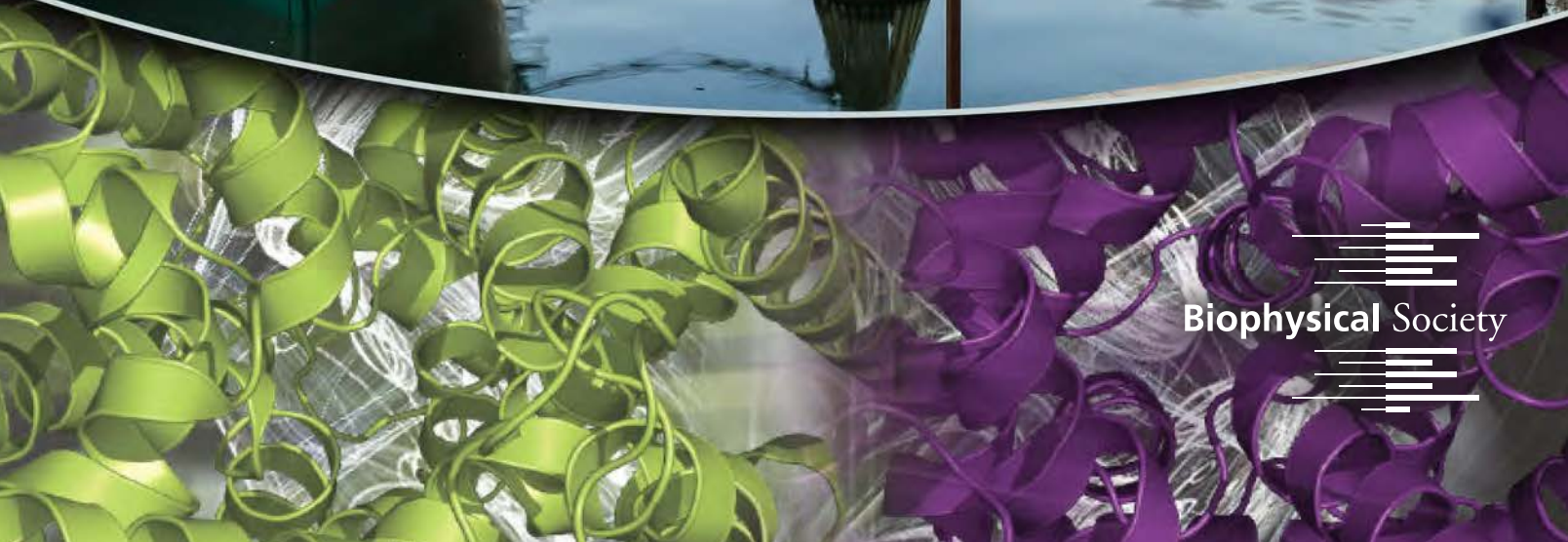
Theory and Experiment to the Cell and Back

