAL REPORTER UNNATURAL AMINO ACID: 4-(AZIDOMETHYL)-L-PHENYLALANINE. **Tianjiao Shi**, Scott H. Brewer, Edward E. Fenlon

2408-Pos Board B552
SYNTHESIS AND EVALUATION OF THIOCYANATE AND SELENOCYANATE DERIVATIVES OF ADENOSINE AND PHENYLALANINE AS VIBRATIONAL REPORTERS. **Daniel E. Levin**, Edward E. Fenlon, Scott H. Brewer

2409-Pos Board B553
INVESTIGATION OF NOVEL SPECTROSCOPIC FEATURES IN THE NEAR ULTRAVIOLET REGION ARISING FROM NON-AROMATIC AMINO ACIDS IN PEPTIDES AND PROTEINS. **Saumya Prasad**, Imon Mandal, Ashim Paul, Bhubaneswar Mandal, Ravindra Venkatramani, Rajaram Swaminathan

2410-Pos Board B554
CHARACTERIZATION OF THE ROLE OF INDIVIDUAL EF-HANDS IN DREAM IN MODULATING CONFORMATIONAL DYNAMICS, OLIGOMERIC STATES, AND INTERACTION WITH DNA. **Khoa N. Pham**, Jose Alfonso, Jaroslava Miksovska

2411-Pos Board B555
PHOTOPHYSICAL CHARACTERIZATION OF FLUORESCENT LYSOZYME STABILIZED GOLD NANOCLUSTERS AND THEIR APPLICATIONS. **Sunil Ajit Shah**, Rahul Chib, Bryan Jan, Zygmunt Gryczynski, Ignacy Gryczynski

2412-Pos Board B556
LIPOPLEXES FOR GENE DELIVERY CHARACTERIZED BY FLUORESCENCE CORRELATION SPECTROSCOPY. **Juliane Lopes de Assis**, Iago L. Grobas, Paula Viegas Pereira Signoretti, Aline Marie Fernandes, Maria Adelaide Carvalho Miranda, Bruno F. B. Silva, Rafael Hospodar Felippe Valverde, Marcelo Einicker-Lamas, Pieter A. A. De Beule

2413-Pos Board B557
MANIPULATIONS OF THE TNF-RECEPTOR AFFINITY AND OLIGOMERIZATION CHARACTERIZED BY FLUORESCENCE LIFETIME MEASUREMENTS. **Chih Hung Lo**, Andrew Lewis, Tory Schaaf, Prachi Bawaskar, Nagamani Vunnam, Karl Peterson, David Thomas, Jonathan Sachs

2414-Pos Board B558
RESOLVING STRUCTURAL DYNAMICS OF THE SERCA-PLB COMPLEX BY MERGING MD SIMULATION AND ORIENTATION-SENSITIVE EPR MEASUREMENT. **Andrew Reid**, Peter Martin, Jesse McCaffrey, Bengt Svensson

2415-Pos Board B559
DETECTING COUNTERFEIT PHARMACEUTICALS THROUGH UV SPECTROPHOTOMETRY. **Gabriela Figueroa**, Bruce Ray, Horia Petrache

2416-Pos Board B560
MEASURING STRUCTURAL CHANGES AS A FUNCTION OF PROTEIN CONCENTRATION USING INFRARED SPECTROSCOPY. **Curtis W. Meuse**

2417-Pos Board B561
PHOTOPHYSICAL PROPERTIES OF SYNTHETIC FOOD DYES. Bogumil Zelent, Chris Bialas, Rahul Chib, Ignacy Gryczynski, Sarah Waxman, Meera Patel, Maria G. Corradini, **Richard D. Ludescher**

2418-Pos Board B562
RIBOFLAVIN AS A GRAS LUMINESCENT PROBE OF FOOD AND PHARMACEUTICAL QUALITY. **Yan L. Wang**, Victoria Yeung, Maria G. Corradini, Richard D. Ludescher

2419-Pos Board B563
REVEALING STRUCTURAL FEATURES AND AFFINITIES OF PROTEIN COMPLEXES IN LIVING CELLS BY MFIS-FRET. **Qijun Ma**, Marc Somssich, Stanislav Kalinin, Thomas Peulen, Ralf Kühnemuth, Yvonne Stahl, Rüdiger Simon, Stefanie Weidtkamp-Peters, Claus A.M. Seidel

2420-Pos Board B564
BINDING STUDIES OF BIOTIN LABELED MACROMOLECULES TO STREPTAVIDIN IN SOLUTION AND ON SOLID SURFACES. **Qiaoqiao Ruan**, Kerry M. Swift, Richard A. Haack, Sergey Y. Tetin

2421-Pos Board B565
IMPROVED FRET-BASED TRILATERATION METHODS APPLIED TO THE MAPPING OF CALMODULIN WITHIN THE RYANODINE RECEPTOR. **Bengt Svensson**, Robyn T. Rebbeck, David D. Thomas, Razvan L. Cornea

2422-Pos Board B566
NANOSCALE CHEMICAL AND TOPOLOGY IMAGING OF COLLAGEN WITH PHOTO-INDUCED FORCE MICROSCOPY. Will Morrison, Jinhui Tao, Katie Park, **Derek Nowak**, Sung Park, James De Yoreo

2423-Pos Board B567
CORRELATIVE FLOURESCENCE - BRILLOUIN SCATTERING IMAGING OF PLANTS. **Kareem Elsayad**, Marcal Gallemi, Edmundo R. Sanchez-Guajardo, Lijuan Zhang, Youssef Belkhadir

2424-Pos Board B568
DETERMINATION OF ANTIBODY BINDING AFFINITY USING SINGLE-MOLECULE COUNTING AND FLOW. **Patrick J. Macdonald**, Qiaoqiao Ruan, Richard A. Haack, Sergey Y. Tetin

2425-Pos Board B569
MULTI-CHANNEL TIRF IMAGING OF CARDIAC CALCIUM SIGNALS. **Lars Cleemann**, Martin Morad

2426-Pos Board B570
OPTICALLY MODULATED PHOTOSWITCHABLE FLUORESCENT PROTEINS YIELD IMPROVED BIOLOGICAL IMAGING SENSITIVITY. **Yen-Cheng Chen**, Amy E. Jablonski, Irina Issaeva, Daisy Bourassa, Jung-Cheng Hsiang, Christoph J. Fahrni, Robert M. Dickson

2427-Pos Board B571
ULTRASENSITIVE TIME- AND SPACE-RESOLVED DETECTION OF LUMINESCENE, I.E. SINGLET OXYGEN PHOSPHORESCENCE. **Christian Litwinski**, Sebastian Tannert, Manoel Veiga, Felix Koberling, Volker Buschmann, Matthias Patting, Marcus Sackrow, Michael Wahl, Olaf Schulz, Marcelle Koenig, Rainer Erdmann, Christian Wolf, Christian Kaufmann, Humberto Rodriguez Alvarez

2428-Pos Board B572
LINEAR COMBINATION BETWEEN LIFETIME AND SPECTRAL PHASOR PLOTS: A NEW APPROACH TO STUDY MEMBRANE ORGANIZATION WITH LAURDAN. **Leonel S. Malacrida**, David M. Jameson, Enrico Gratton

2429-Pos Board B573
DARK STATE DYNAMICS OF RED FLUORESCENT PROTEINS IN THE CELL ENVIRONMENT MEASURED IN MICROFLUIDIC FLOW. **Premashis Manna**, Felix Vietmeyer, Ralph Jimenez

2430-Pos Board B574
EXPERIMENTAL DETERMINATION OF SINGLE- AND TWO-PHOTON EXCITATION TRANSITION MOMENTS IN REPRESENTATIVE FLUORESCENT PROTEINS. **Josef Lazar**, Prakash Shukla, Richard Chazal, Alexey Bondar, David von Stetten, Antoine Royant

2431-Pos Board B575
FLUORESCENCE FLUCTUATION SPECTROSCOPY IN THE PERINUCLEAR SPACE. **Jared Hennen**, Cosmo Saunders, G. W. Gant Luxton, Joachim D. Mueller

2432-Pos Board B576
A COMPARISON OF LIBS FOR THE QUANTIFICATION OF AU NANOPARTICLES USING 1064 NM, 532 NM, AND 266 NM EXCITATION. Komal Vig, Aaleyah Joe, **Cleon M. Barnett**

2433-Pos Board B577
DIRECT LABEL-FREE MEASUREMENT OF THE DISTRIBUTION OF SMALL MOLECULAR WEIGHT COMPOUND INSIDE THICK BIOLOGICAL TISSUE USING COHERENT RAMAN MICROSPECTROSCOPY. Masahiko KawagishiI, Yuki Obara, Takayuki Suzuki, Masumi Hayashi, Kazuhiko Misawa, **Sumio Terada**

2434-Pos Board B578
COMPARISON BETWEEN AUTOFLUORESCENCE AND REFLECTANCE-BASED HYPERSPECTRAL IMAGING FOR VISUALIZATION OF ATRIAL ABLATION LESIONS. **Huda Asfour**, Mohammed Aljishi, Tigran Chahbazian, Luther Swift, Narine Muselimyan, Daniel Gil, Narine Sarvazyan

2435-Pos Board B579
USE OF EXCITATION EMISSION MATRICES TO REVEAL SPECTRAL CHANGES CAUSED BY RADIOFREQUENCY ABLATION OF CARDIAC TISSUE. **Mohammed Aljishi**, Huda Asfour, Luther Swift, Narine Muselimyan, Tigran Chahbazian, Narine Sarvazyan

Computational Methods and Bioinformatics II (Boards B580 - B588)

2436-Pos Board B580
HUNTING STRATEGY OF PHAGES THAT INFECT BACTERIA. **Arlette R. Baljon**, Elena Arroyo, Peter Salamon, Jim Nulton, Ben Felts, Jeremy Barr, Forest Rohwer

2437-Pos Board B581
BIOPHYSICAL IMPLICATIONS OF EBOLA VIRUS EVOLUTION. Craig R. Miller, Erin L. Johnson, Aran Z. Burke, Kyle P. Martin, Tanya A. Miura, Celeste J. Brown, Holly A. Wichman, **F. Marty Ytreberg**

2438-Pos Board B582
RULE-BASED MODELING AND SIMULATION FOR BEGINNERS: INTUITIVE GRAPHICAL INTERFACE WITHIN VIRTUAL CELL. **Michael L. Blinov**, Dan Vasilescu, Ion I. Moraru, Leslie M. Loew, James C. Schaff

2439-Pos Board B583
MAPPING EPIGENETIC LANDSCAPES OF GENE REGULATORY NETWORKS BY ADAPTIVE WEIGHTED ENSEMBLE SAMPLING. **Margaret J. Tse**, Brian K. Chu, Elizabeth L. Read

2440-Pos Board B584
USING NETWORK MODELS OF PROTEINS TO PREDICT FUNCTIONALLY LINKED INTERFACES OF PROTEINS (FLIPS) AT THE RESIDUE LEVEL. **Isha D. Mehta**, Brian W. Beck

2441-Pos Board B585
ANALYSIS OF NOVEL MECHANISMS UNDERLYING ASPIRIN RESISTANCE USING BIOINFORMATICS APPROACH. Beryen Lai, Mallory Brooke Lai, **Baskaran Thyagarajan**

2442-Pos Board B586
CLUSTERING AND VISUALIZING OF MEMBRANE PROTEINS SEQUENCE SIMILARITY NETWORK. **Geng-Ming Hu**, Te-Lun Mai, Chi-Ming Chen

2443-Pos Board B587
EVOLUTION AND STRUCTURAL ADAPTATION TO MEMBRANES OF SINGLE-PASS TRANSMEMBRANE PROTEINS. **Andrei L. Lomize**, Irina Pogozheva

2444-Pos Board B588
TABULATION AS A HIGH-RESOLUTION ALTERNATIVE TO COARSE-GRAINING PROTEIN INTERACTIONS: INITIAL APPLICATION TO VIRUS CAPSID SUBUNITS. **Justin M. Spiriti**, Daniel M. Zuckerman

Force Spectroscopy and Scanning Probe Microscopy (Boards B589 - B616)

2445-Pos Board B589
EXAMINING THE MECHANICAL PROPERTIES OF COPPER BINDING AZURIN USING SINGLE MOLECULE FORCE SPECTROSCOPY AND STEERED MOLECULAR DYNAMICS. **Anju Yadav**, Sanjoy Paul, Ravindra Venkatramani, Sri Rama Koti Ainavarapu

2446-Pos Board B590
RESOLVING INDIVIDUAL DAMAGE SITES IN DNA WITH AFM USING REENGINEERED REPAIR PROTEINS. **Christopher J. Fitzgibbon**, Eric A. Josephs, Piotr E. Marszalek

2447-Pos Board B591
DIRECT OBSERVATION OF THE FOLDING TRAJECTORY OF A SLIPKNOTTED PROTEIN. **Chengzhi He**, Chunmei Lyu, Chunguang Hu, Xiaodong Hu, Xiaotang Hu, Hongbin Li

2448-Pos Board B592
MUTUAL A DOMAIN INTERACTIONS IN THE FORCE SENSING PROTEIN VON WILLEBRAND FACTOR (VWF). **Sandra Posch**, Camilo Aponte-Santamaria, Frauke Gräter, Tobias Obser, Gesa König, Maria A. Brehm, Hermann J. Gruber, Reinhard Schneppenheim, Robert Tampé, Peter Hinterdorfer

2449-Pos Board B593
SURPRISING FORCE-DEPENDENT UNFOLDING OF TITIN IMMUNOGLOBULIN DOMAIN REVEALED BY MAGNETIC TWEEZERS. Guohua Yuan, Zhoujie Yang, Hui Qian, Xin Zhou, Jie Yan, **Hu Chen**

2450-Pos Board B594
MULTIPLE INTERMEDIATES IN THE FOLDING OF SUPEROXIDE DISMUTASE 1 REVEALED BY SINGLE MOLECULE FORCE SPECTROSCOPY. **Supratik Sen Mojumdar**, Derek R. Dee, Logan Rouleau, Uttam Anand, Craig Garen, Michael T. Woodside

2451-Pos Board B595
SWINGING ARMS OF ANTIBODY IGG MAKE THE ANTIGEN BINDING DOCILE. **Norito Kotani**, Ramanujam Kumaresan, Yoko Kawamoto-Ozaki, Takao Okada

2452-Pos Board B596
MOLECULAR TOOLS FOR ADVANCED SINGLE-MOLECULE STUDIES. **Fabian Baumann**, Magnus Sebastian Bauer, Lukas Frederik Milles, Hermann Eduard Gaub, Diana Angela Pippig

2453-Pos Board B597
MECHANICAL PROPERTIES OF THE FIBRIN NETWORK ON THE MACROSCOPIC AND MICROSCOPIC SCALES. **Timea Feller**, Balazs Kiss, Jolan Harsfalvi, Miklos Kellermayer

2454-Pos Board B598
AGGREGATES OF AMPHOTERICIN B ONTO SUPPORTED LIPID BILAYERS OF DOPC:SM:CHOL. **Arturo Galván-Hernández**, Carlos Muñoz-Garay, Iván Ortega-Blake

2455-Pos Board B599
SINGLE MOLECULAR FORCE SENSING REVEALS FIBRONECTIN-SPECIFIC BINDING EPITOPES OF BACTERIAL CURLI FIMBRIAE. **Yoo Jin Oh**, Michael Hubauer-Brenner, Hermann J. Gruber, Yidan Cui, Sungsu Park, Peter Hinterdorfer

2456-Pos Board B600 **INTERNATIONAL TRAVEL AWARDEE**
SELECTIVE INTERACTION BETWEEN TOXIC AMYLOID OLIGOMERS AND THE CELL MEMBRANE REVEALED BY INNOVATIVE AFM APPLICATIONS. **Reinier Oropesa-Nuñez**, Silvia Seghezza, Sandeep Keshavan, Silvia Dante, Cristina Cecchi, Massimo Stefani, Fabrizio Chiti, Alberto Diaspro, Claudio Canale

2457-Pos Board B601
STRUCTURAL AND MECHANICAL CUES IN CARTILAGE MORPHOGENESIS. **Carina Prein**, Hauke Clausen-Schaumann, Attila Aszodi

2458-Pos Board B602
BIOPHYSICAL CHARACTERIZATION OF ANTIMICROBIAL RESISTANCE. **Mehrdad M. Tajkarimi**

2459-Pos Board B603
NANOMECHANICAL AND VISCOELASTIC MEASUREMENTS IN BIOLOGICAL ATOMIC FORCE MICROSCOPY (AFM). **Sophia Hohlbauch**

2460-Pos **Board B604** **INTERNATIONAL TRAVEL AWARDEE**
COMBINED MAGNETO-OPTICAL TWEEZERS AND SUPER-RESOLUTION FLUORESCENCE IMAGING FOR PROBING DYNAMIC SINGLE-MOLECULE TOPOLOGY OF DNA, AND PROTEIN MACHINES THAT MANIPULATE DNA TOPOLOGY. **Zhaokun Zhou**, Helen Miller, Christoph Baumann, Mark Leake

2461-Pos **Board B605**
TRAPPING OF HIGHLY BIREFRINGENT RUTILE NANOCYLINDERS IN THE OPTICAL TORQUE WRENCH. **Yera Y. Ussembayev**, Seungkyu Ha, Richard Janissen, Maarten M. van Oene, Nynke H. Dekker

2462-Pos **Board B606**
IMPROVED AXIAL OPTICAL TRAPPING. **Russell Pollari**, Joshua N. Milstein

2463-Pos **Board B607**
ENHANCED SITE-SPECIFIC ANCHORING OF BIOMOLECULES FOR SINGLE-MOLECULE FORCE SPECTROSCOPY. **Robert Walder**, William J. Van Patten, Ayush Adhikari, Marc-Andre LeBlanc, Stephen R. Okoniewski, Ruby May A. Sullan, Marcelo C. Sousa, Thomas T. Perkins

2464-Pos **Board B608**
A NOVEL PLATFORM FOR TAILORING MEMBRANE PROTEIN MOBILITY. **Andreas Karner**, Benedikt Nimmervoll, Birgit Plochberger, Enrico Klotzsch, Andreas Horner, Denis G. Knyazev, Roland Kuttner, Klemens Winkler, Lukas Winter, Christine Siligan, Nicole Ollinger, Peter Pohl, Johannes Preiner

2465-Pos **Board B609**
IMPROVED CALIBRATION METHOD FOR THE NONLINEAR REGIME OF A SINGLE-BEAM OPTICAL TRAP ALLOWS HIGHER FORCE APPLICATIONS. **Jamianne C. Wilcox**, Benjamin J. Lopez, Otger Campas, Megan T. Valentine

2466-Pos **Board B610**
PRECISE CONTROL AND MEASUREMENT OF TEMPERATURE WITH FEMTOSECOND OPTICAL TWEEZERS. **Dipankar Mondal**, Debabrata Goswami

2467-Pos **Board B611**
A COMBINED IMAGING AND FORCE SPECTROSCOPY APPROACH REVEALS THE MATERIAL PROPERTIES OF VIRAL NANOPARTICLES. **Denise Denning**, Gijs J.L. Wuite, Wouter H. Roos

2468-Pos **Board B612**
HIGH SPEED AFM THROUGH NON-RASTER SCANNING AND HIGH SPEED ACTUATION. Trevor Ashley, Tian Huang, William Nagel, **Sean Andersson**, Kam Leang

2469-Pos **Board B613**
HIGH RESOLUTION MAGNETIC TWEEZERS TO PROBE SINGLE MOLECULE DYNAMICS. **Bob M. Lansdorp**, Omar A. Saleh

2470-Pos **Board B614** **EDUCATION TRAVEL AWARDEE**
MULTIPLEXED MECHANOCHEMISTRY ASSAY - A TOOL FOR MULTIPLEXED SINGLE MOLECULE BOND RUPTURE FORCE STUDIES. **Bhavik Nathwani**, Darren Yang, Wesley Wong, William M. Shih

2471-Pos **Board B615**
LABEL-FREE INTRAMOLECULAR CHEMICAL MICROSCOPY OF A PROTEIN-RNA COMPLEX. **Duckhoe Kim**, Zhenghan Gao, Ozgur Sahin

2472-Pos **Board B616**
TUNING THE MUSIC: ACOUSTIC FORCE SPECTROSCOPY (AFS) 2.0. **Douwe Kamsma**, Ramon Creyghton, Gerrit Sitters, Erwin J.G. Peterman, Gijs J.L. Wuite

Micro- and Nanotechnology I (Boards B617 - B646)

2473-Pos **Board B617** **CID TRAVEL AWARDEE**
CHARACTERIZATION OF NUCLEOSOMES USING DNA ORIGAMI. **Jenny V. Le**, Yi Luo, Christopher R. Lucas, Michael G. Poirier, Carlos E. Castro

2474-Pos **Board B618**
THERAPEUTIC ENHANCEMENT WITH NUCLEAR TARGETED GOLD NANOPARTICLES. **Celina J. Yang**, Devika B. Chithrani

2475-Pos **Board B619**
MICROCARRIER-GUIDED NANOPORE DIELECTROPHORESIS FOR SELECTIVE NUCLEIC ACID DETECTION. **Kai Tian**, Karl Decker, Aleksei Aksimentiev, Liqun Gu

2476-Pos **Board B620**
DIPOLE EFFECTS ON ION TRANSPORT DEMONSTRATED IN APROTIC SOLVENTS. **Timothy S. Plett**, Wenqing Shi, Yuhan Zeng, William Mann, Ivan Vlassiouk, Lane Baker, Zuzanna S. Siwy

2477-Pos **Board B621**
A NOVEL MULTI-LAYER MICROFLUIDIC PIPETTE ASPIRATION DEVICE FOR STUDYING MECHANOSENSITIVE VESICLES. Lap Man Lee, Danielle Chase, **Allen Liu**

2478-Pos **Board B622**
AN ION-SPECIFIC EFFECT ON POLYMER-PROTEIN INTERACTION ENHANCES RESOLUTION OF NANOPORE-BASED DETECTION. Aleksandra Dylewska-Chaumeil, Gerhard Baaken, **Jan C. Behrends**

2479-Pos **Board B623**
IONIC AND MOLECULAR TRANSPORT INSIDE CARBON NANOTUBES: TOWARDS THE DETECTION OF INDIVIDUAL BIOMOLECULES. Khadija Yazda, Said Tahir, Thierry Michel, Jean-Baptiste Thibaud, **Francois Henn**, Vincent Jourdain

2480-Pos **Board B624**
FABRICATION OF LOW NOISE BOROSILICATE GLASS NANOPORES FOR SINGLE MOLECULE SENSING. Jayesh Bafna, **Gautam Soni**

2481-Pos **Board B625**
IN VITRO STUDIES OF MULTIFUNCTIONAL PERFLUOROCARBON NANOEMULSIONS FOR CANCER THERAPY AND IMAGING. **Donald A. Fernandes**, Dennis D. Fernandes, Claudiu C. Gradinaru, Michael C. Kolios

2482-Pos **Board B626** **INTERNATIONAL TRAVEL AWARDEE**
MAGNETIC FOCUSING AND HYDRODYNAMIC DEFLECTION OF MICROPARTICLES IN A MICRODEVICE. **Vikash Kumar**, Pouya Rezai

2483-Pos **Board B627**
CONTROLLING GLIDING TRAJECTORIES OF MICROTUBULES BY ALTERING MICROTUBULE FLEXURAL RIGIDITY. **Naoto Isozaki**, Scott Erickson, Shintaku Hirofumi, Hidetoshi Kotera, Taviare L. Hawkins, Jennifer L. Ross, Ryuji Yokokawa

2484-Pos **Board B628**
A MICROFLUIDIC DEVICE FOR SINGLE CELL IMAGING AND INTRACELLULAR COMPONENTS COUNTING. **David C. Duran**, Juan Manuel Pedraza

2485-Pos **Board B629**
UNDERSTANDING THE ELECTROSTATIC CONTRIBUTION TO GOLD NANOPARTICLE-PROTEIN BINDING. **Ailin Wang**, Randika Perera, Nicholas Fitzkee

2486-Pos Board B630
FILOVIRUS MIMICS DELIVER EFFECTIVELY. **Praful R. Nair**, Kyle R. Spinler, Mohammed R. Vakili, Afsaneh Lavasanifar, Dennis E. Discher

2487-Pos Board B631
WORMPHARM: A MICROFLUIDIC PLATFORM FOR PHARMACOGENETIC STUDIES ON C. ELEGANS. **Andrew Moore**, Jung Doh, Irem Celen, Michael Moore, Chandran Sabanayagam

2488-Pos Board B632
SEPARATION OF PEPTIDES AND INTERACTION WITH FORWARD OSMOSIS BIOMIMETIC MEMBRANES: A SOLUTION DIFFUSION MODEL. **Niada Bajraktari**, Henrik T. Madsen, Mathias F. Gruber, Elzbieta L. Jensen, Henrik Jensen, Claus Hélix-Nielsen

2489-Pos Board B633
TRANSLOCATION OF SHORT POLYMERS THROUGH A SIEVE. **Isam Hasan**, Nidhal Sulaiman, Julia Yeomans

2490-Pos Board B634
ANOMALOUS IONIC CONDUCTANCE IN CARBON NANOTUBE NANOCHANNELS. **Steven Buchsbaum**, Shirui Guo, Preston Hinkle, Eric Meshot, Anh Pham, Zuzanna Siwy, Francesco Fornasiero

2491-Pos Board B635
RADIAL DEPENDENCE OF DNA TRANSLOCATION VELOCITY IN A SOLID-STATE NANOPORE. **Binquan Luan**

2492-Pos Board B636
NANO-CONFINED POLYMER STRUCTURES FOR PROTEIN BINDING. **Jaroslaw Jacak**, Richard Wollhofen, Andrea Sonnleitner, Thomas A. Klar

2493-Pos Board B637
SELF-ASSISTED OPTOTHERMAL TRAPPING OF GOLD NANORODS UNDER TWO-PHOTON EXCITATION. **Hongtao Chen**, Enrico Gratton, Michelle A. Digman

2494-Pos Board B638
SEQUENCE DIRECTED FORMATION OF COVALENT PROTEIN-DNA BONDS. **Klaus N. Lovendahl**, Wendy R. Gordon

2495-Pos Board B639
STABILITY OF SOLID-STATE NANOPORE FABRICATED BY DIELECTRIC BREAKDOWN. **Cuifeng Ying**, Yanxiao Feng, Yuechuan Zhang, Wenyuan Zhou, Wangwei Hui, Deqiang Wang, Jianguo Tian

2496-Pos Board B640
ANOMALOUS TRANSIT TIME AND PULSE AMPLITUDE OF HIGHLY CHARGED PARTICLES IN RESISTIVE PULSING. **Yinghua Qiu**, Preston Hinkle, Crystal Yang, Ivan V. Vlassiouk, Zuzanna Siwy

2497-Pos Board B641
REAL-TIME STATISTICS ON ION-CHANNEL RECORDINGS USING A NOVEL ALL-IN-ONE BLM EDUCATIONAL KIT WITH EMBEDDED MINIATURIZED AMPLIFIER. Michele Rossi, **Federico Thei**, Marco Bennati, Bajram Hushi, Matteo Marra, Marco Crescentini

2498-Pos Board B642
A NEW PROCEDURE FOR MEASURING PARTICLE LENGTH USING THE RESISTIVE PULSE TECHNIQUE WITH IRREGULAR SINGLE MICROPORES. **Preston Hinkle**, Yinghua Qiu, Crystal Yang, Zuzanna Siwy, Arnout Imhof, Henriette Bakker

2499-Pos Board B643
TUNING THE PHYSICAL PROPERTIES OF LIPOSOMES TO UNDERSTAND HYDROPHOBIC DRUG DELIVERY MECHANISMS. **Victoria M. Steffes**, Ramsey N. Majzoub, Bretton J. Fletcher, Kai K. Ewert, Cyrus R. Safinya

2500-Pos Board B644
3D NANOELECTRODES FOR ELECTROPHYSIOLOGY: HOW SIZE EFFECTS SEAL RESISTANCE. **Allister F. McGuire**, Francesca Santoro, Felix Alfonso, Yi Cui, Bianxiao Cui

2501-Pos Board B645
QUANTIFYING AMINO ACIDS SPECIFICITY IN THE PROTEIN RADIATION DAMAGE. Senamees S. Khrais, Halima A. AlNaqpi, Selwa M. Boularaoui, Syed M. Tariq, Deborah L. Gater, **Abdel F. Isakovic**

2502-Pos Board B646
DETERMINATION OF ELECTROPHORETIC FORCES IN A GEL MATRIX IN DIFFERENT IONIC STRENGTH CONDITIONS. **Rachel Flaugh**, Joshua Lallman, Kristy L. Kounovsky-Shafer

Biosensors II (Boards B647 - B656)

2503-Pos Board B647
USE OF WATER-SOLUBLE OXYGEN SENSORS TO STUDY THE OXYGEN CONSUMPTION DURING PHOTOSENSITIZATION WITH HYPERICIN IN VITRO AND IN VIVO. **Veronika Huntosova**, Dominik Belej, Emmanuel Gerelli, Pavol Miskovsky, Georges Wagnieres

2504-Pos Board B648
DETECTION OF SHUNT OCCLUSIONS WITHIN CLINICAL RANGE. **David J. Apigo**, Philip L. Bartholomew, Alokik Kanwal, Reginald C. Farrow, Gordon A. Thomas

2505-Pos Board B649
NANOPARTICLE SHAPE AND SIZE CHARACTERIZATION WITH SOLID STATE NANOPORES. **Santoshi Nandivada**, Mourad Benamara, Jiali Li

2506-Pos Board B650
REAL TIME, IN VIVO PHOTOACOUSTIC POTASSIUM IMAGING AND MONITORING. **Jeffrey Folz**, Chang Lee, Wuliang Zhang, Raoul Kopelman

2507-Pos Board B651
STEPWISE TRANSPORT OF STRETCHED SSDNA THROUGH GRAPHENE NANOPORES. **Hu Qiu**, Aditya Sarathy, Jean-Pierre Leburton, Klaus Schulten

2508-Pos Board B652
APOLLO-NADP$^+$ IN 3D: FLUORESCENCE ANISOTROPY IMAGING OF A HOMOFRET-BASED BIOSENSOR FOR NADP+ IN LIVING TISSUE. **Cindy V. Bui**, William D. Cameron, Jonathan V. Rocheleau

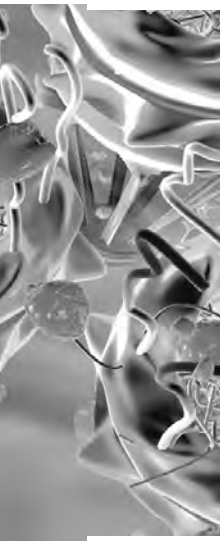
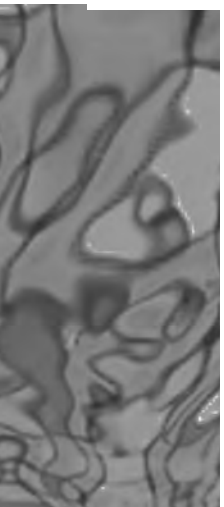
2509-Pos Board B653
DEVELOPING SENSORS OF CHEMICAL WARFARE AGENT SIMULANTS WITH FLUORESCENT DYE MOLECULES. **Suhyun Yoon**, David Keller

2510-Pos Board B654
TARGETING THE SERCA-PLB COMPLEX FOR TREATMENT OF HEART FAILURE. **Daniel Stroik**, Tory Schaaf, Simon Gruber, Prachi Bawaskar, Gregory D. Gillispie, Roger Hajjar, David D. Thomas

2511-Pos Board B655
DEVELOPMENT AND CHARACTERIZATION OF A NOVEL BISTABLE DNA SENSOR FOR ANTI-HIV DRUG DISCOVERY. **Nan Thuzar Myint**, Raghuvaran M. Iyer, Deborah J. Kerwood, Phillip N. Borer

2512-Pos Board B656
DETECTING THE SEQUENCE OF AMINO ACID QUADROMERS IN PROTEIN MOLECULES USING A SUB-NANOMETER-DIAMETER PORE. **Zhuxin Dong**, Eamonn Kennedy, Clare Tennant, Gregory L. Timp



BPS Membership Can Help You Advance Your Career

Take advantage of membership benefits that allow you to:

- Keep up with the latest research – with access to *Biophysical Journal* online – the premier journal of quantitative biology
- Get published for less - publish in the *Biophysical Journal* and pay reduced rates for pages and print color and receive free online color
- Save money on meetings – get significant member discounts to the BPS Annual Meeting – the largest meeting of biophysicists in the world
- Increase your career development skills – through webinars on timely and relevant career development topics
- Expand your network – connect with your peers at Society meetings including BPS Annual Meeting, Thematic Meetings, and local networking events
- Get financial assistance – apply for travel awards and bridging funds to attend the BPS Annual Meeting, or apply for funds to help support your local meetings and events
- Stay connected and informed – gain easy access to other members through the members-only directory and monthly newsletter
- Advance your career – through many career development resources, including the BPS Job Board, external career resources, and career expert columnist "Molly Cule"
- Make your voice count – join thousands of biophysicists across the globe speaking in one strong voice advocating for funding basic science in general and for biophysics specifically

Not a Member Yet?
Join the Biophysical Society Today!

Visit biophysics.org/**join**

Biophysical Society

Wednesday, March 2, 2016

Daily Program Summary

All rooms are located in the *Los Angeles Convention Center* unless noted otherwise.

8:00 AM–11:00 AM	**New Council Meeting**	**Room 510**
8:15 AM–10:15 AM	**Symposium: Voltage Sensing and Gating** **Chair:** *Peter Larsson, University of Miami* CONFORMATIONAL CHANGES DURING VOLTAGE SENSING. *Francisco Bezanilla* VOLTAGE-SENSING DOMAINS AS ION CHANNELS. *Francesco Tombola* MOLECULAR LOCATIONS OF GATES IN POTASSIUM CHANNELS. *Crina Nimigean* MECHANISMS OF KCNE BETA SUBUNIT MODULATION OF VOLTAGE SENSING AND GATING IN KCNQ1 CHANNELS. *Peter Larsson*	**Petree Hall C**
8:15 AM–10:15 AM	**Symposium: Chemomechanical Coupling in Immune Response** **Chair:** *Jay Groves, University of California, Berkeley* SIGNALING REACTIONS ON MEMBRANE SURFACES: THE ROLES OF SPACE, FORCE, AND TIME. *Jay Groves* CHEMOMECHANICAL INTERACTIONS ENHANCE IGE-FCεRI SIGNALING IN MAST CELLS. *Barbara Baird* PROTEIN NANOCLUSTERING AS FUNCIONAL UNIT OF IMMUNE CELLS. *Maria Garcia-Parajo* ANATOMIC COMPARTMENTALIZATION REGULATES TCR-Pep-MHC INTERACTION AND FATE. *Cheng Zhu*	**Petree Hall D**
8:15 AM–10:15 AM	**Platform: Cell Mechanics, Mechanosensing, and Motility II**	**Room 502A**
8:15 AM–10:15 AM	**Platform: Protein Dynamics and Allostery II**	**Room 502B**
8:15 AM–10:15 AM	**Platform: Protein-Nucleic Acid Interaction**	**Room 515A**
8:15 AM–10:15 AM	**Platform: Force Spectroscopy and Scanning Probe Microscopy**	**Room 515B**
8:15 AM–10:15 AM	**Platform: Biosensors**	**Room 501ABC**
8:15 AM–10:15 AM	**Platform: Membrane Fusion**	**Room 511ABC**
10:30 AM–12:30 PM	**Poster Presentations and Late Posters**	**West Hall**
1:00 PM–3:00 PM	**Symposium: Multiscale Correlative Imaging Techniques** **Chair:** *Jacob Hoogenboom, Delft University of Technology, Netherlands* CORRELATIVE IMAGING OF INTRACELLULAR TRANSPORT PROCESSES AT HIGH RESOLUTION. *Melike LakadamyaliIn VIVO IMAGING OF CELLULAR DYNAMICS FROM THE* NANOSCALE TO THE MACROSCALE. *Eric Betzig* LOCALIZING MOLECULES IN CELLULAR CT SCANS. *Carolyn Larabell* MATCHING SCALES AND CAPABILITIES WITH INTEGRATED FLUORESCENCE AND ELECTRON MICROSCOPY. *Jacob P. Hoogenboom*	**Petree Hall C**
1:00 PM–3:00 PM	**Symposium: Crowding and Order in the Genome** **Chair:** *John Marko, Northwestern University* PREDICTABILITY AND CONTROL OF GENE BURSTING IN LIVE MAMMALIAN CELLS. *Ibrahim Cissé* SINGLE-MOLECULE IMAGING OF RNA IN LIVE CELLS. *Maria Carmo-Fonseca* SEEING IS BELIEVING VS SEEING IS DECEIVING IN THE CELL NUCLEUS. *David Grunwald* MICROMECHANICAL STUDY OF MAMMALIAN METAPHASE CHROMOSOMES AND NUCLEI. *John F. Marko*	**Petree Hall D**
1:00 PM–3:00 PM	**Platform: Molecular Dynamics II**	**Room 502A**
1:00 PM–3:00 PM	**Platform: Cardiac Muscle Regulation**	**Room 502B**
1:00 PM–3:00 PM	**Platform: Ion Channels, Pharmacology, and Disease**	**Room 515A**
1:00 PM–3:00 PM	**Platform: Protein Plasticity & Binding**	**Room 515B**
1:00 PM–3:00 PM	**Platform: Micro- and Nanotechnology**	**Room 501ABC**
1:00 PM–3:00 PM	**Platform: Membrane Receptors and Signal Transduction**	**Room 511ABC**

Wednesday, March 2

New Council Meeting

8:00 AM - 11:00 AM, ROOM 510

Symposium
Voltage Sensing and Gating

8:15 AM - 10:15 AM, PETREE HALL C

Chair
Peter Larsson, University of Miami

2513-SYMP 8:15 AM
CONFORMATIONAL CHANGES DURING VOLTAGE SENSING. **Francisco Bezanilla**, Jerome Lacroix, Michael Priest

2514-SYMP 8:45 AM
VOLTAGE-SENSING DOMAINS AS ION CHANNELS. **Francesco Tombola**

2515-SYMP 9:15 AM
MOLECULAR LOCATIONS OF GATES IN POTASSIUM CHANNELS. **Crina Nimigean**

2516-SYMP 9:45 AM
MECHANISMS OF KCNE BETA SUBUNIT MODULATION OF VOLTAGE SENSING AND GATING IN KCNQ1 CHANNELS. **Peter Larsson**

Symposium
Chemomechanical Coupling in Immune Response

8:15 AM - 10:15 AM, PETREE HALL D

Chair
Jay Groves, University of California, Berkeley

2517-SYMP 8:15 AM
SIGNALING REACTIONS ON MEMBRANE SURFACES: THE ROLES OF SPACE, FORCE, AND TIME. **Jay Groves**

2518-SYMP 8:45 AM
CHEMOMECHANICAL INTERACTIONS ENHANCE IGE-FCεRI SIGNALING IN MAST CELLS. **Barbara Baird**

2519-SYMP 9:15 AM
PROTEIN NANOCLUSTERING AS FUNCIONAL UNIT OF IMMUNE CELLS. **Maria Garcia-Parajo**

2520-SYMP 9:45 AM
ANATOMIC COMPARTMENTALIZATION REGULATES TCR-PEP-MHC INTERACTION AND FATE. **Cheng Zhu**, Prithiviraj Jothikumar, Young-Jin Seo, Arash Grakoui

Platform
Cell Mechanics, Mechanosensing, and Motility II

8:15 AM - 10:15 AM, ROOM 502A

Co-Chairs
Joshua Francois, University of California, San Diego
Daniel Hammer, University of Pennsylvania

2521-PLAT 8:15 AM
THE FORCE DYNAMICS OF INTERACTING CELLS. **Daniel A. Hammer**, Micah Dembo, Marc Herant, Olga Shebanova

2522-PLAT 8:30 AM **EDUCATION TRAVEL AWARDEE**
MECHANOBIOLOGY IN CELL-CELL FUSION: ROLES OF MYOSIN II AND SPECTRIN IN MECHANOSENSING AND FORCE GENERATION DURING CELL-CELL FUSION. **Ji Hoon Kim**, Elizabeth Chen

2523-PLAT 8:45 AM
MYOSIN II FACILITATES LIGAND DISCRIMINATION DURING T CELL ACTIVATION. **Jinsung Hong**, Sricharan Murugesan, John A. Hammer

2524-PLAT 9:00 AM
MECHANISMS OF B CELL ANTIGEN EXTRACTION REVEALED BY DNA-BASED MOLECULAR SENSORS. **Katelyn M. Spillane**, Pavel Tolar

2525-PLAT 9:15 AM
CELL MIGRATION IN MECHANICALLY RESISTIVE ENVIRONMENT. **Nishit Srivastava**, Robert Kay, Alexandre Kabla

2526-PLAT 9:30 AM
ACTIN RETROGRADE FLOWS STABILIZE CELL POLARITY BY MECHANO-CHEMICAL FEEDBACK LOOPS IN MIGRATING CELLS. **Stefan Wieser**, Verena Ruprecht, Monika Ritsch-Marte, Carl-Philipp Heisenberg, Matthieu Piel, Michael Sixt

2527-PLAT 9:45 AM
MECHANICS OF ADHESION DEPENDENT AND INDEPENDENT NEUTROPHIL MIGRATION IN THREE-DIMENSIONAL EXTRA-CELLULAR MATRICES. **Joshua Francois**, Ruedi Meili, Juan Carlos del Alamo, Richard A. Firtel, Juan C. Lasheras

2528-PLAT 10:00 AM
CORTICAL CONTRACTION WAVES AT CYTOKINESIS OF LARGE CELLS. **Johanna Bischof**, Christoph Brand, Ulrich Schwarz, Peter Lenart

Platform
Protein Dynamics and Allostery II

8:15 AM - 10:15 AM, ROOM 502B

Co-Chairs
Ernesto Fuentes, University of Iowa
Henrike Mueller-Werkmeister, University of Toronto, Canada

2529-PLAT 8:15 AM
ALLOSTERIC REGULATION OF UHRF1 FOR DNA METHYLATION MAINTENANCE. Zhi-Min Zhang, Scott B. Rothbart, David F. Allison, Joseph S. Harrison, Yinsheng Wang, Brian D. Strahl, Gang G. Wang, **Jikui Song**

2530-PLAT 8:30 AM
OPTICAL ABSORBANCE SENSITIVITY TO RUGGED ENERGY LANDSCAPE. **Katherine A. Niessen**, Edward Snell, Andrea G. Markelz

2531-PLAT 8:45 AM
ROLE OR AROMATIC RESIDUES IN DYNAMIC NETWORKS IN DREAM/KCHIP3. **Walter G. Gonzalez**, Maurizio Diaz, David H. Perez, Jaroslava Miksovska

2532-PLAT 9:00 AM
CAPTURING FUNCTIONALLY RELEVANT PROTEIN MOTIONS AT THE ATOMIC LEVEL: FEMTOSECOND TIME RESOLVED SERIAL CRYSTALLOGRAPHY OF LIGAND DISSOCIATION OF CARBOXY-MYOGLOBIN. **Henrike M. Müller-Werkmeister**, Anling Kuo, Helen M. Ginn, Saeed Oghbaey, Antoine Sarracini, Olivier Pare-Labrosse, Darren Sherrell, Alexander Marx, Sascha W. Epp, Arwen R. Pearson, Robin L. Owen, David I. Stuart, Oliver P. Ernst, R. J. Dwayne Miller

2533-PLAT 9:15 AM
MECHANISM OF CYCLIC AMP PARTIAL AGONISM IN PROTEIN KINASE G (PKG). **Bryan VanSchouwen**, Rajeevan Selvaratnam, Rajanish Giri, Robin Lorenz, Friedrich W. Herberg, Choel Kim, Giuseppe Melacini

2534-Plat 9:30 AM
MAPPING MOTIONS AND STRUCTURE TO A STATE NECESSARY FOR OLIGOMERIZATION OF A LARGE GTPASE: A JOINT SAXS, NSE, EPR AND FRET STUDY. **Thomas-Otavio Peulen**, Carola S. Hengstenberg, Ralf Biehl, Mykola Dimura, Alessandro Valeri, Semra Ince, Tobias Vöpel, Bela Farago, Holger Gohlke, Christian Herrmann, Johann Klare, Andreas Stadler, Claus A.M. Seidel

2535-Plat 9:45 AM
TONB BINDING PRODUCES ALLOSTERIC CHANGES IN THE OUTER LOOPS AND SUBSTRATE BINDING SITE OF THE TBDT BTUB. **Arthur K. Sikora**, David Cafiso

2536-Plat 10:00 AM
CONFORMATIONAL DYNAMICS AND STRUCTURE UNDERLIE THE NOVEL LIGAND BINDING SPECIFICITY OF A TIAM1 PDZ DOMAIN MUTANT. **Ernesto J. Fuentes**, Xu Liu, David C. Speckhard, Tyson R. Shepherd, Sarah R. Hengel, Liping Liping, C. Andrew Fowler, Lokesh Gakhar

Platform
Protein-Nucleic Acid Interaction

8:15 AM - 10:15 AM, Room 515A

Co-Chairs
Timothy Craggs, University of Oxford, United Kingdom
Steve Harvey, University of Pennsylvania

2537-Plat 8:15 AM
HOW STRUCTURE-SPECIFIC DNA-BINDING PROTEINS RECOGNISE THEIR SUBSTRATES. **Timothy D. Craggs**, Marko Sustarsic, Majid Mosayebi, Hendrik Kaju, Johannes Hohlbein, Phillip C. Biggin, Jonathan P.K. Doye, Achilles N. Kapanidis

2538-Plat 8:30 AM
FLIPPING BY DNA BOUND PROTEINS OCCURS THROUGH RAPID REBINDING. **Mahipal Ganji**, Margreet Docter, Stuart F.J. Le Grice, Elio Abbondanzieri

2539-Plat 8:45 AM
STEPWISE NUCLEOSOME TRANSLOCATION BY RSC REMODELING COMPLEXES. **Bryan T. Harada**, William L. Hwang, Sebastian Deindl, Blaine Bartholomew, Xiaowei Zhuang

2540-Plat 9:00 AM
PROBING HELICASE DYNAMICS ON NUCLEIC ACIDS THROUGH FLUORESCENCE-FORCE MEASUREMENTS. **Chang-Ting Lin**, Meigang Gu, Charles M. Rice, Virginia A. Zakian, Taekjip Ha Ha

2541-Plat 9:15 AM
THE SCRUNCHWORM HYPOTHESIS: TRANSITIONS BETWEEN A-DNA AND B-DNA PROVIDE THE DRIVING FORCE FOR GENOME PACKAGING IN DOUBLE-STRANDED DNA BACTERIOPHAGES. **Stephen C. Harvey**, James T. Waters, James C. Gumbart, Harold D. Kim

2542-Plat 9:30 AM
TFAM REGULATES MITOCHONDRIAL TRANSCRIPTION THROUGH SEQUENCE-SPECIFIC DNA LOOPING. **Divakaran Murugesapillai**, Maria F. Lodeiro, Louis J. Maher III, Craig E. Cameron, Mark C. Williams

2543-Plat 9:45 AM
VISUALIZING THE ASSEMBLY OF DNA CONDENSATION CLUSTERS BY SMC USING SINGLE-MOLECULE MICROSCOPY. **Hyeongjun Kim**, Joseph J. Loparo

2544-Plat 10:00 AM
SINGLE MOLECULE IMAGING OF P53'S DYNAMIC INTERACTION WITH CHROMATIN. Vincent Wong, Zhe Liu, Sam Peng, Charles Kenworthy, Wei-Li Liu, **Robert A Coleman**

Platform
Force Spectroscopy and Scanning Probe Microscopy

8:15 AM - 10:15 AM, Room 515B

Co-Chairs
Pieter De Beule, International Iberian Nanotechnology Laboratory, Portugal
A. Catalina Velez-Ortega, University of Kentucky

2545-Plat 8:15 AM
ACOUSTIC FORCE SPECTROSCOPY: AN INSTRUMENT TO PERFORM HIGHLY PARALLEL SINGLE MOLECULE MEASUREMENTS. **Gerrit Sitters**, Felix Oswald, Douwe Kamsma, Jerom Langeveld, Willem Peutz, Erwin Peterman, Gijs Wuite, Olivier Heyning

2546-Plat 8:30 AM
A NOVEL METHOD FOR MULTIPLEXED NANOMETRIC BEAD TRACKING. **Thomas Brouwer**, John van Noort

2547-Plat 8:45 AM
SIMULTANEOUS ADVANCED MICROSCOPIES FOR LIVE CELL SIGNALING DYNAMICS INVESTIGATIONS. Adelaide Miranda, Marco Martins, **Pieter A. A. De Beule**

2548-Plat 9:00 AM
VIDEO-BASED FORCE DETECTION IN OPTICAL TWEEZERS TO MEASURE DNA TRANSLOCATION THROUGH SI-NX AND LIPID-COATED NANOPORES. **Andy Sischka**, Sebastian Knust, Lukas Galla, Andreas J. Meyer, Andre Spiering, Michael Mayer, Adam R. Hall, Peter Reimann, Karsten Gall, Dario Anselmetti

2549-Plat 9:15 AM
ADAPTIVE HOPPING PROBE ION CONDUCTANCE MICROSCOPY OF LIVE CELLS AT ~5-10 NM RESOLUTION. **A. Catalina Velez-Ortega**, Oleg Belov, Pavel Novak, Samir A. Rawashdeh, Yuri E. Korchev, Gregory I. Frolenkov

2550-Plat 9:30 AM
DIRECT OBSERVATION OF TRANSITION PATHS DURING THE FOLDING OF PROTEINS AND NUCLEIC ACIDS. Krishna Neupane, Daniel AN Foster, Derek R. Dee, Hao Yu, Feng Wang, **Michael T. Woodside**

2551-Plat 9:45 AM
EQUILIBRIUM FOLDING OF AN INDIVIDUAL BACTERIORHODOPSIN INTO AND OUT OF ITS NATIVE LIPID BILAYER RESOLVES ENERGY LANDSCAPES AND HIDDEN DYNAMICS. **Hao Yu**, Matthew G. W. Siewny, Devin T. Edwards, Aric W. Sanders, Thomas T. Perkins

2552-Plat 10:00 AM
BINDING MECHANISM OF PURINE NUCLEOTIDES TO MITOCHONDRIAL UNCOUPLING PROTEINS EXPLORED BY RECOGNITION FORCE SPECTROSCOPY. **Melanie Koehler**, Gabriel Macher, Anne Rupprecht, Rong Zhu, Hermann J. Gruber, Elena E. Pohl, Peter Hinterdorfer

Platform
Biosensors

8:15 AM - 10:15 AM, Room 501ABC

Co-Chairs
Loredana Casalis, Elettra Sincrotrone Trieste, Italy
Sergey Sekatskii, École Polytechnique Fédérale de Lausanne, Switzerland

2553-Plat 8:15 AM **INTERNATIONAL TRAVEL AWARDEE**
CONTROLLING THE NANOSCOPIC CONFINEMENT OF ENZYMES INSIDE CLYA NANOPORES FOR SINGLE-PROTEIN STUDIES. **Annemie Biesemans**, Misha Soskine, Giovanni Maglia

2554-Plat 8:30 am
LABEL-FREE OPTICAL BIOSENSOR BASED ON PHOTONIC CRYSTAL SURFACE WAVES REVEALS BINDING KINETICS OF ANTIBODIES TO LIVING BACTERIA IN REAL TIME. Ekaterina Rostova, Giovanni Dietler, **Sergey K. Sekatskii**

2555-Plat 8:45 am
SINGLE WAVELENGTH EXCITATION DUAL COLOR FLIM FOR MULTIPLEXING GENETICALLY ENCODED FRET BIOSENSORS. **Claire Demeautis**, François Sipieter, Julien Roul, Catherine Chapuis, Sergi Padilla-Parra, Franck Riquet, Marc Tramier

2556-Plat 9:00 am
HIGH-RESOLUTION ANALYSIS OF MOLECULAR OXYGEN IN MAMMALIAN CELL MODELS BY PHOSPHORESCENCE LIFETIME IMAGING MICROSCOPY. **Ruslan I. Dmitriev**, James Jenkins, Irina A. Okkelman, Dmitri B. Papkovsky

2557-Plat 9:15 am
A NANO-IMMUNOASSAY BASED ON FLUORESCENCE AND ATOMIC FORCE SPECTROSCOPY FOR THE DETECTION OF CIRCULATING CANCER BIOMARKERS: THE CASE OF HER2 POSITIVE BREAST CANCER. **Loredana Casalis**, Elena Ambrosetti, Pietro Parisse, Alessandro Bosco, Ario De Marco, Elda Tagliabue

2558-Plat 9:30 am
DETECTION OF A GEOGRAPHICALLY DIVERSE MALARIAL BIOMARKER VIA MULTI-EPITOPE TARGETED SCREENING. **JingXin Liang**, Arundhati Nag, Samir Das, David Bunck, Amy McCarthy, Anvita Mishra, John E. Heath, Belen Villalonga, James R. Heath

2559-Plat 9:45 am
NANOCLUSTER BEACONS FOR DETECTION OF A SINGLE N6-METHYLADENINE EPIGENETIC MODIFICATION. Yu-An Chen, Judy M. Obliosca, Yen-Liang Liu, Cong Liu, Mary L. Gwozdz, **Tim Yeh**

2560-Plat 10:00 am
SENSING MEMBRANE POTENTIAL BY INORGANIC SEMICONDUCTOR NANORODS. Kyoungwon Park+, **Yung Kuo**, Volodymyr Shvadchak, Antonino Ingargiola, Xinghong Dai, Lawrence Hsiung, Wookyeom Kim, Z. Hong Zhou, Peng Zou, Alex J. Levine, Jack Li, Shimon Weiss

Platform
Membrane Fusion

8:15 am - 10:15 am, Room 511ABC

Co-Chairs
Claire François-Martin, Ecole Normale Supérieure, France
Chris Stroupe, University of Virginia

2561-Plat 8:15 am
EXPERIMENTAL MEASUREMENT OF THE ACTIVATION ENERGY OF PHOSPHOLIPID MEMBRANE FUSION. **Claire François-Martin**, James E Rothman, Frédéric Pincet

2562-Plat 8:30 am
PLANAR PORE-SPANNING MEMBRANES: A PLATFORM TO STUDY SNARE-MEDIATED FUSION PROCESSES. Raphael Hubrich, Jan Kuhlmann, Lando LG Schwenen, Dragomir Milovanovic, Reinhard Jahn, Burkhard Geil, **Claudia Steinem**

2563-Plat 8:45 am
DIRECT QUANTITATIVE DETECTION OF DOC2B-INDUCED HEMIFUSION IN OPTICALLY TRAPPED MEMBRANES. **Ineke Brouwer**, Asiya Giniatullina, Niels Laurens, Jan R.T. van Weering, Dirk Bald, Alexander J.A. Groffen, Gijs J.L. Wuite

2564-Plat 9:00 am
CELL FUSION STAGE IN OSTEOCLAST FORMATION. **Santosh K. Verma**, Evgenia Leikina, Kamran Melikov, Leonid V. Chernomordik

2565-Plat 9:15 am
THE ROLE OF ACIDIC PH IN EBOLA MEDIATED CELL-CELL FUSION. **Ruben Markosyan**, Grigory Melikian, Chungui Miao, Shan-Lu Liu, Fredric S. Cohen

2566-Plat 9:30 am **International Travel Awardee**
THE MECHANISM OF HIV ENTRY INHIBITION BY 25-HYDROXYCHOLESTEROL. **Bárbara Gomes**, Axel Hollmann, Nuno C. Santos

2567-Plat 9:45 am
RECEPTOR-MEDIATED HDL-LIPID UPTAKE IS REGULATED BY ELASTIC PROPERTIES OF THE PLASMA MEMBRANE. Birgit Plochberger, Clemens Roehrl, Johannes Preiner, Julian Weghuber, Erdinc Sezgin, Peter Hinterdorfer, Herbert Stangl, **Gerhard J. Schuetz**

2568-Plat 10:00 am
THE HOPS/CLASS C VPS COMPLEX TETHERS MEMBRANES BY BINDING TO A RAB GTPASE IN ONE MEMBRANE AND DIRECTLY TO A SECOND MEMBRANE VIA A CURVATURE-SENSING MOTIF. **Christopher Stroupe**

Poster Presentations and Late Posters

10:30 am - 12:30 pm, West Hall

Symposium
Multiscale Correlative Imaging Techniques

1:00 pm - 3:00 pm, Petree Hall C

Chair
Jacob Hoogenboom, Delft University of Technology, Netherlands

2569-Symp 1:00 pm
CORRELATIVE IMAGING OF INTRACELLULAR TRANSPORT PROCESSES AT HIGH RESOLUTION. **Melike Lakadamyali**

2570-Symp 1:30 pm
IN VIVO IMAGING OF CELLULAR DYNAMICS FROM THE NANOSCALE TO THE MACROSCALE. **Eric Betzig**

2571-Symp 2:00 pm
LOCALIZING MOLECULES IN CELLULAR CT SCANS. **Carolyn Larabell**, Gerry McDermott, Mark Le Gros

2572-Symp 2:30 pm
MATCHING SCALES AND CAPABILITIES WITH INTEGRATED FLUORESCENCE AND ELECTRON MICROSCOPY. **Jacob P. Hoogenboom**

Symposium
Crowding and Order in the Genome

1:00 pm - 3:00 pm, Petree Hall D

Chair
John Marko, Northwestern University

2573-Symp 1:00 pm
PREDICTABILITY AND CONTROL OF GENE BURSTING IN LIVE MAMMALIAN CELLS. **Ibrahim Cissé**

2574-Symp 1:30 pm
SINGLE-MOLECULE IMAGING OF RNA IN LIVE CELLS. **Maria Carmo-Fonseca**

No Abstract 2:00 pm
SEEING IS BELIEVING VS SEEING IS DECEIVING IN THE CELL NUCLEUS. **David Grunwald**

2575-Symp 2:30 pm
MICROMECHANICAL STUDY OF MAMMALIAN METAPHASE CHROMOSOMES AND NUCLEI. **John F. Marko**

Platform
Molecular Dynamics II
1:00 PM - 3:00 PM, ROOM 502A

Co-Chairs
Tristan Bereau, Max Planck Institute for Polymer Research, Germany
Tobin Sosnick, University of Chicago

2576-PLAT 1:00 PM
RNA CONFORMATIONAL ENSEMBLES: NARROWING THE GAP BETWEEN EXPERIMENTS AND SIMULATIONS WITH METADYNAMICS. **Alejandro Gil-Ley**, Sandro Bottaro, Giovanni Bussi

2577-PLAT 1:15 PM
APPLICATION OF THE STRING AND 2D HAMILTONIAN REPLICA EXCHANGE UMBRELLA SAMPLING METHODS FOR THE STUDY OF CONFORMATIONAL CHANGES IN THE BACTERIAL ASPARTATE TRANSPORTER GLT(PH). **Hristina R. Zhekova**, Bogdan Lev, Sergei Noskov

2578-PLAT 1:30 PM **EDUCATION TRAVEL AWARDEE**
QUANTIFYING MACROMOLECULAR TRANSITION PATHS WITH PATH SIMILARITY ANALYSIS. **Sean L. Seyler**, Avishek Kumar, Taylor Colburn, Michael F. Thorpe, Oliver Beckstein

2579-PLAT 1:45 PM
INVESTIGATING KINETICS OF CONFORMATIONAL CHANGE USING MOLECULAR DYNAMICS AND MILESTONING. **Hiroshi Fujisaki**, Ayori Mitsutake

2580-PLAT 2:00 PM
IMPROVED KINETICS OF MOLECULAR SIMULATIONS USING BIASED MARKOV STATE MODELS. Joseph F. Rudzinski, Kurt Kremer, **Tristan Bereau**

2581-PLAT 2:15 PM
UPSIDE: A NEW DYNAMICS METHOD CAPABLE OF COOPERATIVE DE NOVO PROTEIN FOLDING IN CPU-HOURS. **Tobin R. Sosnick**, John M. Jumper, Karl F. Freed

2582-PLAT 2:30 PM
MODELLING CYSTEINE DISULFIDE EXCHANGE REACTIONS BY MOLECULAR DYNAMICS SIMULATIONS. **Katra Kolšek**, Camilo Aponte-Santamaría, Frauke Gräter

2583-PLAT 2:45 PM
CLASSICAL DENSITY FUNCTIONAL THEORY FOR IMPLICIT SOLVENT SIMULATIONS. **Eric A. Mills**, Steven S. Plotkin

Platform
Cardiac Muscle Regulation
1:00 PM - 3:00 PM, ROOM 502B

Co-Chairs
Nazha Hamdani, Ruhr University Bochum, Germany
Alla Kostyukova, Washington State University

2584-PLAT 1:00 PM
DOES TROPOMYOSIN SLIDE OR ROLL OVER F-ACTIN DURING REGULATORY TRANSITIONS? Michael Rynkiewicz, Veronika Schott, Marek Orzechowski, Stefan Fischer, **William Lehman**

2585-PLAT 1:15 PM
TROPOMYOSIN DYNAMICS DURING CARDIAC THIN FILAMENT ACTIVATION AS GOVERNED BY A MULTI-WELL ENERGY LANDSCAPE. **Yasser Aboelkassem**, Natalia Trayanova

2586-PLAT 1:30 PM
INVESTIGATING COOPERATIVITY USING A NEW BIOPHYSICALLY DETAILED CARDIAC CONTRACTION MODEL. **Sander Land**, Steven A. Niederer

2587-PLAT 1:45 PM
CARDIOMYOPATHY-ASSOCIATED MUTATION K15N IN TROPOMYOSIN AFFECTS ITS INTERACTION WITH LEIOMODIN AND TROPOMODULIN. Mert Colpan, Dmitri Tolkatchev, Samantha Grover, Gregory L. Helms, John R. Cort, Natalia Moroz, **Alla S. Kostyukova**

2588-PLAT 2:00 PM
INTEGRATION OF CARDIAC TROPONIN I PHOSPHORYLATIONS TO MODULATE FUNCTION. **Hussam E. Salhi**, Nicholas P. Gualtieri, Shane D. Walton, Elizabeth A. Brundage, Jonathan P. Davis, Brandon J. Biesiadecki

2589-PLAT 2:15 PM
CROSSTALK WITHIN CARDIAC TROPONIN COMPLEX WITH THE R145W MUTATION IN CARDIAC TROPONIN I. **Nikolai Smolin**, Alexey V. Dvornikov, Jodi L. Martin, Seth L. Robia, Pieter P. de Tombe

2590-PLAT 2:30 PM
CMYBP-C PHOSPHORYLATION MODULATES SARCOMERE LENGTH-DEPENDENT CHANGES IN CARDIAC MUSCLE CONTRACTILE FUNCTION. **Ranganath Mamidi**, Kenneth S. Gresham, Julian E. Stelzer

2591-PLAT 2:45 PM
IMPACT OF CGMP-PKG PATHWAY MODULATION ON TITIN PHOSPHORYLATION AND TITIN-BASED MYOCARDIAL PASSIVE STIFFNESS. **Nazha Hamdani**, Melissa Herwig, Soraya Heopler, Doris Koesling, Marcus Kreuger, Michaela Kuhn, Wolfgang A. Linke

Platform
Ion Channels, Pharmacology, and Disease
1:00 PM - 3:00 PM, ROOM 515A

Co-Chairs
Aurelia Honerkamp-Smith, University of Cambridge, United Kingdom
Harley Kurata, University of Alberta, Canada

2592-PLAT 1:00 PM
POSITIVE ALLOSTERIC MODULATION OF SK CHANNELS BY RILUZOLE. Young-Woo Nam, Sara Ali, Stephen Chiang, Tia Alexander, **Miao Zhang**

2593-PLAT 1:15 PM
DEFINING THE MOLECULAR MECHANISMS OF SUBTYPE SPECIFIC KCNQ2/3 POTASSIUM CHANNEL ACTIVATORS. **Wei-Ting (Alice) Wang**, Michael Yau, Harley Kurata

2594-PLAT 1:30 PM
VOLTAGE-DEPENDENT ACCESSIBILITY OF PHOSPHORYLATION SITES AT THE CARBOXY-TERMINAL DOMAIN OF KV1.3 CHANNELS DETERMINES KV1.3-INDUCED CELL PROLIFERATION. **Teresa Pérez-García**, Pilar Cidad, Laura Jiménez-Perez, Ines Alvarez-Miguel, Alba Santos-Hipolito, Esperanza Alonso, Miguel A. de la Fuente, José R. López-López

2595-PLAT 1:45 PM
USING UNNATURAL AMINO ACIDS TO PROBE THE MOLECULAR BASIS FOR HERG DRUG BLOCK. **Logan Macdonald**, Robin Y. Kim, Harley T. Kurata, Christopher Ahern, David Fedida

2596-PLAT 2:00 PM
MANUAL PATCH-CLAMP RECORDING FOR MEDIUM-THROUGHPUT ION CHANNEL DRUG SCREENING: ASSAY VALIDATION BY SEARCHING FOR A BLOCKER OF NUCLEAR MONOVALENT CATIONIC CHANNEL. **Viktor Yarotskyy**, Robert T. Dirksen

2597-PLAT 2:15 PM
ON THE RELATION BETWEEN HERG CHANNEL BLOCK IN CELL LINE AND ACTION POTENTIAL PROLONGATION IN HUMAN IPSC CARDIOMYOCYTES. **Priyanka Saxena**, Maria Hortigon-Vinagre, Stanislav Beyl, Igor Baburin,

Anna Costa, Adriaan P IJzerman, Philipp Kügler, Eugen Timin, Godfrey Smith, Steffen Hering

2598-Plat 2:30 pm
SOMATIC MOSAICISM OF NOVEL SCN5A MUTATION IN PURKINJE SYSTEM (PS) MAY UNDERLIE 2:1 BLOCK IN AN INFANT WITH LONG QT SYNDROME (LQTS). **Joseph K. Yu**, Patrick M. Boyle, Thomas O'Hara, James R. Priest, Euan Ashley, Natalia A. Trayanova

2599-Plat 2:45 pm
THE VOLTAGE-GATED POTASSIUM CHANNEL KV1.3 AS A TARGET FOR INHIBITING DETRIMENTAL M1 MICROGLIA FUNCTIONS. Yi-Je Chen, Hai M. Nguyen, Izumi Maezawa, Lee-Way Jin, **Heike Wulff**

Platform
Protein Plasticity & Binding

1:00 pm - 3:00 pm, Room 515B

Co-Chairs
Margaret Cheung, University of Houston
Oliver Fisette, Ruhr-University Bochum, Germany

2600-Plat 1:00 pm
A STRUCTURAL CHARACTERIZATION OF THE KV7.2-KV7.3 M CHANNEL PROXIMAL C-TERMINUS/CAM COMPLEX. **Roi Strulovich**, William Tobelaim, Bernard Attali, Joel A. Hirsch

2601-Plat 1:15 pm
LESSONS IN PROTEIN DESIGN FROM COMBINED EVOLUTION AND CONFORMATIONAL DYNAMICS. **Margaret S. Cheung**, Swarnendu Tripathi, M. N. Waxham, Yin Liu

2602-Plat 1:30 pm
IN SILICO IDENTIFICATION OF BINDING SITES RESPONSIBLE FOR SPECIES SPECIFICITY ON HUMAN CD81 AND HEPATITIS C VIRUS E2 PROTEIN. **Chun-Chun Chang**, Hao-Jen Hsu, Je-Wen Liou

2603-Plat 1:45 pm
SINGLE-MOLECULE EXPERIMENTS TO RESOLVE STRUCTURAL AND MECHANICAL PROPERTIES OF CONDENSIN. **Jorine Eeftens**, Allard Katan, Marc Kschonsak, Markus Hassler, Essam Dief, Liza de Wilde, Christian Haering, Cees Dekker

2604-Plat 2:00 pm
PROTEIN COMPLEXES FROM MD SIMULATIONS: THE ROPE-PULLING GAME OF TAPASIN AND HISTOCOMPATIBILITY MOLECULES. **Olivier Fisette**, Lars V. Schäfer

2605-Plat 2:15 pm
REMEDIAL SYNERGISTIC CONCOCTION OF β-CYCLODEXTRIN AND NATURALLY OCCURRING POLYPHENOLS TARGETING α-SYNUCLEIN AGGREGATION UNDER CELL MIMICKING CONDITIONS. **Saurabh Gautam**, Pramit K. Chowdhury

2606-Plat 2:30 pm
CONFORMATIONAL CHANGE IN THE ECTODOMAIN OF THE AMYLOID PRECURSOR PROTEIN IN RESPONSE TO PROTEOLYTIC PROCESSING: THE RANDOM COIL REGIONS MATTER. **Clare Peters-Libeu**

2607-Plat 2:45 pm
THE NON AMYLOID-β COMPONENT (NAC) OF HUMAN α-SYNUCLEIN OLIGOMERS INDUCES THE FORMATION OF NEW Aβ OLIGOMERS: INSIGHT INTO THE MOLECULAR INTERACTIONS THAT LINK PARKINSON'S DISEASE AND ALZHEIMER'S DISEASE. **Yoav Atsmon-Raz**, Yifat Miller

Platform
Micro- and Nanotechnology

1:00 pm - 3:00 pm, Room 501ABC

Co-Chairs
Nicholas Fitzkee, Mississippi State University
Meni Wanunu, Northeastern University

2608-Plat 1:00 pm
HOW DO NANOPARTICLE SIZE AND PROTEIN CHARGE AFFECT GOLD NANOPARTICLE-PROTEIN INTERACTIONS? **Nicholas C. Fitzkee**, Ailin Wang, Karen E. Woods, Randika Perera

2609-Plat 1:15 pm
BIOINTERACTIONS OF ULTRASMALL GOLD NANOPARTICLES: INFLUENCE OF NANOPARTICLE SIZE AND SURFACE CHEMISTRY. Luiza L. Knittel, Sergio A. Hassan, Maria A. Aronova, Peter Schuck, Richard D. Leapman, **Alioscka A. Sousa**

2610-Plat 1:30 pm
TOWARDS A "GREEN" ANTIMICROBIAL THERAPY: STUDY OF GRAPHENE NANOSHEETS INTERACTION WITH HUMAN PATHOGENS. **Valentina Palmieri**, Massimiliano Papi, Francesca Bugli, Mariacarmela Lauriola, Claudio Conti, Gabriele Ciasca, Giuseppe Maulucci, Maurizio Sanguinetti, Marco De Spirito

2611-Plat 1:45 pm
TRACKING SINGLE-PARTICLE ROTATION DURING MACROPHAGE UPTAKE. **Lucero Sanchez**, Yan Yu

2612-Plat 2:00 pm
PEPTIDE TRANSLOCATION THROUGH SINGLE LYSENIN CHANNELS. **Nisha Shrestha**, Sheenah Bryant, Xinzhu Pu, Paul Carnig, Juliette Tinker, Charles Hanna, Daniel Fologea

2613-Plat 2:15 pm
NANOPORE ZERO-MODE WAVEGUIDES FOR DNA SEQUENCING AND BEYOND. Joseph Larkin, Robert Y. Henley, Jonas Korlach, **Meni Wanunu**

2614-Plat 2:30 pm
CARBON NANOTUBE PORINS: BIOMIMETIC MEMBRANE PORE CHANNELS FOR NANOFLUIDIC STUDIES. **Aleksandr Noy**

2615-Plat 2:45 pm
IMPROVING DNA SEQUENCING WITH NANOPORE MSPA. **Henry Brinkerhoff**

Platform
Membrane Receptors and Signal Transduction

1:00 pm - 3:00 pm, Room 511ABC

Co-Chairs
Diane Lidke, University of New Mexico
Christian Sieben, Humboldt-University Berlin, Germany

2616-Plat 1:00 pm
THE DYNAMICS AND LOCALIZATION OF THE EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR) ON LIVE CELL PLASMA MEMBRANE STUDIED BY ITIR-FCS. **Shuangru Huang**, Nirmalya Bag, Thorsten Wohland

2617-Plat 1:15 pm
PROBING THE NON-GENETIC CELL-TO-CELL HETEROGENEITY IN EGFR-MEDIATED MAPK ACTIVATION BY SUPER-RESOLUTION MICROSCOPY. **Oana Coban**

2618-Plat 1:30 pm
INFLUENZA A VIRUSES USE MULTIVALENT SIALIC ACID CLUSTERS FOR CELL BINDING AND RECEPTOR ACTIVATION. **Christian Sieben**, Suliana Manley

2619-Plat 1:45 pm
THE BINDING LIFETIME OF SYK KINASE TO THE IMMUNE RECEPTOR FCεRI

REGULATES THE EFFICIENCY OF SIGNAL PROPAGATION. **Samantha L. Schwartz**, Cedric Cleyrat, Bridget S. Wilson, Keith A. Lidke, Diane S. Lidke

2620-Plat 2:00 PM
DOES RECEPTOR PHOSPHORYLATION AFFECT LATERAL DIMERIZATION? **Deo R. Singh**, Michael Paul, Kalina Hristova

2621-Plat 2:15 PM
OPTICAL PROBING OF METABOTROPIC GLUTAMATE RECEPTORS. **Josh Levitz**, Chris Habrian, Shashank Bharill, Zhu Fu, Reza Vafabakhsh, Ehud Isacoff

2622-Plat 2:30 PM
PRECOUPLING OF G PROTEINS WITH GPCRS VISUALIZED BY TWO-PHOTON POLARIZATION MICROSCOPY. **Alexey Bondar**, Adela Brzakova, Stepan Timr, Josef Lazar

2623-Plat 2:45 PM
MAPPING SINGLE MOLECULE RECEPTOR BINDING TO EARLY CELLULAR ACTIVATION IN LIVING PRIMARY T CELLS. **Jenny J. Lin**, Kate N. Alfieri, Shalini T. Low-Nam, Jay T. Groves

WEDNESDAY POSTER SESSIONS

10:30 AM–12:30 PM, West Hall

Below is the list of poster presentations of abstracts submitted by October 1.
The list of late abstracts scheduled for Wednesday is available in the Program addendum and the posters can be viewed on boards beginning with L. All abstracts are available through the desktop planner and mobile app.

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

Odd-Numbered Boards 10:30 AM–11:30 AM | Even-Numbered Boards 11:30 AM–12:30 PM

Board Numbers	Category
B1 – B13	Protein Structure and Conformation IV
B14 – B40	Protein Structure, Prediction, and Design
B41 – B70	Protein-Small Molecule Interactions II
B71 – B92	Enzymes Function, Cofactors, and Post-translational Modifications
B93 – B113	Intrinsically Disordered Proteins (IDP) and Aggregates: Aß, Tau, and α-Synuclein
B114 – B140	Investigating the Properties of Intrinsically Disordered Proteins (IDP)
B141 – B152	Protein-Nucleic Acid Interactions II
B153 – B175	DNA Structure and Dynamics II
B176 – B204	Membrane Dynamics
B205 – B234	Protein-Lipid Interactions III
B235 – B264	Membrane Structure II
B265 – B283	Cardiac Smooth and Skeletal Muscle Electrophysiology II
B284 – B305	Membrane Receptors and Signal Transduction III
B306 – B316	Exocytosis and Endocytosis II
B317 – B327	Intracellular Transport
B328 – B342	Excitation-Contraction Coupling II
B343 – B347	Voltage-gated K Channels andvoltage Mechanisms of Voltage Sensing and Gating III
B348 – B363	Ligand-gated Channels III
B364 – B388	Ion Channel Regulatory Mechanisms
B389 – B407	TRP Channels II
B408 – B420	Myosins
B421 – B437	Cytoskeletal Assemblies and Dynamics
BB438 – B463	Cell Mechanics, Mechanosensing, and Motility III
B464 – B490	Membrane Pumps, Transporters, and Exchangers II
B491 – B497	Computational Neuroscience
B498 – B537	Single-Molecule Spectroscopy
B538 – B567	Molecular Dynamics II
B568 – B591	Optical Microscopy and Super-Resolution Imaging III
B592 – B617	Micro-and Nantotechnology II

It is the responsibility of the poster presenters to remove print materials from the board after their presentations. Please do not leave materials or belongings under poster boards or in the poster area. Posters will not be collected or stored for pick-up at a later time. The Biophysical Society is not responsible for any articles left in the poster area.

Protein Structure and Conformation IV (Boards B1 - B13)

2624-Pos Board B1
CHANGES IN βL-CRYSTALLIN AND OVALBUMIN DUE TO EXPOSURE TO GREEN AND RED LIGHT. **Juan Horacio Espinoza Rodríguez**, Hilda Mercado Uribe

2625-Pos Board B2
THE EFFECT OF SMALL MOLECULES ON EARLY AND LATE EVENTS OF ALPHA SYNUCLEIN AGGREGATION IN SOLUTION AND INSIDE LIVING CELLS. **Amrita Kundu**, Sumanta Ghosh, Krishnananda Chattopadhyay

2626-Pos Board B3
MENADIONE SUPPRESSES AMYLOID FIBRILLOGENESIS AND CYTOTOXICITY: IMPLICATION IN THE TREATMENT OF SYSTEMIC AMYLOIDOSIS. **Parvez Alam**, Sumit K. Chaturvedi, Mohd K. Siddiqi, Rizwan H. Khan

2627-Pos Board B4
OLIGOMERIC STRUCTURES OF AN AGGREGATION-TRIGGERING FRAGMENT OF SOD1 PROTEIN. **Qingwen Zhang**, Yu Zou

2628-Pos Board B5
STRUCTURAL REARRANGEMENT FROM OLIGOMER TO FIBRIL IN A DESIGNED AMPHIPHILIC PEPTIDE. **Heng Chi**, Timothy A. Keiderling

2629-Pos Board B6
STUDY OF MOLECULAR MECHANISMS OF AMYLOID β-PEPTIDE VARIANTS AGGREGATION IN PRESENCE OF SURFACTANTS. **Michalina Skupin**, Maciej Kozak

2630-Pos Board B7
ANOMALOUS IRREVERSIBLE "CONVERSION" OF TAG-BFP FLUORESCENCE SPECTRA IN THE PRESENCE OF TAG-RFP: POSSIBLE MODEL OF PRION INTERACTIONS. **Andrey Samsonov**, Andrea Klarich, Nathan Zenser, Hongyi Zhang, Dmitry Malkov

2631-Pos Board B8
COMPARATIVE CONFORMATIONAL DYNAMICS OF CELLULAR PRION PROTEINS TOWARDS ELUCIDATING THE SPECIES BARRIER. **Robyn Hamada**, Jesse Woo, Ronald Shikiya, Patricia Soto

2632-Pos Board B9
EXPLORING THE ORB2 FIBRIL CORE. **Alexander S. Falk**, Silvia A. Cervantes, Maria A. Conrad-Soria, Thalia H. Bajakian, Ansgar B. Siemer

2633-Pos Board B10
CONFORMATIONAL SHIFTS IN HUNTINGTIN EXON 1 MONOMER ARE DEPENDENT ON TEMPERATURE AND POLYGLUTAMINE LENGTH. Natalie C. Kegulian, **Mario J. Isas**, Sean S. Chung, Nitin K. Pandey, Jose M. Bravo, Ralf Langen

2634-Pos Board B11
ASSEMBLY MECHANISM AND NANOMECHANICS OF Aβ IN ALZHEIMER'S DISEASE. Hsien-Shun Liao, **Catherine Stark**, James B. Yao, Havisha Garimella, Paul D. Smith, Curtis W. Meuse, Albert J. Jin

2635-Pos Board B12
INVESTIGATION ON PLEXIN RHO GTPASE BINDING DOMAIN (RBD) BINDING WITH SMALL RHO GTPASES USING MOLECULAR DYNAMICS SIMULATIONS. **Liqun Zhang**, Thomas Centa, Matthias Buck

2636-Pos Board B13
CONFORMATIONAL PLASTICITY OF THE MAGE-A3 PROTEIN AS A THERAPEUTIC STRATEGY IN MULTIPLE MYELOMA. **Roman Osman**, Hearn J. Cho, Anna H. Mei, Joseph A. Newman, Opher Gileadi

Protein Structure, Prediction, and Design (Boards B14 - B40)

2637-Pos Board B14
ENHANCING THE COEVOLUTIONARY SIGNAL. **Travis A. Hoppe**, Pengfei Tian, Robert Best

2638-Pos Board B15
ALTERNATIVE APPROACH TO PROTEIN STRUCTURE PREDICTION BASED ON SEQUENTIAL SIMILARITY OF PHYSICAL PROPERTIES. **Yi He**, S. Rackovsky, Yanping Yin, Harold A. Scheraga

2639-Pos Board B16
PROTEIN RETHREADING. **Salem Faham**, Sandra Poulos, Austin Yu, Sayeh Agah

2640-Pos Board B17
PREDICTION OF PROTEIN RIGID DOMAINS AND HINGE RESIDUES BASED ON GRAPH THEORY AND ELASTIC NETWORK MODEL. **Julian Lee**, Jun Sim, Jaehyun Sim, Eunsung Park

2641-Pos Board B18
CHARACTERIZING THE STATISTICAL PROPERTIES OF PROTEIN SURFACES. **Ji Hyun Bak**, Anne-Florence Bitbol, William Bialek

2642-Pos Board B19
A NOVEL IN SILICO 4D GEOMETRICAL MEASURE OF THE ACTIVE SITE CORRELATES WITH THE ENZYMATIC ACTIVITY OF HCV NS3 PROTEASE; IMPLICATIONS IN CATALYSIS AND DRUG DESIGN. **Mohammad S. Yousef**, Hamzah Hamad, Jeremy Thurston, Thomas Teague, Edward Ackad

2643-Pos Board B20
TENSILE MECHANICS OF COILED COIL PROTEIN STRUCTURES. Mojtaba Jokar, **Korosh Torabi**

2644-Pos Board B21
DESIGN AND ENGINEERING OF NANOPORES WITH EMERGENT FUNCTIONS. **Giovanni Maglia**

2645-Pos Board B22
ON THE COMBINATION OF RESTRAINT-DRIVEN DOCKING OF FLEXIBLE PEPTIDES TO ION CHANNELS - LESSONS LEARNT FROM THE COMPLEX FORMED BY THE SPIDER VENOM PCTX1 AND THE ACID SENSING ION CHANNEL1. **Evelyne Deplazes**, Josephine Davies, Alexandre M. J. J. Bonvin, Alan E. Mark

2646-Pos Board B23
DE NOVO DESIGNED PEPTIDES INHIBIT THE CYTOKINES BINDING TO THEIR RECEPTORS FROM MOLECULAR SIMULATIONS AND IN VITRO EXPERIMENTS. **Yi Chung**, Shinn-Jong Jiang, Je-Wen Liou, Hao-Jen Hsu

2647-Pos Board B24
MUTUALLY EXCLUSIVE FOLDING AND ITS ESCAPE HATCH: DESIGNING FUNCTIONAL POLYMERS BY ENGINEERED DOMAIN SWAPPING. **Joshua M. Karchin**, Jeung-Hoi Ha, Stewart N. Loh

2648-Pos Board B25
COMBINING FRAGMENTATION OF AN AMINO ACYL TRNA SYNTHETASE WITH FUSION TO INTERACTING PROTEINS TO INCREASE CONTROL OVER PROTEIN METABOLIC LABELING. **Emily E. Thomas**

2649-Pos Board B26
DE NOVO DESIGN AND IN SILICO OPTIMIZATION OF ANTIBODY-LIKE BINDERS TARGETING EBOLA VIRAL ANTIGEN. **Muyun Lihan**, Boon Chong Goh, Tong Li, Costas D. Maranas, Klaus Shulten

2650-Pos Board B27
COMPUTATIONAL APPROACH TO DESIGNING ANTIBODY FOR EBOLA VIRUS. **Amir Barati Farimani**, Narayana R. Aluru, Emad Tajkhorshid, Eric Jakobsson

2651-Pos Board B28
STRUCTURAL REFINEMENT OF BAR-PH DOMAINS REMODELING CELL MEMBRANE USING MDFF. Chun Chan, Xiaoyun Pang, Yan Zhang, Victor W. Hsu, Fei Sun, **Jun Fan**

2652-Pos Board B29
STRUCTURE AND INTERACTION OF TYPE II CAS1 FROM STERPTOCOCCUS PYOGENES. **Donghyun Ka**, Euiyoung Bae

2653-Pos Board B30
PROBING P53 ACTIVATING STAPLED-PEPTIDE INTERACTION WITH ALBUMIN USING MOLECULAR DOCKING AND SIMULATION. **Garima Tiwari**, Chandra S. Verma

2654-Pos Board B31
COMPUTATIONAL AND EXPERIMENTAL STUDY OF NEUROGLOBIN AND CARBON MONOXIDE. **Lauren Nelson**, Samuel Cho, Daniel Kim-Shapiro

2655-Pos Board B32
ELUCIDATING THE ROLE OF STRUCTURAL DYNAMICS IN LIGAND SELECTION OF HUMAN ADIPOCYTE FATTY ACID BINDING PROTEIN BY NMR SPECTROSCOPY. **Kim N. Ha**, Youlin Xia, Yenchi Tran, Gianluigi Veglia, David Bernlohr

2656-Pos Board B33
THE KNOB-SOCKET MODEL: AN AMINO ACID CODE DESCRIBING PROTEIN TERTIARY PACKING STRUCTURE. Hyun Joo, Keith J. Fraga, **Jerry Tsai**

2657-Pos Board B34
AN AMINO ACID CODE FOR THE RATIONAL DESIGN AND INVESTIGATION OF PROTEIN PACKING STRUCTURE USING THE KNOB-SOCKET MODEL. **Shivarni Patel**, Hyun Joo, Jerry Tsai

2658-Pos Board B35
AUTOMATED CROSS-LINKS-BASED CONFORMATIONAL SAMPLING OF PROTEIN ASSEMBLIES : THE GEOMETRICAL CHALLENGE OF CROSS-LINKS. **Mathias Ferber**, Michael Nilges, Guillaume Bouvier

2659-Pos Board B36
PHOTOCONTROL OF PROTEIN AFFINITY REAGENTS BY RED LIGHT USING AZOBENZENE SWITCHES. **Amirhossein Babalhavaeji**, Mingxin Dong, Di Wu, G. Andrew Woolley

2660-Pos Board B37
BLUE LIGHT CONTROL OF CREB VIA A DESIGNED DOMINANT NEGATIVE. **Jakeb M. Reis**, Ahmed M. Ali, Yan Xia, Asim Rashid, Valentina Mercaldo, Katherine Brechun, Vitali Borisenko, Sheena Josselyn, John Karanicolas, Andrew Woolley

2661-Pos Board B38
VIBRATIONAL AND ELECTRONIC STARK EFFECTS IN GREEN FLUORESCENT PROTEIN. **Joshua D. Slocum**, Lauren J. Webb

2662-Pos Board B39
A SPLIT GFP BARREL WITH AN INTERNAL CAVITY THAT BINDS THE CHROMOPHORE. **Chi-Yun Lin**, Steven G. Boxer

2663-Pos Board B40
A REVERSIBLY PHOTODISSOCIABLE SPLIT GFP. **Johan H. Both**, Steven G. Boxer

Protein-Small Molecule Interactions II (Boards B41 - B70)

2664-Pos Board B41 International Travel Awardee
MODELING PROTEIN- DNA INTERACTION ON GROUNDS OF QUANTUM ENTANGLEMENT. **Yadira Medina Guevara**, Joao D. T. Arruda-Neto, Danyer Perez Adan

2665-Pos Board B42
ACCELERATED MOLECULAR DYNAMICS SIMULATIONS OF PHOSPHATE BINDING PROTEINS. **Sigurd F. Truelsen**

2666-Pos Board B43
INVESTIGATION OF INHIBITORY POTENCY OF BHQ DERIVATIVES AS SERCA INHIBITORS TO USE AS POTENTIAL DRUGS AS WELL AS TOOLS TO STUDY THE SERCA FUNCTION: BINDING FREE ENERGY COMPUTATION USING FEP/MD SIMULATIONS. **Manori Jayasinghe**, Qi Wang, Andrew Schirmer, George Stan

2667-Pos Board B44
INVESTIGATION OF HNO-DERIVED MODIFICATIONS ON PHOSPHOLAMBAN. **Gizem Keceli**, Ananya Majumdar, Chevon N. Thorpe, James E. Mahaney, Nazareno Paolocci, John P. Toscano

2668-Pos Board B45
PHOSPHOLAMBAN INTERACTION WITH SR CA-ATPASE INVESTIGATED BY PRE-STEADY STATE CHARGE MEASUREMENTS. **Serena Smeazzetto**, Howard S. Young, Catharine A. Trieber, Maria Rosa Moncelli, Francesco Tadini-Buoninsegni

2669-Pos Board B46
MOLECULAR COMPETITORS OF THE ALPHA GLOBIN/ENOS INTERACTION. **T. C. Stevenson Keller IV**, Joshua T. Butcher, Brant E. Isakson, Linda M. Columbus

2670-Pos Board B47
CANCER CELL-DIRECTED DRUG DELIVERY AND CHEMOPOTENTIATING EFFECTS BY GSTP1-ACTIVATED NITRIC OXIDE (NO)-RELEASING PRODRUG. **Vandana Kumari**, Ryan J. Holland, Christina E. Luthers, Marzena A. Dyba, Sergey G. Tarasov, Joseph E. Saavedra, Larry K. Keefer, Xinhua Ji

2671-Pos Board B48
ISOTHERMAL ANALYSIS OF INTERACTION BETWEEN LIPOCALIN-TYPE PROSTAGLANDIN D SYNTHASE AND PROSTANOIDS. **Yusuke Nakagawa**, Shigeru Shimamoto, Yutaro Fukuda, Takahiro Maruno, Yuji Kobayashi, Tadayasu Ohkubo, Kousuke Aritake, Yoshihiro Urade, Yuji Hidaka

2672-Pos Board B49
FLUNITRAZEPAM CONVERSION BY CYP3A4 IS ALTERED BY CAFFEINE AND ETHANOL. **Thomas R. Larson**, Larry R. Masterson

2673-Pos Board B50
DECIPHERING THE BINDING MODE OF PROMISING ANTITUBERCULOSIS COMPOUNDS WITH THEIR BACTERIAL MEMBRANE TARGET IN LIVING CELLS BY NMR. Catherine Simenel, Guillaume Bouvier, Michael Nilges, **Nadia Izadi Pruneyre**

2674-Pos Board B51
A RAPID BIOCHEMICAL ASSAY TO MEASURE SMALL MOLECULES BINDING TO PREGNANE XENOBIOTIC RECEPTORS FROM HUMAN, DOG AND RAT. **Anita Niedziela-Majka**, Kristina Hinman, Johannes Voigt, Magdeleine Hung, Andrew Post, Roman Sakowicz

2675-Pos Board B52
CHARACTERIZATION OF THE MOLECULAR INTERACTIONS BETWEEN PARE/GYRB AND AN INHIBITOR AND ITS INSIGHT INTO DEVELOPING ANTIBACTERIAL AGENTS. **Congbao Kang**

2676-Pos Board B53
STRUCTURAL BASIS OF MEMBRANE TARGETING BY THE INNATE IMMUNITY ADAPTOR TIRAP. **Xiaolin Zhao**, Shuyan Xiao, Jeffrey Ellena, Geoffrey Armstrong, Daniel Capelluto

2677-Pos Board B54
NOVEL MODULATORS OF GLYCINE RECEPTORS. **Marta M. Wells**, Andrew Maxwell, Yan Xu, Pei Tang

2678-Pos Board B55
SCREENING OF A PROTEIN-PROTEIN INTERACTION FOCUSED LIBRARY TARGETING BIG3-PHB2 INTERACTION. **Takeru Chigira**, Satoru Nagatoishi, Kouhei Tsumoto

2679-Pos Board B56
PEPTIDES DERIVED FROM CXCL8 BASED ON IN SILICO ANALYSIS INHIBIT CXCL8 INTERACTIONS WITH ITS RECEPTOR CXCR1. Chun-Chun Chang, Shinn-Jong Jiang, Je-Wen Liou, Yi Chung, **Hao-Jen Hsu**

2680-Pos Board B57
PROTEIN-PEPTIDE DOCKING WITH HIGH CONFORMATIONAL FLEXIBILITY USING CABS-DOCK WEB TOOL. **Maksim Kouza**, Maciej Blaszczyk, Mateusz Kurcinski, Lukasz Wieteska, Aleksander Debinski, Andrzej Kolinski, Sebastian Kmiecik

2681-Pos Board B58
INCREASED FLEXIBILITY OF LOCAL CONFORMATION IN THE N-TERMINAL DOMAIN OF MDMX ENHANCES LIGAND-BINDING AFFINITY. **Lingyun Qin**, Rong Chen, Huili Liu, Zhengding Su

2682-Pos Board B59
THE INFLUENCES OF DRUG-RESISTANT MUTATIONS OF EGFR TO THE INHIBITOR BINDING AFFINITY AND THE DRUG TARGET SELECTIVITY PROFILES. **Jiyong Park**, Joseph J. McDonald, Russell C. Petter, Ken Houk

2683-Pos Board B60
THE IMPACT OF EXPERIMENTAL, PROTEIN STRUCTURE ON OUR ABILITY TO MODEL PROTEIN FUNCTION. **Oleg Y. Borbulevych**, Lance M. Westerhoff

2684-Pos Board B61
HEPARIN-SCLEROSTIN INTERACTIONS FROM SURFACE PLASMON RESONANCE AND MOLECULAR DYNAMICS SIMULATIONS. **J. Joel Janke**, Fuming Zhang, Robert J. Linhardt, Angel E. Garcia

2685-Pos Board B62
MOLECULAR BASES BASIS OF ANTIBIOTIC TRANSLOCATION ACROSS OUTER MEMBRANE PORINS OF ENTEROBACTER AEROGENES. **Jiajun Wang**, Muriel Masi, Harsha Bajaj, Mohamed Kreir, Mathias Winterhalter, Niels Fertig

2686-Pos Board B63
STUDY OF LIGAND BINDING SELECTIVITY OF HISTONE DEACETYLASES BY REPLICA-EXCHANGE UMBRELLA SAMPLING MOLECULAR DYNAMICS SIMULATIONS. **Shuichiro Tsukamoto**, Yoshitake Sakae, Yukihiro Itoh, Takayoshi Suzuki, Yuko Okamoto

2687-Pos Board B64 **International Travel Awardee**
PREDICTING LIGAND SELECTIVITY ACROSS BROMODOMAIN FAMILIES. **Matteo Aldeghi**, Alexander Heifetz, Michael J. Bodkin, Stefan Knapp, Philip C. Biggin

2688-Pos Board B65
A MOLECULAR DYNAMICS STUDY OF MICHAELIS COMPLEX FOR DESIGNING SELECTIVE TRANSITION STATE ANALOG INHIBITORS FOR CYSTEINE PROTEASE CALPAIN-2. **Payal Chatterjee**, Abdelaziz Alsamarah, David Kent, Li Qian, David Wych, Christine N. Pham, Alla Avetisyan, Steven Standley, Michel Baudry, Yun Luo

2689-Pos Board B66
MECHANISM OF UREA CONDUCTION THROUGH H. PYLORI UREI. **Ugur Akgun**

2690-Pos Board B67 **CPOW Travel Awardee**
DISSECTING THE CONTRIBUTION OF KINASE CONFORMATIONAL REORGANIZATION ENERGIES TO INHIBITOR SELECTIVITY. **Sonya M. Hanson**, Lucelenie Rodriguez, Julie M. Behr, Andrea Rizzi, Daniel L. Parton, Kyle A. Beauchamp, Joshua H. Fass, Jan-Hendrik Prinz, Sarah E. Boyce, Markus A. Seeliger, Nicholas M. Levinson, John D. Chodera

2691-Pos Board B68
MULTISCALE MODELING OF DENDRIMERS FOR BIOLOGICAL APPLICATIONS. **Bo Wang**, Esteban Gurzov, Pu Chun Ke, Feng Ding

2692-Pos Board B69
PHOSPHORYLATION MODIFIES COUPLING OF THE MEMBRANE DOMAINS AND NBD1 OF FULL LENGTH CFTR. **Stephanie Chin**, Mohabir Ramjeesingh, Paul Eckford, Christine E. Bear

2693-Pos Board B70
A FUSION PROTEIN OF P53 PEPTIDE AND MDMX AS AN EFFICIENT MODEL FOR SCREENING OF ANTICANCER PRODRUGS WITH FLUORESCENCE SPECTROSCOPY. Rong Chen, Lingyun Qin, **Zheng Su**

Enzymes Function, Cofactors, and Post-translational Modifications (Boards B71 - B92)

2694-Pos Board B71 **Education Travel Awardee**
IMPULSIVE ENZYMES: A NEW FORCE IN MECHANOBIOLOGY. **Krishna Kanti Dey**, Ayusman Sen

2695-Pos Board B72
DISSECTING PROTON DELOCALIZATION AND THE ELECTROSTATIC CONTRIBUTION TO CATALYSIS IN AN ENZYME'S HYDROGEN BOND NETWORK WITH UNNATURAL AMINO ACIDS. **Yufan Wu**, Steven G. Boxer

2696-Pos Board B73
VIBRATIONAL STARK EFFECTS FOR DIVERSE CARBONYL PROBES APPLIED TO THE RE-INTERPRETATION OF IR AND RAMAN DATA IN TERMS OF ELECTRIC FIELDS AT ENZYME ACTIVE SITES. **Samuel H. Schneider**, Steven G. Boxer

2697-Pos Board B74
COMPUTATIONAL STUDY ON THE CATALYTIC EFFECT OF THE MAGNESIUM IONS IN THE MECHANISM OF DNA POLYMERASES. **Ricardo A. Matute**, Arieh Warshel

2698-Pos Board B75
THE EFFECT OF MAGNESIUM ION CONCENTRATION ON THE NUCLEOTIDE SPECIFICITY AND FIDELITY OF HIV-1 REVERSE TRANSCRIPTASE. **Shanzhong Gong**, Kenneth Johnson

2699-Pos Board B76 **Education Travel Awardee**
THE ROLE OF PHOSPHORYLATION AND ACETYLATION OF TFAM IN DNA BINDING REGULATION USING SINGLE-MOLECULE MANIPULATION AND FLUORESCENCE MICROSCOPY. **Maryam Hashemi Shabestari**, Graeme A. King, Wouter H. Roos, Carolyn K. Suzuki, Gijs J. L. Wuite

2700-Pos Board B77 **Education Travel Awardee**
NEW INSIGHT INTO THE CATALYTIC AND INHIBITION MECHANISM OF THE HUMAN ACYL PROTEIN THIOESTERASE. **Martina Audagnotto**, Sylvia Ho, Patrick Sandoz, Nicole Andenmatten, Gisou van der Goot, Matteo Dal Peraro

2701-Pos Board B78
STRUCTURAL AND BIOCHEMICAL INVESTIGATIONS ON THE CATALYTIC MECHANISM OF PYRIDOXAL KINASE (PDXK) FROM SALMONELLA TYPHIMURIUM AND ITS INTERACTIONS WITH PLP-DEPENDENT ENZYMES. **G. Deka**, J. F. Benazir, J. N. Kalyani, H. S. Savithri, M.R.N. Murthy

2702-Pos Board B79
MOLECULAR BASIS FOR COHESIN ACETYLATION BY ESTABLISHMENT OF SISTER CHROMATID COHESION N-ACETYLTRANSFERASE (ESCO1). **Yadilette Rivera-Colon**, Andrew Maguire, Glen P. Liszczak, Ronen Marmorstein

2703-Pos Board B80
ORIGINS OF CATALYTIC SPECIFICITY IN BACTERIAL OLIGOSACCHARYLTRANSFERASE. **Brittany R. Morgan**, Francesca Massi