BPS19

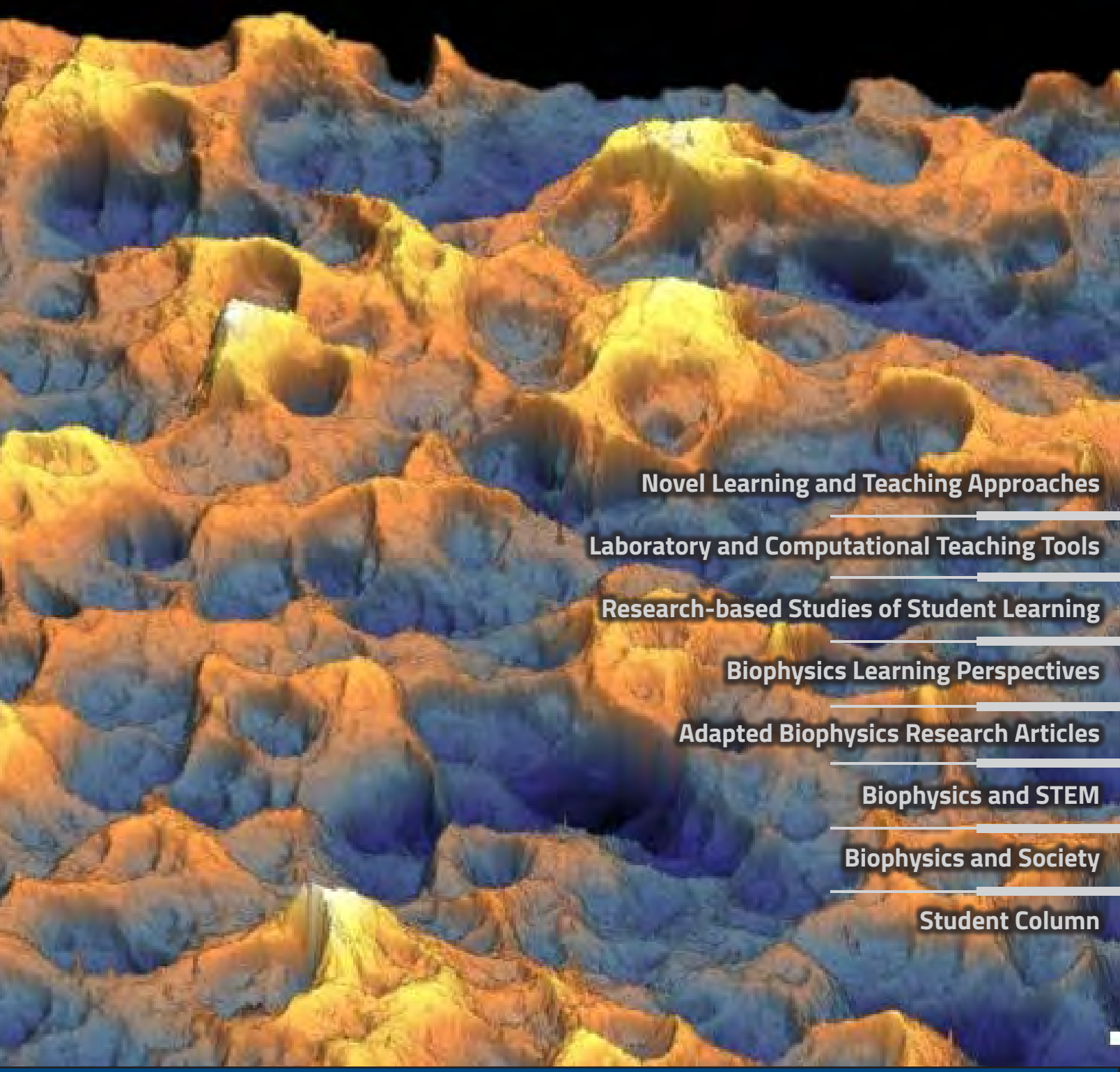
63RD ANNUAL MEETING OF THE BIOPHYSICAL SOCIETY

BALTIMORE, MARYLAND • MARCH 2–6, 2019

Program



Biophysical Society



Biophysical Society

The Biophysicist

Volume 1, Issue 1, 2019

www.thebiophysicist.org

A New Journal from the Biophysical Society

Biophysical Society
Industry Partner

The Biophysical Society is grateful to its Industry Partners

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Biophysical Society

BiophysicsWeek

March 25–29, 2019

Biophysics Week Partners: British Biophysical Society · EBSA Biophysics in Europe · SIBPA Società Italiana di Biofisica Pura e Applicata

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.

Monday, March 25

Biophysics Week Kickoff Event at Johns Hopkins University

Tuesday, March 26

Capitol Hill Briefing: The Cryo-EM Revolution presented by Eva Nogales

Sponsors: American Society for Cell Biology, JEOL.USA, the Lawrence Berkley National Lab, and Thermo-Fisher Scientific.
Supported by: The University of California, Berkeley

Wednesday, March 27

Webinar: Cover Letters Are Annoying, but Here's How You Write Them with Alaina G. Levine

Thursday, March 28

John Hopkins University Student Poster Night at Baltimore City Hall

State Advocacy Days

Friday, March 29

To Be Announced

Daily Events:

Cell Picture Show

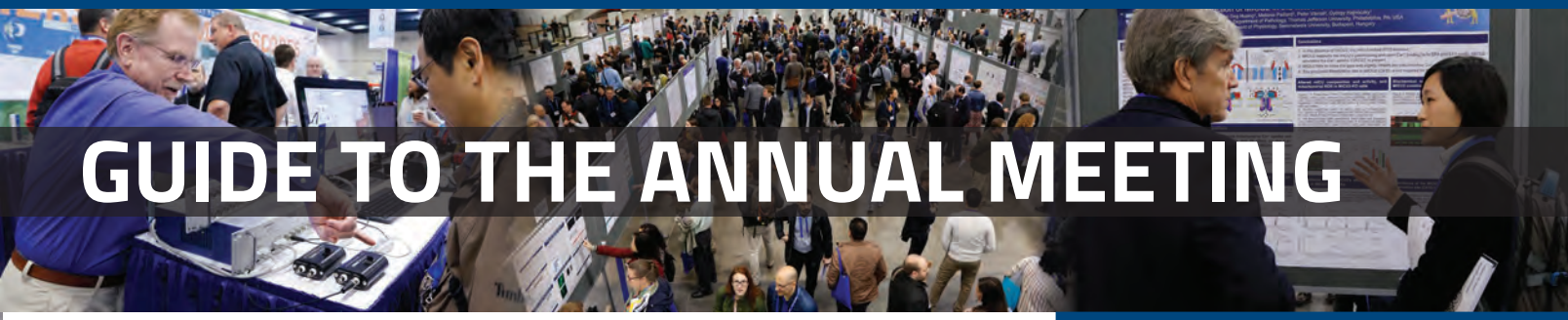
Take 5 for Science Policy Videos

Using Your PhD in Non-Academic Career Videos

Order Your T-Shirt Today

Order online at biophysics.org/BiophysicsWeek or purchase at the Biophysical Society Booth at the BPS Annual Meeting.

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



GUIDE TO THE ANNUAL MEETING

About the BPS Annual 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 early career 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

Subgroup Programs
- Scientific sessions held Saturday
- Feature speakers presenting the latest research in biophysics subfields

Biophysical Society 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 Development 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 uses

Posters

Most interactive and well attended scientific sessions of the meeting.

Poster Presenters
It is important to present science, but also have posters available for attendee viewing prior to and following presentations.

Poster Schedule
Please refer to the programming notice, desktop planner, or mobile app for the date and time of poster presentations.

Board Assignments
Board numbers (B1, B2, B3, LB1, LB2, etc.) indicate the location of the poster board in the Exhibit Hall.

Poster numbers (250-Pos, 251-Pos, etc.) correspond with the number assigned to each poster in the online Abstracts Issue.

Presentation Date	Sunday, March 3	Monday, March 4	Tuesday, March 5	Wednesday, March 6
Setup Time	Saturday after 6 PM	Sunday after 6 PM	Monday after 6 PM	Wednesday after 7 AM
Removal Time	Sunday before 5:30 PM	Monday before 6 PM	Tuesday before 4 PM	Wednesday before 3 PM

PLEASE NOTE: POSTERS WILL NOT BE COLLECTED OR STORED FOR PICK UP AT A LATER TIME.

Social and Networking Events

Opening Reception
- Hors d'oeuvres and cash bar

First-Time Attendee Drop-By
- Information on how to navigate the Meeting

Dinner 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 quieter atmosphere

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

Biophysical Society

SUTTER INSTRUMENT

Precision Instrumentation for the Sciences

Visit us at: Booth #201

AMPLIFIERS

Introducing **dPatch®**, a digital, ultra-fast, integrated patch clamp amplifier and data acquisition system, bundled with **SutterPatch®**, a comprehensive software package built on the foundation of Igor Pro 8. Best suited for low-noise, single-channel and whole-cell recordings on both voltage and true current clamp modes. Optimized to enable the experimenter to set up and perform routine tasks quickly, yet highly configurable to meet the demands of the experienced electrophysiologist.

MICROMANIPULATION

Continuing to build on our extensive line of micromanipulators, we introduce the **TRIO™ MPC-100**, a highly-stable 3-axis manipulator system with synthetic 4th axis that can be set in software as any angle between 0 and 90 degrees for diagonal movement. The compact design of the integrated Rotary Optical Encoder (ROE) controller requires minimal bench space. Quality. Precision. Reliability.