2704-Pos Board B81
MOLECULAR MECHANISM OF THE CATALYTIC REACTION OF NO REDUCTASE REVEALED BY NOVEL TIME-RESOLVED VISIBLE/IR ABSORPTION SPECTROMETERS WITH MICROFLUIDIC DEVICE. **Tetsunari Kimura**, Hanae Takeda, Shoko Ishii, Takehiko Tosha, Yoshitsugu Shiro, Minoru Kubo

2705-Pos Board B82
DROPLET-BASED MICROFLUIDICS FOR MEASURING ENZYMATIC ACTIVITIES: APPLICATION TO L-ASPARAGINASE USED IN ANTILEUKEMIC THERAPY. **Manfred W. Konrad**, Christos S. Karamitros, Joanan Lopez Morales, Jean-Christophe Baret

2706-Pos Board B83 **EDUCATION TRAVEL AWARDEE**
TRANSGLUTAMINASE FACTOR XIII CROSS-LINKS REACTIVE GLUTAMINES IN DISORDERED REGIONS OF FIBRINOGEN αC. **Kelly Njine Mouapi**, Kerrie A. Smith, Robert A.S Ariens, Helen Philippou, Muriel C. Maurer

2707-Pos Board B84
CHARACTERIZATION OF THE PYRUVATE OXIDASE CIDC FROM S. AUREUS. **Xinyan Zhang**, Kenneth Bayles, Sorin Luca

2708-Pos Board B85
PHOSPHODIESTERASE 5 SIGNALS THROUGH HIPPO/TAZ PATHWAY IN MAINTAINING STEMNESS OF PROSTATE CANCER CELLS. **Naihua Liu**, Xing Ji, Ximei Wu

2709-Pos Board B86
THE NEET PROTEINS MEDIATE IRON-SULFUR CLUSTER TRANSPORT FROM THE MITOCHONDRIA TO CYTOSOLIC PROTEINS. **Colin H. Lipper**, Mark L. Paddock, Rachel Nechushtai, Patricia A. Jennings

2710-Pos Board B87
KINETIC AND STRUCTURAL ANALYSES OF A DYNAMIN MECHANOENZYME. **Blake Hill**, Nolan Kennedy

2711-Pos Board B88
KINETIC DISSECTION OF THE PRE-EXISTING CONFORMATIONAL EQUILIBRIUM IN THE TRYPSIN FOLD. Austin D. Vogt, **Pradipta Chakraborty**, Enrico Di Cera

2712-Pos Board B89
INFLUENCE OF DIFFUSION ON THE KINETICS OF MULTISITE PHOSPHORYLATION. **Irina V. Gopich**, Attila Szabo

2713-Pos Board B90
EFFECTS OF METAL SUBSTITUTION IN HDAC8 AND IMPLICATIONS FOR KINETICS. **Nathan Gallup**, Michael Nechay

2714-Pos Board B91
SYNTHESIZING CAGED-NAD MOLECULES TO CONDUCT LAUE TIME-RESOLVED CRYSTALLOGRAPHY MEASUREMENTS ON HMGCOA REDUCTASE. **Vatsal Purohit**, Farbod Salahi, Nic Steussy, Paul Helquist, Olaf Weist, Cynthia Stauffacher

2715-Pos Board B92
DISTRIBUTION OF IMMOBILIZED ENZYMES ON THE SURFACE AND INTO THE MESOPOROUS SILICA PARTICLE. **Pegah S. Nabavi Zadeh**, Björn Åkerman

Intrinsically Disordered Proteins (IDP) and Aggregates: Aß, Tau, and α-Synuclein (Boards B93 - B113)

2716-Pos Board B93
WHY PRESSURE IS BAD FOR YOUR BRAIN? HYDROSTATIC PRESSURE PROMOTES AGGREGATION OF ALPHA-SYNUCLEIN IN CELLS. **Urszula P. Golebiewska**, Suzanne Scarlata

2717-Pos Board B94
AGGREGATION AND FIBRILLATION OF α-SYNUCLEIN BY POLYMORPH PATCHY PARTICLES. **Ioana M. Ilie**, Wouter K. den Otter, Wim J. Briels

2718-Pos Board B95
ALPHA-SYNUCLEIN AND ITS INTERACTION WITH CYTOSKELETON (ASSOCIATED) PROTEINS: IMPLICATIONS IN PARKINSON'S DISEASE. **Senthil Kumar Thangaraj**, Lisanne Dijk, Mireille Claessens

2719-Pos Board B96
MOLECULAR DYNAMICS SIMULATIONS OF ALPHA-SYNUCLEIN ENSEMBLE FRET MEASUREMENTS FROM DIFFERENT FORCE FIELDS. Reinhard Klement, **Timo Graen**, Asaf Grupi, Elisha Haas, Helmut Grubmüller

2720-Pos Board B97
UNCONVENTIONAL CHAPERONE INHIBITS AMYLOID FORMATION BY PROMOTING OFF-PATHWAY AGGREGATION. Illes-Toth Eva, Shah Maliha, Wu Nelson, Verzini Silvia, Selenko Philipp, Wanker E. Erich, **Jan Bieschke**

2721-Pos Board B98 **EDUCATION TRAVEL AWARDEE**
MULTI-TRGET THERAPEUTIC POTENTIAL OF GREEN TEA CATECHINS AND BLACK TEA THEAFLAVINS TOWARD Aβ-INDUCED SIGNAL PATHWAYS INVOLVED IN ALZHEIMER'S DISEASE. **Shelby E. Chastain**, Melissa Moss

2722-Pos Board B99
EFFECT OF ACIDIC PH ON THE STABILITY OF ALPHA-SYNUCLEIN DIMERS. **Zhengjian Lv**, Alexey V. Krasnoslobodtsev, Yuliang Zhang, Daniel Ysselstein, Jean-Christophe Rochet, Scott C. Blanchard, Yuri L. Lyubchenko

2723-Pos Board B100
THE INTERPLAY OF INTRINSIC DISORDER AND MACROMOLECULAR CROWDING ON α-SYNUCLEIN FIBRIL FORMATION. **Nobu C. Shirai**, Macoto Kikuchi

2724-Pos Board B101
ASSESSING N-TERMINAL MODIFICATIONS ON ALPHA-SYNUCLEIN STRUCTURE AND FUNCTION. **Siobhan Toal**, David DeWitt, Adam Trexler, Mark Brown, Elizabeth Rhoades

2725-Pos Board B102
EFFICIENT LIPID PEROXIDATION CATALYZED BY AMYLOID-BETA-COPPER COMPLEX: OBSERVATION OF CHEMICAL OSCILLATION AND CHAOS. Ciaran McFarlane, Paul Girvan, Thomas Branch, **Liming Ying**

2726-Pos Board B103
SELF-ASSEMBLY OF FULL-SIZE AMYLOID BETA 40 PROTEINS IN DIMERS. **Mohtadin Hashemi**, Yuliang Zhang, Zhengjian Lv, Yuri L. Lyubchenko

2727-Pos Board B104
X-RAY DIGITAL AGGREGATED DYNAMICS OF INTRINSICALLY DISORDERED PROTEINS. **Naruki Hara**, Yufuku Matsushita, Keigo Ikezaki, Hiroshi Sekiguchi, Naoya Fukui, Yasushi Kawata, Yuji C. Sasaki

2728-Pos Board B105
TAU MEDIATES WIDELY-SPACED MICROTUBULE BUNDLES THROUGH LOCAL POLYION ATTRACTIONS AT THE MIDPLANE LAYER: A NOVEL, FUNCTIONAL MECHANISM FOR INTRINSICALLY DISORDERED PROTEINS. **Peter J. Chung**, Chaeyeon Song, Joanna Deek, Herbert P. Miller, Youli Li, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

2729-Pos Board B106 Education Travel Awardee
Aβ FIBRILS ACT AS AQUEOUS PORES: A MOLECULAR DYNAMICS STUDY. **Sachin R. Natesh**, Stephen C. Meredith, Tobin R. Sosnick, Karl F. Freed, Esmael J. Haddadian

2730-Pos Board B107
DANCING WITH STRINGS: THE CONFORMATIONAL DYNAMICS OF VQIXXK MOTIFS WITHIN TAU PROTEIN IN MONOMER, FIBRIL AND HYPER-PHOSPHORYLATED FILAMENT STATES. **Buyong Ma**, Guanghong Wei, Jie Zhen, Ruth Nussinov

2731-Pos Board B108
THE CONFORMATION OF Aβ-PEPTIDE AGGREGATES ON 2D SURFACES IS DIFFERENT THAN IN SOLUTION: A MOLECULAR DYNAMICS STUDY. Sachin R. Natesh, Kark F. Freed, **Esmael J. Haddadian**

2732-Pos Board B109
TAU BINDS TO MULTIPLE TUBULIN DIMERS WITH HELICAL STRUCTURE. **Xiaohan Li**, Jacob A. Culver, Elizabeth Rhoades

2733-Pos Board B110
THE DISPARATE EFFECTS OF TWO MOLECULAR CHAPERONES ON TAU AMYLOID FORMATION. **Hannah E.R. Baughman**, Amanda F. Clouser, Rachel E. Klevit, Abhinav Nath

2734-Pos Board B111
BINDING-ACTIVATED SUPERRADIANT PROBES FOR AMYLOID IN SOLUTION AND TISSUE. **Patrick Donabedian**, Nicole Maphis, Shanya Jiang, Kiran Bhaskar, David Whitten, Eva Chi

2735-Pos Board B112
AMYLOID AGGREGATION OF AMYLIN: GAIN OF FUNCTION ALONG AGGREGATION PATHWAY? **Anoop Rawat**, Debanjan Bhowmik, Barun Kumar Maity, Sudipta Maiti

2736-Pos Board B113
AMYLOID-β(1-42)OLIGOMER MODELS DEVELOPED USING COMBINED SOLID STATE NMR AND SEQUENCE SPECIFIC HYDROXYL RADICAL FOOTPRINTING DATA. **Alexandra Klinger**, Cong Guo, Huan-Xiang Zhou, Anant Paravastu, Janna Kiselar, Andrew J. Nix, Terrone L. Rosenberry

Investigating the Properties of Intrinsically Disordered Proteins (IDP) (Boards B114 - B140)

2737-Pos Board B114
NMR INVESTIGATION OF CALMODULIN INDUCED FOLDING IN THE REGULATORY DOMAIN OF CALCINEURIN. **Dinesh K. Yadav**

2738-Pos Board B115
PROTEIN DESIGN FOR DECREASED DISORDER: SHERP AS AN EXEMPLAR PROTEIN. **Elliot Drew**, David T. Jones, B.A. Wallace

2739-Pos Board B116
STRUCTURAL MODELS OF AN INTRINSICALLY DISORDERED PROTEIN ADAPTED FOR BACTERIAL SECRETION. Darragh Patrick O'Brien, Belen Hernandez, Dominique Durand, Veronique Hourdel, Ana Cristina Sotomayor Pérez, Patrice Vachette, Mahmoud Ghomi, Julia Chamot-Rooke, Daniel Ladant, Sébastien Brier, **Alexandre Chenal**

2740-Pos Board B117
MULTI-COLOR SINGLE MOLECULE FRET STUDY OF INTRINSICALLY DISORDERED PROTEIN BINDING. **Hoi Sung Chung**, Fanjie Meng, Jae-Yeol Kim, John M. Louis

2741-Pos Board B118
CHARACTERIZATION OF AN INTRINSIC DISORDER DOMAIN AND FUNCTIONAL ACTIVITY OF CHIZ MEMBRANE PROTEIN FROM MYCOBACTERIUM TUBERCULOSIS. **Cristian A. Escobar**, Riqiang Fu, Timothy A. Cross

2742-Pos Board B119
EXPERIMENTAL POLYPROLINE II PROPENSITIES DESCRIBE SEQUENCE-DEPENDENT VARIABILITY IN THE HYDRODYNAMIC SIZE OF INTRINSICALLY DISORDERED PROTEINS. **Steven T. Whitten**

2743-Pos Board B120
RESCUING THE OVER-COLLAPSE OF INTRINSICALLY DISORDERED PROTEINS USING A FORCE FIELD DERIVED BY A NEW PARADIGM. **Davide Mercadante**, Sigrid Milles, Gustavo Fuertes, Dmitri Svergun, Edward A. Lemke, Frauke Gräter

2744-Pos Board B121
PROTEOMIC AND BIOPHYSICAL ANALYSIS OF POLAR TRACTS. **Kiersten M. Ruff**, Alex S. Holehouse, Mary G.O. Richardson, Rohit V. Pappu

2745-Pos Board B122
SINGLE-MOLECULE DISSECTION OF THE CONFORMATIONS, DYNAMICS AND BINDING OF THE DISORDERED 4E-BP2 PROTEIN. **Zhenfu Zhang**, Alaji Bah, Hamda Sajjad, Julie D. Forman-Kay, Claudiu C. Gradinaru

2746-Pos Board B123
LC8 MOTIF RECOGNITION: INSIGHTS FROM THE LC8-CHICA COMPLEX. **Sarah Clark**

2747-Pos Board B124
NMR-BASED MOLECULAR VIEW OF THE BIOLOGY AND BIOPHYSICS OF WIP, AN INTRINSICALLY DISORDERED PROTEIN. Eva Rozentur-Shkop, Hadassa Shaked, **Jordan Chill**

2748-Pos Board B125 Education Travel Awardee
DYNAMICS OF CONTACT FORMATION IN DISORDERED POLYPEPTIDES. **Gül H. Zerze**, Robert B. Best, Jeetain Mittal

2749-Pos Board B126
CHEMICAL PERTURBATION OF AN INTRINSICALLY DISORDERED REGION OF TFIID DISTINGUISHES DE NOVO TRANSCRIPTION INITIATION FROM REINITIATION. **Zhengjian Zhang**, Zarko Boskovic, Mahmud Hussain, Wenxin Hu, Carla Inouye, Angela Koehler, Stuart Schreiber, Robert Tjian

2750-Pos Board B127
RNA-BINDING DOMAIN DISORDER MODULATES THE RNA DESTABILIZING ACTIVITY IN THE TTP FAMILY OF PROTEINS. Laura M. Deveau, **Francesca Massi**

2751-Pos Board B128
PROBING THE CONFORMATIONAL ENSEMBLE OF A BACTERIAL ANTITOXIN THROUGH MOLECULAR DYNAMICS SIMULATIONS AND MASS SPECTROMETRY. **Virginia M. Burger**, Albert Konijnenberg, Alexandra Vanderwelde, Frank Sobott, Remy Loris, Collin M. Stultz

2752-Pos Board B129
THE ROLE OF INTRINSIC DISORDER IN THE MOLECULAR MECHANISM OF NUCLEAR TRANSPORT. **Laura K. Maguire**, Kathryn Wall, Geoff Armstrong, Kaushik Dutta, Samuel Sparks, Deniz B. Temel, Alia Kamal, Jaclyn Tetenbaum-Novatt, Michael P. Rout, David Cowburn, Loren Hough

2753-Pos Board B130
ELUCIDATING THE MECHANISM OF RECOGNITION AND BINDING OF PROTEIN KINASE INHIBITOR BY PROTEIN KINASE A USING NMR AND FLUORESCENCE SPECTROSCOPY. **Geoffrey Li**, Cristina Olivieri, Matthew Neibergall, Jonggul Kim, Susan Taylor, Joseph Muretta, Gianluigi Veglia

2754-Pos Board B131
CONFORMATIONS AND EXCHANGE DYNAMICS OF FLGM, AN INTRINSICALLY DISORDERED PROTEIN, IN DILUTE AND CROWDED CONDITIONS STUDIED BY NMR SPECTROSCOPY. **Pieter E S Smith**, Huan-Xiang Zhou

2755-Pos Board B132
HYDROPHOBICITY OF POLY(A)-BINDING PROTEIN'S INTRINSICALLY DISORDERED REGION DETERMINES ITS CONFORMATION AND ORGANISM THERMOTOLERANCE. **Joshua Riback**, Chris Katanski, Tobin R. Sosnick, D. Allan Drummond

2756-Pos Board B133
SMFRET AND DEER DISTANCE MEASUREMENTS AS APPLIED TO DISORDERED AND STRUCTURED PROTEINS. Keith Weninger, Ruoyi Qiu, Erkang Ou, Sergey Milikisiyants, Hugo Sanabria, **Tatyana I. Smirnova**

2757-Pos Board B134
LIKE-CHARGE REGIONS (LCRS) AND OTHER EVOLUTIONARILY CONSERVED FEATURES REGULATE FG NETWORK FORMATION AT THE CENTER OF THE NPC. **Mohaddeseh Peyro**, Mohammad Soheilypour, Briana Lynne Lee, Ali Ghavami, Mohammad R. K. Mofrad

2758-Pos Board B135
EFFECTS OF A STRUCTURED DOMAIN ON THE CONFORMATIONAL ENSEMBLE OF DISORDERED REGIONS IN BRAIN-DERIVED NEUROTROPHIC FACTOR. **Ruchi Lohia**, Reza Salari, Grace Brannigan

2759-Pos Board B136
ULTRA-SENSITIVE NUCLESOME BINDING RESPONSE OF FACT BY THE PHOSPHORYLATION TO ITS IDP ELEMENT. **Shin-ichi Tate**

2760-Pos Board B137
SPECTRAL PROPERTIES OF "DISORDERED" AND POLYPROLINE II STRUCTURES DEFINED BY CIRCULAR DICHROISM SPECTROSCOPY. **Jose Luiz S. Lopes**, A J. Miles, Lee Whitmore, BA Wallace

2761-Pos Board B138
DIMENSIONS AND DYNAMICS OF HIGHLY COOPERATIVE SIC1-WD40 BINDING: SMFRET THROUGH A POLYMER PHYSICS LENS. **Gregory Gomes**, Veronika Csizmok, Jianhui Song, Hue Sun Chan, Julie Forman-Kay, Claudiu C. Gradinaru

2762-Pos Board B139
SMALL ANGLE NEUTRON SCATTERING OF THE INTRINSICALLY DISORDERED PROTEIN FLGM UNDER CROWDED CONDITIONS. **Anthony Banks**, Kevin Weiss, Chris Stanley, Huan-Xiang Zhou

2763-Pos Board B140
PROMISCUOUS BINDING OF MEMBRANE PROTEINS ON FLEXIBLE CO-CHAPERONES, YEAST SGT2 AND HUMAN SGTA. **Ku-Feng Lin**, William M. Clemons

Protein-Nucleic Acid Interactions II (Boards B141 - B152)

2764-Pos Board B141
INVESTIGATION OF PARTITION MECHANISM OF HIGH-COPY NUMBER BACTERIAL PLASMIDS VIA REPLICATION INCOMPATIBILITY. Tai-Ming Hsu, **Yi-Ren Chang**

2765-Pos Board B142
CHARACTERIZATION OF NUCLEIC ACID BINDING BY THE HISTONE-DERIVED ANTIMICROBIAL PEPTIDES BUFORIN II AND DESHDAP1. **Sukin Sim**, Kara J. Cutrona, Brittany Beyer, Penny Wang, Mala L. Radhakrishnan, Donald E. Elmore

2766-Pos Board B143
OXYGEN-TO-SULFUR SUBSTITUTION OF DNA PHOSPHATE ENTROPICALLY ENHANCES PROTEIN-DNA AFFINITY. **Dan Nguyen**, Levani Zandarashvili, Kurtis M. Anderson, Mark A. White, David G. Gorenstein, Junji Iwahara

2767-Pos Board B144
ROLE OF THE MOIETY CHIRALITY IN DETERMINING THE DNA BINDING CHARACTERISTICS OF THREADING INTERCALATORS. **Thayaparan Paramanathan**, Nicholas Bryden, Fredrik Westerlund, Per Lincoln, Micah McCauley, Ioulia Rouzina, Mark C. Williams

2768-Pos Board B145
DIRECT OBSERVATION OF THE STEPPING BEHAVIOR OF E. COLI UVRD HELICASE. **Kevin D. Whitley**, Matthew J. Comstock, Haifeng Jia, Timothy M. Lohman, Yann R. Chemla

2769-Pos Board B146
EFFECTS OF HFQ ON THE CONFORMATION AND COMPACTION OF DNA. **Johan R. van der Maarel**, Kai Jiang, Veronique Arluison, Jeroen van Kan

2770-Pos Board B147
EFFECTS OF H2A HISTONE VARIANTS ON DNA SEQUENCE AND NUCLEOSOME STRUCTURE USING COARSE GRAIN SIMULATIONS. **Ignacio Faustino**, Siewert-Jan Marrink

2771-Pos Board B148
EFFECTOR-FREE MOLECULAR MECHANISM OF EPIGENETIC REGULATION REVEALED BY MOLECULAR DYNAMICS SIMULATIONS AND SINGLE-MOLECULE FRET EXPERIMENTS. Jejoong Yoo, Hajin Kim, Taekjip Ha, **Aleksei Aksimentiev**

2772-Pos Board B149 EDUCATION TRAVEL AWARDEE
NUCLEOSOME KINETICS REGULATES THE BINDING TIMESCALES OF NON-HISTONE PROTEINS TO DNA SITES. **Jyotsana J. Parmar**, Dibyendu Das, Ranjith Padinhateeri

2773-Pos Board B150
EFFECT OF THE SECONDARY STRUCTURE OF LONG RNAS ON THEIR PACKAGING BY VIRAL CAPSID PROTEIN. **Christian Beren**, Lisa Dreesens, Katherine Liu, Richard Sportsman, Charles Knobler, William Gelbart

2774-Pos Board B151
RECOGNITION AND CONDENSATION OF THE BACTERIAL CENTROMERE BY PARB. **Gemma L. Fisher**, César L. Pastrana, James A. Taylor, Annika Butterer, Frank Sobott, Fernando Moreno-Herrero, Mark S. Dillingham

2775-Pos Board B152
INVESTIGATING THE HANDEDNESS DYNAMICS OF TETRASOMES. **Orkide Ordu**, Rifka Vlijm, Mina Lee, Alexandra Lusser, Cees Dekker, Nynke H. Dekker

DNA Structure and Dynamics II (Boards B153 - B175)

2776-Pos Board B153
INTERACTION OF TETRAALKYLAMMONIUM^{+} AND DNA. **Earle Stellwagen**, Nancy Stellwagen

2777-Pos Board B154
BASE-PAIR LEVEL ANALYSIS OF DNA FOUR-WAY JUNCTION STRUCTURE AND DYNAMICS. Matthew R. Adendorff, **Mark Bathe**

2778-Pos Board B155
MEASURING AND MODELING THE EFFECT OF SINGLE MISMATCH ON DNA STRAND DISPLACEMENT. **D. Bo Broadwater, Jr.**, Harold D. Kim

2779-Pos Board B156
DNA ORIGAMI FORCE BALANCE. Philipp C. Nickels, Phil Holzmeister, Bettina Wünsch, Dina Grohmann, Philipp Tinnefeld, **Tim Liedl**

2780-Pos Board B157
THE OCCURRENCE OF PLECTONEMES IN SUPERCOILED DNA DEPENDS ON DNA SEQUENCE. **Sung Hyun Kim**, Mahipal Ganji, Jaco van der Torre, Elio Abbondanzieri, Cees Dekker

2781-Pos Board B158
PREDICTING THE MECHANISM AND KINETICS OF THE WATSON-CRICK TO HOOGSTEEN BASE PAIRING TRANSITION. **Jocelyne Vreede**, Peter G. Bolhuis, David WH Swenson

2782-Pos Board B159
BIOPHYSICAL MECHANISM OF SEQUENCE-DEPENDENT ATTRACTION BETWEEN DOUBLE-STRANDED DNAS AND ITS BIOLOGICAL SIGNIFICANCE. **Hajin Kim**

2783-Pos Board B160
G-QUADRUPLEXES RECOGNITION BY PLATINUM COMPLEXES PROBED BY SITE-DIRECTED SPIN LABELING. Xiaojun Zhang, Cuixia Xu, Zong-Wan Mao, **Peter Qin**

2784-Pos Board B161
COMPUTATIONAL INVESTIGATION OF THE DISSOCIATIVE RECOMBINATION OF ADENINE, GUANINE, THYMINE, AND CYTOSINE. **Zachary P. Chen**, Hwoi Chan Kwon, Yoon Seo Lee, Charles P. De Guzman, Vola M. Andrianarijaona

2785-Pos Board B162
ELUCIDATING THE ROLE OF ELECTROSTATICS IN CONDENSED DNA ARRAYS. **Sarah Hansen**, Wei Meng, Abby Bull, Xiangyun Qiu, Kurt Andresen

2786-Pos Board B163
DESIGN AND CONSTRUCT A TYPE OF FLUORESCENTLY LABELED CIRCULAR DNA MOLECULES TO STUDY DNA TOPOLOGY AND TOPOISOMERASES BY FLUORESCENCE RESONANCE ENERGY TRANSFER (FRET). **Maria De Cabrera**, Maxwell Gu, Fenfei Leng

2787-Pos Board B164
THE EFFECT OF LOCAL MELTING OF DNA ON DNA LOOP FORMATION. **Jiyoun Jeong**, Harold D. Kim

2788-Pos Board B165
A SURVEY OF THE IONIZATION ENERGIES OF THE DNA NITROGENOUS BASES VIA DFT-BASED CALCULATIONS OF THEIR POTENTIAL ENERGY SURFACES. **Hwoi Chan Kwon**, Zachary P. Chen, Aaron Z. Watson, Vola M. Andrianarijaona

2789-Pos Board B166
THE ROLE OF INTER-NUCLEOBASE COULOMBIC DECAY IN THE PHOTOIONIZATION OF DNA. **Abraham C. Duot**, Justin Lyu, David Rivas, Michael Andrianarijaona

2790-Pos Board B167
DYNAMICS OF LARGE DNA LOOPS. **Zubair Azad**, Robert Riehn

2791-Pos Board B168
SYSTEMATIC AND QUANTITATIVE ANALYSIS OF G-QUADRUPLEX DNA FOLDING. **Chun-Ying Lee**, Alex Kreig, Sua Myong

2792-Pos Board B169
STRUCTURE-BASED DESIGN, SYNTHESIS, AND CHARACTERIZATION OF CUSTOM DNA NANOPARTICLES. **Sakul Ratanalert**, Remi Veneziano, Kaiming Zhang, Keyao Pan, Fei Zhang, Wah Chiu, Hao Yan, Mark Bathe

2793-Pos Board B170
STAPLE-FREE DNA SELF-ASSEMBLY. **Sakul Ratanalert**, Mark Bathe

2794-Pos Board B171
NUCLEIC ACID-PEPTIDE COMPLEXES CONTROLLED BY DNA HYBRIDIZATION. **Jeffrey Vieregg**, Michael Lueckheide, Lorraine Leon, Amanda Marciel, Matthew Tirrell

2795-Pos Board B172
THE ROLE OF ENTROPY IN EXPLAINING TIGHTLY BEND DNA PROPENSITY AND KINETIC BARRIERS TO BASE PAIR UNZIPPING. **Ioan Andricioaei**

2796-Pos Board B173
DESIGNING AN ELECTROCHEMICALLY LABELLED THROMBIN DNA APTAMER USING MOLECULAR DYNAMICS SIMULATIONS. **Loan K. Huynh**, Alan Chen

2797-Pos Board B174
DYNAMIC CONTROL OF DNA ORIGAMI NANOSTRUCTURES VIA GOLD NANOPARTICLES. **Joshua A. Johnson**, Abhilasha Dehankar, Qirui Fan, Jessica Winter, Carlos Castro

2798-Pos Board B175
COMPUTATIONAL AND EXPERIMENTAL CHARACTERIZATION OF RIBOSOMAL DNA AND RNA G-QUADRUPLEXES. **Samuel S. Cho**

Membrane Dynamics (Boards B176 - B204)

2799-Pos Board B176
FLIP-FLOP PROMOTION BY MEMBRANE-SPANNING SEQUENCES IN THE ER MEMBRANE PROTEINS. **Hiroyuki Nakao**, Keisuke Ikeda, Yasushi Ishihama, Minoru Nakano

2800-Pos Board B177
MOLECULAR DYNAMICS SIMULATIONS OF INTER-LEAFLET DEPENDENCE IN ASYMMETRIC LIPID MEMBRANES. **Michael D. Weiner**, Gerald W. Feigenson

2801-Pos Board B178
CONTROLLING MEMBRANE DYNAMICS BY TUNING THE HYDROPHOBIC MISMATCH AND LIPID COMPOSTION. **Butler D. Paul**, Elizabeth Kelley, Rana Ashkar, Robert Bradbury, Andrea Woodka, Michihiro Nagao

2802-Pos Board B179
STOCHASTIC BUT FINE-TUNED: DUALISM IN CELL MEMBRANES' ORGANIZATION AS REVEALED BY COMPUTER SIMULATIONS. **Roman G. Efremov**

2803-Pos Board B180
PRE-TRANSITION EFFECTS MEDIATE FORCES OF ASSEMBLY BETWEEN TRANSMEMBRANE PROTEINS: THE ORDERPHOBIC EFFECT. **Shachi Katira**, Kranthi K. Mandadapu, Suriyanarayanan Vaikuntanathan, Berend Smit, David Chandler

2804-Pos Board B181
MEMBRANE CROWDING AND ANOMALOUS DIFFUSION IN ARTIFICIAL LIPID BILAYERS. **Helena L.E. Coker**, Matthew R. Cheetham, Ravinash Krishna Kumar, Mark I. Wallace

2805-Pos Board B182
FAST MEMBRANE DYNAMICS IN PLANAR SUSPENDED LIPID BILAYERS REVEALED BY SINGLE PARTICLE TRACKING. **Xinxin Woodward**, Abir Kabbani, Christopher V. Kelly

2806-Pos Board B183
INVESTIGATING MEMBRANE DOMAIN DYNAMICS USING MULTIMODAL OPTICAL MICROSCOPY. Tyler Floden, Rochelle Warner, Ahmed A. Heikal, **Erin D. Sheets**

2807-Pos Board B184
FASTER, MORE ACCURATE QUANTIFICATION OF DIFFUSION AND CORRELATED MOTIONS IN LIPID BILAYERS. **Tara M. Urner**, Gwendolyn A. Claflin, Michael G. Lerner, Rodoula Kyvelou-Kokkaliaris

2808-Pos Board B185
SINGLE PARTICLE TRACKING IN DOUBLE CUSHIONED, BLEBBED SUPPORTED LIPID BILAYERS ENABLES STUDIES OF TRANSMEMBRANE PROTEIN DIFFUSION. **Rohit R. Singh**, Martin I. Malgapo, Maurine Linder, Susan Daniel

2809-Pos Board B186
NANO-SUBSTRUCTURES OF RAFT-MIMETIC LIQUID-ORDERED MEMBRANE DOMAINS REVEALED BY HIGH-SPEED SINGLE-PARTICLE TRACKING. Hsiao-Mei Wu, Ying-Hsiu Lin, Tzu-Chi Yen, **Chia-Lung Hsieh**

2810-Pos Board B187
SUPERDIFFUSIVE MOTION OF MEMBRANE-TARGETING DOMAINS. **Diego Krapf**, Grace Campagnola, Kanti Nepal, Olve B. Peersen

2811-Pos Board B188
CALCULATING TRANSMEMBRANE DIFFUSIVITY. **Christopher N. Rowley**, Ernest Awoonor-Williams, Kari Gaalswyk

2812-Pos Board B189
PROBING ROLE OF CHOLESTEROL IN INTEGRIN CROSSTALK AND COMPLEXATION OF INTEGRINS WITH GPI-ANCHORED UROKINASE RECEPTORS AND GANGLIOSIDES USING MODEL LIPID MIXTURES. **Yifan Ge**, Jiayun Gao, Rainer Jordan, Christoph Naumann

2813-Pos Board B190 **EDUCATION TRAVEL AWARDEE**
DYNAMICS AND STATICS IN PHASE SEPARATING, ADHERING LIPID MEMBRANES. **Orrin Shindell**, Natalie Mica, Max Ritzer, Vernita D. Gordon

2814-Pos Board B191
SPECIFIC ADHESION OF GIANT PLASMA MEMBRANE VESICLES TO SURFACE-IMMOBILIZED SIRPα BY MEMBRANE RECONSTITUTED "MARKER OF SELF" SIGNALING PROTEIN CD47. **Jan Steinkühler**, Cory Alvey, Reinhard Lipowsky, Rumiana Dimova, Dennis Discher

2815-Pos Board B192
T-CELLS IN SUSPENSION DO NOT SHOW PRE-CLUSTERED LCK. **Jorge Bernardino de la Serna**, Veronica T. Chang, Dominic Waithe, Ricardo A. Fernandes, Marco Fritzsche, Ana Mafalda Santos, Dilip Shrestha, James H. Felce, Meike C. Assmann, Simon J. Davis, Christian Eggeling

2816-Pos Board B193
SINGLE-MOLECULE FLUORESCENCE IMAGING TO DETERMINE THE STOICHIOMETRY OF THE TWIN-ARGININE TRANSLOCASE. **Hajra Basit**, Felicity Alcock, Ben Berks, Mark I. Wallace

2817-Pos Board B194
DC-SIGN MEDIATED DENGUE VIRUS ENTRY INTO CELLS.
Kenneth Jacobson, Ping Liu, Marc Ridilla, Laurie Betts, Aravinda de Silva, Nancy L. Thompson

2818-Pos Board B195
EFFECT OF DENGUE FUSION PEPTIDE IN LANGMUIR MONOLAYERS. **Thaís F. Schmidt**, Christian Salesse, Karin A. Riske

2819-Pos Board B196
DIRECTING MEMBRANE PORE AND STALK FORMATION IN MD SIMULATIONS WITH EMBEDDED MECHANICAL DEVICES. **Gregory Bubnis**, Helmut Grubmuller

2820-Pos Board B197
MITOCHONDRIAL MEMBRANE FUSION: COMPUTATIONAL MODELING OF MITOFUSINS. **Dario De Vecchis**, Antoine Taly, Marc Baaden, Jérôme Hénin

2821-Pos Board B198
MOLECULAR DYNAMICS SIMULATIONS OF MEMBRANE TRANSLOCATION OF DENDRIMERS. **Valreia Marquez-Miranda**, Ingrid Araya-Duran, Jeffrey Comer, Maria Carolina Otero Acuna, Jonathon Canan, Fernando Danilo Gonzalez Nilo

2822-Pos Board B199
THE SIZE OF A REVERSE MICELLE. **Gozde Eskici**, Paul H. Axelsen

2823-Pos Board B200
FLUCTUATING LIPID NANODOMAINS NEAR CRITICAL TRANSITIONS. George R. Heath, Stephen D. Evans, **Simon D. Connell**

2824-Pos Board B201
MICELLES AND BICELLES AS MEMBRANE MIMICS FOR MEMBRANE PROTEIN CHARACTERIZATION. **Ashton Brock**, Shelby Lipes, Ryan Oliver, Svetlana Baoukina, Peter Tieleman, Linda Columbus

2825-Pos Board B202
DETAILED INVESTIGATION OF DETERGENT MICELLE FORMATION USING MOLECULAR DYNAMICS SIMULATIONS. **Sadegh Faramarzi**, Danielle Grodi, Andrew Philpott, Michael Block, Madison Kukura, Erica Harvey, Blake Mertz

2826-Pos Board B203 **INTERNATIONAL TRAVEL AWARDEE**
ATOMISTIC AND COARSE-GRAINED MOLECULAR SIMULATIONS OF MIXED LAMELLAR/NONLAMELLAR LIPID MEMBRANES. **Wei Ding**, Michail Palaiokostas, Wen Wang, Mario Orsi

2827-Pos Board B204
ATOMISTIC SIMULATIONS OF SMALL MOLECULE PERMEATION THROUGH LAMELLAR/NONLAMELLAR LIPID MEMBRANES. **Michail Palaiokostas**, Wei Ding, Mario Orsi

Protein-Lipid Interactions III (Boards B205 - B234)

2828-Pos Board B205
MEMPROTMD: PROTEIN-LIPID INTERACTIONS OF PHOSPHOLIPID BIOSYNTHETIC ENZYMES AND DEVELOPMENT OF THE WEB DATABASE. **Thomas D. Newport**, Mark S.P. Sansom, Phillip J. Stansfeld

2829-Pos Board B206
LIPOPHILICITY IS A KEY FACTOR TO INCREASE THE ANTIVIRAL ACTIVITY OF HIV NEUTRALIZING ANTIBODIES. **Marcelo T. Augusto**, Axel Hollmann, Fulvia Troise, Ana S. Veiga, Antonello Pessi, Nuno C. Santos

2830-Pos Board B207
FREE ENERGIES OF INTERACTION OF PH DOMAINS WITH PHOSPHATIDYLINOSITOL PHOSPHATE LIPIDS. **Fiona B. Naughton**, Antreas C. Kalli, Mark S P Sansom

2831-Pos Board B208
BINDING OF GABRA1 CYTOPLASMIC PEPTIDE TO PHOSPHATIDYLSERINE UNILAMELLAR VESICLES. Julie L. Mustard, **Norbert W. Seidler**

2832-Pos Board B209
THE SYNAPTOTAGMIN-7 C2AB DOMAIN ALTERS MEMBRANE MORPHOLOGY IN A CALCIUM-DEPENDENT MANNER. **Peter Dahl**, Joseph Vasquez, Jefferson Knight, Arun Anantharam

2833-Pos Board B210
INTERPLAY BETWEEN HYDROPHOBIC AND ELECTROSTATIC INTERACTIONS IN PROTONATION-DEPENDENT INSERTION OF TRANSMEMBRANE HELICES. **Victor Vasquez-Montes**, Alexander Kyrychenko, Mykola V. Rodnin, Stephen H. White, Martin B. Ulmschneider, Alexey S. Ladokhin

2834-Pos Board B211
SINGLE MOLECULE DIFFUSION OF PHOSPHATIDYLINOSITOL BISPHOSPHATE (PIP2) LIPIDS ON ASYMMETRIC LIPID BILAYERS UNDER THE INFLUENCE OF POLYCATIONIC MACROMOLECULES. **Xiaojun Shi**, Xiaosi Li, Maryam Kohram, Adam W. Smith

2835-Pos Board B212 **EDUCATION TRAVEL AWARDEE**
MEMBRANE FISSION BY PROTEIN CROWDING. **Wilton T. Snead**, Carl C. Hayden, Jeanne C. Stachowiak

2836-Pos Board B213
UNDERSTANDING THE ROLE OF PEPTIDE-LIPID REACTIONS IN BIOLOGICAL SYSTEMS. **Hannah M. Britt**, Vian S. Ismail, Jackie A. Mosely, John M. Sanderson

2837-Pos Board B214
SELECTIVE TARGETING OF LIPID DROPLETS BY PROTEINS.
Morris E. Cohen, Gregory A. Voth

2838-Pos Board B215
MEMBRANE LATERAL PRESSURE CONTROLS HYDRATION AND WATER MOBILITY AT THE COPPER-BINDING SITE OF THE P1B-TYPE COPPER ATPASE COP-A FROM LEGIONELLA PNEUMOPHILA. **Karim Fahmy**, Elisabeth Fischermeier, Ahmed Sayed

2839-Pos Board B216
HUMAN AND BACTERIUM HSP70 INTERACTS DIFFERENTLY WITH LIPID MEMBRANES. Victor Lopez, David M. Cauvi, Nelson Arispe, **Antonio De Maio**

2840-Pos Board B217
ROLE OF PIP2-DEPENDENT MEMBRANE INTERACTIONS IN VINCULIN ACTIVATION, MOTILITY AND FORCE TRANSMISSION. **Sharon L. Campbell**, Peter M. Thompson, Caitlin E. Tolbert, Lindsay Case, Srinivas Ramachandran, Mihir Pershad, Nikolay Dokholyan, Keith Burridge, Clare Waterman

2841-Pos Board B218
ORIENTATION OF DIMERIC TUBULIN ON LIPID MEMBRANES STUDIED USING NEUTRON REFLECTOMETRY. **David P. Hoogerheide**, Sergei Noskov, Tatiana K. Rostovtseva, Sergey M. Bezrukov, Hirsh Nanda

2842-Pos Board B219
SHAPE TRANSFORMAITON OF BIOMEMBRANE INDUCED BY BANANA-SHAPED PROTEIN RODS: TUBULATION AND FORMATION OF POLYHEDRAL VESICLES. **Hiroshi Noguchi**

2843-Pos Board B220
INTRODUCING IMPROVED PROTEIN SIDE CHAIN DYNAMICS IN THE MARTINI MODEL TO SIMULATE PROTEIN-MEMBRANE INTERACTIONS. **Florian A. Herzog**, Lukas Braun, Ingmar Schoen, Viola Vogel

2844-Pos Board B221
TRANSPORTATION OF AN ARTIFICAL CARGO BY A PAR-MIN HYBRID SYSTEM. **James A. Taylor**, Anthony G. Vecchiarelli, Keir C. Neuman, Kiyoshi Mizuuchi

2845-Pos Board B222
NEW INSIGHTS ON THE LIPIDATION OF PEPTIDES AND PROTEINS IN LIPID MEMBRANES. Hannah M. Britt, Vian S. Ismail, **John M. Sanderson**

2846-Pos Board B223
A NOVEL EXPERIMENTAL PLATFORM TO STUDY THE TEMPORAL EVOLUTION OF PHOSPHOINOSITIDE GRADIENTS IN MODEL MEMBRANES. **Brittany M. Neumann**, Devin Kenney, Qi Wen, Arne Gericke

2847-Pos Board B224
DYNAMIC CONTACTS BETWEEN THE ENDOPLASMIC RETICULUM AND THE PLASMA MEMBRANE REGULATE PHOSPHOINOSITIDE METABOLISM AND CONTROL CELLULAR EXCITABILITY. **Eamonn J. Dickson**, Jill B. Jensen, Bertil Hille

2848-Pos Board B225
ENDOLYSIN PLYC BINDING TO MODEL MEMBRANES REVEALS ITS ENTRY POINT ON MAMMALIAN CELLS. **Marilia Barros**, Tarek Vennemann, Frank Heinrich, Daniel Nelson, Mathias Lösche

2849-Pos Board B226
MEMBRANE BINDING OF HIV-1 MATRIX PROTEIN: DEPENDENCE ON BILAYER COMPOSITION AND PROTEIN LIPIDATION. **Marilia Barros**, Frank Heinrich, Siddartha A. K. Datta, Alan Rein, Mathias Lösche

2850-Pos Board B227
LIPROTIDES: A NEW CLASS OF PROTEIN LIPID-COMPLEXES. **Jannik N. Pedersen**, Henriette Kristina S. Frislev, Jan S. Pedersen, Daniel E. Otzen

2851-Pos Board B228
A SURFACE PLASMON RESONANCE STUDY OF LIPID INTERACTIONS FOR AMPHIPATHIC ALPHA- HELIX BUNDLES. **Sewwandi S. Rathnayake**, Elizabeth R. Brown, Edgar E. Kooijman

2852-Pos Board B229
LIPROTIDES: NANO-SIZED CYTOTOXIC PROTEIN-FATTY ACID COMPLEXES WITH A CORE-SHELL OR MULTI-LAYER STRUCTURE. **Henriette S. Frislev**, Jannik N. Pedersen, Jan S. Pedersen, Daniel E. Otzen

2853-Pos Board B230 Education Travel Awardee
TO UNFOLD OR NOT TO UNFOLD? STRUCTURAL INSIGHTS OF PEROXIDASE-ACTIVE CARDIOLIPIN-BOUND CYTOCHROME C BY SOLID-STATE NMR. **Abhishek Mandal**, Cody L. Hoop, Ravindra Kodali, Marissa Di, Maria DeLucia, Valerian E. Kagan, Jinwoo Ahn, Patrick C. A. van der Wel

2854-Pos Board B231
PRINCIPLES UNDERLYING MEMBRANE INTERACTION OF RETROVIRAL STRUCTURAL PROTEIN GAG. **Yi Wen**, Robert A. Dick, Gerald W. Feigenson, Volker M. Vogt

2855-Pos Board B232
STRUCTURAL MECHANISM IN A MEMBRANE REMODELLING ATPASE. **Maria Hoernke**, Elin Larsson, Jagan Mohan, Jeanette Blomberg, Sebastian Westenhoff, Richard Lundmark, Christian Schwieger

2856-Pos Board B233
NEW METHOD FOR MEASURING THE ANCHORING ENERGY OF STRONGLY-BOUND MEMBRANE-ASSOCIATED PROTEINS. **Michael S. Kent**, Elisa La Bauve, Briana C. Vernon, Dongmei Ye, David M. Rogers, Cathryn M. Siegrist, Bryan Carson, Susan L. Rempe, Aihua Zheng, Margaret Kielian, Andrew P. Schreve

2857-Pos Board B234
MEMBRANE PHASE CHARACTERISTICS CONTROL NA-CATH ACTIVITY. Robin L. Samuel, **Susan D. Gillmor**

Membrane Structure II (Boards B235 - B264)

2858-Pos Board B235
CHOLESTEROL MODULATED INTERDIGITATION OF LONG-CHAIN SPHINGOMYELIN AND GLYCOLIPIDS. **Tomasz Rog**, Adam Orłowski, Moutusi Manna, Alicia Llorente, Tore Skotland, Tuulia Sylvänne, Dimple Kauhanen, Kim Ekroos, Kirsten Sandvig, Ilpo Vattulainen

2859-Pos Board B236
TRANSBILAYER REGISTRATION OF LIQUID-ORDERED DOMAINS: NO INTERACTIONS AT THE MEMBRANE MIDPLANE REQUIRED. Timur R. Galimzyanov, Veronika V. Alexandrova, Peter Pohl, **Sergey A. Akimov**

2860-Pos Board B237
N-RAS LIPID ANCHOR ADSORPTION TO MEMBRANES AS A FUNCTION OF LIPID COMPOSITION AND CURVATURE. Jannik B. Larsen, Celeste Kennard, Søren L. Pedersen, Knud J. Jensen, Nikos S. Hatzakis, **Mark J. Uline**, Dimitrios Stamou

2861-Pos Board B238
SEGMENTATION OF MEMBRANE PROTEIN MOTION IN THE AXON INITIAL SEGMENT. **Christian M. Winterflood**, David Albrecht, Gabrielle de Wit, Philipp Kukura, Helge Ewers

2862-Pos Board B239
MECHANISTIC INSIGHTS INTO MEMBRANE BENDING BY PROTEIN CROWDING: UNDERSTANDING THE ROLE OF MEMBRANE COMPOSITION, PHASE SEPARATION AND FREE ENERGY OF PROTEIN BINDING. **Gokul Raghunath**, Brian Dyer

2863-Pos Board B240
A DETERGENT-FREE APPROACH TO MEMBRANE PROTEIN RESEARCH: POLYMER-BOUNDED "NATIVE" NANODISCS. **Jonas M. Dörr**, Juan J. Dominguez Pardo, Marleen H. van Coevorden-Hameete, Stefan Scheidelaar, Martijn C. Koorengevel, Casper C. Hoogenraad, J. Antoinette Killian

2864-Pos Board B241
"ANIONIC H-BONDS" STRUCTURE TWO SIMPLE BILAYERS, ONE NATURAL. Edward G. Hohenstein, Michael A. Green, Alisher Kariev, Saranga Naganathan, Mary Manning Cleveland, **Thomas H. Haines**

2865-Pos Board B242
CURVATURE-INDUCED LIPID SORTING IN PLASMA MEMBRANE TETHERS. **Svetlana Baoukina**, Helgi I. Ingolfsson, Siewert J. Marrink, D. Peter Tieleman

2866-Pos Board B243 **EDUCATION TRAVEL AWARDEE**
DIRECT OBSERVATION OF ORDERED AND DISORDERED MEMBRANE DOMAINS IN B CELL PLASMA MEMBRANES USING MULTI-COLOR SUPER-RESOLUTION FLUORESCENCE MICROSCOPY AND APPLICATION TO B CELL RECEPTOR SIGNALING. **Matthew B. Stone**, Sarah Shelby, Marcos Nunez, Sarah Veatch

2867-Pos Board B244
HIGH RESOLUTION IMAGING ATOMIC FORCE MICROSCOPE STUDY OF INTERACTIONS AT THE MEMBRANE-FLUID INTERFACE. **Chiara Rotella**, Jason I. Kilpatrick, Simona Capponi, Miguel Holmgren, Francisco Bezanilla, Eduardo Perozo, Suzanne P. Jarvis

2868-Pos Board B245
LYSOZYME IN THE TEAR FILM LIPID LAYER. **Lukasz Cwiklik**, Agnieszka Olżyńska, D. Robert Iskander, Alicja Wizert

2869-Pos Board B246
THE POWER OF FREEZE-FRACTURE ELECTRON MICROSCOPY IN MEMBRANE EXPLORATION. **Brigitte Papahadjopoulos-Sternberg**

2870-Pos Board B247 **EDUCATION TRAVEL AWARDEE**
DETERMINING THE CQC-MEDIATED INTERACTIONS IN THE MUCIN 1 HOMODIMER. **Emily Bilyk**, Christina Freeman, Timothy Stachowski, Edwin Li

2871-Pos Board B248
REVISITING TILT IN CLASSICAL CURVATURE ELASTIC THEORIES FOR MEMBRANES. **M. Mert Terzi**, Markus Deserno

2872-Pos Board B249
PHASE BEHAVIOR OF COMPLEX LIPID MIXTURES: SIGNATURES OF SPATIAL ORGANIZATION. **Shushan He**, Lutz Maibaum

2873-Pos Board B250
ERGOSTEROL HAS NO CONDENSING EFFECT OF CHOLESTEROL. **Wei-Chin Hung**, Hsien Chung, Nicholas Charron, Ming-Tao Lee, Huey W. Huang

2874-Pos Board B251
SCATTERING SIGNATURES OF COMPLEX LIPID MEMBRANES: SPHERICAL VESICLES VS. PLANAR PATCHES. Yongtian Luo, **Lutz Maibaum**

2875-Pos Board B252
THE TERNARY LIPID PHASE DIAGRAM BY AFM. **Anders Aufderhorst-Roberts**, George R. Heath, James A. Goodchild, Simon D. Connell

2876-Pos Board B253
MECHANISM OF LINE ACTIVITY OF GANGLIOSIDE GM1 ON LIQUID-ORDERED DOMAINS. **Timur R. Galimzyanov**, Veronika V. Alexandrova, Oleg V. Batishchev, Anna S. Lyushnyak, Sergey A. Akimov

2877-Pos Board B254
EICOSAPENTAENOIC ACID (EPA), BUT NOT OTHER TRIGLYCERIDE-LOWERING AGENTS, INHIBITS GLUCOSE-INDUCED CHANGES IN MEMBRANE WIDTH AND CHOLESTEROL DOMAIN FORMATION THROUGH A POTENT ANTIOXIDANT MECHANISM. **R. Preston Mason**, Samuel C.R. Sherratt, Robert F. Jacob

2878-Pos Board B255
HOFMEISTER EFFECTS ON RAFT-LIKE DOMAINS. **Michal Belicka**, Santosh Prasad Gupta, Bing Sui-Lu, Rudolf Podgornik, Georg Pabst

2879-Pos Board B256
DOCOSAHEXAENOIC ACID (DHA), BUT NOT EICOSAPENTAENOIC ACID (EPA), INCREASES BOTH MEMBRANE FLUIDITY AND CHOLESTEROL CRYSTALLINE DOMAIN FORMATION IN LIPID VESICLES. **Samuel C.R. Sherratt**, Sandeep Shrivastava, Robert F. Jacob, Amitabha Chattopadhyay, R. Preston Mason

2880-Pos Board B257
BINDING OF VITAMIN E IN MODEL MEMBRANES STUDIED BY UMBRELLA SAMPLING SIMULATIONS. **Xiaoling Leng**, Fangqiang Zhu, Stephen R. Wassall

2881-Pos Board B258
ALL N-3 PUFA ARE NOT THE SAME: A COMPARISON OF DPA, EPA AND DHA BY MD SIMULATIONS. **Xiaoling Leng**, Jacob J. Kinnun, Saame R. Shaikh, Scott E. Feller, Stephen R. Wassall

2882-Pos Board B259
HOW LIPID COMPOSITION CONTROLS ORDERED MEMBRANE DOMAIN ("RAFT") FORMATION IN MEMBRANES OF PATHOGENIC BACTERIA. **Zhen Huang**, Erwin London, Jorge L. Benach, Alvaro Toledo

2883-Pos Board B260
DIETARY FATS REMODEL PLASMA MEMBRANE LIPIDOME AND PHYSICAL PROPERTIES TO REGULATE PHASE SEPARATION IN BIOLOGICAL MEMBRANES. Kandice R. Levental, Joseph H. Lorent, Xubo Lin, Alemayehu A. Gorfe, **Ilya Levental**

2884-Pos Board B261
MOLECULAR MODELING OF THE LAMELLAR TO INVERSE HEXAGONAL PHASE TRANSITION IN DOPE-DOPC LIPID SYSTEMS. **Katherine I. Driscoll**, Mark J. Uline

2885-Pos Board B262
CA^{2+} GRADIENT INDUCES MEMBRANE BENDING AND FORMATION OF NANOTUBES IN GIANT LIPID VESICLES. **Baharan Ali Doosti**, Tatsiana Lobovkina

2886-Pos Board B263
OXIDIZED LIPIDS IN MODEL MEMBRANES: ATOMISTIC DETAILS FROM SOLID-STATE NMR EXPERIMENTS AND MD SIMULATIONS. **Tiago Mendes Ferreira**, Ruth Bärenwald, Rohit Sood, Roman Volinsky, Simon Drescher, Göran Karlström, Daniel Topgaard, Paavo Kinnunen, Kay Saalwächter, Samuli Ollila

2887-Pos Board B264
ON THE TRANSITION REGION OF TRANSMEMBRANE PORES. **Neha Awasthi**, Jochen S. Hub

Cardiac Smooth and Skeletal Muscle Electrophysiology II (Boards B265 - B283)

2888-Pos Board B265
POPULATION-BASED MATHEMATICAL MODELING FACILITATES THE INTERPRETATION OF DYNAMIC CLAMP EXPERIMENTS IN CARDIOMYOCYTES. **Ryan A. Devenyi**, Francis A. Ortega, Trine Krogh-Madsen, David J. Christini, Eric A. Sobie

2889-Pos Board B266
AN IN SILICO STUDY OF FEMALE SUSCEPTIBILITY TO AROUSAL-INDUCED ARRHYTHMIAS. **Pei-Chi Yang**, Yibo Wang, Laura L. Perissinotti, Junko Kurokawa, Kevin R. DeMarco, Mao-Tsuen Jeng, Robert D. Harvey, Colleen E. Clancy

2890-Pos Board B267
PULSE DURATION DETERMINES EFFICACY OF ARRHYTHMIA TERMINATION VIA TARGETED OPTOGENETIC STIMULATION. Patrick M. Boyle, **Michael Murphy**, Thomas V. Karathanos, Dafang Wang, Sohail Zahid, Kaitlyn N. Whyte, Erica L. Schwarz, Emilia Entcheva, Natalia A. Trayanova

2891-Pos Board B268
QUANTIFICATION OF THE IONIC CURRENT CONTRIBUTIONS TO CARDIAC REPOLARIZATION RESERVE BASED ON A NOVEL PIECEWISE-LINEAR APPROXIMATION APPROACH. Michelangelo Paci, Jari Hyttinen, **Stefano Severi**

2892-Pos Board B269
THE HUMAN SINOATRIAL ACTION POTENTIAL: AN IN SILICO MODEL. Alan Fabbri, Matteo Fantini, Ronald Wilders, **Stefano Severi**

2893-Pos Board B270
QUANTITATIVE PREDICTIONS OF ADULT HUMAN DRUG EFFECTS FROM STEM CELL-DERIVED MYOCYTE PHYSIOLOGY. **Jingqi Gong**, Eric A. Sobie

2894-Pos Board B271
ANALYSIS OF ACTIVATION-RECOVERY INTERVALS FROM INTRACARDIAC ELECTROGRAMS IN NORMAL AND INFARCTED PORCINE HEARTS. Danielle Denisko, Sudip Ghate, Samuel Oduneye, Ilan Lashevsky, Graham Wright, **Mihaela Pop**

2895-Pos Board B272
DETERMINANTS OF THE DIASTOLIC CALCIUM-VOLTAGE COUPLING GAIN FOR DELAYED AFTERDEPOLARIZATION MEDIATED TRIGGERED ACTIVITY. **Michael B. Liu**, Christopher Y. Ko, Zhen Song, Alan Garfinkel, James N. Weiss, Qu Zhilin

2896-Pos Board B273
MONITORING CARDIOMYOCYTE FUNCTIONAL INDICES WITH HYBRID MEA-IMPEDANCE TECHNOLOGY. **Liudmila Polonchuk**, Ulrich Thomas, Mark Davies, Sonja Stoelzle-Feix

2897-Pos Board B274
ROOM TEMPERATURE VS ICE COLD - TEMPERATURE EFFECTS ON CARDIAC CELL ACTION POTENTIAL. Ken Wang, Andreu Climent, David Gavaghan, Peter Kohl, **Christian Bollensdorff**

2898-Pos Board B275 **EDUCATION TRAVEL AWARDEE**
POSTNATAL DEVELOPMENT OF CALCIUM SIGNALING IN RAT CARDIOMYOCYTES. **Katarina Mackova**, Alexandra jr. Zahradnikova, Ivan Zahradnik, Alexandra Zahradnikova

2899-Pos Board B276
DETERMINATION OF THE UPPER BOUND OF INTRACELLULAR [NA^+] BY ELECTROPHYSIOLOGICAL METHOD: PROBING THE SUBSARCOLEMMAL [NA^+]. **Bence Hegyi**, Tamas Banyasz, Zhong Jian, Rafael Shimkunas, Ye Chen-Izu, Leighton T. Izu

2900-Pos Board B277
AGE-RELATED CHANGES İN ELECTRİCAL ACTİVİTİES AND MİCRORNAS OF LEFT VENTRİCULAR CARDİOMYOCYTES İSOLATED FROM RAT HEART. **Yusuf Olgar**, Erkan Tuncay, Belma Turan

2901-Pos Board B278
DYSFERLIN STABILIZES EXCITATION-CONTRACTION COUPLING IN MURINE SKELETAL MYOFIBERS. **Valeriy Lukyanenko**, Joaquin Muriel, Robert J. Bloch

2902-Pos Board B279
ROLE OF ZIP7 IN REGULATION OF CYTOSOLIC FREE ZN^{2+} LEVEL IN MAMMALIAN CARDIOMYOCYTES. **Erkan Tuncay**, Verda C. Bitirim, Aysegul Toy, Zeynep Tokcaer Keskin, Kamil C. Akcali, Guy A. Rutter, Belma Turan

2903-Pos Board B280
PHOSPHODIESTERASE TYPE-1 REGULATES TRANSIENT BK CURRENTS AND CONTRACTILITY OF HUMAN URINARY BLADDER SMOOTH MUSCLE. **Georgi V. Petkov**, Vitor S. Fernandes, Ning Li, Biao Chen, Eric S. Rovner, Wenkuan Xin

2904-Pos Board B281
EFFECTS OF PRUNUS MUME SIEBOLD & ZUCC. ON THE PACEMAKING ACTIVITIES OF INTERSTITIAL CELLS OF CAJAL IN MURINE SMALL INTESTINE. Sang Weon Lee, Sung Jin Kim, Hyungwoo Kim, Hyun Jung Kim, **Byung Joo Kim**

2905-Pos Board B282
MOLECULAR INTERACTIONS OF SLC26A6 AND CFTR IN CARDIOMYOCYTES. Wei Chun Chen, Jeong-Han Lee, Choong-Ryoul Sihn, Hannah Ledford, Yinuo Zhang, Megan A. Yamoah, Victor C. Lau, Catherine Kim, Gu Dai, Maria Timofeyeva, Richard E. Myers, Sassan Rafizadeh, **Xiao-Dong Zhang**

2906-Pos Board B283
CAPACITIVE MEMBRANE ACTIVITY IN ISOLATED CARDIAC MYOCYTES. Ivan Zahradnik, **Matej Hotka**

Membrane Receptors and Signal Transduction III (Boards B284 - B305)

2907-Pos Board B284
MG53 PROMOTES WOUND HEALING AND REDUCES SCAR FORMATION BY FACILITATING CELL MEMBRANE REPAIR AND CONTROLLING MYOFIBROBLAST DIFFERENTIATION. **Haichang Li**, Pu Duann, Pei-Hui Lin, Li Zhao, Zhaobo Fan, Tao Tan, Xinyu Zhou, Mingzhai Sun, Matthew Sermersheim, Hanley Ma, Steven Steinberg, Hua Zhu, Chunyu Zeng, Jianjun Guan, Jianjie Ma

2908-Pos Board B285
ZINC BINDING TO MG53 FACILITATES REPAIR OF INJURY TO CELL MEMBRANE. **Peihui Lin**, Chuanxi Cai, Hua Zhu, Jae-Kyun Ko, Moonsun Hwang, Zui Pan, Tao Tan, Daiju Yamazaki, Hiroshi Takeshima, Irina Korichneva, Jianjie Ma

2909-Pos Board B286
MODELING THE STRUCTURAL DIFFERENCES BETWEEN WILD-TYPE AND POLYMORPHIC G PROTEIN-COUPLED RECEPTOR KINASE 4 GAMMA. **Rhye-Samuel Kanassatega**, Abdelaziz Alsamarah, Yun Luo, Bradley T. Andresen

2910-Pos Board B287
SINGLE MOLECULE ASSAYS OF FULL LENGTH SOS ON MEMBRANES USING CRUDE CELL LYSATES. **Young Kwang Lee**, Shalini Low-Nam, Scott D. Hansen, Steven Alvrez, Hiu Yue Monatrice Lam, Jay T. Groves

2911-Pos Board B288
STUDY OF THE PATHOGENIC MECHANISM OF THE W64R MUTATED HUMAN β3-ADRENERGIC RECEPTOR BY CONFOCAL FLUORESCENCE MICROSCOPY. Chao Sun, Yanan Yang, Xiaoyan Ding, **Xin Zhao**

2912-Pos Board B289 **INTERNATIONAL TRAVEL AWARDEE**
STRUCTURAL AND FUNCTIONAL INSIGHTS OF NORRIN MIMICS WNT FOR SIGNALLING. **Tao-Hsin Chang**, Fu-Lien Hsieh, Matthias Zebisch, Karl Harlos, Jonathan Elegheert, E. Yvonne Jones

2913-Pos Board B290
A COMPUTATIONAL INVESTIGATION PREDICTS MECHANISMS OF SUBCELLULAR CAMP COMPARTMENTATION. Pei-Chi Yang, Britton Boras, Mao-Tsuen Jeng, **Steffen Docken**, Timothy Lewis, Andrew McCulloch, Robert Harvey, Colleen Clancy

2914-Pos Board B291
BK CHANNELS ALLEVIATE LYSOSOMAL STORAGE DISEASES BY PROVIDING POSITIVE FEEDBACK REGULATION OF LYSOSOMAL CA2+ RELEASE. **Xianping Dong**

2915-Pos Board B292
DIFFERENTIAL REGULATION OF CYTOPLASMIC AND NUCLEAR PKA ACTIVITIES BY β1- AND β2-ADRENOCEPTORS IN ADULT CARDIAC MYOCYTES. **Ibrahim Bedioune**, Audrey Varin, Rodolphe Fischmeister, Grégoire Vandecasteele

2916-Pos Board B293
SUPRA-MOLECULAR ORGANIZATION OF THE CRYSTALLOGRAPHIC CONFORMATIONS OF INACTIVE AND ACTIVATED μ-OPIOID RECEPTOR IN A MULTI-COMPONENT PLASMA MEMBRANE MODEL. **Kristen A. Marino**, Davide Provasi, Marta Filizola

2917-Pos Board B294
BINDING PATHWAYS OF A G-PROTEIN BIASED μ-OPIOID RECEPTOR AGONIST UNDER CLINICAL EVALUATION. Sebastian Schneider, **Davide Provasi**, Marta Filizola

2918-Pos Board B295
ATP-DEPENDENT BIOMECHANICAL PROPERTIES OF CILIATED AND NON-CILIATED CELLS MEASURED BY ATOMIC FORCE MICROSCOPY. **Karla Droguett**, Camilo Navarrete, Christian Fuentes, Mariana Ríos, Manuel Villalón, Nelson Barrera

2919-Pos Board B296
ELUCIDATING THE FUNCTIONAL ROLES OF SPATIAL ORGANIZATION IN CROSS-MEMBRANE SIGNAL TRANSDUCTION BY A HYBRID SIMULATION METHOD. **Yinghao Wu**

2920-Pos Board B297
TRACKING CHANGES IN PROTONATION AND CONFORMATION DURING PHOTOACTIVATION OF A PHYTOCHROME PROTEIN. **Serena Donnini**, Modi Vaibhav, Janne Ihalainen, Gerrit Groenhof

2921-Pos Board B298
MECHANISM OF TIM1, TIM3, AND TIM4 BINDING TO LIPID MEMBRANES. **Zhiliang Gong**, Daniel Kerr, Gregory T. Tietjen, James Michael Henderson, Adrienne M. Luoma, Wei Bu, Kathleen D. Cao, Hyeondo Luke Hwang, Theodore L. Steck, Binhua Lin, Erin J. Adams, Ka Yee C. Lee

2922-Pos Board B299
NON BACTERIAL LIPID AND PROTEINS AGGREGATES ARE ACTIVATORS OF THE INNATE SYSTEM. **Jean-Marie Ruysschaert**, Malvina Pizzuto, Caroline Lonez

2923-Pos Board B300
A CYTOKINE RECEPTOR REVOLUTION: ACTIVATION OF THE TYPE-I CYTOKINE RECEPTORS VIA PROTOMER ROTATION. **Michael Corbett**, David Poger, Alan E. Mark

2924-Pos Board B301
PROBING THE DIMERIZATION AFFINITY OF VISUAL OPSINS. Megan J. Kaliszewski, William D. Comar, Kevin C. Skinner, Beata Jastrzebska, Krzysztof Palczewski, **Adam W. Smith**

2925-Pos Board B302
LIGAND-INDUCED GROWTH OF CD36-FYN CLUSTERS INDUCES SIGNALING. John Maringa Githaka, Anthony R. Vega, Michelle A. Baird, Michael W. Davidson, Khuloud Jaqaman, **Nicolas Touret**

2926-Pos Board B303
DISTINCT ROLES OF α-ACTININ IN REGULATING TALIN-INDUCED ACTIVATION OF αIIBβ3 VERSUS α5β1 INTEGRINS. **Hengameh Shams**, Mohammad R. K. Mofrad

2927-Pos Board B304
TARGETING LIPOSOMES FOR UPTAKE INTO CEACAM-EXPRESSING HUMAN CELLS USING A BACTERIAL MEMBRANE PROTEIN. **Jason Kuhn**, Asya Smirnov, Alison K. Criss, Linda Columbus

2928-Pos Board B305
MECHANISM OF INTERACTION BETWEEN ADENOSINE PHOSPHATES AND LYSENIN CHANNELS. **Sheenah L. Bryant**, Nisha Shrestha, Paul Carnig, Samuel R. Kosydar, Philip Belzeski, Jason May, Lauren McDaid, Daniel Fologea

Exocytosis and Endocytosis II (Boards B306 - B316)

2929-Pos Board B306
IMAGING THE RAPID RECRUITMENT OF DYNAMINS AT THE EXOCYTIC FUSION PORE. **Adam J. Trexler**, Justin W. Taraska

2930-Pos Board B307
NON-INVASIVE IMAGING OF MEMBRANE DYNAMICS ACCOMPANIED WITH ENDOCYTOSIS IN LIVING CELLS BY ATOMIC FORCE MICROSCOPY. **Aiko Yoshida**, Shuichi Ito, Masahiro Kumeta, Shige H. Yoshimura

2931-Pos Board B308
WHAT CAN GEOMETRY TELL US ABOUT DYNAMIN FILAMENTS ON MEMBRANE NECKS? **Zachary McDargh**, Pablo Vázquez-Montejo, Jemal Guven, Markus Deserno

2932-Pos Board B309
MEMBRANE TENSION INHIBITS DEFORMATION BY COAT PROTEINS IN CLATHRIN-MEDIATED ENDOCYTOSIS. **Julian Hassinger**, David Drubin, George Oster, Padmini Rangamani

2933-Pos Board B310
DEVELOPMENT OF A NEW SINGLE-MOLECULE IMAGING APPROACH TO MEASURE TURNOVER DYNAMICS OF ENDOCYTIC PROTEINS. **Michael M. Lacy**, David Baddeley, Julien Berro

2934-Pos Board B311
FEEDBACK INTERACTIONS BETWEEN ACTIN AND ITS REGULATORS IN ENDOCYTIC PROTEIN PATCHES. **Xinxin Wang**, Brian J. Galletta, John A. Cooper, Anders E. Carlsson

2935-Pos Board B312
OLIGOMERIZATION AND ENDOCYTOSIS OF HEDGEHOG IS NECESSARY FOR ITS EFFICIENT EXOVESICULAR SECRETION. **Anup Parchure**, Neha Vyas, Charles Ferguson, Robert G. Parton, Satyajit Mayor

2936-Pos Board B313
CLATHRIN-INDEPENDENT ENDOCYTOSIS OF WINGLESS VIA CLIC/GEEC PATHWAY IS NECESSARY FOR EFFECTIVE SIGNALLING IN DROSOPHILA WING DISCS. **Anupama HL**, Chaitra Prabhakara, Satyajit Mayor

2937-Pos Board B314
EFFECTS OF STEROL STRUCTURE AND STEROL ABILITY TO FORM ORDERED MEMBRANE DOMAINS UPON CELLULAR ENDOCYTOSIS. **Ji Hyun Kim**, Ashutosh Singh, Maurizio Del Poeta, Deborah Brown, Erwin London

2938-Pos Board B315
DIACYLGLYCEROL GUIDES THE HOPPING OF CLATHRIN-COATED PITS ALONG MICROTUBULES FOR EXO-ENDOCYTOSIS COUPLING. **Liangyi Chen**

2939-Pos Board B316
INDUCED PLURIPOTENT STEM (IPS) CELLS TO ASSESS THE CARDIOPROTECTIVE AND PROANGIOGENIC ACTIVITIES OF EXOSOMES SECRETED BY HUMAN CARDIAC PROGENITOR CELLS. **Claudia Altomare**, Elisabetta Cervio, Ciullo Alessandra, Giuseppina Milano, Tiziano Torre, Stefanos Demertzis, Lucio Barile, Giuseppe Vassalli

Intracellular Transport (Boards B317 - B327)

2940-Pos Board B317
GOLGI MEMBRANE COMPARTMENTALIZATION: BIOPHYSICAL ASPECTS AND PHYSIOLOGICAL IMPLICATIONS. **Felix Campelo**, Josse van Galen, Vivek Malhotra

2941-Pos Board B318
SUPER-RESOLUTION IMAGING OF NUCLEAR IMPORT OF ADENO-ASSOCIATED VIRUS IN LIVE CELLS. **Joseph M. Kelich**, Jiong Ma, Connor Magura, Weidong Yang

2942-Pos Board B319
SINGLE-POINT FRAP DISTINGUISHES INNER AND OUTER NUCLEAR MEMBRANE PROTEIN DISTRIBUTION. **Krishna C. Mudumbi**, Weidong Yang, Jiong Ma, Eric C. Schirmer

2943-Pos Board B320
QUANTITATIVE ANALYSIS OF AUTOPHAGIC FLUX BY RATIOMETRIC PH-IMAGING OF AUTOPHAGIC INTERMEDIATES. **Giuseppe Maulucci**, Michela Chiarpotto, Massimiliano Papi, Valentina Palmieri, Gabriele Ciasca, Maria Carmela Lauriola, Daniela Samengo, Giovambattista Pani, Marco De Spirito

2944-Pos Board B321
EFFECTS OF OBSTACLE BINDING AND BOUND MOBILITY IN A LATTICE MODEL OF PROTEIN DIFFUSION. **M. D. Betterton**, Samantha Norris, Franck Vernerey, Loren E. Hough

2945-Pos Board B322
GENOMIC INTEGRATION OCCURS IN THE PACKAGING CELL VIA UNEXPORTED LENTIVIRAL PRECURSORS. Abdullah Mosabbir, **Anam Qudrat**, Kevin Truong

2946-Pos Board B323
INTERCELLULAR TRANSPORT OF PROTEINS CARRIED BY NANODIAMONDS THROUGH MEMBRANE NANOTUBES. **Chandra P. Epperla**

2947-Pos Board B324
ANISOTROPIC AND ANOMALOUS DIFFUSION IN MITOTIC CELLS. **Matthias Weiss**

2948-Pos Board B325
ANALYSIS OF SCFD2 - A NEW MEMBER OF THE SM PROTEIN FAMILY. **Janeta V. Iordanova**, Dirk Fasshauer

2949-Pos Board B326
QUANTIFYING THE INFLUENCE OF THE CROWDED CYTOPLASM ON IONIC DIFFUSION. **Selcuk Atalay**, Caitlin E. Scott, Peter M. Kekenes-Huskey

2950-Pos Board B327
TRANSPORT IMAGING OF LIVING CELLS. **Szabolcs Osváth**, Levente Herényi, Gergely Agócs, Katalin Kis Petik, Miklós S.Z. Kellermayer

Excitation-Contraction Coupling II (Boards B328 - B342)

2951-Pos Board B328
FLUORESCENT DEXTRAN DIFFUSION ASSAY TO STUDY CARDIAC T-TUBULES. **Keita Uchida**, Anatoli N. Lopatin

2952-Pos Board B329
THE T-SYSTEM PROVIDES A DYNAMIC CA^{2+}-BUFFER IN HUMAN SKELETAL MUSCLE FIBRES. **Tanya R. Cully**, Bradley S. Launikonis

2953-Pos Board B330
POSTNATAL DEVELOPMENT OF T-TUBULES IN SHEEP ATRIAL MYOCYTES. **Charlotte E.R. Smith**, David A. Eisner, Andrew W. Trafford, Katharine M. Dibb

2954-Pos Board B331
RELATIONSHIP BETWEEN MULTI-SCALE CARDIOMYOCYTE ORGANIZATION AND FUNCTION IN TRABECULAE OF THE FAILING HUMAN HEART. **Michelle L. Munro**, Xin Shen, Marie Ward, David J. Crossman, Christian Soeller

2955-Pos Board B332
MODULATION BY CGP-37157 (CGP) ANALOGS OF THE SARCOPLASMIC RETICULUM CALCIUM ATPASE SERCA). Melanie M. Loulousis, Yuanzhao L. Darcy, **Julio A. Copello**

2956-Pos Board B333
ENHANCED CARDIAC CONTRACTILITY AND $CA2^{+}$ SIGNALLING FOLLOWING DIETARY NITRATE SUPPLEMENTATION IN MICE. Niklas Ivarsson, Gianluigi Pironti, Jingning Yang, Alex Bersellini Farinotti, William Jonsson, Camilla Svensson, Håkan Westerblad, Eddie Weitzberg, Jon Lundberg, John Pernow, Johanna Lanner, **Daniel C. Andersson**

2957-Pos Board B334
CAMKII AND HEART FAILURE PROMOTE A PATHOLOGICAL RYANODINE RECEPTOR CONFORMATION THAT REDUCES CALMODULIN BINDING AND ENHANCES SR CA^{2+} LEAK. **Hitoshi Uchinoumi**, Yi Yang, Tetsuro Oda, Jose L. Puglisi, Ye Chen-Izu, Razvan L. Cornea, Xander H.T. Wehrens, Donald M. Bers

2958-Pos Board B335
CARDIAC-SPECIFIC OVEREXPRESSION OF PHOSPHODIESTERASE 2 (PDE2) IN MOUSE IS CARDIOPROTECTIVE. **Marta Lindner**, Christiane Vettel, Matthias Dewenter, Merle Riedel, Simon Lämmle, Fleur Mason, Simon Meinecke, Thomas Wieland, Hind Mehel, Sarah Karam, Patrick Lechene, Jerome Leroy, Gregoire Vandecasteele, Ali El-Armouche, Rodolphe Fischmeister

2959-Pos Board B336
CARDIAC OVER-EXPRESSION OF CREATINE KINASE DIFFERENTIALLY AFFECTS CARDIOMYOCYTE FUNCTION IN ISCHEMIC AND NON-ISCHEMIC HEART FAILURE. **Carlo G. Tocchetti**, Michelle K. Leppo, Djahida Bedja, Yibin Wang, Robert G. Weiss, Nazareno Paolocci

2960-Pos Board B337
MECHANICAL REMODELING OF ATRIAL MYOCARDIUM IN HCM MOUSE MODELS CARRYING CTNT MUTATIONS. **Josè Manuel Pioner**, Francesca Gentile, Raffaele Coppini, Beatrice Scellini, Jil Tardiff, Chiara Tesi, Corrado Poggesi, Cecilia Ferrantini

2961-Pos Board B338
MECHANO-CHEMO-TRANSDUCTION IN RABBIT CARDIOMYOCYTES MEDIATED BY NO SIGNALING. **Rafael Shimkunas**, Zhong Jian, Bence Hegyi, John Shaw, Nipavan Chiamvimonvat, Kenneth Ginsburg, Julie Bossuyt, Donald M. Bers, Kit S. Lam, Leighton T. Izu, Ye Chen-Izu

2962-Pos Board B339
THE ROLE OF ROS AND CALCIUM FOR THE PROLONGED FORCE DEPRESSION AFTER ECCENTRIC CONTRACTIONS. **Håkan Westerblad**, Niklas Ivarsson, Abram Katz, Sigitas Kamandulis, Maja Schlittler, Marius Brazaitis, Albertas Skurvydas

2963-Pos Board B340
THE LOSS OF THE TRANSMEMBRANE PROTEIN MG23 AFFECTS THE FAST-TWITCH FEATURE OF EDL MUSCLE. **Myuki Nishi**, Takahisa Gouda, Nagomi Kurebayashi, Yu Takahashi, Shinji Komazaki, Hua Zhu, Hiroshi Takeshima

2964-Pos Board B341
ROLES OF MITSUGUMIN53 IN SKELETAL MUSCLE. **Mi Kyoung Ahn**, Keon Jin Lee, Mei Huang, Jianjie Ma, Eun Hui Lee

2965-Pos Board B342
SILDENAFIL IS EFFECTIVE TO ENHANCE THE PROLIFERATION OF SKELETAL MYOBLASTS. **Mei Huang**, Keon Jin Lee, Mi Kyoung Ahn, Chung-Hyun Cho, Eun Hui Lee

Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating III (Boards B343 - B347)

2966-Pos Board B343
TRYPTOPHAN 207 IS CRUCIAL TO THE UNIQUE PROPERTIES OF THE HUMAN VOLTAGE GATED PROTON CHANNEL, HHV1. Vladimir V. Cherny, Deri Morgan, Boris Musset, Gustavo Chaves2, Susan M.E. Smith, **Thomas E. DeCoursey**

2967-Pos Board B344
HV1 PROTON CHANNEL RESTING-STATE VOLTAGE SENSOR MODEL STRUCTURES ARE REFINED BY EXPERIMENTAL MAPPING OF ZINC-COORDINATING RESIDUES. **Victor De-la-Rosa**, Ashley L. Bennett, Ian Scott Ramsey

2968-Pos Board B345
KVAP GATING STATES PROBED BY ELECTRON SPIN-ECHO ENVELOPE MODULATION (ESEEM) SPECTROSCOPY. **Dylan O. Burdette**, Adrian Gross

2969-Pos Board B346
REGULATION OF HERG1B BY HERG1A N-TERMINAL REGIONS. **Beth A. McNally**, Matthew C. Trudeau

2970-Pos Board B347
MULTIPLE METAL BRIDGES AT THE INTRACELLULAR GATE OF A VOLTAGE ACTIVATED POTASSIUM CHANNEL PREVENT CLOSING. **Angel A. de la Cruz Landrau**, Miguel Holmgren

Ligand-gated Channels III (Boards B348 - B363)

2971-Pos Board B348
MOLECULAR MODELING OF CHARGE SELECTIVITY IN PENTAMERIC LIGAND-GATED ION CHANNELS. **Tyler J. Harpole**, Claudio Grosman

2972-Pos Board B349
PATCH CLAMP FLUOROMETRY IN OUTSIDE-OUT PATCHES FOR LIGAND-GATED ION CHANNELS. **Matthias Wulf**, Stephan A. Pless

2973-Pos Board B350
THE ROLE OF A TRYPTOPHAN CLUSTER IN THE EXTRACELLUAR DOMAIN OF CYS-LOOP RECEPTORS. **Nina Braun**, Timothy Lynagh, Rilei Yu, Philip C. Biggin, Stephan A. Pless

2974-Pos Board B351
EXPRESSION AND PURIFICATION OF THE INTRACELLULAR DOMAIN OF A CATIONIC PENTAMERIC LIGAND-GATED ION CHANNEL. **Katharine Jenkins**, Akash Pandhare, Laura J. Delin, Michaela Jansen

2975-Pos Board B352
FUNCTIONAL AND BIOCHEMICAL CHARACTERIZATION OF ALVINELLA POMPEJANA CYS-LOOP RECEPTOR HOMOLOGUES. **Eveline Wijckmans**, Mieke Nys, Sarah Debaveye, Marijke Brams, Els Pardon, Daniel Bertrand, Jan Steyaert, Chris Ulens

2976-Pos Board B353
UNDERSTANDING NICOTINIC RECEPTOR ASSEMBLY IN THE ENDOPLASMIC RETICULUM WITH SINGLE MOLECULE FLUORESCENCE MICROSCOPY. **Chris Richards**, Ashley Loe, Faruk Moonschi

2977-Pos Board B354
PROBING BINDING INTERACTIONS OF AGONISTS WITH THE α6β2 NICOTINIC ACETYLCHOLINE RECEPTOR. **Michael R. Post**, Dennis A. Dougherty, Henry A. Lester

2978-Pos Board B355
EFFECTS OF MENTHOL ON α3β4* NICOTINIC RECEPTORS. **Suparna Patowary**, Elisha D.W. Mackey, Sheri L. McKinney, Purnima Deshpande, Brandon J. Henderson, Gabriel Biener, Valerica Raicu, Henry A. Lester

2979-Pos Board B356
SELECTIVITY OF SPIROIMINE PHYCOTOXINS TOWARD NICOTINIC ACETYLCHOLINE RECEPTORS. **Bogdan I. Iorga**, Rómulo Aráoz, Evelyne Benoit, Jordi Molgó

2980-Pos Board B357
SIMULATIONS OF ENDPLATE ACHRS: AGONIST SITE β-SHEET AND M1 π-HELIX. **Srirupa Chakraborty**, Anthony Auerbach

2981-Pos Board B358
FUNDAMENTAL CONSTANTS FOR ACTIVATION OF HUMAN ENDPLATE RECEPTORS. **Anthony Auerbach**, Tapan K. Nayak

2982-Pos Board B359
EFFECTS OF QUASI-NATIVE LIPID COMPOSITION ON MEMBRANE DOMAIN FORMATION INDUCED BY NICOTINIC ACETYLCHOLINE RECEPTORS. **Liam M. Sharp**, Reza Salari, Grace Brannigan

2983-Pos Board B360
INTERACTOME MAPS OF THE ACETYLCHOLINE RECEPTOR GATE REGION. **Tapan K. Nayak**, Anthony Auerbach

2984-Pos Board B361
THE β2(+)/α4(-) INTERFACES OF (α4β2)2α4 NICOTINIC RECEPTORS ALLOSTERICALLY CONTRIBUTE TO RECEPTOR FUNCTION. **Simone Mazzaferro**, Isabel Bermudez, Silvia Garcia Del Villar, Karina K. New

2985-Pos Board B362
BETWEEN THE SHEETS: INTER-SUBUNIT BACKBONE INTERACTIONS AT ACHR NEUROTRANSMITTER BINDING SITES. **Shaweta Gupta**, Srirupa Chakraborty, Anthony Auerbach

2986-Pos Board B363
INTERACTION OF THE POSITIVE ALLOSTERIC MODULATOR LY2087101 WITH α4β2 NICOTINIC ACETYLCHOLINE RECEPTOR. Ze-Jun Wang, Farah Deba, Tiffany R. Trevino, Kara Ramos, **Ayman K. Hamouda**

Ion Channel Regulatory Mechanisms (Boards B364 - B388)

2987-Pos Board B364
HIGH MEMBRANE PERMEABILITY FOR MELATONIN. **Haijie Yu**, Eamonn Dickson, Seung-Ryoung Jung, Duk-Su Koh, Bertil Hille

2988-Pos Board B365
LOCKING THE ASYMMETRIC OPEN CONFORMATION OF MG^{2+} CHANNEL CORA WITH A SYNTHETIC ANTIBODY FRAGMENT. **Bharat Reddy**, Pawel Dominik, Olivier Dalmas, Tony Kossiakoff, Eduardo Perozo

2989-Pos Board B366
MITOGENIC ACTIVATION AND PROLIFERATION OF T LYMPHOCYTES IN TRPM7 KINASE-DEAD MUTANT MICE. **Pavani Beesetty**, Masayuki Matsushita, J. Ashot Kozak

2990-Pos Board B367
DYNAMIC INTERPLAY OF CALMODULIN AND FIBROBLAST GROWTH FACTOR HOMOLOGOUS FACTORS IN REGULATING NA CHANNELS. **Manu B. Johny**, Gordon F. Tomaselli, David T. Yue

2991-Pos Board B368 **CPOW TRAVEL AWARDEE**
SECRETED HUMAN CLCA1 ACTIVATES CALCIUM-DEPENDENT CHLORIDE CURRENTS THROUGH DIRECT BINDING OF ITS VWA DOMAIN WITH AN EXTRACELLULAR LOOP OF TMEM16A/ANOCTAMIN 1. **Monica Sala-Rabanal**, Zeynep Yurtsever, Colin G. Nichols, Tom J. Brett

2992-Pos Board B369
FUNCTIONAL COUPLING BETWEEN TRPV1 AND ANO1 IN SENSORY NEURONS REQUIRES CA^{2+}-RELEASE FROM THE ENDOPLASMIC RETICULUM. **Shihab Shah**, Nikita Gamper

2993-Pos Board B370
TRANSCRIPTIONAL REGULATION OF POTASSIUM CHANNEL EXPRESSION BY G9A IN NEUROPATHIC PAIN. **Hui-Lin Pan**, Shao-Rui Chen, Geoffroy Laumet, Yuhao Zhang

2994-Pos Board B371
NICOTINE-UPREGULATION OF ALPHA 7 NACHR IN XENOPUS OOCYTES. **Joseph Farley**, Mohammad F. Islam, Patrick B. Schwartz, Kristi DeBoeuf, Jayharsh Panchal, Thangaraju Murugesan, Jed E. Rose

2995-Pos Board B372
MOLECULAR MECHANISM OF USE-DEPENDENT ACTIVATION OF KV1.2 CHANNEL COMPLEXES AND ITS IMPACT ON REGULATION OF NEURONAL EXCITABILITY. **Victoria A. Baronas**, Brandon R. McGuinness, Yury Y. Vilin, Stefano G. Brigidi, Shernaz X. Bamji, Runying Yang, Harley T. Kurata

2996-Pos Board B373
HETERODIMERIZATION WITHIN THE TREK CHANNEL SUBFAMILY. **Guillaume Sandoz**

2997-Pos Board B374
POLYMODAL GATING OF THE TREK-2 K2P POTASSIUM CHANNEL INVOLVES STRUCTURALLY DISTINCT OPEN STATES. Conor McClenaghan, Marcus Schewe, Thomas Baukrowitz, **Stephen J. Tucker**

2998-Pos Board B375
KV7.5 POTASSIUM CHANNEL SUBUNITS ARE THE PRIMARY TARGET FOR PKA-DEPENDENT ENHANCEMENT OF VASCULAR SMOOTH MUSCLE KV7 CURRENTS. **Lyubov I. Brueggemann**, Bharath K. Mani, Christina Robakowski, Leanne L. Cribbs, Kenneth L. Byron

2999-Pos Board B376
INTRACELLULAR ZINC AND ASCORBATE POTENTIATE KCNQ CURRENTS VIA DISTINCT MECHANISMS. **Aurelien Boillat**, Haixia Gao, Chris Peers, Nikita Gamper

3000-Pos Board B377
INTRACELLULAR ZINC POTENTIATES KCNQ CHANNELS THROUGH MODULATION OF THEIR SENSITIVITY TO PIP2. Haixia Gao, Aurelien Boillat, Chris Peers, **Nikita Gamper**

3001-Pos Board B378
MODULATION OF NEURONAL KIR3 CHANNELS BY CHOLESTEROL. Anna N. Bukiya, **Avia Rosenhouse-Dantsker**

3002-Pos Board B379
CROSS-TALK BETWEEN CHOLESTEROL, PIP2 AND CAVEOLIN IN REGULATING KIR2 CHANNELS. Huazhi Han, Avia Rosenhouse-Dantsker, Radhakrishnan Gnanasambandam, Frederick Sachs, **Irena Levitan**

3003-Pos Board B380
A SHARED MECHANISM OF BK CHANNEL ACTIVATION BY MALLOTOXIN AND AUXILIARY γ1 SUBUNIT. Xin Guan, Qin Li, **Jiusheng Yan**

3004-Pos Board B381
A CRITICAL ROLE OF THE S6 TRANSMEMBRANE HELIX IN BK CHANNEL MODULATION BY AUXILIARY γ SUBUNITS. **Qin Li**, Jiusheng Yan

3005-Pos Board B382
THE STRETCH-ACTIVATED BK (SAKCA) CHANNEL IN CHICK HEART IS INHIBITED BY THE SPIDER PEPTIDE GSMTX-4. **Qiong-Yao Tang**, Xiao-Dong Tang, Yan-Jun Feng, Hui Li, Fei-Fei Zhang, Zhe Zhang, Masahiro Sokabe

3006-Pos Board B383
N-LINKED GLYCOSYLATION REGULATES CALHM1 CHANNEL FUNCTION AND SUBCELLULAR LOCALIZATION. **Akiyuki Taruno**, Hongxin Sun, Makiko Kashio, Yoshinori Marunaka

3007-Pos Board B384
EFFECTS OF EXCLUDED VOLUME AND INDUCED N-TERMINAL CONFORMATIONAL CHANGE ON ION TRANSLOCATION ACROSS VDAC. **Sai Shashank Chavali**, Grace Brannigan, Reza Salari

3008-Pos Board B385
ELECTROPHYSIOLOGICAL CHARACTERIZATION OF TWO NOVEL ION CHANNELS OF MITOCHONDRIA. **Vanessa Checchetto**, Angela Paggio, Simona Reina, Diego De Stefani, Vito De Pinto, Rosario Rizzuto, Ildikò Szabò

3009-Pos Board B386
CONFORMATIONAL CHANGES THAT OPENS TRKH ION CHANNEL. **Hanzhi Zhang**, Zhao Wang, Wah Chiu, Ming Zhou

3010-Pos Board B387 **CID TRAVEL AWARDEE**
ELUCIDATING THE PH DEPENDENT MECHANISM OF OMPG GATING. **Christina M. Chisholm**, Emily Friis, Monifa A. Fahie, Min Chen

3011-Pos Board B388
CHARACTERIZATION OF TRANSMEMBRANE SYNTHETIC CHLORIDE ION TRANSPORTERS. **Ahmed Fuwad**

TRP Channels II (Boards B389 - B407)

3012-Pos Board B389
STORE-OPERATED CA^{2+} ENTRY MEDIATED BY ORAI1 AND TRPC1 PARTICIPATES TO INSULIN SECRETION IN RAT β-CELLS. **Jessica Sabourin**, Loïc Le Gal, Jacques-Antoine Haefliger, Eric Raddatz, Florent Allagnat

3013-Pos Board B390
TRPC3-CALCINEURIN MICRODOMAINS GOVERN ORAI1 SIGNALING IN MAST CELLS. Michael Poteser, Bernadett Bacsa, Oleksandra Tiapko, Michaela Lichtenegger, Irene Frischauf, Christoph Romanin, **Klaus Groschner**

3014-Pos Board B391
MODULATION OF NEURONAL ACTIVITY BY SYNTHETIC ACTIVATORS OF LIPID-GATED TRPC CHANNELS. **Oleksandra Tiapko**, Toma Glasnov, Gemma Guedes de la Cruz, Michael Poteser, Michaela Lichtenegger, Klaus Groschner

3015-Pos Board B392 **INTERNATIONAL TRAVEL AWARDEE**
MECHANOSENSITIVITY OF TRPC6 ION CHANNEL RECONSTITUTED IN THE LIPOSOMES. **Yury A. Nikolaev**, Paul R. Rohde, Derek R. Laver, Boris Martinac

3016-Pos Board B393
CRITICAL ROLES OF GI/O PROTEINS AND PHOSPHOLIAPSE C-δ1 IN THE ACTIVATION OF RECEPTOR-OPERATED TRPC4 CHANNELS. **Dhananjay Thakur**, Jin Bin Tian, Jaepyo Jeon, Michael X. Zhu

3017-Pos Board B394
REGULATOR OF G PROTEIN SIGNALING (RGS) AND GOLOCO PROTEINS SUPPRESS TRPC4 CHANNEL FUNCTION VIA ACTING AT GAI/O. **Jaepyo Jeon**, Dhananjay P. Thakur, Jin Bin Tian, Michael X. Zhu

3018-Pos Board B395
INTRACELLULAR CALCIUM ACTIVATED AN ENDOGENOUS CURRENT IN HEK293 CELLS, BUT DID NOT ACTIVATE TRPC4-MEDIATED CURRENTS. **Yekaterina Merkulova**, Nicholas Penington, Keith Williams

3019-Pos Board B396
STORE OPERATED CALCIUM CHANNELS, NEW TARGETS OF ALDOSTERONE IN CARDIOMYOCYTES. **Fiona Bartoli**, Jessica Sabourin, Ana-Maria Gomez, Jean-Pierre Benitah

3020-Pos Board B397
THE CYCLIC AMP SIGNALING PATHWAY AND DIRECT PKA PHOSPHORYLATION REGULATE POLYCYSTIN-2 (TRPP2) CHANNEL FUNCTION. **María del Rocío Cantero**, Irina F. Velázquez, Andrew J. Streets, Albert C.M. Ong, Horacio F. Cantiello

3021-Pos Board B398
REGULATION OF POLYCYSTIN-2 TRPP2 ASSOCIATED CATION CURRENTS IN THE RENAL EPITHELIAL CELL LINE LLC-PK1 BY THE CALCIUM-SENSING RECEPTOR. Xiao Qing Dai, **Paula L. Perez**, Mariano Smoler, María del Rocío Cantero, Horacio F. Cantiello

3022-Pos Board B399
FURTHER EVIDENCE OF AN ALTERNATIVE ION PERMEATION PATHWAY IN THE NOCICEPTOR TRPM3. **Katharina Held**, Annelies Janssens, Thomas Voets, Joris Vriens

3023-Pos Board B400
TRPM3 EXHIBITS SLIGHT TEMPERATURE SENSITIVITY IN THE PLANAR LIPID BILAYER SYSTEM AND REQUIRES THE PRESENCE OF PIP_2. **Lusine Demirkhanyan**, Kunitoshi Uchida, Swapna Asuthkar, Alejandro Cohen, Makoto Tominaga, Eleonora Zakharian

3024-Pos Board B401
ROLE OF THE KINASE DOMAIN IN TRPM7 CHANNEL ACTIVITY AND FUNCTION. **Ceredwyn E. Hill**, Mustafa D. Ahmadzai

3025-Pos Board B402
TESTOSTERONE IS A HIGHLY POTENT AND SPECIFIC AGONIST OF TRPM8. Zahir Hussain, Lusine Demirkhanyan, Swapna Asuthkar, **Eleonora Zakharian**

3026-Pos Board B403
UBIQUITIN-MEDIATED TRPM8 PROTEIN DEGRADATION IN THE PATHOGENESIS OF PROSTATE CANCER. **Swapna Asuthkar**, Alejandro Cohen, Lusine Demirkhanyan, Eleonora Zakharian

3027-Pos Board B404
COMPETITIVE PIRT AND PI(4,5)P2 INTERACTIONS MODULATE TRPM8. Nicholas J. Sisco, Parthasarathi Rath, **Wade D. Van Horn**

3028-Pos Board B405
IMPLICATIONS OF HUMAN TRPM8 CHANNEL GATING FROM SENSING DOMAIN AND MENTHOL BINDING STUDIES. **Parthasarathi Rath**

3029-Pos Board B406
BIOPHYSICAL CHARACTERIZATION OF HUMAN TRANSIENT RECEPTOR POTENTIAL MELASTATIN 8 (TRPM8) ION CHANNEL MODULATION BY PHOSPHOINOSITIDE REGULATOR OF TRP (PIRT). **Jacob K. Hilton**, Nicholas J. Sisco, Parthasarathi Rath, Wade D. Van Horn

3030-Pos Board B407
TARGETING SEQUENCE AND FUNCTION-DEPENDENCE OF SUBCELLULAR LOCALIZATION OF TRANSIENT RECEPTOR POTENTIAL MUCOLIPIN CHANNELS. **Jian Xiong**, Xinghua Feng, Michael X. Zhu

Myosins (Boards B408 - B420)

3031-Pos Board B408
STRUCTURAL COORDINATION OF THE MYOSIN POWERSTROKE. **Joseph Muretta**, John Rohde, David D. Thomas

3032-Pos Board B409
MECHANISM OF COOPERATIVE FORCE GENERATIONS BETWEEN SKELETAL MYOSINS. **Motoshi Kaya**, Yoshiaki Tani, Takumi Washio, Toshiaki Hisada, Hideo Higuchi

3033-Pos Board B410
β-MYHC MUTATIONS LINKED TO EARLY-ONSET HCM AND DCM SHOW DIFFERENCES IN PRE-STEADY AND STEADY STATE KINETIC PARAMETERS. **Carlos D. Vera Velazquez**, Jonathan Walklate, Michael A. Geeves, Leslie A. Leinwand

3034-Pos Board B411
ARACHIDONIC ACID DIRECTLY BINDS AND ACTIVATES BETA-CARDIAC MYOSIN IN THE REGULATED CARDIAC ACTOMYOSIN COMPLEX. **Manuel H. Taft**, Giulia Falorsi, Michael B. Radke, Salma Pathan-Chhatbar, Nikolas Hundt, Claudia Thiel, Mirco Müller, Vincenzo Lombardi, Dietmar J. Manstein

3035-Pos Board B412
MODELLING OF DOUBLE HIT MUTATIONS IN THORACIC AORTIC ANEURYSM DISEASE THAT HAVE VARIABLE IMPACT ON PHENOTYPE. **Brett D. Hambly**, Elizabeth Robertson, Stefanie S. Portelli, Yaxin Lu, Murat Kekic, Richmond Jeremy

3036-Pos Board B413
ELECTROSTATICS OF ACTOMYOSIN INTERFACE AND THE RATE OF RIGOR BINDING. **Jinghua Ge**, Bhavana Ambil, Furong Huang, Yuri E. Nesmelov

3037-Pos Board B414
MYOSIN II HEAD INTERACTION IN PRIMITIVE SPECIES. Kyounghwan Lee, Shixin Yang, Xiong Liu, Edward D. Korn, Floyd Sarsoza, Sanford I. Bernstein, Luther Pollard, Matthew J. Lord, Kathleen M. Trybus, **Roger Craig**

3038-Pos Board B415 **Education Travel Awardee**
CHARACTERIZATION OF A UNIQUE MYOSIN IIIA DEAFNESS MUTATION WHICH ENHANCES ACTIN-SLIDING VELOCITY BUT ABOLISHES FILOPODIA TIP LOCALIZATION. **Manmeet H. Raval**, Lina Jamis, William Unrath, Omar A. Quintero, M'hamed Grati, Jasmine Crenshaw, Xue Zhong Liu, Christopher M. Yengo

3039-Pos Board B416
LARGE VESICLE MOVES IN ROLLING MANNER BY MYOSIN 5C ALONG ACTIN TRACKS. **Justin J. Raupp**, Alexander Pattyn, Laura K. Gunther, Xuequn Chen, Takeshi Sakamoto