MICROSCOPES

Perform *in vivo* and *in vitro* advanced optical experiments using the **MOM®** multi-photon resonant scanning microscope, **BOB** open architecture upright scope, or **SOM®** simple moving microscope. We have solutions for wide field functional imaging, multi-photon imaging, photostimulation and slice electrophysiology. Stand-alone components include **MScan** software suite, the **RESSCANNER**, an ultra quiet resonant scan box and controller, and **PS-2** PMT power supply.

MICROINJECTION

The **XenoWorks®** microinjection system has been designed to meet the needs of a wide variety of applications that require the manipulation of cells and embryonic tissues including ICSI, ES Cell Microinjection, and Adherent Cell Microinjection. Highly responsive movement and excellent ergonomics intuitively link the user with the micropipette, improving yield – saving time and resources.

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BPS19

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Table of Contents

2019 Biophysical Society Lecturer

Carol Robinson

University of Oxford, United Kingdom

From Peripheral Proteins to Membrane Motors — Mass Spectrometry Comes of Age

Monday, March 4, 8:00–9:00 PM, Baltimore Convention Center

About the Image

Lipid Connections Caught in the Gas Phase of a Mass Spectrometer

Protein subunits of LeuT (PDB ID 2A65 green, purple) form a lipid-mediated dimer in the presence of cardiolipin (red head-group, grey side-chain). The quadrupole rods (silver) enable the discovery of lipid binding to membrane proteins through tandem mass spectrometry experiements.

List of Advertisers in the 2019 Annual Meeting Program

Mad City Labs Inc
Molecular Devices
Nanion Technologies
Sutter Instrument

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

ACS Omega
Asylum Research
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Bruker Corporation
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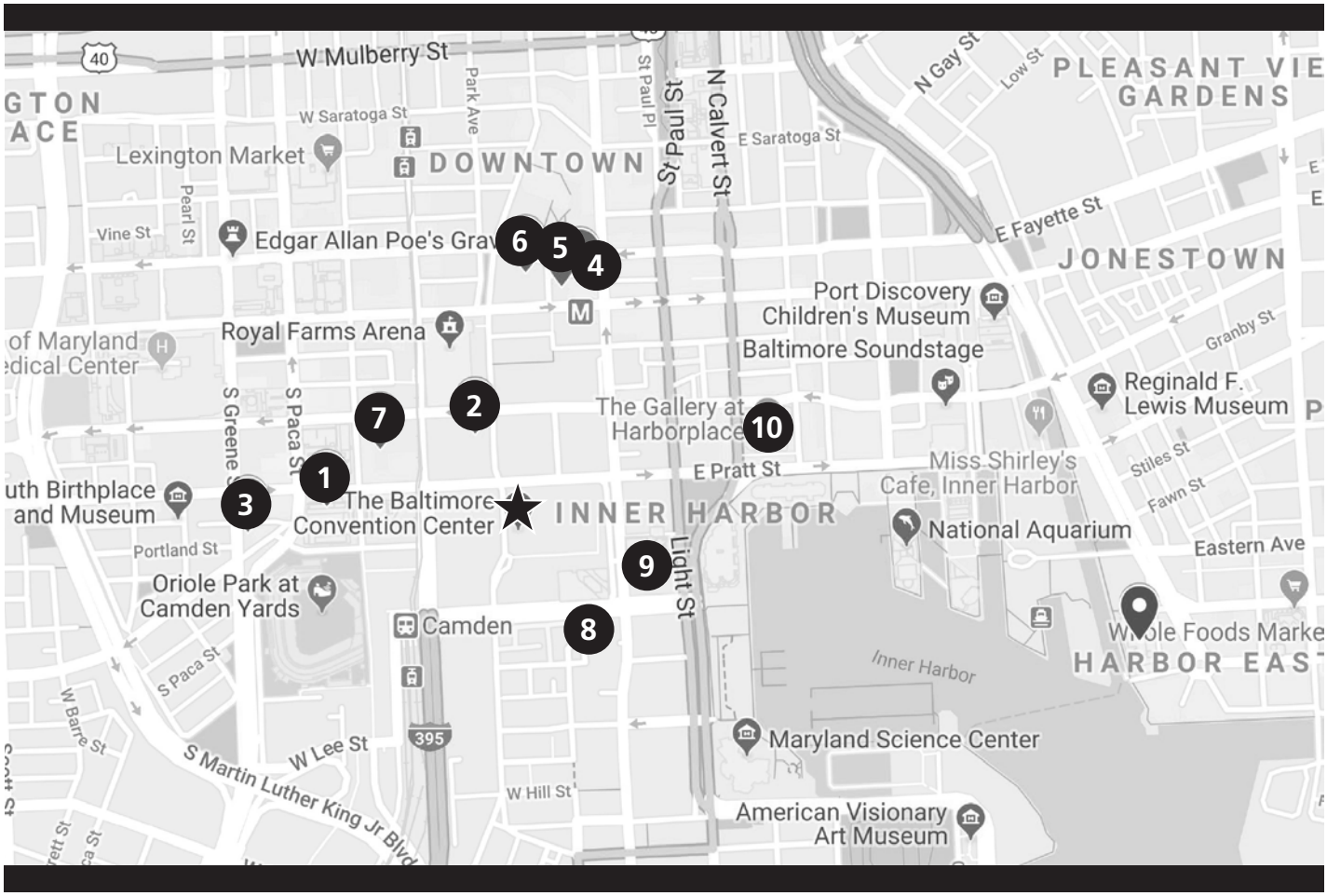
Chroma Technology
ELEMENTS SRL
FISBA US
Hamamatsu Corporation
HORIBA Scientific
IonOptix
Journal of Cell Science
Journal of General Physiology
Leica Microsystems
LUMICKS
Mad City Labs
Mizar Imaging
Molecular Devices
Nanion Technologies
NanoSurface Biomedical
Photonics Media
Physics Today
Smart Ephys
Sophion Bioscience A/S
Sutter Instrument
The Journal of Physical Chemistry
Wyatt Technology Corporation