3040-Pos Board B417
MYOSIN 19 IS AN OUTER MITOCHONDRIAL MEMBRANE MOTOR AND EFFECTOR OF STARVATION INDUCED FILOPODIA WITH UNIQUE KINETIC FEATURES. **Arnon Henn**, Boris Shneyer, Marko Usaj

3041-Pos Board B418
COMPARING THE MOTILITY OF MYOSIN X WITH PARALLEL AND ANTIPARALLEL DIMERIZATION DOMAINS. **Matthew A. Caporizzo**, Claire E. Fishman, Osamu Sato, Mitsuo Ikebe, Yale E. Goldman

3042-Pos Board B419
DYNAMIC ACTIN NETWORKS UTILIZED TO SUPPORT SIMULTANEOUS PROCESSIVE MOTILITY OF TWO DIFFERENT MYOSIN MOTOR CLASSES. **Alicja Santos**, Ronald S. Rock

3043-Pos Board B420 **Education Travel Awardee**
FLUORESCENCE INTERFERENCE CONTRAST MICROSCOPY (FLIC) - A NEW TOOL TO STUDY THE COLLECTIVE MOTOR DYNAMICS. **Agata K. Krenc**, Jagoda Rokicka, Ronald S. Rock

Cytoskeletal Assemblies and Dynamics (Boards B421 - B437)

3044-Pos Board B421
MEASURING THE ON-RATE OF MEMBRANE-CYTOSKELETON BONDS AT THE NEAR-EQUILIBRIUM REGION. **Vivek Rajasekharan**, Varun K. A. Sreenivasan, Jeffrey N. Myers, Fred A. Pereira, Brenda Farrell

3045-Pos Board B422 INTERNATIONAL TRAVEL AWARDEE
DYNAMIC INSTABILITY EMERGES FROM MICROMECHANICS AND CHEMICAL KINETICS OF MICROTUBULE PROTOFILAMENTS. **Ishutesh Jain**, Ranjith Padinhateeri

3046-Pos Board B423 INTERNATIONAL TRAVEL AWARDEE
EFFECT OF BRANCHING ON FORCE-VELOCITY CURVES AND LENGTH FLUCTUATIONS OF ACTIN NETWORKS. **Deepak K. Hansda**, Shamik Sen, Ranjith Padinhateeri

3047-Pos Board B424
GLASSY DYNAMICS OF PASSIVE AND ACTIVE NETWORK MATERIALS: A MICROSCOPIC THEORY. **Shenshen Wang**, Peter Wolynes

3048-Pos Board B425
BOUNDARY EFFECTS ON ACTIVE ACTIN GELS. **Felix Keber**, Andreas Bausch

3049-Pos Board B426
FROM NANOSCALE TO MESOSCALE: INTEGRATING ADVANCED MICROSCOPY TECHNIQUES TO REVEAL THE ULTRASTRUCTURE AND COORDINATED DYNAMICS OF MECHANOSENSORY PODOSOMES. Koen van den Dries, Marjolein BM Meddens, Elvis Pandzic, Ben Joosten, Johan A. Slotman, Leila Nahidiazar, Kees Jalink, Adriaan B. Houtsmuller, Paul W. Wisemann, **Alessandra Cambi**

3050-Pos Board B427
STRUCTURE AND DYNAMICS OF FILOPODIA STUDIED BY ELECTRON CRYO-TOMOGRAPHY AND SINGLE MOLECULE FLUORESCENCE IMAGING. Andrew Howe, James Streetley, Michelle Peckham, Peter B. Rosenthal, **Justin E. Molloy**

3051-Pos Board B428
ACTIN FILAMENTS BUNDLING MECHANISMS BY FASCIN IN FILOPODIA WERE REVEALED WITH CRYO-ET. **Shinji Aramaki**, Kouta Mayanagi, Kazuhiro Aoyama, Takuo Yasunaga

3052-Pos Board B429
SUBSTRATE REGULATION OF CYTOSKELETAL ORDER AND BEATING STRAIN DYNAMICS OF CARDIOMYOCYTES. Kinjal Dasbiswas, Ohad Cohen, **Sam Safran**

3053-Pos Board B430
A MISSENSE MUTATION IN THE OBSCURIN GENE LEADS TO HYPERTROPHIC CARDIOMYOPATHY DUE TO DEREGULATED CALCIUM CYCLING. Li-Yen R. Hu, Maegen Ackermann, Peter Hecker, Benjamin Prosser, Brendan King, Kelly O'Connell, Larry Asico, Pedro Jose, Nathan Wright, Jonathan Lederer, **Aikaterini Kontrogianni-Konstantopoulos**

3054-Pos Board B431
TWO ISOFORMS OF MYOSIN-II ACCOUNT FOR THE TENSION OF THE FISSION YEAST CYTOKINETIC RING. **Shuyuan Wang**, Harvey F. Chin, Erdem Karatekin, Thomas D. Pollard, Ben O'Shaughnessy

3055-Pos Board B432
FULL T-CELL ACTIVATION BUT NOT EARLY SIGNALING REQUIRES ACTIN REMODELING. **Marco Fritzsche**, Christian Eggeling

3056-Pos Board B433
3-D TOPOLOGICAL ARRANGEMENT OF CYTOSKELETON MODULATED BY ENVIRONMENTAL MECHANICS. **Chiao-Yu Tseng**, Emilio Sanchez, Chin-Lin Guo

3057-Pos Board B434
STORAGE AND ABRUPT RELEASE OF ELASTIC ENERGY IN THE MICROTUBULE-EG5 NETWORK. Takayuki Torisawa, Daisuke Taniguchi, Shuji Ishihara, **Kazuhiro Oiwa**

3058-Pos Board B435
QUANTIFYING THE EFFECT OF ELECTRIC FIELDS IN THE FREQUENCY RANGE OF 100-500 KHZ ON MITOTIC SPINDLE STRUCTURES. **Zeev Bomzon**, Cornelia Wenger, Moshe Giladi, Noa Urman, Rosa S. Schneiderman, Tali Voloshin Sela, Ya'ara Porat, Mijal Munster, Roni Blat, shay sherbo, Uri Weinberg, Eilon Kirson, Pedro C. Miranda, Yoram Wasserman, Yoram Palti

3059-Pos Board B436
BRIGHTNESS CHARACTERIZATION OF SUN1 AND SUN2 BY Z-SCAN FLUORESCENCE FLUCTUATION SPECTROSCOPY. Cosmo A. Saunders, Jared Hennen, Elizabeth M. Smith, Joachim D. Mueller, **GW Gant Luxton**

3060-Pos Board B437
DYNAMIC FORCE PATTERNS PROMOTE COLLECTIVE CELL MIGRATION. **Teresa Zulueta-Coarasa**, Rodrigo Fernandez-Gonzalez

Cell Mechanics, Mechanosensing, and Motility III (Boards B438 - B463)

3061-Pos Board B438
THE VINCULIN D1 DOMAIN STABILIZES αE-CATENIN IN A STRONG ACTIN BINDING STATE. **Nicolas A. Bax**

3062-Pos Board B439
MECHANOSENSITIVITY OF ACTIN TURNOVER ALLOWS CELLS TO MAINTAIN HOMEOSTASIS AGAINST MYOSIN-II CONTRACTILE FLUCTUATIONS IN THE CYTOSKELETON. Shuyuan Wang, **Sathish Thiyagarajan**, Mark A. Smith, Elizabeth Blankman, Laura M. Chapin, Mary C. Beckerle, Ben O'Shaughnessy

3063-Pos Board B440
MODELING MECHANICALLY-INDUCED GROWTH CONE ADVANCE REVEALS THE IMPORTANCE OF MICROMETER-SCALE ELASTIC ADHESION STRUCTURES IN RIGIDITY SENSING. **Ahmad I M Athamneh**, Rodolfo Amezcua, Arvind Raman, Daniel M. Suter

3064-Pos Board B441
BINDING FORCES OF SINGLE αMβ2 INTEGRIN-FIBRINOGEN INTERACTIONS ON LIVING CELLS. **Wayne B. Christenson**

3065-Pos Board B442
THE MECHANICAL PROPERTIES OF TALIN ROD DOMAIN. **Mingxi Yao**, Benjamin T. Goult, Michael P. Sheetz, Jie Yan

3066-Pos Board B443
FRUSTRATED PHAGOCYTIC SPREADING DYNAMICS END IN DISTINCT NON-MUSCLE MYOSIN II DEPENDENT CONTRACTION. **Daniel T. Kovari**, Wenbin Wei, Jan-Simon Toro, Ruth E. Fogg, Karen Porter, Jennifer E. Curtis

3067-Pos Board B444
ROLE OF TOPOGRAPHIC CUES ON CANCER CELL PROLIFERATION. **Parthiv Kant Chaudhuri**

3068-Pos Board B445
CELL MECHANICAL PROPERTIES AND CANCER METASTASIS: EFFECTS OF CANCER DRUGS AND RADIOTHERAPY. Sruti V. Prathivadhi-Bhayankaram, Carolyn E. Taylor, Jianhao Ning, Michael Nichols, **Andrew E. Ekpenyong**

3069-Pos Board B446
EVALUATING BREAST CANCER CELL MORPHOLOGY AS A PREDICTOR OF INVASIVE CAPACITY. **Michelle J. Ziperstein**, Asja Guzman, Laura J. Kaufman

3070-Pos Board B447
THE ROLE OF HETEROGENEITY IN CANCER CELL MIGRATION. **Christoph Mark**, Claus Metzner, Julian Steinwachs, Lena Lautscham, Ben Fabry

3071-Pos Board B448
MECHANICAL INDUCTION OF THE TUMORIGENIC β-CATENIN PATHWAY BY TUMOUR GROWTH PRESSURE IN VIVO. **Emmanuel Farge**

3072-Pos Board B449
SEGREGATION OF MOBILE NUCLEAR PROTEINS AWAY FROM CHROMATIN WHEN THE NUCLEUS IS CONSTRICTED. **Charlotte R. Pfeifer**, Jerome Irianto, Dennis E. Discher

3073-Pos Board B450
A CHEMO-MECHANICAL MODEL FOR EXTRACELLULAR MATRIX AND NUCLEAR RIGIDITY REGULATED SIZE OF FOCAL ADHESION PLAQUES. **Xuan Cao**, Yuan Lin, Tristian P. Driscoll, Janusz Franco-Barraza, Edna Cukierman, Robert L. Mauck, Vivek Shenoy

3074-Pos Board B451
SPINDLE MICRO-FLUCTUATIONS OF LENGTH REVEAL ITS DYNAMICS OVER CELL DIVISION. **Benjamin Mercat**, Xavier Pinson, Jonathan Fouchard, Hadrien Mary, Sylvain Pastezeur, Zahraa Alayan, Yannick Gachet, Sylvie Tournier, Hélène Bouvrais, Jacques Pécréaux

3075-Pos Board B452 **CPOW TRAVEL AWARDEE**
ACTOMYOSIN NETWORK CONTRACTILITY TRIGGERS A STOCHASTIC TRANSFORMATION INTO HIGHLY MOTILE AMOEBOID CELLS. **Verena Ruprecht**, Stefan Wieser, Andrew Callan-Jones, Michael Smutny, Hitoshi Morita, Keisuke Sako, Vanessa Barone, Monika Ritsch-Marte, Michael Sixt, Raphael Voituriez, Carl-Philipp Heisenberg

3076-Pos Board B453
CYTOSKELETAL AND ADHESION DYNAMICS ARE COUPLED TO MATRIX DEFORMATION IN 3D CELL MIGRATION. **Leanna M. Owen**, Arjun S. Adhikari, Mohak Patel, Natascha Leijnse, Min Cheol Kim, Christian Franck, Alexander R. Dunn

3077-Pos Board B454
HOMEOSTASIS OF PLASMA MEMBRANE TENSION THROUGH SURFACE AREA REGULATION IN EPITHELIAL CELLS. **Andreas Janshoff**, Bastian Brueckner, Stefan Nehls

3078-Pos Board B455
CELL MOTILITY AND GROWTH FACTORS ACCORDING TO DIFFERENTIALLY VARIATIONAL SURFACES. **David V. Svintradze**

3079-Pos Board B456
CELLULAR ADHESION: EVALUATING THE EFFECT OF RECEPTOR-LIGAND CHEMISTRIES, DISTRIBUTION OF RECEPTORS, AND SPREAD VERSUS SPHERICAL CELL GEOMETRY. **Aravind R. Rammohan**, Mathew Mckenzie, Ravi Radhakrishnan, Natesan Ramakrishnan

3080-Pos Board B457
CELL FORMATION AND COMPETITION IN THREE DIMENSIONS. Anqi Huang, Jianmin Yin, Weimiao Yu, **Timothy E. Saunders**

3081-Pos Board B458
MECHANICAL PROPERTIES OF DIFFERENTIATING STEM CELLS ON PEPTIDE NANOFIBERS. **Ahmet E. Topal**, Ayse B. Tekinay, Mustafa O. Guler, Aykutlu Dana

3082-Pos Board B459 **INTERNATIONAL TRAVEL AWARDEE**
COHERENT MOTION OF MONOLAYER SHEETS UNDER ACTIVE AND PASSIVE CONFINEMENT: FROM BUILD-UP TO CONSEQUENCE. **SS Soumya**, Dibyendu Das, Shamik Sen, Mandar M. Inamdar

3083-Pos Board B460
MECHANOBIOLOGICAL INDUCTION OF LONG-RANGE CONTRACTILITY AND SIZE SCALING IN CELL ASSEMBLIES. **Kinjal Dasbiswas**, Samuel Safran

3084-Pos Board B461
CORTICAL FLOW-DRIVEN SHAPES OF NON-ADHERENT CELLS. **Andrew Callan-Jones**, Verena Ruprecht, Stefan Wieser, Carl-Philipp Heisenberg, Raphaël Voituriez

3085-Pos Board B462
AN ACTIVE CONTRACTION MODEL OF VALVULAR INTERSTITIAL CELLS. Yusuke Sakamoto, **Michael S. Sacks**

3086-Pos Board B463
MULTI-CELLULAR MECHANICAL REGULATION OF ENDOTHELIAL PERMEABILITY. **Corey Hardin**, Ramaswamy Krishnan, Emanuela Del Gado

Membrane Pumps, Transporters, and Exchangers II (Boards B464 - B490)

3087-Pos Board B464
THE MECHANICAL INSIGHTS INTO PROTON/ELECTRON TRANSFER IN CYTOCHROME C OXIDASE REVEALED BY DIRECT MODELING OF VOLTAGE CHANGES IN RESPONSE TO CHARGE SEPARATION. **Ilsoo Kim**, Arieh Warshel

3088-Pos Board B465
WHAT KEEPS TOLC CLOSED? INSIGHTS FROM MOLECULAR DYNAMICS SIMULATIONS. **Fabio Grassi**, Vassiliy N. Bavro, Ulrich Kleinekathöfer

3089-Pos Board B466
SPONTANEOUS INWARD OPENING OF THE DOPAMINE TRANSPORTER IS TRIGGERED BY PIP2-REGULATED DYNAMICS OF THE N-TERMINUS. **George Khelashvili**, Nathaniel Stanley, Michelle Sahai, Jaime Medina, Michael V. LeVine, Lei Shi, Gianni De Fabritiis, Harel Weinstein

3090-Pos Board B467
COMPUTATIONAL INVESTIGATION OF THE TRANSPORT MECHANISM OF NEUROTRANSMITTER SODIUM SYMPORTERS USING A PHYSIOLOGICAL ION GRADIENT. **Emily M. Benner**, Jeffry D. Madura

3091-Pos Board B468
TOWARDS IDENTIFYING BIOLOGICALLY RELEVANT INTERMEDIATE CONFORMATIONAL STATES IN DOPAMINE TRANSPORTER. **Ara M. Abramyan**, Nicholas Taro, Sebastian Stolzenberg, Lei Shi

3092-Pos Board B469
KEEPING SECONDARY TRANSPORTERS UNDER CONTROL: LESSONS FROM A NA^+/CA^{2+} EXCHANGER. **Fabrizio Marinelli**, José Faraldo-Gómez

3093-Pos Board B470 **CID TRAVEL AWARDEE**
COMBINED QM/MM DYNAMICS SIMULATIONS OF PROTON TRANSFER IN E. COLI CLC CHLORIDE/PROTON ANTIPORTER. **Christina Garza**

3094-Pos Board B471
COMPUTATIONAL STUDIES OF ELEVATOR-LIKE MOVEMENTS IN SECONDARY TRANSPORT. Cristina Fenollar-Ferrer, Claudio Anselmi, Ariela Vergara Jaque, Hossein Ali Karimi-Verzaneh, Horacio Poblete-Vilches, Christopher Mulligan, Ian C. Forster, Joseph A. Mindell, José D. Faraldo-Gómez, **Lucy R. Forrest**

3095-Pos Board B472
DISSECTING FUNCTIONAL CORRELATES OF A DOUBLE MUTATION ENHANCING GLTPH TRANSPORT EFFICIENCY USING ALCHEMICAL FREE ENERGY CALCULATIONS. **Michel A. Cuendet**, Harel Weinstein

3096-Pos Board B473
HIGH-RESOLUTION STRUCTURES AND MOLECULAR DYNAMICS SIMULATIONS OF THERMUS THERMOPHILUS NAPA REVEAL A LARGE-SCALE CONFORMATIONAL CHANGE FOR ION TRANSLOCATION. **David L. Dotson**, Mathieu Coincon, Povilas Uzdavinys, Emmanuel Nji, Iven Winkelmann, Saba Abdul-Hussein, Alexander D. Cameron, David Drew, Oliver Beckstein

3097-Pos Board B474
STRUCTURAL CHARACTERIZATION OF SUBSTRATE TRANSPORT SELECTIVITY OF THE SLC13 FAMILY OF NA^+/DICARBOXYLATE COTRANSPORTERS. **Claire Colas**, Ana M. Pajor, Avner Schlessinger

3098-Pos Board B475
A MOLECULAR DYNAMICS BASED MODEL OF THE OUTWARD-FACING STATE AND TRANSPORT MECHANISM OF THE HUMAN NACT HOMOLOG VCINDY. **Noah Trebesch**, Joshua V. Vermaas, Emad Tajkhorshid

3099-Pos Board B476
MOLECULAR DYNAMICS OF THE MTRE EFFLUX GATE FROM N. GONORRHOEAE. **Giulia Tamburrino**, Owen N. Vickery, Alexander Krah, Anthony G. Hope, Ulrich Zachariae

3100-Pos Board B477
ELECTROSTATIC LOCK CONTROLLING STRUCTURAL TRANSITION IN THE EMRE POLYAROMATIC CATION TRANSPORTER. **Joshua V. Vermaas**, Emad Tajkhorshid

3101-Pos Board B478 **INTERNATIONAL TRAVEL AWARDEE**
RESCUE OF NA^+ AFFINITY IN ASPARTATE-928 MUTANTS OF NA^+,K^+-ATPASE BY SECONDARY MUTATION OF GLUTAMATE-314. **Rikke Holm**, Anja P. Einholm, Jens P. Andersen, Pablo Artigas, Bente Vilsen

3102-Pos Board B479
ENZYMATIC REQUIREMENTS FOR NON-CANONICAL PROTON IMPORT BY NA/K PUMPS. **Kevin Stanley**, Craig Gatto, Pablo Artigas

3103-Pos Board B480
BINDING SITE PROTONATION AND UPHILL OCCLUSION CONTROL THE NA^+/K^+-PUMP SELECTIVITY. **Huan Rui**, Benoît Roux

3104-Pos Board B481
CONFORMATIONAL TRANSITIONS AND ALTERNATIVE ACCESS MECHANISM IN ATP-DRIVEN CALCIUM PUMP SERCA. **Avisek Das**, Benoit Roux

3105-Pos Board B482
KINETICS BY X-RAY CRYSTALLOGRAPHY: SEQUENTIAL SUBSTITUTION OF K^+ BOUND TO NA^+,K^+-ATPASE. **Haruo Ogawa**, Flemming Cornelius, Ayami Hirata, Chikashi Toyoshima

3106-Pos Board B483
MOLECULAR MECHANISM BY WHICH TWO LYSINE SUBSTITUTIONS ALTER NA/K-PUMP STOICHIOMETRY TO CONFER HIGH-SALINITY ADAPTATION IN BRINE SHRIMP. **Dylan J. Meyer**, Jessica Eastman, Huan Rui, Kevin Stanley, Craig Gatto, Benoit Roux, Pablo Artigas

3107-Pos Board B484
NANOSECOND FLUORESCENCE AND MICROSECOND SIMULATION OF SERCA REGULATORY INTERACTIONS WITH SARCOLIPIN AND PHOSPHOLAMBAN. **Joseph M. Autry**, Michel Espinoza-Fonseca, Kurt C. Peterson, Bengt Svensson, David D. Thomas

3108-Pos Board B485
IN VITRO DEMONSTRATION OF LIGHT-DRIVEN NA^+/H^+ PUMPING BY A MICROBIAL RHODOPSIN. **Hai Li**, Oleg A. Sineshchekov, Giordano F. Z. da Silva, John L. Spudich

3109-Pos Board B486
THE DIVERSITY OF LIGHT-DRIVEN ION PUMPS AND THEIR CONVERSION INTO ION CHANNELS. **Arend Vogt**, Christiane Grimm, Peter Hegemann

3110-Pos Board B487
LOCALIZATION OF A SODIUM BINDING SITE IN THE SODIUM TRANSLOCATING NADH:UBIQUINONE OXIDOREDUCTASE. **Katherine G. Mezic**, Blanca Barquera

3111-Pos Board B488
CHARACTERIZING NANOPORE-POLYMER INTERACTIONS AND CYS-LOOP PROTEIN RECEPTOR GATING. **Nicholas B. Guros**, Jeffery B. Klauda

3112-Pos Board B489
KEY DIFFERENCES IN MOLECULAR TRANSPORT MECHANISMS OF UNCOUPLING PROTEINS. **Gabriel Macher**, Melanie Köhler, Anne Rupprecht, Peter Hinterdorfer, Elena Pohl

3113-Pos Board B490
WATER PATHWAY ANALYSIS OF MULTI-DRUG EFFLUX TRANSPORTER ACRB. **Tsutomu Yamane**, Ryotaro Koike, Motonori Ota, Satoshi Murakami, Akinori Kidera, Mitsunori Ikeguchi

Computational Neuroscience (Boards B491 - B497)

3114-Pos Board B491
MODELING THE OSCILLATING DIPOLE PROPERTIES OF ELECTRIC ORGAN DISCHARGE IN THE WEAKLY ELECTRIC FISH, EIGENMANNIA. **Bela Joos**, Michael R. Markham, Yanna Steimle, John E. Lewis, Morris E. Catherine

3115-Pos Board B492
RESONANCES AND SPECTRAL CHARACTERISTICS OF A NEURAL NETWORK FOR THE SONG MOTOR PATHWAY IN BIRDS. **Cristiano Giordani**, Hector Fabio Rivera-Gutierrez, Ruggero Micheletto

3116-Pos Board B493
NOISE-DRIVEN SYNCHRONIZATION OF COUPLED NEURAL NETWORKS. **Anis Yuniati**, Te-Lun Mai, Chi-Ming Chen

3117-Pos Board B494
A UNIFIED FRAMEWORK FOR NEURONAL SPIKES, SEIZURES, SPREADING DEPRESSION, AND ISCHEMIA-INDUCED ANOXIC DEPOLARIZATION. **Ghanim Ullah**, Yina Wei, Steven J. Schiff

3118-Pos Board B495
CELL VOLUME IN BRAIN PATHOLOGIES: ANIONS-CONTROLLED NEURAL AND GLIAL SWELLING IN SPREADING DEPOLARIZATION AND INCREASED NEURONAL SUSCEPTIBILITY TO ISCHEMIC INJURY DUE TO LARGE EXTRACELLULAR SPACE. **Niklas Hubel**

3119-Pos Board B496
MULTI-SCALE SPATIAL SIMULATIONS REVEAL THE EFFECT OF DOPAMINE TRANSPORTER LOCALIZATION ON DOPAMINE NEUROTRANSMISSION. **Cihan Kaya**, Ethan R. Block, Alexander Sorkin, James R. Faeder, Ivet Bahar

3120-Pos Board B497
SYNTHETIC PERSONS. **Otto E. Rossler**

Single-Molecule Spectroscopy (Boards B498 - B537)

3121-Pos Board B498
ADVANCING 3D SINGLE MOLECULE TRACKING BY TIME-GATING AND FAST SIMULTANEOUS SPINNING DISK IMAGING FOR CONTEXTUAL INFORMATION. **Dominik G. Stich**, Matthew S. DeVore, Cédric Cleyrat, Mary L. Phipps, Bridget S. Wilson, Peter M. Goodwin, James H. Werner

3122-Pos Board B499
PHOTON-HDF5: AN OPEN FILE FORMAT FOR TIMESTAMP-BASED SINGLE-MOLECULE FLUORESCENCE DATA. Antonino Ingargiola, **Robert Boutelle**, Ted Laurence, Shimon Weiss, Xavier Michalet

3123-Pos Board B500
A 16 CHANNEL SPAD ARRAY FOR HIGH-THROUGHPUT TCSPC MEASUREMENTS OF SINGLE-MOLECULE FRET OF FREELY DIFFUSING MOLECULES. **Antonino Ingargiola**, Pietro Peronio, Ivan Rech, Angelo Gulinatti, Massimo Ghioni, Shimon Weiss, Xavier Michalet

3124-Pos Board B501
THE NEXT GENERATION OF NANOPHOTONIC STANDING-WAVE ARRAY TRAPS FOR PRECISION MANIPULATION. **Jun Lin**, Fan Ye, Ryan Badman, James Inman, Michelle Wang

3125-Pos Board B502
IMPROVING Z-TRACKING ACCURACY IN TWO-PHOTON SINGLE-PARTICLE TRACKING MICROSCOPE. **Cong Liu**, Evan Perillo, Yen-Liang Liu, Ajay Rastog, Andrew Dunn, Tim Yeh

3126-Pos Board B503 **INTERNATIONAL TRAVEL AWARDEE**
ON ARTIFACTS IN SINGLE-MOLECULE FORCE SPECTROSCOPY. **Pilar Cossio**, Gerhard Hummer, Attila Szabo

3127-Pos Board B504
OPEN COMPUTATIONAL TOOLS FOR FREELY DIFFUSING SINGLE-MOLECULE FLUORESCENCE ANALYSIS. **Antonino Ingargiola**, Ted Laurence, Robert Boutelle, Shimon Weiss, Xavier Michalet

3128-Pos Board B505
QUANTITATIVE THREE-COLOR FRET FOR THE STUDY OF COORDINATED INTRAMOLECULAR MOTION. **Anders Barth**, Lena Voith von Voithenberg, Ganesh Agam, Don C. Lamb

3129-Pos Board B506
BIO-AVAILABILITY OF HEAVY METALS IN WILD PLANTS FOUND IN AN ABANDONED BATTERY WASTE SITE. **Sarah Oni**, Olumuyiwa Ogunlaja, Olusola Ladokun

3130-Pos Board B507
DNA HAIRPIN DYNAMICS UNDER MOLECULAR CROWDING CONDITIONS. **Laura E. Baltierra-Jasso**, Michael J. Morten, Linda Laflör, Steven D. Quinn, Steven W. Magennis

3131-Pos Board B508
SINGLE MOLECULE FLUORESCENCE STUDIES OF TRANSITION PATHS IN DNA HAIRPIN FOLDING. **Katherine Truex**, Hoi Sung Chung, John M. Louis, William A. Eaton

3132-Pos Board B509
A COMPARATIVE STUDY ON G-QUADRUPLEX UNFOLDING ACTIVITY OF RECQ HELICASES. **Jagat B. Budhathoki**, Hamza Balci, Jaya G. Yodh, Pavel Janscak, Parastoo Maleki, William Roy

3133-Pos Board B510
A HYBRID SINGLE MOLECULE METHOD TO INVESTIGATE SUB-NANOMETER DYNAMICS OF DNA AND PROTEIN AT A SUB-MS RESOLUTION. Sijie Wei, Jongseong Kim, Jaehyoun Lee, **Tae-Hee Lee**

3134-Pos Board B511
A SINGLE MOLECULE STUDY OF G-QUADRUPLEX AND TELOMESTATIN INTRACTIONS. **Parastoo Maleki**, Y MA, K Iida, Kazuo Nagasawa, Hamza Balci

3135-Pos Board B512
MULTIPLEXED FORCE SPECTROSCOPY USING DNA NANOSWITCH A CENTRIFUGE. **Darren Yang**, Andrew R. Ward, Ken Halvorsen, Wesley P. Wong

3136-Pos Board B513
THE EFFECT MAGNESIUM CATIONS TO THE FORMATION OF G-QUADRUPLEX STUDIED BY SINGLE-MOLECULE SPECTROSCOPY. **I-Ren Lee**, Hao-Yi Hsu, Jia-Yu Wu

3137-Pos Board B514
SINGLE-MOLECULE STUDIES OF FLUORESCENTLY-LABELLED POLYSACCHARIDES. **Steven D. Quinn**, Charlotte E. Dalton, Robin A. Jeanneret, John M. Gardiner, Steven W. Magennis

3138-Pos Board B515
PROTEIN FOLDING DRIVES MUSCLE CONTRACTION. **Jaime A. Rivas Pardo**, Edward C. Eckels, Ionel Popa, Pallav Kosuri, Wolfgang A. Linke, Julio M. Fernandez

3139-Pos Board B516
ON-RATE SWITCHING UNDER FORCE INCREASES THE BINDING OF VON WILLEBRAND FACTOR A1 TO GPIBα. **Nathan Hudson**, Jongseong Kim, Timothy A. Springer

3140-Pos Board B517
UNFOLDING/FOLDING OF A MULTI-DOMAIN PROTEIN UNTANGLED BY SINGLE-MOLECULE FRET. **Antonie Schöne**, Daryan Kempe, Michele Cerminara, Matteo Gabba, Tina Züchner, Jörg Fitter

3141-Pos Board B518
STRUCTURAL DYNAMICS OF THE FULL-LENGTH METABOTROPIC GLUTAMATE RECEPTORS BY SINGLE-MOLECULE FRET. **Anne-Marinette Cao**, Fataneh Fatemi, Philippe Rondard, Jean-Philippe PinN, Emmanuel Margeat

3142-Pos Board B519
QUANTIFYING MEMBRANE BINDING OF THE GTPASE SAR1 BY DUAL-COLOR FLUORESCENCE CROSS-CORRELATION SPECTROSCOPY. Daniela Kruger, Jan Ebenhan, Stefan Werner, Sebastian Daum, **Kirsten Bacia**

3143-Pos Board B520
SINGLE MOLECULE LIGAND BINDING FRET AT HCN2 CHANNEL DOMAINS IN ZERO-MODE WAVEGUIDES. **Marcel P. Goldschen-Ohm**, Vadim Klenchin, Randall Goldsmith, Baron Chanda

3144-Pos Board B521
SINGLE-MOLECULE FRET REVEALS ALTERNATIVE LIGAND AND OSMOLYTE-DEPENDENT α-SYNUCLEIN FOLDING. **Mahdi M. Moosa**, Allan Chris M. Ferreon, Ashok Deniz

3145-Pos Board B522
BIOPHYSICAL CHARACTERIZATION OF MECHANOSENSORS WITHIN THE PLASMA PROTEIN VON WILLEBRAND FACTOR AND ITS RECEPTOR PLATELET GLYCOPROTEIN IB-IX. **Xiaohui Zhang**, Wei Zhang, Matthew Dragovich, Wei Deng, Renhao Li

3146-Pos Board B523
STOICHIOMETRIC ANALYSIS OF PROTEIN COMPLEXES BY CELL FUSION AND SINGLE MOLECULE IMAGING. **Avtar Singh**, Maria Sirenko, Alexander Song, Paul J. Kammermeier, Warren R. Zipfel

3147-Pos Board B524
THE SECRETED SIGNALING PROTEIN WNT3 RESIDES IN PLASMA MEMBRANE LIPID DOMAINS IN VIVO: A SPIM-FCS STUDY. **Thorsten Wohland**, Xue Wen Ng, Cathleen Teh, Vladimir Korzh

3148-Pos Board B525
SINGLE MOLECULE FLUORESCENCE STUDIES ON NUCLEOSOME DYNAMICS. **Kathrin Tegeler**, Johanna Mehl, Martin Würtz, Alexander Gansen, Katalin Toth, Yaakov Levy, Jörg Langowski

3149-Pos Board B526 **Education Travel Awardee**
DYNAMICS OF EGFR TRAFFICKING FROM MEMBRANE INTO DEEP CYTOPLASM REVEALED BY A SPATIOTEMPORALLY MULTIPLEXED 3D TRACKING MICROSCOPE. **Yen-Liang Liu**, Evan P. Perillo, Cong Liu, Peter M. Yu, Chao-Kai Chou, Mien-Chie Hung, Andrew K. Dunn, Tim Yeh

3150-Pos Board B527
OPTICAL BIOSENSORS TO EXPLORE BIOLOGICAL SYSTEMS. **Marta Espina Palanco**, Klaus Bo Mogensen, Nils H. Skovgaard Andersen, Kirstine Berg-SØrensen, Claus Hélix-Nielsen, Katrin Kneipp

3151-Pos Board B528
STUDYING THE HSP90 MACHINERY IN LIVING CELLS BY SINGLE MOLECULE FRET. **Philipp Wortmann**, Fernando Aprile-Garcia, Ritwick Sawarkar, Thorsten Hugel

3152-Pos Board B529
DIFFUSION AND BIOCHEMICAL REACTIONS IN INHOMOGENEOUS CROWDED FLUIDS. **Olivia Stiehl**, Matthias Weiss

3153-Pos Board B530
SINGLE-MOLECULE MASSPIC ANALYSIS OF SHORT-CHAIN PEG. **Siyun Chen**, Chan Cao, Yi-tao Long

3154-Pos Board B531
SINGLE-MOLECULE ASSAY DEVELOPMENT FOR STUDYING HUMAN RNA POLYMERASE II PROMOTER-PROXIMAL PAUSING. **Yazan K. Alhadid**, Benjamin L. Allen, SangYoon Chung, Dylan J. Taatjes, Shimon Weiss

3155-Pos Board B532
DESIGN AND DEVELOPMENT OF A TELOMERE SENSOR BASED ON FLUORESCENCE ENERGY TRANSFER. **Haitao Li**

3156-Pos Board B533
BEYOND AN 'ON-OFF' ACTIVATION MODEL OF G-PROTEIN-COUPLED RECEPTORS. **Julia Wagner**, Mike Friedrich, Martin J. Lohse, Katrin G. Heinze

3157-Pos Board B534
DETERMINING THE STOICHIOMETRY OF EGFR AND ADRβ2 USING CELL FUSION AND SINGLE MOLECULE IMAGING. **Maria Sirenko**, Avtar Singh, Alexander Song, Paul Kammermeier, Warren Zipfel

3158-Pos Board B535
BIFUNCTIONAL RHODAMINE LINKER SIMPLIFIES COLOCALIZATION STUDIES IN SINGLE-MOLECULE IMAGING. **Richard A. Haack**, Patrick J. Macdonald, Qiaoqiao Ruan, Richard J. Himmelsbach, Sergey Y. Tetin

3159-Pos Board B536
SINGLE-MOLECULE APPROACHES TO MEMBRANE NANOTUBES. **Minhyeok Chang**, Jungsic Oh, Ryangguen Lee, Jong-Bong Lee

3160-Pos Board B537
INVESTIGATING THE KINETICS AND SPECIFICITY OF TRANSCRIPTION ACTIVATOR-LIKE EFFECTOR BINDING USING HIGH THROUGHPUT SINGLE MOLECULE IMAGING. **Alexander L. Van Slyke**, Avtar Singh, Fabio Cupri Rinaldi, Adam J. Bogdanove, John T. Lis, Warren R. Zipfel

Molecular Dynamics II (Boards B538 - B567)

3161-Pos Board B538
GNEIMOSIM: MULTISCALE INTERNAL COORDINATES MOLECULAR DYNAMICS FOR PROTEINS. **Saugat Kandel**, Adrien B. Larsen, Abhinandan Jain, Nagarajan Vaidehi

3162-Pos Board B539
LOOS: A TOOLKIT FOR ANALYZING MOLECULAR SIMULATIONS AND MAKING NEW TOOLS. Tod D. Romo, **Alan Grossfield**

3163-Pos Board B540
CHARMM-GUI INPUT GENERATOR FOR NAMD, GROMACS, AMBER, OPENMM, AND CHARMM/OPENMM SIMULATIONS USING THE CHARMM36 ADDITIVE FORCE FIELD. **Jumin Lee**, Xi Cheng, Sunhwan Jo, Alexander D. MacKerell Jr., Jeffery B. Klauda, Wonpil Im

3164-Pos Board B541
EASY AND FAST SETUP OF MOLECULAR DYNAMICS SIMULATIONS: COMBINING VMD AND NAMD FOR EXPERIMENTALISTS. **Joao V. Ribeiro**, Rafael C. Bernardi, Till Rudack, Klaus Schulten

3165-Pos Board B542
ACCELERATING ORTHOGONAL SPACE SAMPLING WITH REPLICA EXCHANGE WITH SOLUTE TEMPERING (REST2) THROUGH A GENERIC IMPLEMENTATION IN NAMD. **Wei Jiang**, Sunhwan Jo

3166-Pos Board B543
IMPROVED ESTIMATION OF LONG-TIME KINETICS USING NON-MARKOVIAN ANALYSIS OF TRAJECTORY SEGMENTS: APPLICATION TO PROTEIN FOLDING AND UNFOLDING. **Ernesto Suarez**, Daniel M. Zuckerman

3167-Pos Board B544
HDGB IMPLICIT MEMBRANE MODEL WITH A VAN DER WAALS DISPERSION TERM. **Bercem Dutagaci**, Maryam Sayadi, Michael Feig

3168-Pos Board B545
OBTAINING BINDING FREE ENERGY FROM A PATH SAMPLING WITHOUT FORCE BIAS. **Duy Phuoc Tran**, Akio Kitao

3169-Pos Board B546
A MULTISCALE APPROACH TO UNDERSTANDING PROTEIN LIGAND BINDING PROCESS. **Tohru Terada**, Tatsuki Negami, Kentaro Shimizu

3170-Pos Board B547
HOW TO EASILY EXTRACT PHYSICAL PROPERTIES FROM MD SIMULATIONS OF LIPID MEMBRANES WITH FATSLIM. **Sebastien Buchoux**

3171-Pos Board B548
A RIEMANNIAN FRAMEWORK FOR TACKLING LARGE-SCALE CONFORMATIONAL CHANGES OF PROTEINS USING ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS. **Mahmoud Moradi**

3172-Pos Board B549
ESTIMATING THE RUGGEDNESS OF PROTEIN FREE ENERGY LANDSCAPES FROM MOLECULAR DYNAMICS SIMULATIONS. **Andreas Volkhardt**, Helmut Grubmüller

3173-Pos Board B550
ON THE EFFECT OF MAPPING IN THE COARSE GRAINING OF ELASTIC NETWORKS. **Patrick M. Diggins**, Changjiang Liu, Potestio Raffaello, Markus Deserno

3174-Pos Board B551
A QUANTITATIVE COARSE-GRAINED MODEL OF SUGARS. **James A. Graham**, Syma Khalid, Jonathan Essex

3175-Pos Board B552
EXPLORING N-GLYCAN CONFORMERS: ASSESSMENT OF ENHANCED SAMPLING ALGORITHMS. **Raimondas Galvelis**, Suyong Re, Yuji Sugita

3176-Pos Board B553
EXTENDING THE ADRESS MULTISCALE SCHEME FOR PROTEIN AND BILAYER APPLICATIONS. **Manuel N. Melo**, Julija Zavadlav, Matej Praprotnik, Siewert J. Marrink

3177-Pos Board B554
UNIVERSAL METRICS OF INTERSTRUCTURE DISTANCE FOR FLEXIBLE AND INTRINSICALLY DISORDERED PROTEINS. **Timothy G. Connolly**, David Ando, Shawn D. Newsam, Ajay Gopinathan, Michael E. Colvin

3178-Pos Board B555 **CID TRAVEL AWARDEE**
STRUCTURAL-FUNCTION STUDY OF MEMBRANE PROTEINS WITH RESTRAINED-ENSEMBLE AND DUMMY SPIN-LABEL MOLECULAR DYNAMICS SIMULATIONS. **Shahidul M. Islam**, Giacomo Florin, Yifei Qi, Rong Shen, Wei Han, Richard A. Stein, Klaus Schulten, Hassane S. Mchaourab, Wonpil Im, Benoit Roux

3179-Pos Board B556
PEPTIDE BOND ISOMERIZATION IN HIGH-TEMPERATURE SIMULATIONS. **Chris Neale**, Régis Pomès, Angel E. García

3180-Pos Board B557
MECHANICAL ASPECTS OF PROTEIN THERMOSTABILITY. **Guillaume Stirnemann**, Fabio Sterpone

3181-Pos Board B558
MD MODELING OF OXIDATIVE FOLDING IN PEPTIDES AND PROTEINS. **Sergei A. Izmailov**, Ivan S. Podkorytov, Nikolai R. Skrynnikov

3182-Pos Board B559
SEQUENCE-SPECIFIC BINDING AND DIFFUSION OF TRF1 ON TELOMERIC DNA STUDIED BY MOLECULAR DYNAMICS. **Milosz Wieczor**, Jacek Czub

3183-Pos Board B560
SIMULATION STUDIES OF TWIST-STRETCH COUPLING IN NUCLEIC ACIDS. **Anupam Chatterjee**

3184-Pos Board B561
SOLVATION STRUCTURE AND QUASIDYNAMICS OF BIOMOLECULES STEERED WITH EFFECTIVE SOLVATION FORCES OBTAINED FROM MOLECULAR THEORY OF SOLVATION. **Andriy Kovalenko**

3185-Pos Board B562
EFFECT OF DMSO ON WATER MOLECULES NEAR PHOSPHOLIPID BILAYER SURFACES. **Yuno Lee**, Changbong Hyeon

3186-Pos Board B563
PROTEINS NEAR SOLID SURFACES AND AT AIR-WATER INTERFACES. **Marek Cieplak**, Grzegorz Nawrocki

3187-Pos Board B564
VIBRATIONS OF WATER MOLECULES IN MONOSACCHARIDE HYDRATION SHELL BY DFT-MD STUDIES. **Katsufumi Tomobe**, Takashi Iijima, Eiji Yamamoto, Masato Yasui, Kenji Yasuoka

3188-Pos Board B565
INCLUSION OF PH EFFECTS IN MOLECULAR DYNAMICS SIMULATIONS OF MEMBRANES AND MEMBRANE PROTEINS. **Brian K. Radak**, Abhishek Singharoy, Klaus Schulten, Benoit Roux

3189-Pos Board B566
IMPROVED PARAMETERIZATION OF AMINE-CARBOXYATE, AMINE-PHOSPHATE, AND ALIPHATIC CARBON-CARBON INTERACTIONS FOR MOLECULAR DYNAMICS SIMULATIONS USING THE CHARMM AND AMBER FORCE FIELDS. **Jejoong Yoo**, Aleksei Aksimentiev

3190-Pos Board B567
IMPROVED LENNARD-JONES PARAMETERS FOR ACCURATE MOLECULAR DYNAMICS SIMULATIONS. **Eliot Boulanger**, Lei Huang, Alexander D. MacKerell Jr., Benoit Roux

Optical Microscopy and Super-Resolution Imaging III (Boards B568 - B591)

3191-Pos Board B568
INVESTIGATING THE DYNAMICS OF VIBRIO CHOLERAE VIRULENCE INITIATION BY STICS AND SINGLE MOLECULE TRACKING. **Josh Karslake**, David J. Rowland, Chanrith Siv, Victor J. DiRita, Julie S. Biteen

3192-Pos Board B569 EDUCATION TRAVEL AWARDEE
SUPER-RESOLUTION IMAGING OF DNA REPLISOME DYNAMICS IN LIVE BACILLUS SUBTILIS. **Yilai Li**, Jeremy W. Schroeder, Yi Liao, Lyle A. Simmons, Julie S. Biteen

3193-Pos Board B570
ELUCIDATING MEMBRANE-BOUND TRANSCRIPTION REGULATION IN VIBRIO CHOLERAE VIA SINGLE-MOLECULE IMAGING. **Chanrith Siv**, Victor J. DiRita, Julie S. Biteen

3194-Pos Board B571
LIVE-CELL SINGLE-MOLECULE IMAGING OF ENDOGENOUS MRNA IN STRESS GRANULES. **Ko Sugawara**, Kohki Okabe, Takashi Funatsu

3195-Pos Board B572
MAGNETOGENETIC MANIPULATION OF INTRACELLULAR SIGNALING USING FERRITIN NANOPARTICLES. **Chiara Vicario**, Domenik Liße, Cornelia Monzel, Albert Ikramov, Jacob Piehler, Mathieu Coppey, Maxime Dahan

3196-Pos Board B573
FRET REVEALS AN INTERPLAY OF THE HIV-1 INTEGRASE SUBUNITS DURING ITS JOURNEY FROM THE CYTOPLASM INTO THE NUCLEUS. Doortje Borrenberghs, Lieve Dirix, Susana Rocha, Johan Hofkens, Zeger Debyser, **Jelle Hendrix**

3197-Pos Board B574
SUPERCRITICAL ANGLE LOCALIZATION MICROSCOPY. **Joran Deschamps**, Markus Mund, Jonas Ries

3198-Pos Board B575 INTERNATIONAL TRAVEL AWARDEE
3D MULTICOLOR STED NANOSCOPE A SUPER-RESOLUTION APPROACH TO MAMMALIAN PHOTORECEPTOR. **Michele Oneto**, Chiara Peres, Francesca D'Autilia, Daniela Calzia, Isabella Panfoli, Alberto Diaspro, Paolo Bianchini

3199-Pos Board B576 INTERNATIONAL TRAVEL AWARDEE
BOOST YOUR MICROSCOPE BY EXPLORING NEW DIMENSIONS. **Marco Castello**, Giorgio Tortarolo, Colin J.R. Sheppard, Alberto Diaspro, Giuseppe Vicidomini

3200-Pos Board B577
A NOVEL FAST VOLUMETRIC LIGHT SHEET MICROSCOPY. **Giuseppe Sancataldo**, Paolo Bianchini, Peter Saggau, Paola Ramoino, Alberto Diaspro, Martì Duocastella

3201-Pos Board B578
THE EFFECTS OF GLUCAGON-INHIBITING FACTORS ON SECOND MESSENGERS IN A PANCREATIC α-CELL LINE. **Alessandro Ustione**, Troy Hutchens, David W. Piston

3202-Pos Board B579
REFRACTIVE INDEX OF CELLS MEASURED THROUGH A MICROSCOPE WITH VARIABLE-ANGLE TIR. Kevin P. Bohannon, Ronald W. Holz, **Daniel Axelrod**

3203-Pos Board B580
A STUDY OF SEQA SUBCELLULAR LOCALIZATION IN ESCHERICHIA COLI USING PHOTO-ACTIVATED LOCALIZATION MICROSCOPY. **Jacek T. Mika**, Aster Vanhecke, Peter Dedecker, Toon Swings, Jeroen Vangindertael, Bram Van den Bergh, Jan Michiels, Johan Hofkens

3204-Pos Board B581
HIGH-SPEED SINGLE PARTICLE TRACKING ON MODEL LIPID MEMBRANES. **Susann Spindler**, Jens Ehrig, Hannah Stein, Vahid Sandoghdar

3205-Pos Board B582
THREE-CHANNEL FLUORESCENCE LIFETIME IMAGING OF ENDOGENOUS FLUOROPHORES. **Zdenek Svindrych**, Horst Wallrabe, Shagufta Rehman, Meghan J. O'Melia, Ammasi Periasamy

3206-Pos Board B583
VISUALIZING SPECIFIC GENOMIC LOCI USING FLUORESCENTLY LABELED TRANSCRIPTION ACTIVATOR-LIKE EFFECTORS. **Juan Wang**, Avtar Singh, Fabio Cupri Rinaldi, John Lis, Adam Bogdanove, Warren Zipfel

3207-Pos Board B584
STRUCTURAL AND DYNAMIC STUDY OF CAVEOLIN-1 MEMBRANE NANODOMAINS IN RESPONSE TO INFLAMMATORY PATHWAY SIGNALING. **Ramunas Stanciauskas**, Fabien Pinaud

3208-Pos Board B585
POLARIZED LOCALIZATION MICROSCOPY DETECTS MEMBRANE CURVATURE AND REVEALS THE INTERPLAY BETWEEN MEMBRANE ORIENTATION AND PROTEIN DYNAMICS. **Abir Kabbani**, XinXin Woodward, Christopher V. Kelly

3209-Pos Board B586
PROTEIN ORDER IN THE DESMOSOME INVESTIGATED WITH FLUORESCENCE POLARIZATION MICROSCOPY. **Emily I. Bartle**, Siddharth Raju, Alexa L. Mattheyses

3210-Pos Board B587
CULTURED NEURONS ON FIDUCIARY MARKERS AND SMALL QUANTUM DOTS WITH MONOMERIC STREPTAVIDIN FOR SUPER-RESOLUTION MICROSCOPY. **Sang Hak Lee**, Kai Wen Teng, Pinghua Ge, Duncan Nall, William N. Green, Sheldon Park, Paul R. Selvin

3211-Pos Board B588
COMBINING DSTORM WITH PROXIMITY LIGATION ASSAYS FOR MULTICOLOR COLOCALIZATION. **Nafiseh Rafiei**, Aoife Taylor, Amir Mazouchi, Joshua Milstein

3212-Pos Board B589
MORPHOLOGICAL CHANGES IN HEALTHY AND MALARIA INFECTED ERYTHROCYTES PROBED BY HIGH PRESSURE MICROSCOPY. Silki Arora, Jennifer Mauser, Debopam Chakrabarti, **Alfons Schulte**

3213-Pos Board B590
IDENTIFICATION OF GLIOBLASTOMA SUBPOPULATIONS BY FLIM. **Andrew Trinh**, Yi-Hong Zhou, Michelle A. Digman

3214-Pos Board B591
EMPLOYING PEPTIDE NUCLEIC ACIDS FOR ENHANCED SUPER-RESOLVED IMAGING OF BACTERIAL DNA. **Daniel Nino**

Micro-and Nantotechnology II (Boards B592 - B617)

3215-Pos Board B592
SILICON NANOWIRES PROMOTE NEURON-LIKE DIFFERENTIATION OF MESENCHYMAL STEM CELLS. Hyunju Kim, Ilsoo Kim, Heon-Jin Choi, **So Yeon Kim**, Eun Gyeong Yang

3216-Pos Board B593
CHARGE INDUCED RECTIFICATION IN SINGLE NANOPORES. **Crystal Yang**, Justin Menestrina, Preston Hinkle, Ivan Vlassiouk, Zuzanna Siwy

3217-Pos Board B594
NANO PATTERNED SURFACE EMBEDDED MICROFLUIDIC DEVICE TO STUDY CUTANEOUS WOUND HEALING PROCESS. **Insu Lee**

3218-Pos Board B595
$NAYF_4$:YB^{3+}/ER^{3+} UPCONVERSION NANOPARTICLES FOR INFRARED PHOTODYNAMIC THERAPY OF TUMORS. **Petr Jezek**, Hana Engstová, Katarina Smolkova, Milos Nekvasil, Pavla Pouckova, Uliana Kostiv, Miroslav Slouf, Nikolay Kotov, Daniel Horak

3219-Pos Board B596
SPATIOTEMPORAL CONTROL OF T CELL STIMULATION USING JANUS PARTICLES. **Kwahun Lee**, Yi Yi, Yan Yu

3220-Pos Board B597
DETERMINATION OF RESTRICTION ENZYME ACTIVITY WHEN CUTTING FLUOROCHROME LABELED DNA MOLECULES. **April R. Maschmann**, Kristy L. Kounovsky-Shafer

3221-Pos Board B598
DEVELOPMENT OF 3D PRINTED DEVICES TO EXTRACT DNA MOLECULES FOR GENOME ANALYSIS. **Jocelyn Dolphin**, Matt Moore, April Maschmann, Kristy Kounovsky-Shafer

3222-Pos Board B599
BEHAVIOR ANALYSIS OF C.ELEGANS TO ELECTRICAL STIMULUS IN A HIGHLY CONTROLLED MICROFLUIDIC CHIP. **Sunhee Yoon**, Hailing Piao, Tae-Joon Jeon, Sun Min Kim

3223-Pos Board B600
DIAGNOSING SICKLE CELL DISEASE. Christopher Brown, Alexey Aprelev, **Frank A. Ferrone**

3224-Pos Board B601
ELECTRON TRANSFER IN HEME PROTEIN-CDSECDS NANOROD COMPLEXES. **Bryant Chica**, Jie gu, Ekaterina Pletneva, Brian Dyer

3225-Pos Board B602
ASYMMETRIC SALT PROFILES EXPAND REACTION CONDITIONS FOR NANOPORE SEQUENCING WITH MSPA. **Ian C. Nova**, Ian M. Derrington, Benjamin I. Tickman, Jonathan M. Craig, Matthew Noakes, Jens Gundlach

3226-Pos Board B603
HIGH-THROUGHPUT COMPOUND SCREENING USING DNA NANOSWITCHES. **Clinton H. Hansen**

3227-Pos Board B604
NOVEL MICROSYSTEM TO MEASURE VOLTAGE-DRIVEN MEMBRANE TRANSPORTER ACTIVITY. **Rikiya Watanabe**, Naoki Soga, Hiroyuki Noji

3228-Pos Board B605
IDENTIFYING OLIGOMERS AND LIPID VESICLES EFFECTS DURING α-SYNUCLEIN FIBRIL FORMATION THROUGH A SOLID-STATE NANOPORE. Rui Hu, Jiajie Diao, **Qing Zhao**

3229-Pos Board B606
CONTROLLABLE PLASMONIC ENHANCEMENT AND HOT SPOTS OF METALLIC NANOCLUSTERS ASSEMBLED BY GREEN FLUORESCENT PROTEINS. **Taerin Chung**, Tugba Koker, Fabien Pinaud

3230-Pos Board B607
DNA NANOSTRUCTURES FOR SINGLE MOLECULE PROTEIN SENSING WITH NANOPORES. **Nicholas A W Bell**, Jinglin Kong, Ulrich F. Keyser

3231-Pos Board B608
SINGLE-SITE RESOLUTION DETECTION OF METHYLATION IN DNA WITH GRAPHENE NANOPORES. **Aditya Sarathy**, Hu Qiu, Klaus Schulten, Jean-Pierre Leburton

3232-Pos Board B609
CONDUCTANCE MODULATION IN SILICON-ON-INSULATOR SOLID-STATE NANOPORES COATED WITH ELECTROACTIVE POLYMERS. Xiaofeng Wang, **Michael Goryll**

3233-Pos Board B610
SINGLE OLIGONUCLEOTIDE DISCRIMINATION WITH AEROLYSIN NANOPORE. Chan Cao, Yi-Lun Ying, **Yi-Tao Long**

3234-Pos Board B611
IONIC TRANSPORT THROUGH UNCHARGED NANOPORES. **Sébastien Balme**, Fabien Picaud, Manoel Manghi, John Palmeri, Mikhael Bechelany, Emmanuel Balanzat, Jean-Marc Janot

3235-Pos Board B612
COMBINED OPTICAL AND CHEMICAL CONTROL OF A MICRO-SIZED JANUS PARTICLE. **Sabrina Simoncelli**, Johannes Summer, Spas Nedev, Paul Kühler, Jochen Feldmann

3236-Pos Board B613
TIME IRREVERSIBILITY OF PARTICLES PASSAGE THROUGH A CORRUGATED MICROPORE. **Zuzanna S. Siwy**, Yinghua Qiu, Thomas P. Hinkle, Ivan Vlassiouk, Eugenia M. Toimil-Molares, Alex J. Levine

3237-Pos Board B614
PROBING DNA TRANSLOCATIONS IN NANOPIPETTES USING HIGH-SPEED DETECTION ELECTRONICS. **Raquel L. Fraccari**, Pietro Ciccarella, Azadeh Bahrami, Marco Carminati, Giorgio Ferrari, Tim Albrecht

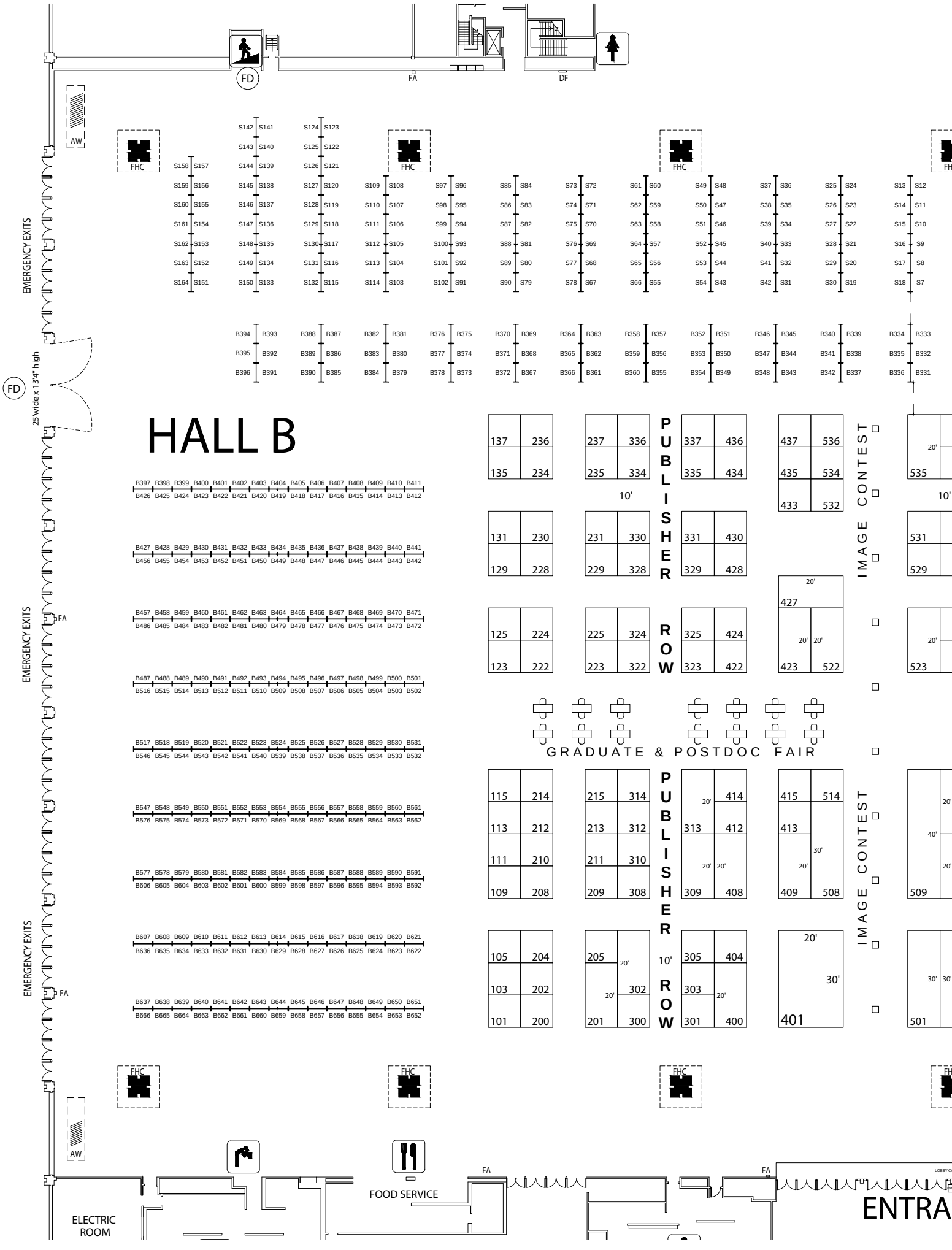
3238-Pos Board B615
BIO-FUNCTIONALIZED POLYMERIC VESICLES ENCAPSULATED WITHIN HYDROGEL MATRIX FOR THE ENHANCEMENT OF BIOLOGICAL ACTIVITIES. **Huisoo Jang**, Sungho Jung, Sun Min Kim, Tae-Joon Jeon

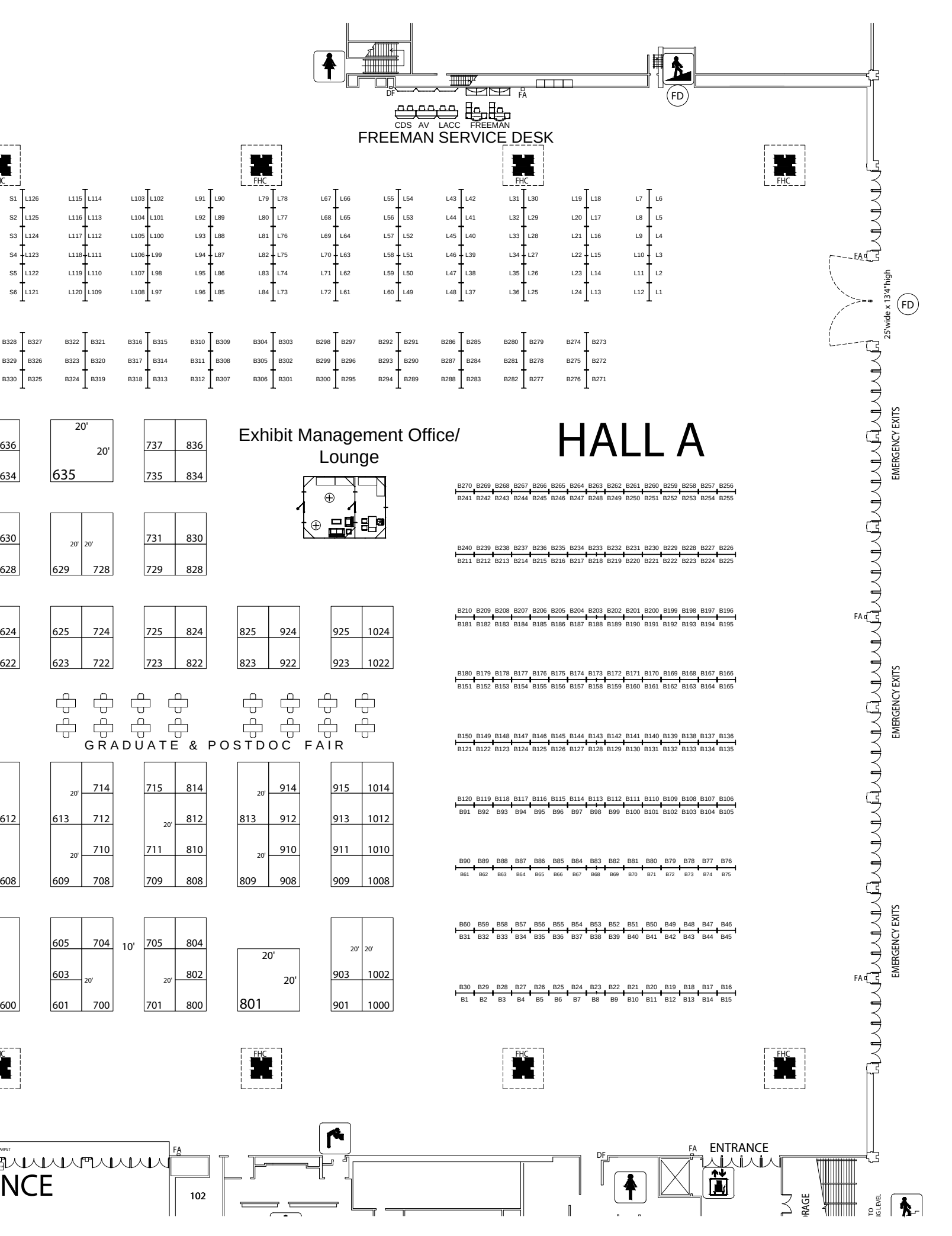
3239-Pos Board B616
SINGLE NUCLEOTIDE DISCRIMINATION WITH ELECTRO-OPTICAL NANOPORE. **Chan Cao**, Yi-Tao Long

3240-Pos Board B617
ENTROPICALLY CONTROLLED NANOMECHANICAL DNA ORIGAMI DEVICES. Michael W. Hudoba, Yi Luo, Randy Patton, Michael G. Poirier, **Carlos Castro**

Exhibitor List and Booth Numbers

Booth Number	Exhibitor	
629	89 North	
804	AAT Bioquest Inc	
809	Agilent Technologies Inc	
310	AIP Publishing	
324	ALA Scientific Instruments	
422	Alembic Instruments Inc	
731	ALVEOLE	NEW 2016
808	Anasys Instruments	
529	Anatrace	
625	Andor Technology	
1010	Anton Paar USA	
710	App Nano	NEW 2016
923	Applied Photophysics	
531	ASI/Applied Scientific Instrumentation	
609	Asylum Research, An Oxford Instruments Company	
636	Aurora Scientific Inc	
508	Avanti Polar Lipids Inc	
1012	Aviv Biomedical Inc	
214	Aviva Systems Biology Corporation	NEW 2016
922	Axiogenesis AG	
1014	Beckman Coulter Life Sciences	NEW 2016
913	Biolin Scientific	
514	BioLogic USA	
812	BiOptix	
724	Bitplane Inc	
700	Bruker Nano Surfaces	
912	Caliber Imaging & Diagnostics Inc	NEW 2016
205	Cambridge University Press	
101	Carl Zeiss Microscopy LLC	
800	Cedarlane	
622	Cell MicroControls	
313	Cell Press	
424	Charles River	
728	Chroma Technology Corporation	
413	Cobolt AB	
301	CRC Press/Taylor & Francis	
222	Creoptix	NEW 2016
412	De Novo Software	
223	DRV Technologies	NEW 2016
630	Ecocyte Bioscience US LLC	
612	Edinburgh Instruments	
613	Electron Microscopy Sciences	
715	Elements SRL	
215	ELSEVIER	
825	Fluicell	
300	Garland Science	
822	Gene Tools LLC	
409	Hamamatsu Corporation	
423	HEKA Elektronik	
709	Hellma USA	
103	Hinds Instruments	NEW 2016
801	HORIBA Scientific	
535	IonOptix	
435	Ionovation GmbH	
309	IOP Publishing	
635	ISS Inc	
437	JASCO	
908	JPK Instruments AG	
323	Keysight Technologies	
428	KinTek Corporation	
704	Laboratory for Fluorescence Dynamics	
534	Larodan	NEW 2016
1000	LUMICKS	
501	Mad City Labs Inc	
711	Malvern Instruments Ltd	
605	Matreya LLC	
811	Maxcyte Inc	NEW 2016
823	Mightex Systems	
714	Minus K Technology Inc	
608	Molecular Devices LLC	
522	Multi Channel Systems	
813	Namiki Precision Jewel Co Ltd	
509	Nanion Technologies	
910	NanoAndMore USA Inc	
810	Nanolive SA	NEW 2016
705	NanoTemper Technologies Inc	
1022	Narishige International USA Inc	
536	NeoBiosystems Inc	
624	NIC@IIT	
523	Nikon Instruments Inc	
322	npi electronic GmbH	
903	Olis Inc	
408	Olympus	
434	Onefive GmbH	NEW 2016
623	Pacer Scientific	
802	Park Systems Inc	
532	PCO-TECH Inc	
404	Photometrics	
303	Physics Today	
400	PI (Physik Instrumente)	
201	PicoQuant Photonics North America Inc	
125	Prior Scientific Inc	
901	Quantum Northwest Inc	
1002	Rainin Instrument LLC	
722	Rapp OptoElectronic GmbH	
115	Rayonix LLC	
603	Renishaw Inc	
828	Rigaku Oxford Diffraction	
308	Rockefeller University Press	
305	Royal Society Publishing	
433	RPMC Lasers Inc	
815	SciMeasure	
415	SciMedia/BrainVision	NEW 2016
1024	Seahorse Bioscience, a part of Agilent Technologies	
723	Semrock Inc	
123	Sensapex OY	
1008	SensiQ Technologies Inc	
708	Siskiyou Corporation	
312	Society for Neuroscience	
909	Sophion Bioscience	
302	Springer	
600	Sutter Instrument	
200	TA Instruments	
729	TgK Scientific Ltd	
314	The Journal of Physiology	
401	Thorlabs	
914	TMC	
725	Tokai Hit Co Ltd	
634	TOPTICA Photonics Inc	NEW 2016
814	UVP LLC	
427	Warner Instruments	
712	WITec Instruments	
414	World Precision Instruments	
601	Wyatt Technology Corporation	

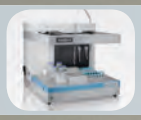

FD
FA
DF
AW
FHC
EMERGENCY EXITS
25'wide x 13'4" high
HALL B
PUBLISHER ROW
GRADUATE & POSTDOC FAIR
IMAGE CONTEST
FOOD SERVICE
ELECTRIC ROOM
ENTRA


DF
FA
FD
CDS AV LACC FREEMAN
FREEMAN SERVICE DESK
FHC
FHC
FHC
FHC
S1 L126 L115 L114 L103 L102 L91 L90 L79 L78 L67 L66 L55 L54 L43 L42 L31 L30 L19 L18 L7 L6
S2 L125 L116 L113 L104 L101 L92 L89 L80 L77 L68 L65 L56 L53 L44 L41 L32 L29 L20 L17 L8 L5
S3 L124 L117 L112 L105 L100 L93 L88 L81 L76 L69 L64 L57 L52 L45 L40 L33 L28 L21 L16 L9 L4
S4 L123 L118 L111 L106 L99 L94 L87 L82 L75 L70 L63 L58 L51 L46 L39 L34 L27 L22 L15 L10 L3
S5 L122 L119 L110 L107 L98 L95 L86 L83 L74 L71 L62 L59 L50 L47 L38 L35 L26 L23 L14 L11 L2
S6 L121 L120 L109 L108 L97 L96 L85 L84 L73 L72 L61 L60 L49 L48 L37 L36 L25 L24 L13 L12 L1
B328 B327 B322 B321 B316 B315 B310 B309 B304 B303 B298 B297 B292 B291 B286 B285 B280 B279 B274 B273
B329 B326 B323 B320 B317 B314 B311 B308 B305 B302 B299 B296 B293 B290 B287 B284 B281 B278 B275 B272
B330 B325 B324 B319 B318 B313 B312 B307 B306 B301 B300 B295 B294 B289 B288 B283 B282 B277 B276 B271
FA
25'wide x 13'4"high
FD
EMERGENCY EXITS
FA
EMERGENCY EXITS
FA
EMERGENCY EXITS
636 634
20' 20' 635
737 836 735 834
Exhibit Management Office/ Lounge
HALL A
630 628
20' 20' 629 728
731 830 729 828
624 622
625 724 623 722
725 824 723 822
825 924 823 922
925 1024 923 1022
B270 B269 B268 B267 B266 B265 B264 B263 B262 B261 B260 B259 B258 B257 B256
B241 B242 B243 B244 B245 B246 B247 B248 B249 B250 B251 B252 B253 B254 B255
B240 B239 B238 B237 B236 B235 B234 B233 B232 B231 B230 B229 B228 B227 B226
B211 B212 B213 B214 B215 B216 B217 B218 B219 B220 B221 B222 B223 B224 B225
B210 B209 B208 B207 B206 B205 B204 B203 B202 B201 B200 B199 B198 B197 B196
B181 B182 B183 B184 B185 B186 B187 B188 B189 B190 B191 B192 B193 B194 B195
B180 B179 B178 B177 B176 B175 B174 B173 B172 B171 B170 B169 B168 B167 B166
B151 B152 B153 B154 B155 B156 B157 B158 B159 B160 B161 B162 B163 B164 B165
B150 B149 B148 B147 B146 B145 B144 B143 B142 B141 B140 B139 B138 B137 B136
B121 B122 B123 B124 B125 B126 B127 B128 B129 B130 B131 B132 B133 B134 B135
B120 B119 B118 B117 B116 B115 B114 B113 B112 B111 B110 B109 B108 B107 B106
B91 B92 B93 B94 B95 B96 B97 B98 B99 B100 B101 B102 B103 B104 B105
B90 B89 B88 B87 B86 B85 B84 B83 B82 B81 B80 B79 B78 B77 B76
B61 B62 B63 B64 B65 B66 B67 B68 B69 B70 B71 B72 B73 B74 B75
B60 B59 B58 B57 B56 B55 B54 B53 B52 B51 B50 B49 B48 B47 B46
B31 B32 B33 B34 B35 B36 B37 B38 B39 B40 B41 B42 B43 B44 B45
B30 B29 B28 B27 B26 B25 B24 B23 B22 B21 B20 B19 B18 B17 B16
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15
GRADUATE & POSTDOC FAIR
612 608
20' 613 609
20' 714 712 710 708
715 814 20' 812 711 810 709 808
20' 813 809
20' 914 912 910 908
915 1014 913 1012 911 1010 909 1008
605 704 603 20' 601 700
10'
705 804 20' 802 701 800
20' 20' 801
20' 20' 903 1002 901 1000
600
FHC
FHC
FHC
FHC
FA
102
DF
FA
ENTRANCE
TO GL LEVEL

Excited about patch clamp?

nan]i[on

Port-a-Patch.
The world's smallest patch clamp rig.



Patchliner.
Unlimited experimental freedom.

SyncroPatch 96.
Get more throughput.

SyncroPatch 384/768PE. NEW!
Patch clamp finally goes HTS.

SURFE²R N1, N96 & SURF Engine. NEW!
Catch the wave for transporters.

CardioExcyte 96. NEW!
Bump up your safety screening.

Orbit 16 & Orbit mini. NEW!
Instant bilayers - just add protein.

Vesicle Prep Pro.
Liposomes made easy.

So are we!

Visit us at booth #509 and learn about our exciting products!

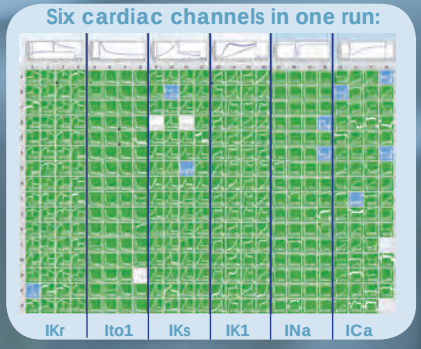
Product Demonstrations:

Monday February 29
12:30 – 2:00 PM
Room 513
LA Convention Center

Ion Channel Drug Discovery:
Beyond the Bottleneck and Ready for CiPA
Live experiments!

Tuesday March 1
12:30 – 2:00 PM
Room 513
LA Convention Center

Measure More Membrane:
Cells and Bilayers on the Port-a-Patch, Orbit16 and Orbit mini
Live experiments!



Welcome!

www.nanion.de

Exhibit Dates and Times

Sunday, February 28 10:00 AM–5:00 PM
Monday, February 29 10:00 AM–5:00 PM
Tuesday, March 1 10:00 AM–4:30 PM

Coffee Served Daily 10:15 AM–11:00 AM

Afternoon Snack Served Daily 1:45 PM–3:00 PM

Exhibit Raffle

Enter to win an Samsung Galaxy Tablet in the Exhibit Hall. Visit with exhibitors to pick up raffle tickets for your chance to win. The more booths you visit, the greater your chances of winning. Drop off your raffle tickets at the Society Booth, outside the Exhibit Hall by 2:30 PM on Tuesday, March 1. The drawing will take place on Tuesday, March 1 at 3:00 PM and announced in the Exhibit Hall — you must be present at the Meeting to win!

Exhibitor Presentations

Exhibitor Presentations will take place in Rooms 505 and 513 of the Los Angeles Convention Center.
See pages 166–170 for detailed abstracts.

Room 505

Sunday, February 28
5:30 PM – 7:00 PM: HEKA Elektronic + Multi Channel Systems

Monday, February 29
9:30 AM–11:00 AM: Sophion together with Biolin Scientific
11:30 AM–1:00 PM: Asylum Research, an Oxford Instruments Company
1:30 PM–3:00 PM: KinTek Corp
3:30 PM–5:00 PM: Bruker Nano Surfaces
5:30 PM–7:00 PM: Sutter Instrument

Tuesday, March 1
11:30 PM–1:00 PM: Bruker Nano Surfaces

Room 513

Sunday, February 28
10:30 AM–12:00 PM: Carl Zeiss Microscopy LLC

Monday, February 29
10:30 AM–12:00 PM: Wyatt Technology Corporation
12:30 PM–2:00 PM: Nanion Technologies GmbH
2:30 PM–4:00 PM: Renishaw Inc
4:30 PM–6:00 PM: Molecular Devices

Tuesday, March 1
12:30 PM–2:00 PM: Nanion Technologies GmbH

Annual Meeting Sponsors*

AIP Publishing
Asylum Research, an Oxford Instruments Company
BioOptix
Bruker Nano Surfaces
Burroughs Wellcome Fund
Carl Zeiss Microscopy LLC
Chroma Technology
FEI
HEKA Elektronic + Multi Channel Systems
KinTek Corp
Maxcyte, Inc
Molecular Devices LLC
Nanion Technologies GmbH
Renishaw Inc
Sophion together with Biolin Scientific
Sutter Instrument
The Journal of Physical Chemistry
Wyatt Technology Corporation

**As of January 19, 2016*

Room 505: Sunday, February 28

5:30 PM–7:00 PM

HEKA Elektronic + Multi Channel Systems

PATCHMASTER and PatchServer: Solutions for Patch Clamp

Presentation 1: Combined Patch Clamp and Imaging with PATCHMASTER and SmartLUX

SmartLUX is the new imaging extension for PATCHMASTER software synchronizing image acquisition and patch clamp data recordings. Image based data such as fluorescence intensities form ROIs that are stored as traces together with current and voltage traces in the PATCHMASTER data file. A link between data points of the trace and the images enables convenient automatic display of the corresponding images when replaying the patch clamp data.

Presenation 2: Multi-Patch Experiments with EPC 10 Quadro and PATCHMASTER

PATCHMASTER software allows the user to control up to 8 patch clamp amplifiers (2 x EPC 10 USB Quardo) in parallel, making it an ideal platform for either conventional multi-patch experiments or automated patch clamping. The Multi-Cell extension of PATCHMASTER allows easy setup and execution of acquisition sequences and analysis methods for operating all amplifiers in parallel. Conventional patch clamping with multiple electrodes can be facilitated by automating processes using the Protocol Editor.

Presentation 3: PatchServer: A Pipette-Based Automatic Patch Clamp System

PatchServer is Multi Channel Systems' new automated patch-clamp system that adds on to a manual patch-clamp setup. It is able to establish single-channel and whole-cell recording configurations using standard glass electrodes. The automation includes sealing on suspended cells, establishing recording configurations, and moving to application bays for solution exchange – all under visual control. PatchServer comes in a one channel version for performing single experiments, as well as a four channel version for recording from four cells in parallel using the EPC 10 Quadro from HEKA. A piezo-driven ultra-fast solution exchanger (UFA tool) is available as an option and can be easily integrated.

Speakers

Christian Heinemann, Head of Engineering at HEKA Elektronik
Juergen Rettinger, Product Manager – Ion Channel Product Line at Multi Channel Systems

Room 505: Monday, February 29

9:30 AM–11:00 AM

Sophion together with Biolin Scientific

Pioneering Ion Channels - Expanding the Boundaries of Automated Patch Clamp

Recent advances in automated patch clamp for voltage and ligand gated ion channels with emphasis on NMDA, cardiac safety and induced pluripotent stem cells

Speakers

Timm Danker, NMI, Germany
Automated Patch Clamp on Crdiac Ion Channels and Multiwell MEA Recordings on Human iPSC-derived Cardiomyocytes: a Complementary Approach for Predictable Proarhytmia Assessments

Caterina Virginio, Aptuit
NMDA Receptors: Meaningful Biophysical and Pharmacological Studies to Redefine Ligands Properties

Denise Franz, University of Rostock, Germany
Electrophysiological Characterization of Human Induced Ppluripotent Stem Cell-derived Dopaminergic Neurons on the QPatch

11:30 AM–1:00 PM

Asylum Research, an Oxford Instruments Company

Soft, Sticky, and Viscous: Practical Considerations for Measuring Cell Mechanics with AFM

The atomic force microscope (AFM) has found broad use in the investigation of cell mechanics, with numerous studies of cell stiffness and modulus dating back over a decade. Because AFM can quantitatively measure the mechanical properties of individual live cells, novel insights to cell function and to cell-substrate interactions have been realized. This is pertinent for cell biology, as it has been demonstrated that the geometrical and mechanical properties of the extracellular microenvironment are important in such processes as cancer, cardiovascular disease, muscular dystrophy, and even the control of cell life and death. Indeed, the ability to control and quantify these external geometrical and mechanical parameters now arises as a key issue in the field and AFM seems poised to play a prominent role in building that understanding.

The use of AFM in this field presents unique challenges and opportunities. Some of the most important considerations are because many of the AFM techniques used here have largely been borrowed from those first developed for materials science. This is simultaneously a success of interdisciplinary research and an opportunity to further tailor measurements to cells and biological materials, which have some fundamentally different characteristics compared to polymers. Most dramatically, cells are far "softer" than polymers, usually at least 100× lower in modulus than even soft rubbers and easily 10,000× lower in modulus than some common plastics. Further, cells are usually quite "sticky," leading to large adhesion to the AFM tip that can complicate measurements. Finally, cells are often strongly viscoelastic, exhibiting not just elastic deformation described by the elastic modulus but also a viscous response that depends on

the velocity of the deformation- and this mechanical component can sometimes be lost or ignored in certain experimental setups and techniques. In fact, this viscous response may prove just as enlightening to cell mechanics as the elastic response more commonly measured alone until recently. This talk will discuss these important issues that must be considered when AFM techniques are applied to cells and other biological materials.

Speaker

Sophia Hohlbauch, Asylum Research, an Oxford Instruments Company

1:30 PM–3:00 PM

KinTek Corporation

Why You Should Fit Kinetic and Equilibrium Binding Data Using Kintek Explorer Software

KinTek Explorer software offers the fastest, most dynamic and robust method of fitting kinetic or equilibrium binding data. Based on fast numerical integration of rate equations, data are fit without the often-inaccurate approximations needed to derive equations. Rather than fitting data to extract "observed rates" or Eigenvalues, which must be then interpreted in second step, *KinTek Explorer* yield rate and equilibrium constants directly while accounting for both the rate and amplitude of observable reactions. By modeling the experiments exactly as performed, all details of the experimental setup are included, eliminating errors in interpretation. Moreover, multiple experiments can be fit simultaneously to a single unifying model. Fast dynamic simulation using proprietary methods for numerical integration allows you to explore parameter space and learn kinetics. Don't be fooled by other vendors pretending to do the same. Only *KinTek Explorer* offers such robust and dynamic data fitting.

In this presentation, Professor Johnson will introduce the theory and operation of the software to show you how easy it is to fit data to any model you care to input. Examples of experiments that can be fit include: transient and single turnover stopped-flow kinetics, steady state kinetics, slow onset inhibition, equilibrium titrations, rapid-quench-flow kinetics, temperature dependence, voltage-dependent rate constants. In addition time-resolved absorbance or fluorescence and pH-dependent spectra can be analyzed by singular value decomposition to yield spectra and time- or pH-dependence of each species. In addition to describing *KinTek Explorer's* basic features, Dr. Johnson will introduce new features and will be available to help you to fit your own data. Learn about what you are missing in your own data fitting. See www.kintek-corp.com for more information.

Speaker

Kenneth A Johnson, President, KinTek Corporation; Professor of Biochemistry, University of Texas at Austin

3:30 PM–5:00 PM

Bruker Nano Surfaces

Advances in Live Super-resolution Imaging Using the Vutara 352 Microscope

Super-resolution microscopy has made a significant impact in the field of biological imaging by enabling a ten-fold improvement in spatial resolution over traditional light microscopy techniques. Most of the imaging has been so far targeted at fixed specimens with a few live cell applications. The Vutara 352 microscope has been engineered towards live-cell imaging by enhancing spatial and temporal resolution in single molecule localization super-resolution. The sCMOS detector in the Vutara 352 enables imaging at 800 fps at full ROI and at video frame rates at reduced ROI. Two color simultaneous imaging can be applied in both super-resolution live cell and 3D particle tracking experiments. The biplane based detection path enables imaging thicker samples such as whole mount Drosophila and offers deeper penetration into tissues. The Vutara 352 also includes real time localization along with several statistical and live cell analysis features for processing data. In summary, the Vutara 352 microscope is a powerful super-resolution imaging and analysis tool.

Speaker

Manasa Gudheti, Applications Scientist at Bruker – Fluorescence Microscopy Business

5:30 PM–7:00 PM

Sutter Instrument

Scientists Empowering Scientists

Patch clamp electrophysiology has matured from a highly specialized scientific technique to a recognized method used to address a variety of experimental questions. Sutter Instrument introduces a highly flexible, intuitive patch clamp instrumentation and software package that enables the experimenter to quickly set up and perform routine tasks, yet remains highly configurable to meet the demands of the experienced electrophysiologist.

We will demonstrate how the IPA™ Integrated Patch Amplifier and SutterPatch™ software can be used for a variety of commonly performed assays, including the characterization of an ionic current and the recording of synaptic events in tissue slices. We will also highlight how the IPA and SutterPatch software provide easy access and flexibility to perform and fine-tune the most challenging acquisition and analysis scenarios.

Building on the basic pipette pulling tutorials presented at the 2015 user meeting and a mid-year webinar, we will further teach advanced techniques that enable the user to create specialized pipette morphologies for unique applications.

There will be plenty of opportunity for discussion with hosts and speakers from the Sutter Instrument Tech Support Team.

Who should attend?

- Electrophysiologists who use amplifiers, micropipettes and micromanipulators for patch clamp, sharp electrode or extracellular recordings.
- Researchers who perform microinjections, including nuclear transfer, sperm injection and application of substances into cell cultures or intact organisms.

Speakers

Jan Dolzer, Tech Support and Product Development, Sutter Instrument
Gregory Hjelmstad, Tech Support and Product Development, Sutter Instrument

Room 505: Tuesday, March 1

11:30 AM–1:00 PM

Bruker Nano Surfaces

BioScope Resolve BioAFM – Unrivalled AFM Biomechanics and Resolution

In this presentation we will introduce new capabilities for cell mechanobiology and highest resolution cell and molecular imaging available on the BioScope Resolve BioAFM. We will explain how innovations in force control and instrument design have enabled BioScope Resolve to be the first AFM to image microvilli on live cells and to consistently resolve the double helix of DNA, while on the inverted microscope. To enable highest resolution and accurate cell mechanics data, the entire AFM mechanical loop of BioScope Resolve has been designed for stability, specifically on biological samples, with biological sample carriers, and when mounted on the inverted microscope. Designed for Bruker's exclusive PeakForce Tapping, BioScope Resolve eliminates the need for fluid cantilever tuning entirely with ScanAsyst and provides quantifiable pN force control for imaging and force mapping. The combination of PeakForce Tapping and FASTForce Volume provides the broadest range of frequencies for mechanical characterization, with a new no-touch calibration method guaranteeing accurate calibration. As we will show in the presentation, BioScope Resolve also features synchronization of these unique mechanical measurements with fluorescence, enabling new kinds of correlative studies.

Speaker

Marcin Walkiewicz, PhD, Applications Scientist, Bruker – Atomic Force Microscopy Business

Room 513: Sunday, February 28

10:30 AM–12:00 PM

Carl Zeiss Microscopy LLC

Technology Innovations: ZEISS LSM 880 Confocal with Airyscan and ZEISS Lightsheet Z.1

These microscopes from ZEISS address both ends of the spectrum of samples, live high speed imaging with superresolution and high speed imaging of large live and fixed tissues. Learn how ZEISS LSM 880 with Airyscan maintains the mantra that each photon of emission light is precious, while expanding the triangle of sensitivity, resolution and speed of acquisition.

ZEISS LSM 880 with Airyscan allows you to use multicolor samples with any label and get image quality like you have never seen before. With Airyscan you are always able to select the optimal acquisition strategy for your sample: Simply decide whether you want to gain 1.7x higher resolution in all three dimensions – resulting in a 5x smaller confocal volume. Or push the sensitivity beyond the limits of all conventional confocal microscopes; or use the increase in signal-to-noise ratio to speed up your image acquisition.

Traditionally, deeply imaging into intact tissue typically requires multiphoton excitation to penetrate deeper than near the surface of a tissue. Using a "clearing" method to remove the light obstructing opaque molecules from a tissue has been another technique for deep imaging. Techniques such as SCALE, CLARITY, ClearT, SeeDB, CUBIC and others have allowed researchers to image deeper than a millimeter into cleared animal model brains and organs.

ZEISS Lightsheet Z.1 features high speed image acquisition and greatly reduced photo damage making imaging of live developmental samples and fixed and cleared tissues easier than ever before. Come learn about using the innovative ZEISS Lightsheet Z.1 microscope for imaging of fixed and cleared tissues.

Speaker

Joseph Huff, Product Marking Manager, Laser Scanning and Superresolution Microscopy, Carl Zeiss Microscopy LLC
Scott Olenych, Product Marketing Manager, Imaging Products, Carl Zeiss Microscopy LLC

Room 513: Monday, February 29

10:30 AM–12:00 PM

Wyatt Technology Corporation

Get it Right the First Time - Enhancing Protein Binding and Structural Studies with the Light-Scattering Toolkit

Biophysical binding studies utilizing surface plasmon resonance (SPR), biolayer interferometry (BLI), isothermal titration calorimetry (ITC), and related techniques are central to the study of protein-protein, protein-DNA and similar biomolecular interactions. Though these are well-established techniques, in a variety of circumstances, binding measurements may be ambiguous or even fail to provide useful data. Wasted measurements can end up being costly in terms of consumables and time.

Small-angle X-ray scattering (SAXS) and small-angle neutron scattering (SANS) are powerful techniques for studying biomolecular structure. SAXS and SANS usually require precious beam time at large facilities, leaving little room for error where the sample preparation is concerned. Poor samples provide poor SAXS/SANS data, but the opportunity to utilize the X-ray or neutron beam may never be recovered.

One thing that SAXS and SANS have in common with SPR, BLI and ITC, is the urgent need to verify sample quality and aggregation state in solution prior to carrying out structural or binding measurements. This seminar discusses a suite of complementary techniques, all based on light scattering, that are useful in assessing and troubleshooting many of the underlying characterization issues. Multi-angle light scattering (MALS) and dynamic light scattering (DLS) can help researchers assess solution quality prior to running binding or structural experiments, qualify aggregation behavior of analytes, and characterize complex interactions that may not be amenable to standard characterization methodology. Judicious use of the biophysical light-scattering toolkit is essential for robust and reliable interaction and structure studies.

Speaker

Sophia Kenrick, Application Specialist, Wyatt Technology Corporation

12:30 PM–2:00 PM

Nanion Technologies GmbH

Ion Channel Drug Discovery - Beyond the Bottlenecks and Ready for CiPA

Nanion Technologies is one of the leading providers of automated patch clamp systems, offering a diverse product portfolio ranging from single channel recordings to HTS-compatible ion channel drug discovery. During this workshop, we will show how to push the boundaries of patch clamp-based ion channel high throughput screening projects of various voltage- and ligand gated targets, and how to get ready for CiPA-compliant safety screening going well beyond hERG.

Cardiac arrhythmic risk assessment is a hot topic these days calling for new screening strategies. With the CiPA-initiative, the panel of cardiac ion channels to consider have drastically expanded, consequently requiring increased data throughput for early compound safety prediction.

The *SyncroPatch 384/768PE*, an automated patch clamp platform recording from up to 768 cells simultaneously, allows the highest data throughput on the market supporting HTS of ion channel active compounds and early safety assessment on cardiac channels. Examples will be shown, where six different cardiac channels were recorded using one single plate, in one single run.

Patchliner, a medium-throughput APC platform, supports automated current clamp recordings, experiments at physiological temperatures, and a minimal cell usage, making it the ideal partner for safety testing on stem cell derived cardiomyocytes. Additionally, the CardioExcyte 96, a hybrid system combining impedance-based and EFP recordings from beating cardiomyocyte networks from 96 recording wells in parallel, has proven a versatile tool for safety and toxicity screening applications serving as a powerful tool complementing APC.

The *SURFE2R* technology allows direct and functional measurements electrogenic transporter. Hands-on experiments on the SURFE2R will be shown. Also membrane fragments from Chantest, a Charles River company, will be used.

Join our workshop to learn more about new safety screening strategies and how to keep up with the increasing demands on cardiac safety and toxicity screening.

Speakers

Maria Barthmes, Nanion Technologies GmbH
Andrea Brüggemann, Nanion Technologies GmbH
Niels Fertig, Nanion Technologies GmbH
Markus Rapedius, Nanion Technologies GmbH

2:30 PM–4:00 PM

Renishaw Inc

Innovative Raman Imaging in the Life Sciences

When light illuminates a sample, most of it scatters without changing. A tiny fraction of the light however is Raman scattered. The Raman scattered light excites the phonons in the samples and produces a spectrum. This spectrum tells us how the atoms are vibrating, providing a chemical fingerprint which allows identification of the sample. Raman spectroscopy produces chemical and structural information to help us understand more about the material being analyzed. The ability to probe the chemical and molecular structure of biological materials is obtained directly without the need for any dyes or markers. These systems can be utilized to generate chemical images of cells, tissue, bone and biocompatible materials with very high spatial resolution. It has been employed for cancer diagnosis, stem cell differentiation, skin treatments, protein structure analysis, bio-diagnostics and bacterial identification.

Renishaw's inVia confocal Raman microscope can be integrated with other instruments, such as atomic force microscopy (AFM) and scanning electron microscopy (SEM), to provide Raman analysis from the same point on the sample. This talk will provide an introduction to Raman microscopy with biological materials, the instrumentation required for these techniques and will highlight some applications where Raman microscopy is making the biggest impact with biological materials.

Speakers

Tim Prusnick, USA Sales Manager SPD, Renishaw Inc
Andrew King, Regional Sales Manager - West Coast, Renishaw Inc
Mark Canales, Field Applications Specialist (Life Science) Spectroscopy Products Division, Renishaw Inc

4:30 PM–6:00 PM

Molecular Devices LLC

Pushing the Performance Envelope: Evaluation of the NMDA receptor using Automated Electrophysiology and Fast Fluidics

Ligand gated ion channels (LGICs) mediate fast synaptic transmission in the nervous system and are highly attractive drug targets due to the pivotal role they play in many physiological functions. The N-Methly-D-Aspartate (NMDA) receptor is a LGIC that is activated by glutamate, the primary excitatory neurotransmitter in the nervous system. Functional impairment or over-excitation of the NMDA receptor occurs in a variety of disease states, however efficient screening for compounds that target the NMDA receptor remains elusive.

Over the last decade, automated electrophysiology has become an indispensable tool for analyzing ion channel activities. Here data will be presented evaluating the fluidic performance of automated patch clamp and its impact on measurement of NMDA receptor activity. We examine channel biophysics both in the presence and absence of extracellular Mg^{2+}, calculate the EC50 of glutamate and the IC50s of antagonists D-AP5 and Ifenprodil, and explore use-dependent blockage by MK801. We also examine differences between competitive and non-competitive inhibition models. Our studies demonstrate the robust fluidics performance of our automated electrophysiology system and its successful application to high-throughput screens and compound profiling assays targeting LGICs.

Speaker

Jeff Webber, Product Manager, Molecular Devices LLC

Room 513: Tuesday, March 1

12:30 PM–2:00 PM

Nanion Technologies GmbH

Measure More Membrane: Cells, Bilayers and Transporter Activity

As the title suggests, this workshop has one common denominator: membranes and the measurements thereof. We will showcase four versatile products: the Port-a-Patch, the world's smallest patch clamp rig, the Orbit product family, for parallel lipid bilayer recordings of reconstituted ion channels, and the SURFE2R product family, for label-free and direct measurements of transporter protein activity.

The *Port-a-Patch*, on the market since 2003, is still the smallest patch clamp rig in the world, and supports high quality patch clamp recordings; attainable without months or years of training. Giga-seal recordings and the excellent voltage-clamp of the cellular membrane ensure high quality data, and the versatile add-ons allow unprecedented experimental freedom, way beyond the possibilities of conventional patch clamping.

The *Orbit 16* supports the parallel formation of and recordings from up to 16 lipid bilayers, accommodating reconstituted ion channels or nanopores. Using Micro Electrode Cavity Array (MECA, Ionera) recording substrates, containing a 4 x 4 array of circular micro-cavities, the bilayers are automatically formed by remotely actuated painting (Ionera- SPREAD), which will be demonstrated during this session. Relying on the same principle, however with the possibility of active cooling and heating, the recently introduced Orbit mini, a minimal footprint, turn-key system, allows 4 parallel lipid bilayer recordings, also using MECA-chips.

Join this workshop for hands-on experiments and information about three outstanding platforms: Port-a-Patch, Orbit 16, and Orbit mini.

Speakers

Andrea Brüggemann, Nanion Technologies GmbH
Niels Fertig, Nanion Technologies GmbH
Gerhard Baaken, Ionera
Ekaterina Zaitseva, Ionera

Company Name Booth Number

89 North 629
1 Mill Street, Unit 285
Burlington, VT 05401
www.89north.com

89 North provides innovative solutions to fluorescence imaging market, including the PhotoFluor LM-75, a direct-mount metal-halide illuminator and the LDI, a state-of-the-art 7-line laser system with up to 1 watt of power per channel. 89 North also sells emission splitting systems, optogenetics solutions, high speed filter wheels and laser combiners from Cairn Research and confocal/super resolution imaging systems from CrestOptics. We also offer engineering and manufacturing expertise to customize existing products or to create new solutions for systems integration.

AAT Bioquest Inc 804
923 Thompson Place
Sunnyvale, CA 94085
www.aatbio.com

AAT Bioquest develops, manufactures and markets bioanalytical reagents and assay kits for life science research and drug discovery. We specialize in absorption, fluorescence and luminescence-based biological detection technologies. Our products include the outstanding Fluo-8®, Cal-520™, Cal-590™, Cal-630™ and FLIPR calcium assay kits, fluorescent ion indicators, fluorescent labeling reagents, cell and in vivo imaging probes. AAT Bioquest also offer a full spectrum of apoptosis and fluorescence imaging probes and assay kits.

Company Name Booth Number

Agilent Technologies 809
5301 Stevens Creek Blvd
Chandler, CA 95051
www.agilent.com

Agilent Technologies is a leading provider of sample preparation, chromatography, mass spectrometry, elemental analysis, molecular spectroscopy, and laboratory information systems as well as support services, columns and consumables that enable you to analyze, confirm and quantify substances of interest with confidence from sample preparation to final report. Learn more www.agilent.com

AIP Publishing LLC 310
1305 Walt Whitman Road, Suite 300
Melville, NY 11747
www.journals.aip.org

AIP Publishing's portfolio has 19 highly regarded, peer-reviewed journals, including Applied Physics Letters, Journal of Applied Physics, and The Journal of Chemical Physics.

ALA Scientific Instruments 324
60 Marine St.
Farmingdale, NY 11735
www.alascience.com

As manufacturers (fluidics, chambers, etc) and distributors (MultiChannel, npi, HEKA, Sutter, Narishige, TMC) of instruments for patch/cellular and multielectrode electrophysiology, our scientists/engineers have decades of experience assembling systems and building custom setups. We focus on your equipment needs so you can focus on your research

Alembic Instruments Inc 422
3285 Cavendish Blvd., Suite 570
Montreal, QC H4B 2L9
Canada
www.alembicinst.com

Alembic Instruments makes patch clamps amplifiers with 100% Rs Compensation! Our patented Rs CompensatorTM completely eliminates series resistance errors rapidly, easily, and with full stability. Only the Rs CompensatorTM can voltage clamp the largest, fastest ionic currents, under physiologic conditions - currents that are simply out of reach without it.