As of January 18, 2019

Hotel Map



1.	*Baltimore Hilton	401 West Pratt Street, Baltimore, MD, 21201	415-626-0200
2.	Days Inn Inner Harbor	100 Hopkins Place, Baltimore, MD, 21201	410-576-1000
3.	Hampton Inn Baltimore - Downtown	550 Washington Blvd, Baltimore, MD, 21230	410-685-5000
4.	Hotel Monaco Baltimore	2 North Charles Street, Baltimore, MD , 21201	443-692-6170
5.	Lord Baltimore Hotel	20 West Baltimore Street, Baltimore, MD, 21201	410-539-8400
6.	Radisson Hotel Baltimore	101 West Fayette Street, Baltimore, MD, 21201	410-752-1100
7.	Holiday Inn Inner Harbor	301 W Lombard Street, Baltimore, MD, 21201	410-685-3500
8.	Sheraton Inner Harbor	300 S. Charles Street, Baltimore, MD, 21201	410-962-8300
9.	Hyatt Regency	300 Light Street, Baltimore, MD 21202	410-528-1234
10.	Renaissance Harborplace Hotel	202 East Pratt Street, Baltimore, MD 21202	410-547-1200

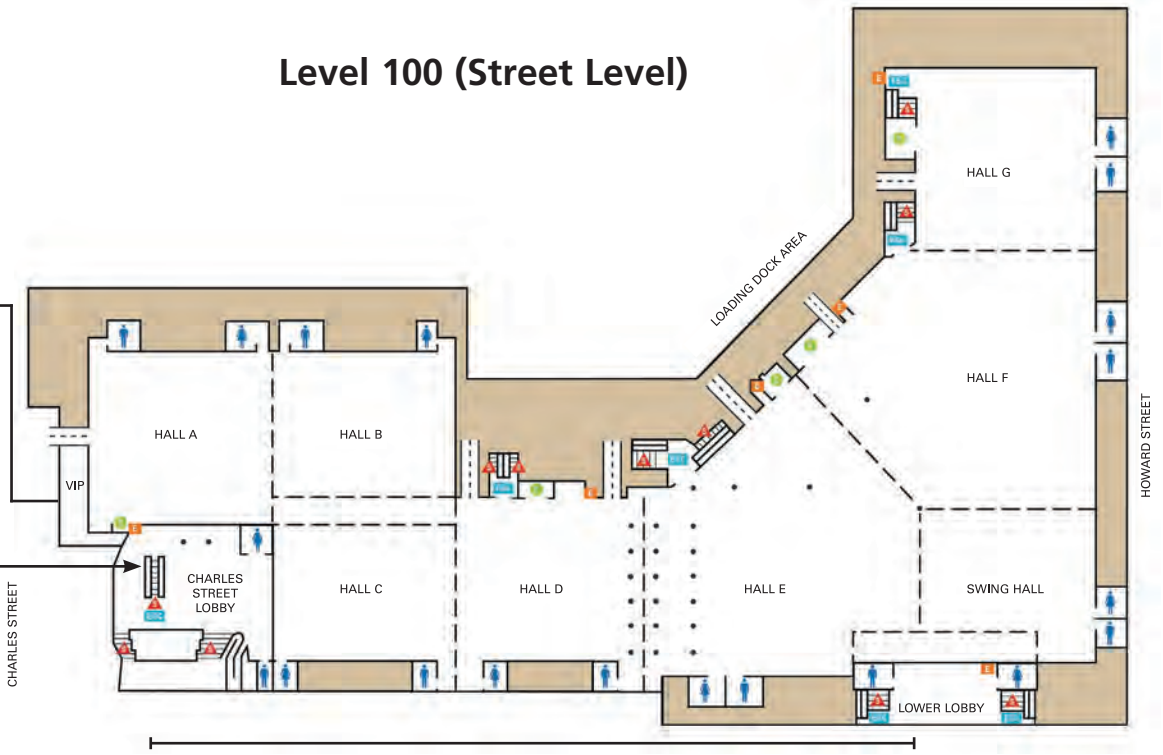
*Headquarter Hotel

Level 100 (Street Level)

Society Meeting Office

Charles Street Lobby

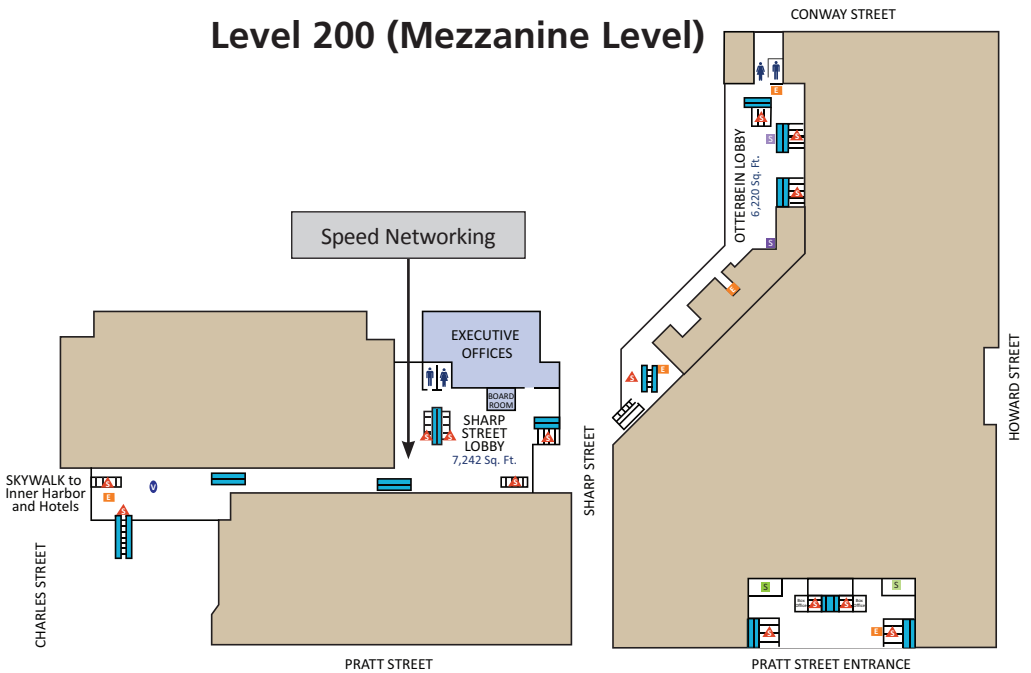
- Registration
- Coat Check
- Luggage Storage
- Society Help Desk
- Cyber Café
- Poster Pickup
- Society Booth