Company Name Booth Number

ALVEOLE 731
68, boulvevard de Port-Royal
Paris 75005
France
www.alveolelab.com

NEW 2016

ALVEOLE offers advanced solutions that combine the latest innovations in cell imaging and microfluidics for controlling various parameters of living cell microenvironnement. We will present our PRIMO, the first multi-protein printing platform. Versatile and easy-to-use it allows you to create, on your own, the patterns of proteins of your choice, on any kind of cell culture surfaces.

Anasys Instruments 808
121 Gray Avenue, Suite 100
Santa Barbara, CA 93101
www.anasysinstruments.com

Anasys Instruments and our scientific collaborators pioneered the field of nanoscale infrared absorption spectroscopy and imaging. Our team is focused on providing robust chemical analysis with nanometer scale spatial resolution. With a researcher's productivity always in mind, we deliver integrated hardware and software solutions that clear the path to your next discovery. Nanoscale IR spectroscopy complemented with thermal and mechanical analysis add a special dimension to AFM imaging.

anatrace

Anatrace 529
434 West Dussel Drive
Maumee, OH 43537
www.anatrace.com

Detergents, Lipids, Protein Purification and Crystallization... For 30+ years, Anatrace has worked with the membrane protein structural biology community to become the leader in high-purity detergents. With the highest batch-to-batch consistency, we are the most trusted detergent source for extracting, solubilizing, stabilizing, and/or crystallizing macromolecules. Additionally, we also sell purification (FPLC prepacked columns and protein concentrators) and crystallization products (MCSG Suite). We demand high standards so you can too!

Andor Technology 625

425 Sullivan Ave., Suite 3
S Windsor, CT 06074
www.andor.com

Andor Technology is a global leader in the pioneering and manufacturing of high performance scientific imaging cameras, spectroscopy solutions and microscopy systems for research and OEM markets. Andor continues to innovate ground-breaking products that improve the world in which we live. Andor Technology is part of Oxford Instruments plc, a leading provider of high technology tools and systems for industry and research.

Anton Paar USA 1010

10215 Timber Ridge Drive
Ashland, VA 23005
www.anton-paar.com

Anton Paar is a major supplier of small-angle X-ray equipment and offers a range of precision instruments for particle characterization, rheological studies and material science

App Nano 710

415 Clyde Ave #102
Mountain View, CA 94043
www.appnano.com

NEW 2016

AppNano makes the world's highest quality and affordable AFM/SPM probes. They are compatible with all major AFM/SPM equipment. We offer custom MEMS, characterization and nano fabrication services.

Applied Photophysics 923

21 Mole Business Prk
Leatherhead, KT22 7BA
United Kingdom
www.photophysics.com

At Applied Photophysics, we are committed to progress. Everything we do is done because we believe it will make a difference, that in the hands of our customers, it will advance scientific knowledge and understanding, and have a wider societal impact. We challenge entrenched views, encourage fresh ideas and incorporate this in our products. Since its creation in 1971 by The Royal Institution of Great Britain under Nobel Prize-winning Lord Porter, Applied Photophysics has remained at the forefront of the technologies of circular dichroism, stopped-flow kinetics and laser flash photolysis.

Company Name Booth Number

ASI/Applied Scientific Instrumentation 531

29391 West Enid Road
Eugene, OR 97402
www.asiimaging.com

Applied Scientific Instrumentation, Inc. (ASI) manufactures top-of-the-line products for Super-resolution microscopy including DC servomotor stages, stages with integrated piezos that provide high-speed nano meter resolution, LED based focus feedback systems for maintaining focus stability, and our Rapid Automated Modular Microscope (RAMM) system that provides a rock solid, fully configurable microscope platform. Our new Dual Inverted Selective Plane Microscopy system (diSPIM) offers several advantages over confocal & other microscopy systems including:

- Use conventional mounting /glass cover slips
- Generate 3D volumes with isotropic resolution (330 nm in all directions)
- Axial resolution is ~2x better than confocal- or spinning disk systems
- Achieve a ~7-10 fold reduction in photobleaching
- Acquisition rates up to 200 images per second or 2-5 volumes per second
- Microscope has multicolor capability, and has been tested successfully on cells on cover slips, and embryos

Company Name Booth Number

Asylum Research, an Oxford Instruments Company 609

6310 Hollister Ave
Santa Barbara, CA 93117
www.asylumresearch.com

Oxford Instruments Asylum Research is the AFM technology leader. We offer the best AFMs available for biophysics research, whether your focus is on high resolution imaging of samples like biomolecules, fibrils, and membranes or you are working in mechanobiology, tissue engineering, or cell biology. There is no other AFM like Cypher™, the highest resolution fast scanning AFM. Exceptional, hassle-free environmental control makes measurements in liquid at controlled temperatures simpler than ever before. Exclusive ease-of-use features, including GetStarted™, and blueDrive™ for fluid imaging help you get your results faster and easier. We'll also feature the MFP-3D-BIO™ for uncompromised AFM integrated with optical microscopy. The MFP-3D-BIO excels at live cell imaging, combined with AFM and optical measurements, force spectroscopy and has the widest variety of accessories for biophysics and multidisciplinary research. No other AFM is better at accurately measuring the rheology (elastic modulus and viscous response) of soft and stick biological samples. Learn more about all the latest AFM advances at our Lunch and Learn Exhibitor Technical Presentation: "Soft, Sticky, and Viscous: Practical Considerations for Measuring Cell Mechanics with AFM" on Monday 2/29, 11:30-1:00, Room 505.

Aurora Scientific Inc 636

25 Industry Street
Aurora, ON L4G 1X6
Canada
www.aurorascientific.com

Aurora Scientific provides solutions for measuring the dynamic physical properties of muscle and connective tissue. Muscle mechanics systems cover the range from single myocyte to whole large-animal in-situ. Products: Muscle Lever Systems, Force Transducers, High-Current Stimulators, Test Apparatus and Software. New Products: Dynamic Muscle Analysis Software with high throughput module.

Avanti Polar Lipids Inc 508

700 Industrial Park Dr.
Alabaster, AL 35007
www.avantilipids.com

Avanti Polar Lipids, with an unparalleled reputation for purity, is clearly established as World Leader in the production of phospholipids, sphingolipids, and sterols. Exciting new products for the Research Chemist and cGMP lipids for Pharmaceutical Production. Recent developments include Adjuvants, Glycosylated Sphingolipids, new Fluorescent and Deuterated lipids; plus Analytical Services.

Aviv Biomedical Inc 1012

750 Vassar Avenue, Suite 2
Lakewood, NJ 08701-6929
www.avivbiomedical.com

Aviv Biomedical Inc manufactures scientific and clinical instruments. Products include a fluorescence accessory (AU-FDS) for the Beckman Analytical Ultracentrifuge, model XLA/XLI and Circular Dichroism Spectrometers. Sales, service and support of Aviv Spectrometers, Aviv Spectrophotometers and Aviv Fluorometers.

Aviva Systems Biology Corporation 214

NEW 2016

5754 Pacific Center Blvd, Suite 201
San Diego, CA 92121
www.avivasysbio.com

Aviva Systems Biology Corporation specializes in providing polyclonal and monoclonal antibodies for research needs. Unlike other companies, we design, manufacture and validate our own antibodies. We currently offer over 40,000 antibodies to the most popular protein targets. The company has an extensive list of antibodies for the following research areas: transcription factors, cancer, cardiovascular, cell biology, DNA damage and repair, epigenetics, signal transduction, cell differentiation, and stem cell biology. We also offer recombinant proteins, ELISA Kits, peptides and cell lysates

Axiogenesis AG 922

Nattermannallee 1 / S20
Cologne NRW 50829
Germany
www.axiogenesis.com

Axiogenesis is a leading provider of unlimited volumes of pure human cell types derived from induced pluripotent stem cells (iPSC) along with assays validated on all relevant commercial platforms. Key products include cardiomyocytes used in applications from single cell analysis to HTS in early cardiac safety and efficacy, as well as several neuronal subtypes. We also offer services for in vitro toxicology, safety pharmacology and drug discovery. A strong IP position and key licenses enable us to offer FTO in the use of iPSC derived cells including disease models like cardiac hypertrophy (HCM).

Beckman Coulter Life Sciences 1014

NEW 2016

5350 Lakeview Parkway South Drive
Indianapolis, IN 46268
www.beckmancoulter.com

Celebrating over 65 years as a global centrifuge leader, Beckman Coulter Life Sciences designs, manufactures, sells, supports and services complete centrifugation solutions, including ultracentrifuges, high-performance and high-capacity centrifuges, general purpose centrifuges, microcentrifuges, and analytical ultracentrifuges. Our combination of exceptional instruments, versatile rotors, innovative labware and advanced software allows Beckman Coulter Life Sciences to deliver powerful centrifugation solutions to laboratory science.

Biolin Scientific 913

215 College Road, Suite 300
Paramus, NJ 07652
www.biolinscientific.com

At Biolin Scientific our instruments help discover better drugs faster, develop better solutions for energy and materials, and perform research at the frontiers of science and technology

Biologic USA 514

9050 Executive Park Dr., Suite 105c
Knoxville, TN 37923
www.bio-logic.us

Bio-Logic USA is the leading manufacturer of stopped flow, quench flow, and freeze quench mixers for examining reaction kinetics in biochemistry, molecular biology, and biophysics. The SFM-4000 series of mixers deliver dead times of 200microseconds or faster, with asymmetrical mixing, modular design, and unsurpassed performance. They can be connected to spectrometers, x-ray and neutron lines, and EPR systems. The MOS-500 spectropolarimeter delivers auto-optimized performance from near IR to UV in CD, LD, absorbance, fluorescence, and anisotropy modes. Sample handling options include cuvette, dry powder, magnetic CD, peltier temperature control, and more. The MOS-500 can be used standalone or with the SFM-4000 series stopped flow mixers.

BiOptix 812

1775 38th Street
Boulder, CO 80301
www.bioptix.com

BiOptix offers an affordable and powerful solution for drug discovery scientists that require label-free, real-time detection of bio-molecular interactions. The unique SPR-enhanced instrumentation offers precise measurement of kinetics, affinity constants and concentration, modern, easy-to-use analytical software, and two operating modes for higher throughput and experimental flexibility.

Bitplane Inc 724

300 Baker Avenue, Suite 150
Concord, MA 01742
www.bitplane.com

Bitplane is the world's leading interactive 3D/4D microscopy image analysis software company. Bitplane (imaris) actively shapes the way scientists process multi-dimensional microscopic images.

Bruker Corporation 700, 701

112 Robin Hill Road
Santa Barbara, CA 93117
www.bruker.com

Bruker offers solutions for biophysical applications: atomic force microscopes, super-resolution, multipoint confocal and multiphoton fluorescence microscopes.

Caliber Imaging & Diagnostics Inc 912

NEW 2016

100 Burtt Road, Suite 203
Andover, MA 01810
www.caliberid.com

A leader in imaging innovation, Caliber I.D. has recently introduced its latest breakthrough in confocal microscopy, the RS-G4. With applications in neuroscience, developmental biology, pathology and translational research, this high-performing system was developed exclusively for the research scientist. The RS-G4 provides your lab the ultimate in efficiency, slashing image acquisition time while delivering unprecedented capabilities in scanning flexibility and image clarity. For more information, visit www.caliberid.com or email infor@caliberid.com.

Cambridge University Press 205

32 Avenue of the Americas
New York, NY 10013-2473
www.cambridge.org/us

Cambridge University Press is a not-for-profit organization that advances learning, knowledge and research worldwide. It is an integral part of the University of Cambridge and for centuries has extended its research and teaching activities through a remarkable range of academic and educational books, journals, and digital products. Visit our stand for 20% off all titles on display.

Carl Zeiss Microscopy LLC 101

One Zeiss Dr
Thornwood, NY 10594
www.zeiss.com/micro

Throughout the world, ZEISS stands for the highest quality and reliability. ZEISS Microscopy is part of the Carl Zeiss group, a leading organization of companies operating worldwide in the optical and opto-electronic industry. As the world's only manufacturer of light, X-ray and electron/ion microscopes, ZEISS offers tailor-made systems for 3D imaging in biomedical research, life sciences and healthcare. A dedicated and well-trained sales force, an extensive support infrastructure and a responsive service team enable customers to use their ZEISS microscope systems to their full potential.

Cedarlane 800

1210 Turrentine St.
Burlington, NC 27215
www.cedarlanelabs.com

Providing today's researchers with the newest products of the highest quality, Cedarlane is a vital resource to the Life Science industry. Cedarlane's customers take advantage of access to over 2 million kits and reagents from over 1000 top global suppliers. Open six days a week, we strive to save you money through consolidation and timely, affordable delivery. Manufactured product lines include: monoclonal and polyclonal antibodies, complement for tissue typing, cell separation media, and neuronal cell line development. Custom services are also available.

Cell MicroControls 622

P.O. Box 11387
Norfolk, VA 23517
www.cellmc.com

Cell MicroControls develops temperature controllers, perfusion, fluid switching devices, tissue chambers & accessories for electrophysiology research. Thin glass heaters, miniature perfusion devices.

Cell Press 313

600 Technology Square
Cambridge, MA 02139
www.cell.com

Cell Press is proud to publish Biophysical Journal for Biophysical Society. Visit booth #313 for the latest high-quality biophysics research and to pick up free journal copies.

Charles River 424

251 Ballardvale St
Wilmington, MA 01887
www.criver.com

As your scientific partner and preclinical CRO, Discovery from Charles River provides innovation, flexibility, and efficiency in developing tomorrow's therapeutics. Not only do we offer the broadest selection of ion channel and epithelial current assays to advance understanding of your compounds effects on membrane function and transport, but our structural biology and biophysics platforms support your structure-based drug discovery from gene to final structures, including incorporation of your selected ligands. Employing the latest techniques and equipment, our scientists bring years of experience in high-throughput gene expression, automated protein purification and crystallization, and X-ray crystallography to your project. In addition, a range of biophysical techniques is available to accelerate and deepen the understanding of the interactions your ligand makes with its biological target and our ion channel screening portfolio. This unique combination of interdisciplinary, multidisciplinary drug discovery expertise and unparalleled scope of capabilities in targets, platforms, and therapeutic areas allow us to deliver depth and breadth in science with insight and data you can trust to progress your drug discovery programs.

Chroma Technology 728

10 Imtec Lane
Bellows Falls, VT 05101
www.chroma.com

Chroma Technology designs and manufactures optical interference filters using advanced sputtering technologies. Our high performance filters are intended for imaging applications ranging from widefield and confocal fluorescence microscopy, TIRF and super-resolution techniques to flow cytometry, high content screening, multi-photon and Raman spectroscopy. Chroma also provides comprehensive technical and applications support.

Cobolt Inc 413

Vretenvagen 13
SE-171 54
Solna
Sweden
www.cobolt.se

Cobolt provides ultra low noise, CW, single mode solid-state lasers in the UV-Vis-NIR spectral range incl fiber pigtailed options; Q-switched DPSS lasers with the unique combination of high pulse rates and high pulse energy in the UV-NIR range; as well as tunable mid-IR sources. The lasers are manufactured using HTCure™ technology yielding unrivaled robustness and reliability.The combination of uncompromised optical performance with nonpareil tolerance to demanding environmental conditions has made Cobolt lasers the preferred choice by leading instrument manufacturers and scientists worldwide.

Creoptix 222

Einsiedlerstrasse 34
Wadenswil 8820
Switzerland
www.creoptix.com

NEW 2016

Creoptix ushers in a new era in kinetics analysis. Its Creoptix™ WAVE system for label-free molecular interaction analysis provides unparalleled sensitivity and measurement of fast kinetics, e.g. off-rates of 5/sec. The WAVE is the ideal tool to analyze large drug targets and very weak and small binders at high accuracy but also long dissociation runs of high affinity binders. Its disposable microfluidics is extremely robust towards all kinds of challenging samples, such as membrane preps, supernatants or even 100% untreated blood serum and particles larger than 100 nm in diameter.

De Novo Software 412

400 North Brand Blvd, Suite 850
Glendale, CA 91203
www.denovosoftware.com

FCS Express™, flow & image cytometry analysis software, is used by thousands of laboratories worldwide for research purposes, & dozens of clinical laboratories for high throughput clinical analysis.

DRV Technologies 223

15921 NE 8th Street, Suite 200
Bellevue, WA 98008
www.drvtech.com

NEW 2016

Image Analysis made Easy. DRVision's software suite, SVCell, enables users to develop and execute image analysis of unsurpassed quality, without image processing expertise. Simple to learn and operate, SVCell provides everything you need to detect, track, measure and classify objects in microscopy images. Free software trial available on website: www.svcell.com

Ecocyte Bioscience US LLC 630

5214 Burleson Road
Austin, TX 78744
ecocyte-us.com

Ecocyte Bioscience is a company that offers a weekly delivery service of "Xenopus laevis oocytes" for expression studies. Our oocytes are defolliculated via collagenase treatment and ready to use for cRNA or cDNA injections or we can preinject your oocytes with cDNA or cRNA for you. In addition, we offer contract services for electrophysiological measurements with Two Electrode Voltage Clamp (TEVC) recordings of our prepared oocytes. We also have recently opened a brand new online shop for your salt and solution needs at www.ecocyteshop.com.

Edinburgh Instruments 612

2 Bain Square
Kirkton Campus
Livingston EH547DQ
United Kingdom
www.edinst.com

Edinburgh Instruments are the experts in fluorescence spectroscopy. Products include fluorescence spectroscopy (steady-state and TCSPC), laser flash photolysis, laser diodes, LEDs, and gas lasers.

Electron Microscopy Sciences 613

1560 Industry Road
Hatfield, PA 19440
www.emsdiasum.com

Electron microscopy sciences will have on display their complete line of accessories, chemicals, supplies and equipment for all fields of microscopy, biological research and general laboratory requirements. As well as our full line of tools, tweezers and dissecting equipment

Elements SRL 715

Via Montalti 42
Cesena - FC 47521
Italy
www.elements-ic.com

Elements produces single and multichannel amplifiers for electrophysiology and pico-scale measurements. Our technology is based on the microelectronic design of custom semiconductors using low-cost CMOS process. Elements instruments are miniaturized and fully digital controlled by an easy to use software interface. They give high quality current data at a very competitive price. We have new products: the real-time data analysis software for statistics and the Lipid Bilayer Kit, a complete, compact, low-cost and easy to use kit for accurate electrophysiological recordings.

ELSEVIER 215

Radarweg 29
Amsterdam 1043 NX
Netherlands
www.elsevier.com

Elsevier is a world-leading provider of information solutions that help you make better decisions, deliver better care, and sometimes make groundbreaking discoveries in science, health, and technology. We provide web-based, digital solutions — among them ScienceDirect, Scopus, Evolve, Knovel, Reaxys and ClinicalKey — and publish over 2,500 journals and more than 33,000 book titles. Discover the latest Biophysical research at the Elsevier booth or discuss your research with the Editor-in-Chief of Biochemical and Biophysical Research Communications (BBRC), Dr. Wolfgang Baumeister.

Company Name Booth Number

Fluicell 825
Hugo Grauers Gata 3B
Gothenburg Sweden SE-411 33
Sweden
www.fluicell.com

Fluicell AB develops and provides the first lab-on-a-tip tool, the BioPen, enabling unparalleled control of the local environment about individual cells, or surface regions, without contaminating any other region within the sample dish. Current application areas are focused within; single-cell biology, organelle biology, enzymology, pharmacology, tissue physiology and bioprinting.

Garland Science 300
711 Third Ave., 8th Fl.
New York, NY 10017
www.garlandscience.com

Garland Science offers a 30% discount on our books, including the new Molecular Biology of Assemblies and Machines by Steven, Baumeister, Johnson, and Parham.

Gene Tools LLC 822
1001 Summerton Way
Philomath, OR 97370
www.gene-tools.com

Gene Tools manufactures Morpholino oligos for blocking translation, modifying splicing or inhibiting miRNA activity. Morpholinos are used in cell cultures, embryos or, as Vivo-Morpholinos, in adult animals. Morpholinos are effective, specific, stable and non-toxic. Backed by Ph.D.-level customer support, Gene Tools designs and synthesizes Morpholinos and offers cytosolic delivery options.

Hamamatsu Corporation 409
360 Foothill Road
Bridgewater, NJ 08807
www.hamamatsu.com

Hamamatsu Corporation is the North American subsidiary of Hamamatsu Photonics K.K. (Japan), and offers cameras, low-light detectors, image sensors, and light sources for biological applications.

Company Name Booth Number

HEKA Elektronik 423
84 October Hill Rd
Holliston, MA 01746
www.heka.com

For decades HEKA provides the finest Patch Clamp Amplifier and acquisition system. Explore our workstations at the booth that combine HEKA patch clamp amplifier and our Warner instruments. Also a new small head stage will be presented. A specialist will provide basic training on PATCHMASTER. Visit us and see our latest updates and join our presentation on Sunday.

Hellma USA 709
80 Skyline Drive
Plainview, NY 11746
www.hellmausa.com

Hellma USA has been providing the highest precision spectroscopic sample accessories for over 50 years. We offer both static and flow chambers in volumes as low as 700 nanoliters. Our cuvettes are the best choice on the market for UV, VIS, NIR, CD and Fluorescence analyses. Additionally, we have all-quartz microplates for precision high-throughput analysis. We are also pleased to offer the highest quality replacement light sources for analytical instruments. Visit us at booth #709!

Company Name Booth Number

Hinds Instruments 103
7245 NW Evergreen Pkwy., Suite 150
Hillsboro, OR 97124
www.hindsinstruments.com
NEW 2016

The Exicor MicroImager from Hinds Instruments is a polarization microscope that provides birefringence images of biological samples. Birefringent structures are visible without dying and can be quantitated to an order of magnitude lower than standard polarization microscopy techniques. Hinds Instruments, Inc. is the world leader in developing and supplying polarization modulation technology for a broad range of applications. With 40+ years of polarization modulation experience, Hinds Instruments' PEM-based solutions are proven tools for laboratory and research applications.

HORIBA Scientific 801
3880 Park Ave
Edison, NJ 08820
www.horiba.com/scientific

HORIBA Scientific: Most sensitive, flexible, simple and affordable steadystate & lifetime fluorometers: Modular, expandable open architecture, tabletop systems & ion ratio imaging microscopy solutions

Pick up your Exhibitor Coupon Book at the registration desk to get great deals from top companies!

IonOptix 535

309 Hillside St
Milton, MA 02186
www.ionoptix.com

IonOptix manufactures high-performance fluorescence and cell dimension data acquisition systems. We are well known for our popular Calcium and Contractility System, the standard for functional characterization of performance in isolated myocytes. We have expanded our line of instruments to include the MyoStretcher, a system which allows attachment, mechanical loading, and force recording. We're proud to offer a revolutionary new addition to this system, a force clamping module capable of executing real-time work loops and measuring power in single myocytes.

Ionovation 435

Westerbreite 7
Osnabrueck 49084
Germany
www.ionovation.com

Ionovation represents a wealth of experience in the development and application of modern electrophysiological and fluorescence techniques. Our product line comprises automated benchtop workstations for the electrophsiological and optical single molecule recording, as well as unique optical tweezers for single particle manipulation, force spectroscopy and scanning probe microscopy. The primary mission of the company is to always provide state-of-the art technology and services for sophisticated research tasks to the scientific as well as industrial markets.

IOP Publishing 309

Temple Circus, Temple Way
Bristol, BS1 6HG
United Kingdom
www.ioppublishing.org

IOP Publishing provides publications through which leading-edge scientific research is distributed worldwide. Beyond our traditional journals programme, we make high-value scientific information easily accessible through an ever-evolving portfolio of books, community websites, magazines, conference proceedings and a multitude of electronic services. IOP Publishing is central to the Institute of Physics, a not-for-profit society. Any financial surplus earned by IOP Publishing goes to support science through the activities of the Institute. Go to ioppublishing.org

Company Name Booth Number

ISS Inc 635

1602 Newton Dr
Champaign, IL 61822
www.iss.com

ISS fluorescence division manufactures spectrofluorometers for time-resolved and steady-state measurements; FLIM/FCS confocal microscopes, lasers and upgrades for LSM microscopes.

JASCO 437

28600 Mary's Court
Easton, MD 21601
www.jascoinc.com

JASCO will be exhibiting a range of biophysical characterization tools including Circular Dichroism, Fluorescence and FTIR instrumentation. The new J-1000 Series is the latest achievement in CD which is also capable of simultaneously measuring LD, Absorbance & Fluorescence as well as stopped-flow in all 3 modes using the new SMP capability. Visit booth #437.

JPK Instruments AG 908

Colditzstraße 34-36
Berlin 12099
Germany
www.jpk.com

JPK Instruments AG is a world-leading manufacturer of nanoanalytic instruments - particularly atomic force microscope (AFM) systems and optical tweezers - for a broad range of applications reaching from soft matter physics to nano-optics, from surface chemistry to cell and molecular biology. The main product lines are the NanoWizard® AFM family (BioScience, NanoScience, ULTRA Speed and NanoOptics versions), the NanoTracker™ force-sensing optical tweezers system, the CellHesion® for cell adhesion and cell mechanics studies, and the ForceRobot® fully automated single-molecule force spectroscope.

Company Name Booth Number

Keysight Technologies 323

5301 Stevens Creek Blvd
Santa Clara, CA 95051
www.keysight.com

Introducing the 9500 AFM, a state-of-the-art atomic force microscope that seamlessly integrates Keysight's powerful new NanoNavigator software with QuickScan enabling scan rates of up to 2 sec/frame and automatically sets all parameters within seconds. It also has industry-leading environmental & temperature control. We will show the compact, high performance SEM now with the option of EDS elemental analysis. Combining low voltage imaging & advanced EDS elemental analysis, the 8500B is the perfect lab companion. Both instruments are optimized for life science applications.

KinTek Corporation 428

7604 Sandia Loop
Austin, TX 78735
www.kintek-corp.com

KinTek offers everything you need to do state-of-the-art kinetic analysis. We offer premier research instruments and those suitable for teaching, all supported by first-class service. At the meeting we will show our new Auto-Stopped-Flow, offering the highest signal using the smallest sample volumes, and our Rapid Chemical/Freeze-Quench-Flow instruments. New advances in KinTek Explorer software for dynamic simulation and fitting of kinetic data will be revealed – available for PC and Mac. See our Exhibitor Presentation on KinTek Explorer at 1:30 to 3:00 pm on Monday.

Collect tickets from exhibitors in the Hall and then enter to win a Samsung Galaxy Tablet! Drop your tickets off at the BPS Booth by 2:30PM on Tuesday!

Laboratory for Fluorescence Dynamics 704

3120 National Sciences II
University of California, Irvine
Irvine, CA 92697
www.lfd.uci.edu

The LFD is a national research resource center for biomedical fluorescence spectroscopy, supported by the National Institute of General Medical Sciences (NIGMS, 8P41GM103540) divisions of the National Institutes of Health (NIH) and the University of California, Irvine (UCI). We provide a state-of-the-art laboratory for fluorescence measurements, microscopy and spectroscopy. We designs, tests, and implements advances in the technology of hardware, software, and biomedical applications. We disseminate knowledge of fluorescence spectroscopic principles, instrumentation, and applications.

Larodan 534

Retzius väg 8
Solna 171 65
Sweden
www.larodan.com

NEW 2016

Larodan develops, makes and sell a comprehensive range of high purity research grade Lipids for customers all over the world. We manufacture lipids both by extraction and purification from natural sources and synthetically. Our customers are involved in analytical chemistry, organic chemistry, biophysics, biochemistry, cell and molecular biology, nanotechnology as well as pharmaceutical product development and food science. Our facilities are located at the Karolinska Institute in Stockholm, Sweden. Larodan was founded in 1963 and has remained a privately held company.

LUMICKS 1000

De Boelelaan 1081
Amsterdam, 1081HV
Netherlands
www.lumicks.com

Ready-to-use single-molecule instrumentation: the revolutionary C-Trap™ Correlative Tweezers-Fluorescence Microscope (CTFM) and the Acoustic Force Spectroscope (AFS™).

Company Name Booth Number

Mad City Labs Inc 501

2524 Todd Dr.
Madison, WI 53713
www.madcitylabs.com

Mad City Labs, Inc. is the leader in nanopositioning systems and precision microscopy instruments for the biophysics community. We manufacture and design high performance closed loop nanopositioning systems, precision aligned microscopy platforms, and single molecule microscopes. Our closed loop nanopositioners feature proprietary PicoQ® sensors with ultra-low noise and high stability performance. They are compatible with third party imaging software. Our nanopositioners for microscopy include lens nanopositioners, Z-axis stages, and slim-line XY and XYZ stages. Applications: super resolution microscopy, high-speed imaging, single molecule biophysics, drift correction, light sheet microscopy, AFM. Visit Booth 501 and discover the advantages of Mad City Labs products. Our knowledgeable sales & scientific staff will be available to provide solutions for your research. Featured products The Nano-LPMW is the only XYZ nanopositioning system designed to hold multiwell plates and incubators for live cell imaging. The RM21™ microscope is designed for biophysics and is the only nanopositioner-ready microscope. Advantages: direct optical pathway access, high stability with precision alignment, flexible configurations, and 30mm & 60mm optical cage systems compatibility. Three new features for single molecule fluorescence microscopy: TIRF module, TIRF Lock and Köhler illumination. The MicroMirror TIRF system is a multi-spectral TIRF microscope for co-localization microscopy with improved signal-to-noise performance and accessibility to entry & exit pathways of the objective. Nano-Cyte® eliminates the effects of drift from microscopy experiments. Nano-Cyte® performs active 3D stabilization for days and allows single molecule techniques to be applied to the realm of cell biology. The SPM-M Kit combines the MadPLL® with our nanopositioning systems to form atomic resolution, closed loop, scanning resonant probe AFM. The SPM-M kit is compatible with the RM21™ microscope.

Company Name Booth Number

Malvern Instruments Ltd 711

117 Flanders Road
Westbourough, MA 01581
www.malvern.com

Malvern supports better characterization/control of proteins/macromolecules. Charge, size, mass, molecular weight, polydispersity are critical parameters, measured using: Zetasizer, dynamic/static light scattering for size, molecular weight, protein charge; NanoSight Nanoparticle Tracking Analysis, concentration; OMNISEC, molecular weight/structure; MicroCal, binding parameters; Archimedes Resonant Mass Measurement, count, mass, size; Viscosizer TD, particle size, concentration, formulation viscosity.

Matreya LLC 605

168 Tressler Street
Pleasant Gap, PA 16823
www.matreya.com

Matreya is a manufacturer of high purity lipids for Life Science Research and offers excellent technical service, consistency, custom synthesis, and rapid delivery.

Maxcyte Inc 811

22 Firstfield Rd # 110
Gaithersburg, MD 20878
www.maxcyte.com

NEW 2016

MaxCyte is driving the next generation of cell-based medicines. It's best-in-class cell modification technology is used in the discovery, development, and manufacture of small molecule, biologic, and cell-based medicines. The MaxCyte's flow electroporation enables the rapid development and consistent production of (co)transfected cells for cell-based assays, cellular therapy, genetic engineering, protein and antibody production, and rapid response vaccine development with comparable results and Seamless Scalability™ from the bench to HTS and pilot and production scale.

Mightex Systems 823

1032 Serpentine Lane
Pleasanton, CA 94566
www.mightexsystems.com

Mightex Systems is a leading developer and supplier of advanced illumination solutions for biophysical applications. Featured on display will be the market leading Polygon400 patterned illuminator which allows researchers to deliver light of any size, shape or wavelength to a sample making it a powerful tool for photo-activation, UV uncaging and calcium imaging and other biophysical applications. Also on display will be the popular OASIS modular macro & microscope platform as well as wide-field microscopy LED solutions, and fiber-coupled LED modules, and cost effective microscopy CCD cameras.

Minus K Technology Inc 714

460 Hindry Ave # C
Inglewood, CA 90301
www.minusk.com

Manufacturer of vibration isolation systems for AFMs, SPMs, SEMs, metrology, microhardness testers, lasers and optics. They are low-cost, passive, vacuum adaptable and require no air or electricity. Products: tabletop platforms, workstations, floor platforms and custom systems. Guaranteed 1/2 Hz natural frequencies make them effective against low-frequency building vibrations. Isolation is typically 10 to 100 times better than air tables and even better than the higher-priced active systems.

MOLECULAR DEVICES
UNLEASH YOUR BRILLIANCE™

Molecular Devices LLC 608

1311 Orleans Dr.
Sunnyvale, CA 94085
www.moleculardevices.com

At Molecular Devices, we provide platforms for high-throughput screening, genomic and cellular analysis, colony selection and microplate detection.

multichannel systems

Multi Channel Systems 522

Aspenhaustrasse 21
72770 Reutlingen, BW
Germany
www.multichannelsystems.com

Multi Channel Systems provides scientific equipment for electrophysiology for academic and pharmaceutical industry like MEA or automated patch clamp systems.

Namiki Precision Jewel Co Ltd 813

NEW 2016

282 Harbor Blvd.
Belmont, CA 94002
www.namiki.net

Built on its core technology of "Cutting, Grinding and Polishing" to nano-level accuracy, Namiki Precision Jewel has developed DC motors, diaphragm pumps, vibration motors, optical isolators and sapphire wafers to supply to IT, semiconductor, and medical equipment industries. Now that there is a worldwide interest in developing bio-inspired products, we have begun focusing on developing robust tools to facilitate R&D and the manufacturing of such products. We will be showcasing a state-of-the-art tool to fully manipulate multiple cells and cell membranes placed on our micro hole substrate.

Nanion Technologies 509

Gabrielenstr. 9
Munich 80636
Germany
www.nanion.de

Nanion Technologies is one of the leading providers of automated patch clamp systems. The Port-a-Patch, Patchliner, and the SyncroPatch 384/768PE cover the entire spectrum from high quality single channel recordings to ion channel HTS, at the same time supporting versatile features including current clamp, temperature control and internal perfusion. Nanion additionally provides platforms for cardiotoxicity screening, CardioExcyte 96, parallel bilayer recordings, Orbit 16 and Orbit mini, and parallel membrane transporter protein recordings, SURFE2R. Visit us and we'll tell you all about it!

NanoAndMore USA Inc 910

21 Brennan Street Suite 10
Watsonville, CA 95076
www.nanoandmore.com

Founded in 2005, NanoAndMore USA is based on the successful one-stop AFM probe shop concept that had already been proven in the European market by NanoAndMore GmbH. Available AFM probe brands include the budget conscious BudgetSensors™, MikroMasch® and OPUS™ lines, the premier NanoWorld™, NANOSENSORS™ and nanotools™ cantilevers and other brands. Functionalized AFM tips, Colloidal AFM probes and Plateau tips upon request. NanoAndMore AFM Probes fit all common AFM instruments. We also provide FREE AFM Technical Support and will Match the best probe for your application and budget requirements!

Nanolive SA 810

NEW 2016

Chemin de la Dent d'Oche 1A
Ecublens CH 1024
Switzerland
nanolive.ch

Nanolive developed a groundbreaking microscope, the 3D Cell Explorer: a high speed, high resolution and non-invasive tool that allows for real-time exploration of living cells, fixed cells and tissues, in 3D and in 4D (time). By combining holography and rotational scanning the system detects changes to light as it propagates through the cell. The physical refractive index distribution within the cell is measured at each voxel and the researcher can decide which parts of the cell to visualize by digitally staining them in contrasting colors, without interfering with the cell's normal physiology.

NanoTemper Technologies Inc 705

395 Oyster Point, Suite 135
South San Francisco, CA 94080
www.nanotemper-technologies.com

NanoTemper Technologies is a globally operating company providing solutions for basic to pre-clinical research in studying binding affinities, kinetics, thermal and colloidal stability.

Narishige International USA Inc 1022

1710 Hempstead Turnpike
East Meadow, NY 11554
usa.narishige-group.com

Narishige offers the latest and most unique micromanipulation instruments available in the market. On display will be Patch Clamp Recording Micromanipulators, Isolation Systems, Microforges, Pipette Pullers, and our new "PC-21" Suction Pump which suitable for in vitro perfusion system. The compact and more affordable YOU manipulator series will be also on display. We specialize in custom-made products upon request.

NeoBiosystems Inc 536

1407 Heikman Way
San Jose, CA 95129
www.neobiosystems.com

NeoBiosystems designs and manufactures automated patch clamp and two electrode voltage clamp (TEVC) products. These products include automated manipulators, pressure controllers, and integrated patch clamp and TEVC systems for higher throughput. These computer-controlled systems improve the success rate of making seals in patch clamp and increase the throughput for two-electrode voltage clamps. The systems are also less expensive than the traditional method, and can reach high success rates in making gig ohm seals even for beginners. They can be used on any kind of cells and tissues.

NIC@IIT 624

Via Morego 30
Istituto Italiano di Tecnologia
Genova 1G1G3
Italy
www.nic.iit.it

The Nikon Imaging Centre at Istituto Italiano di Tecnologia is a core lab for advanced light microscopy. The NIC@IIT is to provide to a wide community of scientists and professionals throughout Italy, Europe and the Rest of the World, a large number of up-to-date imaging methodologies to monitor the living cell activity at high spatial and temporal rate. The main expertise of the NIC@IIT is related to Super resolution and multiphoton microscopy, and it is developed in the multidisciplinary environment of IIT. NIC@IIT offers collaborations on newest advanced microscopes and training workshops.

Nikon Instruments Inc 523

1300 Walt Whitman Road
Melville, NY 11747
www.nikoninstruments.com

Nikon Instruments Inc. is a world leader in the development and manufacture of optical and digital imaging technology for biomedical applications. Now in its 98th year, Nikon provides complete optical systems that offer optimal versatility, performance and productivity with cutting-edge microscopes, digital imaging products and software

npi electronic GmbH 322

Bauhofring 16
Tamm, 71732
Germany
www.npielectronic.com

npi electronic develops and produces equipment for research in physiological and pharmacological research sciences including patch and voltage clamp, extracellular and intracellular amplifiers, stimulus isolators, voltammetric-amperometric amplifiers, filters, µm-range drug application systems, temperature controllers and amplifiers for electroporation and transfection. npi electronic is expert in microelectrode and patch clamp techniques.

Olis Inc 903

130 Conway Dr, Suites A&B
Bogart, GA 30622
Georgia
www.olisweb.com

Upcycling spectrophotometers; Achieving CLARiTY! Using the best new and classic optics to make best UV/Vis and NIR abs, fluo, & CD systems; achieving CLARiTY UV/Vis for solutions, suspensions & solids

Olympus 408

3500 Corporate Pkwy
Center Valley, PA 18034
www.olympus-lifescience.com

Olympus is dedicated to your work, vision and science. Through innovation and service, we seek to aide in your discoveries, advance your research and inspire you to explore new possibilities. Our wide range of imaging solutions are built with the optical excellence and proven application expertise you have come to expect and depend on. Let us be your partner in discovery. Visit us at Booth 408.

Onefive GmbH 434

Althardstrasse 70
Regensdorf, CH-8105
Switzerland
www.onefive.com

NEW 2016

Onefive GmbH is a worldwide leading supplier of femtosecond, picosecond and nanosecond industrial laser modules. The company has a strong expertise in ultra-low noise, mode-locked lasers over a broad range of repetition rates, from pulse-on-demand up to 1.3 GHz. The lasers are air-cooled, maintenance-free, and stand out for their high ease of use and reliability in 24/7 operation. Onefive portfolio offers laser solutions for several applications, among which STED and two-photon microscopy, nonlinear spectroscopy, THz generation, surgery and medical treatments, material processing and sensing.

Pacer Scientific 623

5649 Valley Oak Dr.
Los Angeles, CA 90068
www.pacersci.com

PACER SCIENTIFIC is manufacturers' representative company specializing in the sale of research instrumentation and software for the biosciences. Pacer Scientific represents a wide range of products.

Park Systems Inc 802

3040 Olcott Street
Santa Clara, CA 95054
www.parkafm.com

Park Systems is a world leading manufacturer of atomic force microscopy (AFM) systems with a complete range of products for lab researchers and engineers in biological science, materials research, semiconductor, and data storage industries. Park's AFM provides the highest data accuracy, superior productivity, and the lowest operating cost. Please visit parkafm.com for more information.

PCO-TECH Inc **532**
6930 Metroplex Drive
Romulus, MI 48174
www.pco-tech.com

PCO is the leading manufacturer of sCMOS, CCD, ICCD and CMOS cameras for scientific, OEM, industrial, and military applications. PCO offers specialized cameras with wide dynamic range, high resolution, high speed, and low noise performance used in a wide variety of challenging scientific applications

Photometrics **404**
3440 East Britannia Drive, Suite 100
Tucson, AZ 85706
www.photometrics.com

Photometrics is a premier designer and manufacturer of high-performance, state-of-the-art CMOS, EMCCD cameras, CCD cameras and multichannel imaging systems. As the original architect of the world's first scientific-grade EMCCD camera, Photometrics has supported life science research for decades, enabling significant scientific contributions and advancements globally. The company's headquarters are in Tucson, Arizona. Additional information is available at www.photometrics.com.

Physics Today **303**
One Physics Ellipse
College Park, MD 20740
www.physicstoday.org

Physics Today has a whole new look! More than ever, it is the magazine with journal credibility: reliable coverage from a variety of fields. Subscribe for just $25/year at www.physicstoday.org/BPS16

PI (Physik Instrumente) **400**
16 Albert St
Auburn, MA 01501
www.pi-usa.us

PI is a leading manufacturer of precision motion control equipment, piezo motors, air bearing stages and hexapod parallel-kinematics for semiconductor applications, photonics, bio-nano-technology and medical engineering. PI has been developing and manufacturing standard & custom precision products with piezoceramic and electromagnetic drives for 4 decades. The company has been ISO 9001 certified since 1994 and provides innovative, high-quality solutions for OEM and research. PI is present worldwide with eleven subsidiaries, R&D / engineering on 3 continents and total staff of 800+.

Company Name Booth Number

PicoQuant Photonics North America Inc **201**
9 Trinity Drive
West Springfield, MA 01089
www.picoquant.com

PicoQuant offers pulsed diode lasers, photon counting instrumentation, fluorescence lifetime spectrometers, time-resolved confocal microscopes, FLIM & FCS upgrade kits for laser scanning microscopes

Prior Scientific Inc **125**
80 Reservoir Park Drive
Rockland, MA 02370
www.prior.com

Prior Scientific is the leading manufacturer of microscope automation equipment including motorized microscope stages, slide and well plate loaders, fluorescence illuminators, custom and OEM systems.

Quantum Northwest Inc **901**
22910 E. Appleway Ave, Suite 4
Liberty Lake, WA 99019
www.qnw.com

Quantum Northwest offers the largest selection of Peltier-controlled cuvette holders on Earth. Our products serve the biophysical spectroscopy world with temperature control from -55 to +150 deg C.

Rainin Instrument LLC **1002**
7500 Edgewater Drive
Oakland, CA 94621
www.shoprainin.com

Rainin is a global leader offering the most comprehensive selection of innovative, ergonomic pipettes, quality tips, protein purification systems and service.

Need career advice? Learn what the Career Center has to offer on page XII

Company Name Booth Number

Rapp OptoElectronic GmbH **722**
Gehlenkamp 9a
Hamburg 22559
Germany
www.rapp-opto.com

Rapp OptoElectronic offers products for applications such as: * optogenetics * uncaging * photobleaching/FRAP * photoconversion/photoswitching * ablation * mapping of neural networks * laser temperature-jump * flash photolysis * general illumination Our products include off-the-shelf and customized systems for localized illumination in microscopy, continuous and pulsed light sources (UV, VIS and IR lasers, flash lamps, high power LED systems), microscope modifications for transmission in the deep UV range.

Rayonix LLC **115**
1880 Oak Ave
Evanston, IL 60201
www.rayonix.com

Rayonix L.L.C. now offers XFEL X-ray detectors: The Rayonix High-Speed series, with small pixels, no gaps in the images, factory calibrated, and with geometries that allow the direct beam to pass by.

Renishaw Inc **603**
Annette Tures
5277 Trillium Blvd
Hoffman Estates, IL 60192
www.renishaw.com

Renishaw is the world leader in high-sensitivity confocal Raman instrumentation. Offering Raman systems based on confocal microscopes and advanced fiber optic probes, we can provide a wide variety of configurations to suit many applications in semiconductor characterization. From thin-films to bulk analysis, from pure materials to contaminants, our Raman instruments are employed in many cutting-edge research laboratories and production environments. Our sales and applications engineers will be happy to discuss your characterization needs.

Rigaku Oxford Diffraction 828

9009 New Trails Dr
The Woodlands, TX 77381
www.rigaku.com

Rigaku Oxford Diffraction combines the expertise of single crystal groups from Rigaku and the former Oxford Diffraction group to provide you with high quality instrumentation and software for X-ray crystallography and small angle X-ray scattering experiments. The goal of this new synergistic organization is to provide tools which drive discoveries and increase our understanding of the universe at a molecular level. Our products include instrumentation and software for chemical crystallography, macromolecular crystallography and biological solution scattering. www.rigaku.com

Rockefeller University Press 308

950 Third Ave., Floor 2
New York, NY 10022
www.rupress.org

The mission of the Journal of General Physiology is to publish articles that elucidate important biological, chemical or physical mechanisms of broad physiological significance.

Company Name Booth Number

Royal Society Publishing 305

6-9 Carlton House Terrace
London
United Kingdom
www.rsc.org

The Royal Society, the UK Academy of Science, recognises, promotes, and supports excellence in science. Our journals - Interface, Royal Society Open Science and Open Biology welcome the submission of individual research papers from biophysicists, whilst Interface Focus welcomes proposals for themed issues. We offer rigorous, constructive peer review; efficient, rapid processing by active, expert scientists; open access options; promotion by a dedicated press office; wide dissemination to an international audience and 350 years of experience in scientific publishing. Come and find out more by visiting booth 305. Alternatively, visit http://royalsociety.org/journals, browse our biophysics collection at http://royalsocietypublishing.org/collection/biophysics-12, or contact us at publishing@royalsociety.org

RPMC Lasers Inc 433

203 Joseph Street
O' Fallon, MO 63366
www.rpmclasers.com

RPMC Lasers offers innovative Diode Pumped Solid-State Lasers and Laser diode Modules for industrial and scientific applications, featuring wavelengths in the visible and near-UV spectrum.

Company Name Booth Number

SciMeasure 815

1240 Clairmont Road, Suite 100
Decatur, GA 30030
www.scimeasure.com

High speed low noise large and small format scientific CMOS cameras. Ideal for everything from tracking, ion and voltage imaging to STORM and Light Sheet imaging.

SciMedia/BrainVision 415

940 South Coast Drive, Suite 160
Costa Mesa, CA 92626
www.scimedia.com

NEW 2016

SciMedia/Brainvision specializes in high speed cameras to detect voltage, calcium, and intrinsic signals of biological specimens. The cameras are designed to provide an optimal combination of high speed, high resolution, and high signal to noise ratios. SciMedia also offers custom microscopes specifically designed for wide-field fluorescence imaging applications.

Seahorse Bioscience, a part of Agilent Technologies 1024

16 Esquire Road
Billerica, MA 01862
www.seahorsebio.com

Seahorse Bioscience, a part of Agilent Technologies, provides analytical instruments, and cell-based assay kits, for biological research and drug discovery. XF Extracellular Flux Analyzers are the industry standard for measuring cell metabolism, providing faster, better, and more accurate measurements of real-time cellular bioenergetics via the simultaneous measurement of the two major energy pathways of the cell - mitochondrial respiration and glycolysis – in live cells, in real time. Customers include scientists at academic institutions, pharmaceutical and biotech organizations.

Semrock Inc **723**
3625 Buffalo Road, Suite 6
Rochester, NY 14624
www.semrock.com

Semrock manufactures optical filters that set the standard for use in biomedical and analytical instrumentation. These include LED bandpass sets, sets for Brilliant dyes, and other high-performance fluorescence and Raman spectroscopy filters. These innovative products are built on the latest in optical coating technology for end-users or high-volume delivery demands.

Sensapex OY **123**
Teknologiantie 13
Oulu 90590
Finland
www.sensapex.com

Your partner for ultraprecise micromanipulation applications in electrophysiology, microinjections and optogenetics: -Most compact, scalable and cost-efficient solutions available anywhere -Smooth, stable and drift free positioning -20 mm movement range, 5 nm resolution, 20 nm repeatability -Fast piezo thrusts for intracellular recordings and microinjections -Battery-operated system (rechargeable) -Millisecond level synchrony and open source SDK for PC control Come and test our new triple and single axis manipulators!

SensiQ Technologies Inc **1008**
655 Research Pkwy, Suite #300
Oklahoma City, OK 73104
www.sensiqtech.com

SensiQ Technologies develops, manufacturers and supports advanced Surface Plasmon Resonance (SPR) Instrumentation for Molecular Interaction Analysis. In addition, the company offers complete SPR services on a fee basis. SensiQ has revolutionized the SPR market with the development of dynamic injection (diSPR) methods "FastStep" and "OneStep" making possible complete kinetic and affinity assays in one pass. The OneStep continuous gradient method returns diffusion coefficients for aggregation assessment and provides a differential capability that discriminates strong and weak binders in time

Company Name Booth Number

Siskiyou Corporation **708**
110 SW Booth St
Grants Pass, OR 97526
www.siskiyou.com

Siskiyou Corporation manufactures micromanipulators, motion control devices, tissue slicers, translation stages, probe clamps, construction hardware, adjustable platforms and tilt tables.

Society for Neuroscience **312**
1121 14th Street NW #1010
Washington, DC 20005
www.SfN.org

The Society for Neuroscience is the world's largest organization of scientists and physicians devoted to understanding the brain and nervous system. Founded in 1969, SfN has nearly 38,000 members in more than 90 countries and 150 chapters worldwide. The Society publishes JNeurosci and the open-access journal eNeuro. SfN's annual meeting, Neuroscience 2016, will take place November 12-16 in San Diego. Join more than 30,000 colleagues from more than 80 countries at the world's largest marketplace of ideas and tools for global neuroscience. For details, visit SfN.org or stop by booth #312.

Sophion Bioscience **909**
Baltorpvej 134
Ballerup 2750
Denmark
www.sophion.com

Sophion products offers the most flexible automated patch clamp systems on the market with QPatch and Qube covering your throughput needs and provides genuine whole-cell data based on true gigaseals. Our customers are the focus of everything we do. To help you achieve maximum benefit from your QPatch or Qube system we provide an array of opportunities for support, training and networking.

Company Name Booth Number

Springer **302**
233 Spring Street
New York, NY 10013
www.springer.com

Springer is a leading global publisher, providing researchers with quality content via innovative products and services.

Sutter Instrument **600**
One Digital Drive
Novato CA 94949
www.sutter.com

Sutter Instrument is proud to introduce a new line of state-of-the-art patch clamp and intracellular amplifiers along with the SutterPatch™, a comprehensive software package built on the foundation of Igor Pro 7. The IPA™ (Integrated Patch Amplifier) combines a low-noise patch clamp amplifier, onboard D/A conversion and data acquisition via high-speed USB. Optimized for whole-cell patch clamp recordings, the IPA™ is backed by the service and support you've come to expect from Sutter Instrument. Other exciting new products include the VF-1 Edge, tunable filter system that allows selection of the band-width as well as the center wavelength upon command, the QUAD 4-axis micromanipulator, and the DF-Scope, a multi-photon imaging package for the Olympus BX51WI.

TA Instruments **200**
159 Lukens Drive
New Castle, DE 19720
www.tainstruments.com

With advanced technology, and unparalleled customer support, TA Instruments is the world leader in microcalorimetry, thermal analysis, and rheology. We offer ultrasensitive, high precision calorimeters for label-free measurements of protein binding and structure. Our new Affinity ITC, the Nano ITC (available in two cell volumes) and our Nano DSC with

Autosampler are powerful tools for measuring small-molecule–protein interactions, protein-protein interactions, drug-target binding, and biomolecular structure and stability. The TAM IV isothermal calorimeter is the ultimate platform for isothermal measurements of stability, compatibility, polymorphism, amorphicity and crystallinity, microbial activity, and more. Visit us to learn about the very latest ITC technology, including advanced automation.

TgK Scientific Ltd 729

7 Long's Yard
St. Margaret's Street
Bradford on Avon, Wiltshire
United Kingdom
www.tgkscientific.com

We are delighted to be presenting the ever popular and performance defining Hi-Tech Scientific instruments for transient kinetics. New and existing customers should stop by to catch up on the latest in stopped-flow spectrometers, quench-flow and related

The Physiological Society 314

Hodgkin Huxley House
30 Farringdon Lane
London EC1R 3AW
United Kingdom
www.physoc.org

The Journal of Physiology publishes groundbreaking original research that elucidates new physiological principles or mechanisms. There are no pages charges. The current Impact Factor is 5.037.

Thorlabs 401

108 Powers Court
Sterling, VA 20166
www.thorlabs.com

Although Thorlabs' roots are in the photonics industry, in recent years the company has grown from the laser and electro-optics markets to serve the life sciences and bio-medical segments. As a testament to its growth and dedication to these R&D and research communities, Thorlabs has expanded its portfolio to include a variety of scientific cameras, microscopes, microscopy accessories, femtosecond lasers, OCT systems, and vibration isolation systems. Thorlabs utilizes a vertically-integrated manufacturing design to design and produce custom solutions that fit specific needs in these areas.

Company Name Booth Number

TMC 914

15 Centennial Drive
Peabody, MA 01960
www.techmfg.com

TMC manufactures a complete line of Optical Tops and Precision Vibration Isolation Systems. New products include the patented Everstill™ Bench-top Active Vibration Cancellation Platform and CleanBench™ Vibration Isolation Tables with Gimbal Piston™ Isolators. Other products include CleanTop® II Spill-proof Optical Tops, Non-Magnetic Tops, Vacuum compatible Tops, Lightweight Breadboards, and STACIS® III piezoelectric active vibration cancellation systems.

Tokai Hit Co Ltd 725

306-1 Gandoji-cho
Fujinomiya-shi SHIZUOKA
www.tokaihit.com/

Tokai Hit provides small Incubators enable time lapse imaging (confocal, fluorescence, SIM and TIRF) on microscopes for -Wide temperature range Heating/Cooling. -Perfusion and Drug Administration.

TOPTICA Photonics Inc 634

1286 Blossom Drive
Victor, NY 14564
www.toptica.com

NEW 2016

TOPTICA is the world leader in diode laser and ultrafast technology for industrial and scientific markets. We offer the widest range of single mode tunable light in the 190 to 2900nm and 0.1-2.7THz spectral region with various accessories to measure, characterize, stabilize and analyze light. With our Passion for Precision, TOPTICA delivers!

UVP LLC 814

2066 West 11th St
Upland, CA 91786
www.uvp.com

UVP LLC, offers Western blot/gel documentation image capture analysis systems. UV products. Real time qPCR thermal cyclers, homogenizer, DNA/RNA isolation kits.

Company Name Booth Number

Warner Instruments 427

1125 Dixwell Ave
Hamden, CT 06514
www.warneronline.com

Warner Instruments supplies a large selection of products ideal for biophysics, cell biology, physiology, and neurosciences. Imaging/recording chambers, perfusion and temperature control systems, electronic instrumentation, and Planar Lipid Bilayer technology are our specialties. At our booth we present a new 4 channel differential amplifier.

WITec Instruments 712

130G Market Place Blvd
Knoxville, TN 37922
www.witec-instruments.com

WITec is the leading manufacturer of confocal and scanning-probe microscopes for vital and diverse applications in 3D-Raman Imaging, Atomic Force (AFM), and Scanning Near-Field Optical Microscopy (SNOM). From the company's founding in 1997, WITec has been distinguished by its innovative product portfolio and a microscope design that enables combinations of the various imaging techniques within one system. An exemplar of the company's breakthrough development is the world's first integrated Raman-AFM microscope. Raman microscopy is a powerful technique for label-free chemical imaging.

Wyatt Technology Corporation 601

6300 Hollister Ave
Santa Barbara, CA 93117
www.wyatt.com

Wyatt Technology is the recognized leader in instrumentation for determining the absolute molar mass, size, charge and interactions of macromolecules and nanoparticles in solution.

Product Categories

Company Name — Booth Number

3-D Visualization
Bitplane Inc 724
DRV Technologies 223
Nanolive SA 810
Rigaku Oxford Diffraction 828

AFM/NSOM/Confocal Microscopes
App Nano 710
HORIBA Scientific 801
Ionovation GmbH 435
Mad City Labs Inc 501
NanoAndMore USA Inc 910
Park Systems Inc 802
Renishaw Inc 603
Rigaku Oxford Diffraction 828
WITec Instruments 712

Amperometry/Voltammetry Instrumentation
npi electronic GmbH 322
Amphipols
Anatrace 529

Amplifiers
Alembic Instruments Inc 422
Elements SRL 715
HEKA Elektronik 423
Mad City Labs Inc 501
Multi Channel Systems 522
npi electronic GmbH 322
Onefive GmbH 434
Pacer Scientific 623
Sutter Instrument 600
Warner Instruments 427

Analytical/Testing Services
Charles River 424
NanoTemper Technologies Inc 705
Olympus 408
Park Systems Inc 802
Seahorse Bioscience, a part of Agilent Technologies 1024
TA Instruments 200

Antibodies
AAT Bioquest Inc 804
Aviva Systems Biology Corporation 214
BiOptix 812
Cedarlane 800
Maxcyte Inc 811
NanoTemper Technologies Inc 705
UVP LLC 814

Assay Kits
AAT Bioquest Inc 804
Aviva Systems Biology Corporation 214
Cedarlane 800
Seahorse Bioscience, a part of Agilent Technologies 1024

Atomic Force Microscopes
Anasys Instruments 808
App Nano 710
Asylum Research, an Oxford Instruments Company 609
JPK Instruments AG 908
Keysight Technologies 323
Mad City Labs Inc 501
NanoAndMore USA Inc 910
Park Systems Inc 802
WITec Instruments 712

Automated Temperature/Titration Filter Fluorometer
Aviv Biomedical Inc 1012

Automated Titrating Fluorometer
Aviv Biomedical Inc 1012

Biochemical Reagents
AAT Bioquest Inc 804
Aviva Systems Biology Corporation 214
Gene Tools LLC 822
Larodan 534
Matreya LLC 605

Biochemicals
Aviva Systems Biology Corporation 214
Cedarlane 800
Larodan 534
Matreya LLC 605

Biotechnology
ALVEOLE 731
Anton Paar USA 1010
Axiogenesis AG 922
Gene Tools LLC 822
Malvern Instruments Ltd 711
Maxcyte Inc 811
Namiki Precision Jewel Co Ltd 813
Photometrics 404
Rigaku Oxford Diffraction 828
TA Instruments 200
TgK Scientific Ltd 729

Books and Journals
Cell Press 313
ELSEVIER 215
Garland Science 300
Physics Today 303
Royal Society Publishing 305
Society for Neuroscience 312

Cameras
Andor Technology 625
Carl Zeiss Microscopy LLC 101
Hamamatsu Corporation 409
Mightex Systems 823
Olympus 408
PCO-TECH Inc 532
Photometrics 404
SciMeasure 815
SciMedia/BrainVision 415
Thorlabs 401
UVP LLC 814

Cell Biology Products
AAT Bioquest Inc 804
ALVEOLE 731
Andor Technology 625
Axiogenesis AG 922
Beckman Coulter Life Sciences 1014
Cedarlane 800
Charles River 424
Ecocyte Bioscience US LLC 630
Electron Microscopy Sciences 613
Mightex Systems 823
Namiki Precision Jewel Co Ltd 813
Nanolive SA 810
Park Systems Inc 802
Photometrics 404
Seahorse Bioscience, a part of Agilent Technologies 1024

Cell Culture Products
ALVEOLE 731
Cedarlane 800
Namiki Precision Jewel Co Ltd 813
Olympus 408

Centrifuges
Beckman Coulter Life Sciences 1014

Chromatography
Agilent Technologies Inc 809
Anatrace 529
Malvern Instruments Ltd 711
Wyatt Technology Corporation 601

Circular Dichroism Spectroscopy
Applied Photophysics 923
Aviv Biomedical Inc 1012
BioLogic USA 514
Hellma USA 709
JASCO 437
Olis Inc 903
Quantum Northwest Inc 901

Computational Software
DRV Technologies 223
KinTek Corporation 428

Computers, Hardware and Software
Aurora Scientific Inc 636
Caliber Imaging & Diagnostics Inc 912

Confocal Microscopes
Caliber Imaging & Diagnostics Inc 912
Carl Zeiss Microscopy LLC 101
ISS Inc 635
Laboratory for Fluorescence Dynamics 704

Company Name	Booth Number
LUMICKS	1000
NIC@IIT	624
Nikon Instruments Inc	523
PicoQuant Photonics North America Inc	201
Siskiyou Corporation	708
WITec Instruments	712

Crystallization Utilities

Anatrace	529

Crystallography

Anatrace	529
Charles River	424
NanoTemper Technologies Inc	705
Rigaku Oxford Diffraction	828
TA Instruments	200

Curvettes

Hellma USA	709

Data Acquisition

Alembic Instruments Inc	422
Aurora Scientific Inc	636
Elements SRL	715
IonOptix	535
Rayonix LLC	115

Data Analysis

Bitplane Inc	724
DRV Technologies	223
IonOptix	535
KinTek Corporation	428
Laboratory for Fluorescence Dynamics	704
Wyatt Technology Corporation	601

Data Analysis Software

Agilent Technologies Inc	809
Applied Photophysics	923
Bitplane Inc	724
De Novo Software	412
DRV Technologies	223
Elements SRL	715
KinTek Corporation	428
Laboratory for Fluorescence Dynamics	704
SensiQ Technologies Inc	1008

Detergents

Anatrace	529
NanoTemper Technologies Inc	705

Digitizers

Sutter Instrument	600

Drug Discovery

Axiogenesis AG	922
Beckman Coulter Life Sciences	1014
BiOptix	812
Charles River	424
Creoptix	222
KinTek Corporation	428
Maxcyte Inc	811
Nanolive SA	810
Renishaw Inc	603
Seahorse Bioscience, a part of Agilent Technologies	1024
SensiQ Technologies Inc	1008

Electromechanical Instrumentation

Sutter Instrument	600

Electrophoresis Equipment

Agilent Technologies Inc	809
Wyatt Technology Corporation	601

Electrophysiological Data Acquisition

Alembic Instruments Inc	422
Charles River	424
Ecocyte Bioscience US LLC	630
Elements SRL	715
HEKA Elektronik	423
Multi Channel Systems	522
SciMedia/BrainVision	415
Sutter Instrument	600

Electrophysiological Instruments

Alembic Instruments Inc	422
Aurora Scientific Inc	636
Biolin Scientific	913
Elements SRL	715
Ionovation GmbH	435
Nanion Technologies	509
Sutter Instrument	600

Electrophysiology Equipment

Biolin Scientific	913
Cell MicroControls	622
Ecocyte Bioscience US LLC	630
Elements SRL	715
HEKA Elektronik	423
Multi Channel Systems	522
NeoBiosystems Inc	536
npi electronic GmbH	322
Pacer Scientific	623
Sensapex OY	123
Sutter Instrument	600
Thorlabs	401
Warner Instruments	427

Electrophysiology Software

Elements SRL	715
Multi Channel Systems	522
NeoBiosystems Inc	536
Sutter Instrument	600

Environmental Chambers

Cell MicroControls	622
Park Systems Inc	802

Filter Wheels

89 North	629
ASI/Applied Scientific Instrumentation	531
Chroma Technology Corporation	728
Prior Scientific Inc	125
Sutter Instrument	600

Flash Lamps

Hamamatsu Corporation	409

Fluid Flow Chambers

Hellma USA	709
LUMICKS	1000
Warner Instruments	427

Fluorescence Anisotropy

BioLogic USA	514
Edinburgh Instruments	612
HORIBA Scientific	801
ISS Inc	635
KinTek Corporation	428
Quantum Northwest Inc	901
TgK Scientific Ltd	729

Fluorescence Correlation Spectroscopy

ISS Inc	635
Laboratory for Fluorescence Dynamics	704
NIC@IIT	624

Fluorescence Image Analysis Equipment

Aurora Scientific Inc	636
Laboratory for Fluorescence Dynamics	704

Fluorescence Lifetime Imaging

HORIBA Scientific	801
ISS Inc	635
Laboratory for Fluorescence Dynamics	704
NIC@IIT	624
PCO-TECH Inc	532
Photometrics	404
PicoQuant Photonics North America Inc	201
Rapp OptoElectronic GmbH	722
WITec Instruments	712

Fluorescent Filters

Chroma Technology Corporation	728
Semrock Inc	723

Fluorescent Probes

AAT Bioquest Inc	804

Fluorometers

Aviv Biomedical Inc	1012
Edinburgh Instruments	612
HORIBA Scientific	801
IonOptix	535
ISS Inc	635
Quantum Northwest Inc	901

Glass Capillary Tubing

Sutter Instrument	600
Warner Instruments	427

High-Throughput Instrumentation

Biolin Scientific	913
BiOptix	812
Charles River	424
Ecocyte Bioscience US LLC	630
Mad City Labs Inc	501
Maxcyte Inc	811
Multi Channel Systems	522
Nanion Technologies	509
NanoTemper Technologies Inc	705
NeoBiosystems Inc	536
Rayonix LLC	115

Company Name	Booth Number
SciMeasure	815
SensiQ Technologies Inc	1008
Sophion Bioscience	909
Wyatt Technology Corporation	601

Image Acquisition Systems

Aurora Scientific Inc	636
Hinds Instruments	103
PCO-TECH Inc	532
Rayonix LLC	115
SciMeasure	815
UVP LLC	814

Image Analysis

Bitplane Inc	724
DRV Technologies	223
Malvern Instruments Ltd	711
NIC@IIT	624
PCO-TECH Inc	532
Renishaw Inc	603

Image Analysis Software

Andor Technology	625
Aurora Scientific Inc	636
Bitplane Inc	724
Carl Zeiss Microscopy LLC	101
De Novo Software	412
DRV Technologies	223
Laboratory for Fluorescence Dynamics	704
NanoAndMore USA Inc	910
Nanolive SA	810
Nikon Instruments Inc	523
SciMedia/BrainVision	415

Image Analysis, High Resolution

DRV Technologies	223
Ionovation GmbH	435
PCO-TECH Inc	532

Image Analyzers, High Resolution

SciMeasure	815
PCO-TECH Inc	532
SciMeasure	815

Image Analyzers, Ratiometric Dyes

AAT Bioquest Inc	804

Image Intensifiers

PCO-TECH Inc	532

Image Stabilization

Mad City Labs Inc	501

Imaging Chambers

ALA Scientific Instruments	324
Cell MicroControls	622
Tokai Hit Co Ltd	725
Warner Instruments	427

Imaging Systems

89 North	629
ASI/Applied Scientific Instrumentation	531
Charles River	424
Hinds Instruments	103
Mad City Labs Inc	501
Nanolive SA	810
Nikon Instruments Inc	523
Photometrics	404
Rayonix LLC	115
SciMedia/BrainVision	415
Thorlabs	401
Tokai Hit Co Ltd	725
UVP LLC	814

Imaging, Spectral

Chroma Technology Corporation	728
Hinds Instruments	103
Malvern Instruments Ltd	711

Immunochemicals

Aviva Systems Biology Corporation	214

Incubators

Aviv Biomedical Inc	1012
Tokai Hit Co Ltd	725
Warner Instruments	427

Infrared Spectroscopy

Anasys Instruments	808
BioLogic USA	514
JASCO	437
TgK Scientific Ltd	729

Interferometers

Creoptix	222

Ion Channels

Axiogenesis AG	922
Biolin Scientific	913
Charles River	424
Ionovation GmbH	435
Maxcyte Inc	811
Nanion Technologies	509

Isotope-Labeled Compounds

Larodan	534

Label Free Sensing

Axiogenesis AG	922
BiOptix	812
Creoptix	222
Nanolive SA	810
NanoTemper Technologies Inc	705
SensiQ Technologies Inc	1008

Labeling Dyes

AAT Bioquest Inc	804
Larodan	534

Laboratory Apparatus & Equipment

Beckman Coulter Life Sciences	1014
Electron Microscopy Sciences	613
Namiki Precision Jewel Co Ltd	813
PicoQuant Photonics North America Inc	201
UVP LLC	814

Langmuir Troughs

Biolin Scientific	913

Lasers

89 North	629
Applied Photophysics	923
Cobolt AB	413
Edinburgh Instruments	612
LUMICKS	1000
Onefive GmbH	434
PicoQuant Photonics North America Inc	201
Rapp OptoElectronic GmbH	722
RPMC Lasers Inc	433
Semrock Inc	723
Thorlabs	401
TOPTICA Photonics Inc	634

Life Sciences

89 North	629
Agilent Technologies Inc	809
ALVEOLE	731
Anasys Instruments	808
Andor Technology	625
Applied Photophysics	923
Avanti Polar Lipids Inc	508
Axiogenesis AG	922
Beckman Coulter Life Sciences	1014
Bitplane Inc	724
Chroma Technology Corporation	728
Garland Science	300
Larodan	534
LUMICKS	1000
Mightex Systems	823
NanoAndMore USA Inc	910
NIC@IIT	624
Olympus	408
Photometrics	404
Rapp OptoElectronic GmbH	722
Renishaw Inc	603
Rigaku Oxford Diffraction	828
Seahorse Bioscience, a part of Agilent Technologies	1024
Siskiyou Corporation	708
TA Instruments	200
Thorlabs	401
Tokai Hit Co Ltd	725

Light Sheet Microscopy

Andor Technology	625
ASI/Applied Scientific Instrumentation	531
Carl Zeiss Microscopy LLC	101
Mad City Labs Inc	501
NIC@IIT	624
Photometrics	404
SciMeasure	815

Light Sources

89 North	629
Chroma Technology Corporation	728
Cobolt AB	413
Hamamatsu Corporation	409
HORIBA Scientific	801
IonOptix	535
ISS Inc	635
Mightex Systems	823
PicoQuant Photonics North America Inc	201
Rapp OptoElectronic GmbH	722
Sutter Instrument	600

Company Name	Booth Number
TgK Scientific Ltd	729
Lipids	
Anasys Instruments	808
Anatrace	529
Avanti Polar Lipids Inc	508
Larodan	534
Matreya LLC	605
Liposome Preparation Equipment	
Avanti Polar Lipids Inc	508
Nanion Technologies	509
Liquid Chromatography Instruments	
Agilent Technologies Inc	809
JASCO	437
Wyatt Technology Corporation	601
Magnetic Resonance Imaging	
Charles River	424
Magnetic Stirrers	
Quantum Northwest Inc	901
Mass Spectrometry	
Agilent Technologies Inc	809
Charles River	424
Micro Environmental Control	
ALA Scientific Instruments	324
ALVEOLE	731
Microcalorimetry Systems	
Malvern Instruments Ltd	711
TA Instruments	200
Microelectrode Holders	
ALA Scientific Instruments	324
Sensapex OY	123
Warner Instruments	427
Microelectrodes	
Ecocyte Bioscience US LLC	630
Microfluidic Chambers	
ALA Scientific Instruments	324
Creoptix	222
Elements SRL	715
Fluicell	825
Hellma USA	709
LUMICKS	1000
Microforges	
ALA Scientific Instruments	324
Narishige International USA Inc	1022
Microinjectors	
ASI/Applied Scientific Instrumentation	531
Fluicell	825
Narishige International USA Inc	1022
npi electronic GmbH	322
Sutter Instrument	600
Warner Instruments	427

Company Name	Booth Number
Micromanipulators	
ASI/Applied Scientific Instrumentation	531
Electron Microscopy Sciences	613
Narishige International USA Inc	1022
NeoBiosystems Inc	536
Pacer Scientific	623
Prior Scientific Inc	125
Sensapex OY	123
Siskiyou Corporation	708
Sutter Instrument	600
Micropipette Pullers	
HEKA Elektronik	423
Narishige International USA Inc	1022
Pacer Scientific	623
Siskiyou Corporation	708
Sutter Instrument	600
Micropipettes	
Fluicell	825
Micropositioners	
ASI/Applied Scientific Instrumentation	531
Mad City Labs Inc	501
NeoBiosystems Inc	536
PI (Physik Instrumente)	400
Sensapex OY	123
Sutter Instrument	600
Microscope Accessories	
89 North	629
ASI/Applied Scientific Instrumentation	531
Chroma Technology Corporation	728
Cobolt AB	413
Electron Microscopy Sciences	613
Mad City Labs Inc	501
Minus K Technology Inc	714
NanoAndMore USA Inc	910
Park Systems Inc	802
Prior Scientific Inc	125
Rapp OptoElectronic GmbH	722
Semrock Inc	723
Siskiyou Corporation	708
Thorlabs	401
Microscope Drift Correction	
ASI/Applied Scientific Instrumentation	531
Mad City Labs Inc	501
Nikon Instruments Inc	523
Microscope Stages	
ASI/Applied Scientific Instrumentation	531
Mad City Labs Inc	501
Narishige International USA Inc	1022
Pacer Scientific	623
PI (Physik Instrumente)	400
Prior Scientific Inc	125
Siskiyou Corporation	708
Microscopes	
ASI/Applied Scientific Instrumentation	531
Asylum Research, an Oxford Instruments Company	609
Bruker Nano Surfaces	700/701
Caliber Imaging & Diagnostics Inc	912

Company Name	Booth Number
Carl Zeiss Microscopy LLC	101
Hinds Instruments	103
Ionovation GmbH	435
LUMICKS	1000
Mad City Labs Inc	501
Mightex Systems	823
NanoAndMore USA Inc	910
Nanolive SA	810
NIC@IIT	624
Nikon Instruments Inc	523
Olympus	408
Renishaw Inc	603
SciMedia/BrainVision	415
Sutter Instrument	600
Thorlabs	401
WITec Instruments	712
Microscopy Chambers	
ASI/Applied Scientific Instrumentation	531
Cell MicroControls	622
Tokai Hit Co Ltd	725
Warner Instruments	427
Molecular Biology Products	
Aviva Systems Biology Corporation	214
Cedarlane	800
UVP LLC	814
Monochromators	
HORIBA Scientific	801
Nanopositioning Systems	
ASI/Applied Scientific Instrumentation	531
Mad City Labs Inc	501
PI (Physik Instrumente)	400
Prior Scientific Inc	125
Near-Field Scanning Optical Microscopes (NSOM)	
Mad City Labs Inc	501
WITec Instruments	712
Nuclear Magnetic Resonance	
Charles River	424
Particle Sizing Products	
Anton Paar USA	1010
Beckman Coulter Life Sciences	1014
Malvern Instruments Ltd	711
Wyatt Technology Corporation	601
Patch Clamp Instrumentation	
Alembic Instruments Inc	422
Biolin Scientific	913
HEKA Elektronik	423
Ionovation GmbH	435
Multi Channel Systems	522
Nanion Technologies	509
Narishige International USA Inc	1022
NeoBiosystems Inc	536
npi electronic GmbH	322
Pacer Scientific	623
Sensapex OY	123
Siskiyou Corporation	708
Sophion Bioscience	909
Warner Instruments	427

Company Name	Booth Number

Peptides
Anasys Instruments 808
Cedarlane 800

Perfusion Stepper System
NeoBiosystems Inc 536
Warner Instruments 427

Perfusion Systems
ALA Scientific Instruments 324
Cell MicroControls 622
Ecocyte Bioscience US LLC 630
Narishige International USA Inc 1022
Tokai Hit Co Ltd 725
Warner Instruments 427

Phamaceutical Development Equipment
Malvern Instruments Ltd 711
Maxcyte Inc 811

Phospholipids
Avanti Polar Lipids Inc 508
Larodan 534
Matreya LLC 605

Piezo Lens Positioners
ASI/Applied Scientific Instrumentation 531
Mad City Labs Inc 501
PI (Physik Instrumente) 400

Piezo Scanning Stages
ASI/Applied Scientific Instrumentation 531
Mad City Labs Inc 501
PI (Physik Instrumente) 400
Prior Scientific Inc 125

Piezo Stages
ASI/Applied Scientific Instrumentation 531
Mad City Labs Inc 501
PI (Physik Instrumente) 400
Prior Scientific Inc 125
Sensapex OY 123

Pipettes
Electron Microscopy Sciences 613
Rainin Instrument LLC 1002

Probes
Asylum Research, an Oxford Instruments Company 609
NanoAndMore USA Inc 910
Park Systems Inc 802

Protein Binding Studies
Anasys Instruments 808
Creoptix 222
NanoTemper Technologies Inc 705
SensiQ Technologies Inc 1008
TA Instruments 200

Protein Expression
Charles River 424
Maxcyte Inc 811

Company Name	Booth Number

Protein Purification Systems
Anatrace 529

Protein Structure Data
Anasys Instruments 808
Anatrace 529
Applied Photophysics 923
Charles River 424
Rayonix LLC 115
Rigaku Oxford Diffraction 828

Publications
AIP Publishing 310
Cambridge University Press 205
Garland Science 300
IOP Publishing 309
Physics Today 303
Rockefeller University Press 308
Society for Neuroscience 312
Springer 302
The Journal of Physiology 314

Pumps
NeoBiosystems Inc 536

Quartz Crystal Microbalance
Biolin Scientific 913

Reagents
Avanti Polar Lipids Inc 508
Aviva Systems Biology Corporation 214
Cedarlane 800
Electron Microscopy Sciences 613
Gene Tools LLC 822
Rigaku Oxford Diffraction 828
UVP LLC 814

Recording Chambers
ALA Scientific Instruments 324
Cell MicroControls 622
Ecocyte Bioscience US LLC 630
Warner Instruments 427

Rheometers/Viscometers
Anton Paar USA 1010
TA Instruments 200
Wyatt Technology Corporation 601

Scanning Electron Microscope
Keysight Technologies 323
Mad City Labs Inc 501

Scanning Probe Microscopes
App Nano 710
Asylum Research, an Oxford Instruments Company 609
JPK Instruments AG 908
Keysight Technologies 323
Mad City Labs Inc 501
NanoAndMore USA Inc 910
Park Systems Inc 802
WITec Instruments 712

Company Name	Booth Number

Scientific CMOS Cameras
Andor Technology 625
Hamamatsu Corporation 409
SciMeasure 815

Screening, High-Throughput
Axiogenesis AG 922
Beckman Coulter Life Sciences 1014
BiOptix 812
Charles River 424
Creoptix 222
Ecocyte Bioscience US LLC 630
Mad City Labs Inc 501
Maxcyte Inc 811
Multi Channel Systems 522
Nanion Technologies 509
Nikon Instruments Inc 523
SensiQ Technologies Inc 1008

Sensors
Creoptix 222
SensiQ Technologies Inc 1008

Shutters
Prior Scientific Inc 125

Signal Transduction Reagents
Matreya LLC 605

Software
Bitplane Inc 724
De Novo Software 412
DRV Technologies 223

Solid State Lasers
Cobolt AB 413

Spectrofluorometers
Edinburgh Instruments 612
ISS Inc 635
JASCO 437
Olis Inc 903

Spectrometers
Andor Technology 625
Applied Photophysics 923
Aviv Biomedical Inc 1012
BioLogic USA 514
Edinburgh Instruments 612
JASCO 437
Mightex Systems 823
WITec Instruments 712

Spectrophotometer Light Sources
Hellma USA 709

Spectrophotometers
Aviv Biomedical Inc 1012
BioLogic USA 514
HORIBA Scientific 801
JASCO 437
Olis Inc 903
Quantum Northwest Inc 901
TgK Scientific Ltd 729

Company Name	Booth Number

Spectroscopy Accessories
Applied Photophysics 923
Cobolt AB 413
Hellma USA 709
Olis Inc 903
Quantum Northwest Inc 901
Semrock Inc 723

Sphingolipids
Avanti Polar Lipids Inc 508
Larodan 534
Matreya LLC 605

Stand Alone Stopped-Flow Unit
KinTek Corporation 428
Olis Inc 903
TgK Scientific Ltd 729

Stepper Technology
Mad City Labs Inc 501
Siskiyou Corporation 708

Sterols
Avanti Polar Lipids Inc 508

Stimulators
Aurora Scientific Inc 636
IonOptix 535
IonOptix 535
Mightex Systems 823
Pacer Scientific 623
Warner Instruments 427

Stimulus Isolators
npi electronic GmbH 322
Warner Instruments 427

Stopped-Flow Spectroscopy
Applied Photophysics 923
Aviv Biomedical Inc 1012
BioLogic USA 514
JASCO 437
KinTek Corporation 428
Olis Inc 903
TgK Scientific Ltd 729

Substrates
Namiki Precision Jewel Co Ltd 813

Super Resolution (SR) Microscopy
App Nano 710
ASI/Applied Scientific Instrumentation 531
Bitplane Inc 724
Carl Zeiss Microscopy LLC 101
Laboratory for Fluorescence Dynamics 704
LUMICKS 1000
Mad City Labs Inc 501
NIC@IIT 624
Nikon Instruments Inc 523
Photometrics 404
SciMeasure 815

Surface Plasmon Resonance Instrumentation
BiOptix 812
Charles River 424
Creoptix 222
SensiQ Technologies Inc 1008

TCSPC Components
Edinburgh Instruments 612
ISS Inc 635
Mad City Labs Inc 501
PicoQuant Photonics North America Inc 201

Temperature Controllers
ALA Scientific Instruments 324
Aurora Scientific Inc 636
Cell MicroControls 622
Nanion Technologies 509
npi electronic GmbH 322
Warner Instruments 427

Tensiometers
Biolin Scientific 913

Tomography
Nanolive SA 810
Rayonix LLC 115

UV Spectroscopy
Agilent Technologies Inc 809
BioLogic USA 514
Edinburgh Instruments 612
Hellma USA 709
HORIBA Scientific 801
JASCO 437
Olis Inc 903
Quantum Northwest Inc 901
TgK Scientific Ltd 729

Vibration Isolation Systems
Electron Microscopy Sciences 613
Minus K Technology Inc 714
Narishige International USA Inc 1022
Pacer Scientific 623
Thorlabs 401
TMC 914

Video Microscopy Systems
IonOptix 535
Ionovation GmbH 435
Nikon Instruments Inc 523

Visible Spectroscopy
Hellma USA 709
KinTek Corporation 428
Olis Inc 903
Quantum Northwest Inc 901

Voltage Clamp Instrumentation
Alembic Instruments Inc 422
HEKA Elektronik 423
Ionovation GmbH 435
Multi Channel Systems 522
Nanion Technologies 509
npi electronic GmbH 322
Sophion Bioscience 909
Sutter Instrument 600

X-ray Diffraction Equipment
Anton Paar USA 1010
Olympus 408
Rayonix LLC 115
Rigaku Oxford Diffraction 828

X-ray Imaging Equipment
Andor Technology 625
Carl Zeiss Microscopy LLC 101
Rayonix LLC 115

Zeta Potential
Anton Paar USA 1010
Malvern Instruments Ltd 711
Wyatt Technology Corporation 601

Author Index

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

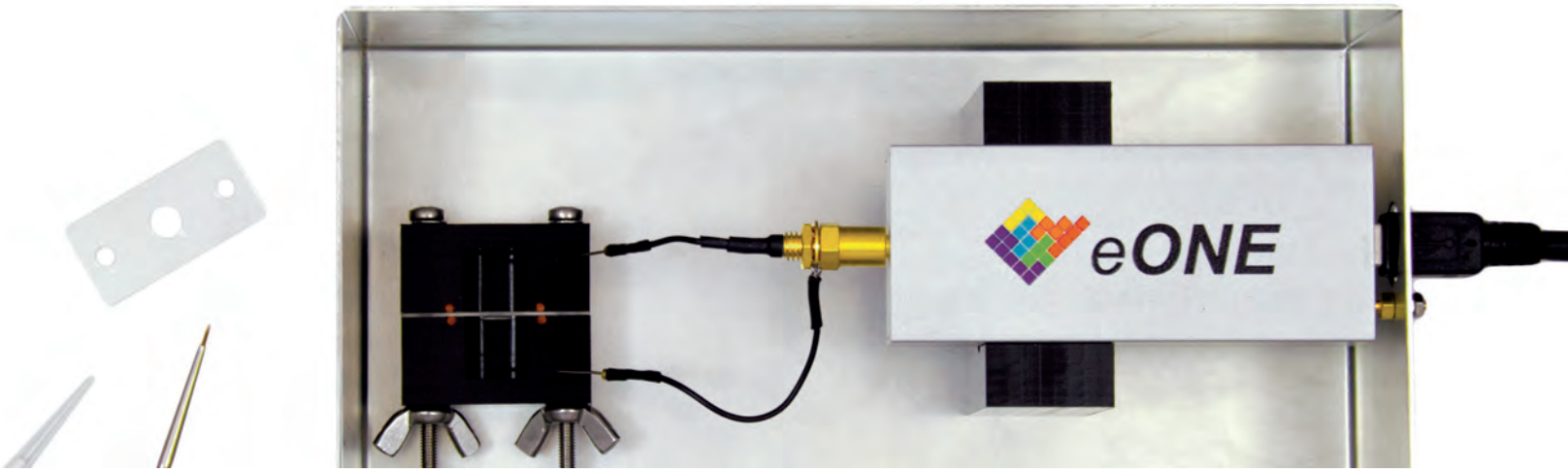
X

Y

Z

elements products: single and multi-channel miniaturized amplifiers for bilayer and nanopore studies.

BLM Kit



The new lipid bilayer (BLM) kit by elements:
a compact and complete educational kit for accurate electrophysiological recordings

The kit includes all the tools for fast screening of ion-channels functional activity in lipid environments.
The kit is contained into a 16 x 10 x 5 cm Faraday cage and includes:

- a recording chamber made by two 1 ml Delrin cuvette with electrode input
- a set of laser drilled Teflon membranes, with fixed holes size of 50, 80, 110 µm
- paint brush, Ag wires, electrode connectors to plug the eONE amplifier
- **eONE amplifier**: single channel, low noise, USB-powered, high bandwidth, easy to use

elements
enabling technologies for Life Science

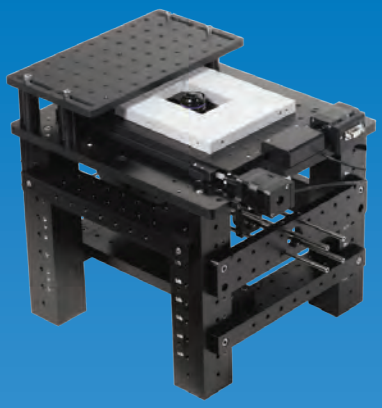
elements srl - Via Montalti, 42
47521 - Cesena (FC) - Italy
Phone: **+39 328 8899408**
Fax: **+39 0547 1791163**
email: **info@elements-ic.com**
www.elements-ic.com

Visit us at booth #715: get FOR FREE your eONE amplifier and test it at your lab for one month!

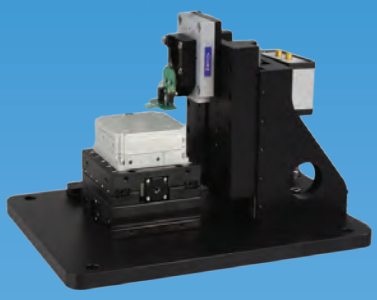
NANOPOSITIONING SYSTEMS

Super Resolution Microscopy

Single Molecule Microscopes



AFM and NSOM



Booth #501

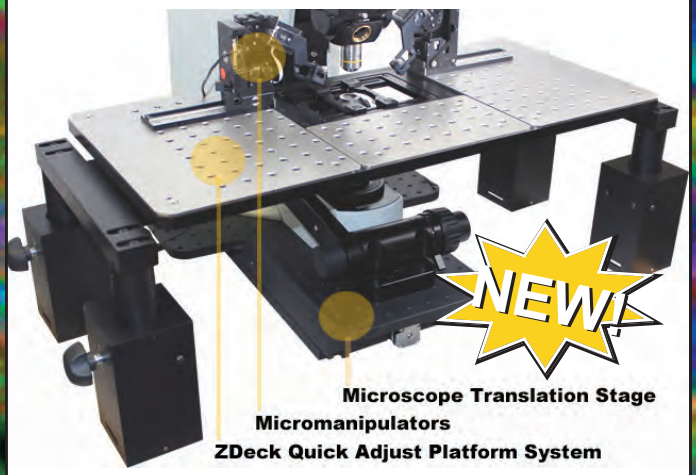
MCL
MAD CITY LABS INC.

USA: +1 608 298 0855
Europe: +41 (0)58 269 8017
www.madcitylabs.com

Visit Booth #125 for a Demonstration!

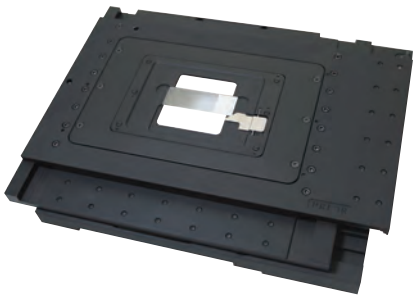
PRIOR
Scientific

INNOVATIVE PHYSIOLOGY AUTOMATION SOLUTIONS



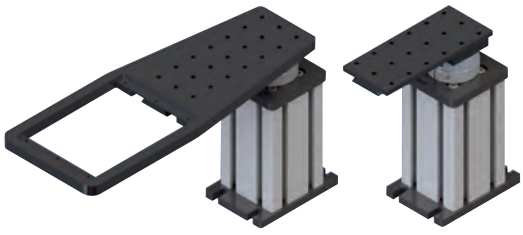
Explore the various physiology/electrophysiology solutions from Prior Scientific. From ZDeck Quick Adjust Platforms, Linear Motor Stages to ultra-precise Micromanipulators and LED Illumination Systems, Prior has the answers you are looking for!

LINEAR MOTOR STAGES



LED ILLUMINATION SYSTEMS

ADJUSTABLE RIGID POST MOUNTS



Prior Scientific, Inc. 800-877-2234 www.prior.com

Biophysical Journal

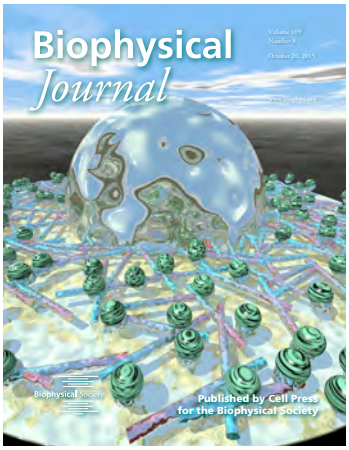
The Premier Journal of Quantitative Biology

Biophysical Journal publishes work that elucidates important biological, chemical, or physical mechanisms and provides quantitative insight into fundamental problems at the molecular, cellular, systems, and whole-organism levels. The journal is organized into seven broad areas of coverage: Nucleic Acids and Genome Biophysics; Proteins; Channels and Transporters; Membranes; Molecular Machines, Motors, and Nanoscale Biophysics; Cell Biophysics; Systems Biophysics.

BJ PUBLISHES

- Research Articles
- Letters
- Computational Tools
- Perspectives
- Comments to the Editor
- New & Notables
- BJ Classics
- Special Thematic Issues
- Special Article Collections

34% ACCEPTANCE RATE
FOR RESEARCH ARTICLES



AUTHOR BENEFITS

- High-quality science
- Rigorous and constructive peer review by working scientists
- No page limits
- Rapid turnaround times
- Affordable publication fees with discounts for BPS members
- Author friendly pre-print policy and direct submission from bioRxiv
- Policies that promote transparency and data sharing
- Hybrid journal with Open Access and licensing options
- Publisher deposits to Pub Med; compliance with federal agency policies
- Broad focus, wide dissemination
- Easy submission with ORCID IDs
- Authors receive link to share their published article for 50 days
- Opportunities to have articles highlighted in cover art, sliders, video clips, news releases, the BPS newsletter, and more
- Automatic Consideration for Paper of the Year Award

POPULAR ARTICLES IN 2015

PE and PS Lipids Synergistically Enhance Membrane Poration by a Peptide with Anticancer Properties
Natália Bueno Leite, Anders Aufderhorst-Roberts, Mario Sergio Palma, Simon D. Connell, João Ruggiero Neto, Paul A. Beales

The Conformation of Myosin Heads in Relaxed Skeletal Muscle: Implications for Myosin-Based Regulation
Luca Fusi, Zhe Huang, Malcolm Irving

Through Thick and Thin—Interfilament Communication in Muscle
John L. Woodhead, Roger Craig

Protein Conformational Changes Are Detected and Resolved Site Specifically by Second-Harmonic Generation
Ben Moree, Katelyn Connell, Richard B. Mortensen, C. Tony Liu, Stephen J. Benkovic, Joshua Salafsky

Feeling for Filaments: Quantification of the Cortical Actin Web in Live Vascular Endothelium
Cornelius Kronlage, Marco Schäfer-Herte, Daniel Böning, Hans Oberleithner, Johannes Fels

Submit your research at http://biophysj.msubmit.net

Biophysical Society

PUBLISHED BY Cell PRESS

Introducing a complete line of **patch-clamp** and **intracellular amplifiers**, with a comprehensive **software** package, backed by the support you've come to expect from **Sutter Instrument**

Shipping Spring 2016

Come see a preview at
The Biophysical Society Meeting
Booth #600

SUTTER INSTRUMENT

1 Digital Drive, Novato, CA 94949
phone: 415.883.0128 fax: 415.883.0572 email: info@sutter.com
www.sutter.com

PHYSICAL REVIEW **APPLIED**

journals.aps.org/prapplied

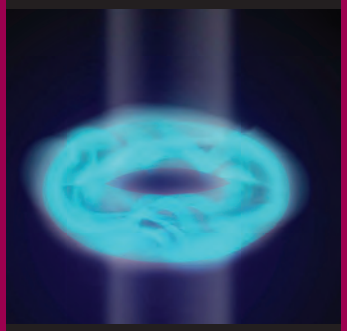
Physical Review Applied publishes high-quality papers that bridge the gap between engineering and physics, between industry and academia, and between current and future technologies.

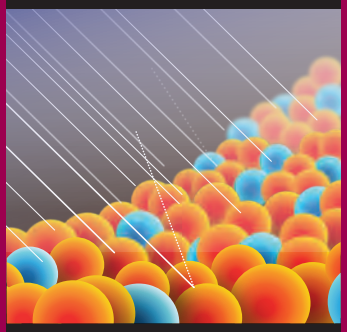
The Editors encourage the submission of research that:

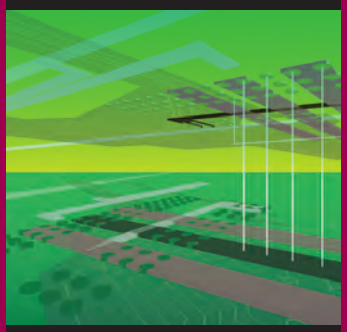
- Significantly advances the field of applied physics.
- Is forward thinking, with a clear vision for future directions.
- Offers qualitative, not merely quantitative or incremental, advances over prior work.
- Crosses disciplines, to interest more than a specialized group of readers.

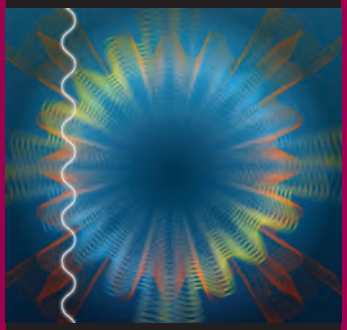
Now Indexed in Web of Science!

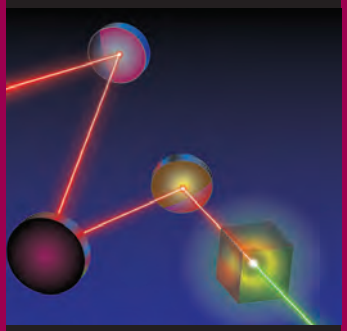
APS physics™

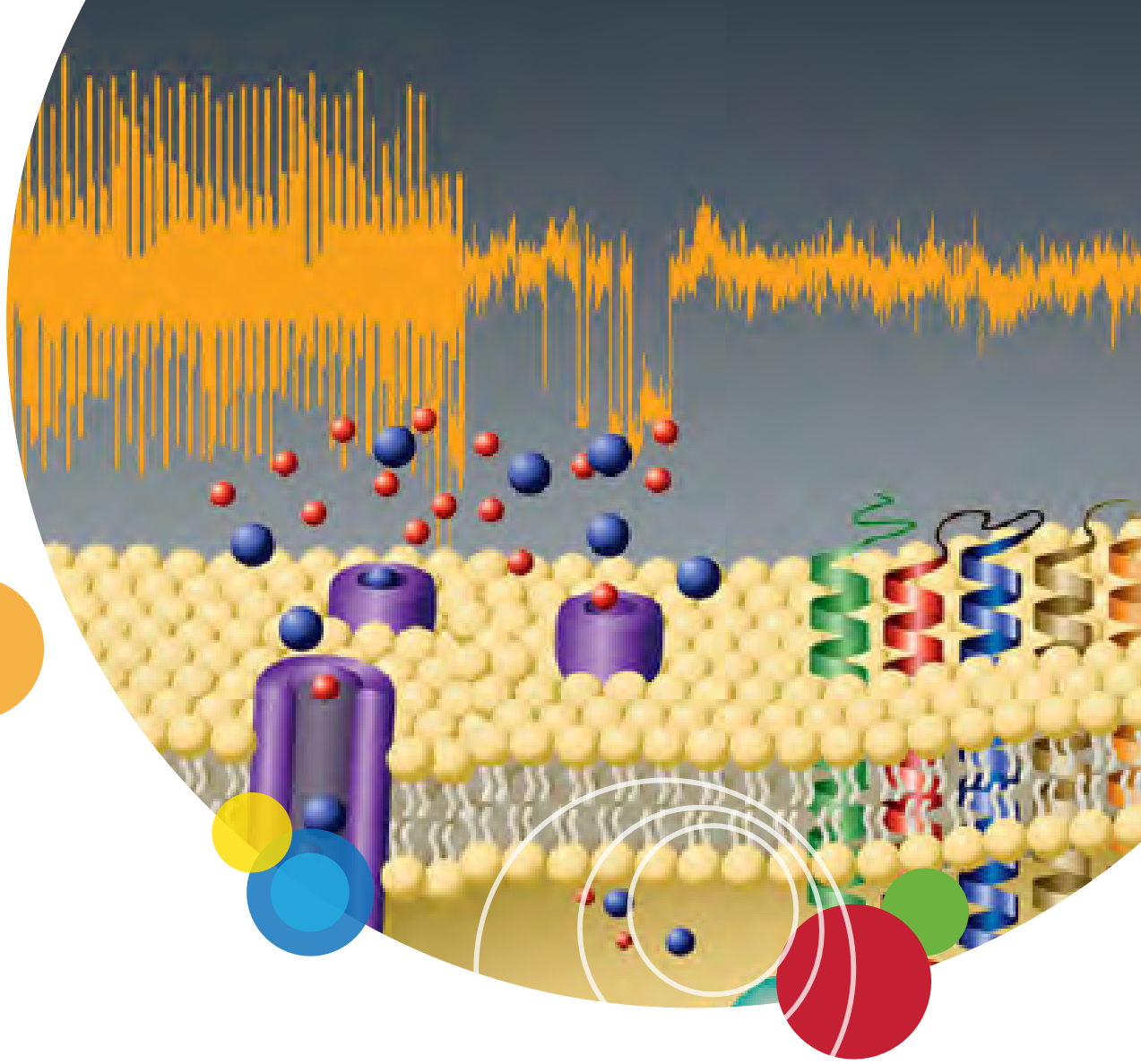












Goodbye noise, hello signal

Axon Digidata® with four HumSilencer channels

Bring a new level of simplicity to your patch-clamp experiments. Equipped with up to four HumSilencer™ channels, the Axon™ Digidata® 1550B Low Noise Data Acquisition System enables you to record multiple cells simultaneously without 50/60 Hz line-frequency noise. Eliminate the noise obscuring your biological signals of interest with only a single click! With Digidata 1550B, say goodbye to noisy, complicated setups and hello to fidelity and simplicity.

See us a BioPhysical Society Booth# 608
User Meeting, Monday, February 29, 4:30-6:30PM, Room 513

moleculardevices.com/goodbyenoise

MOLECULAR DEVICES