Hall A-E

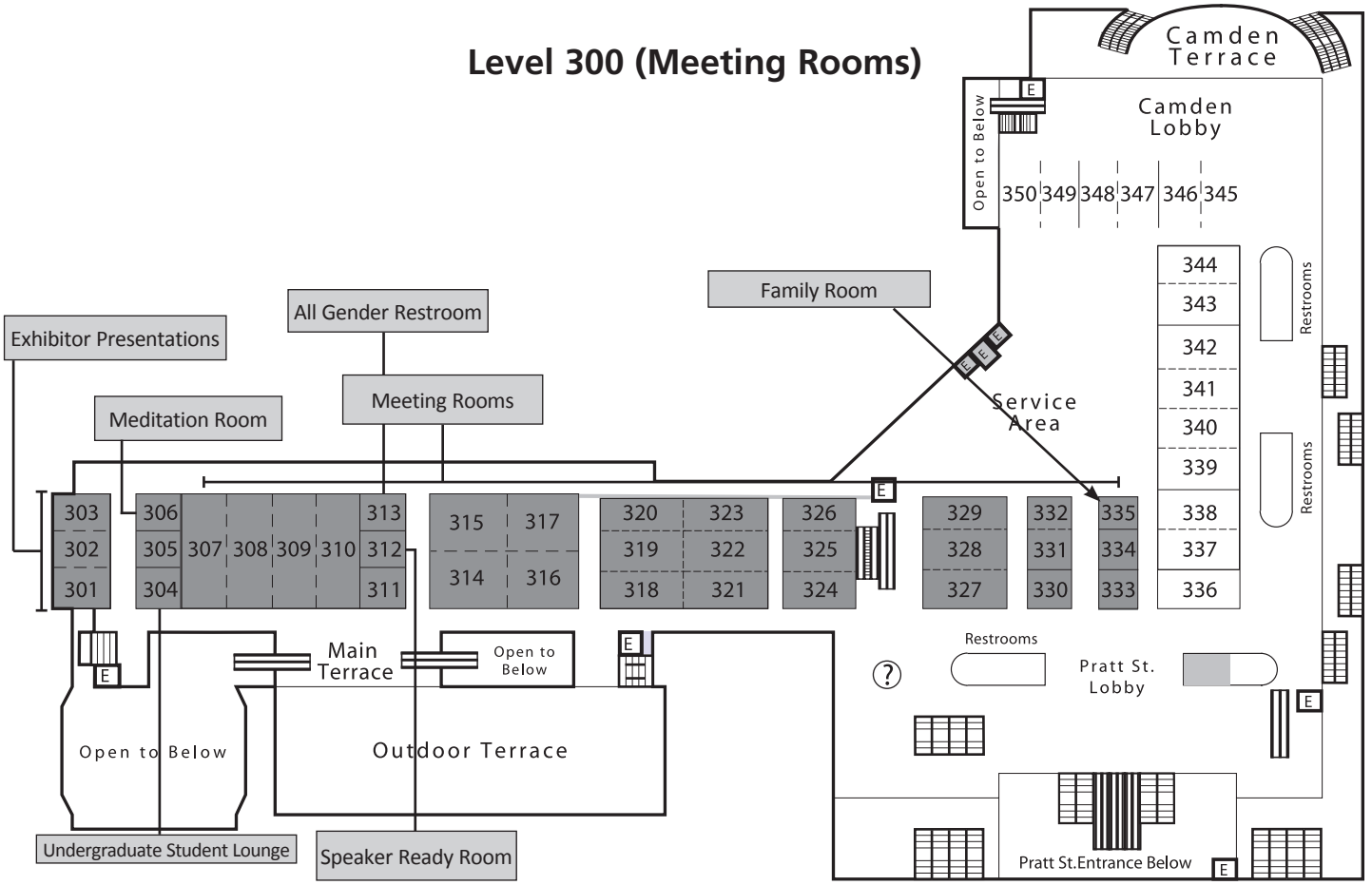
- Posters & Exhibits
- Education and Career Opportunities Fair
- Career Development Center
- SRAA Competition
- Exhibits Office
- Exhibitor Presentations
- Image Contest
- Travel Awardee Reception

Level 200 (Mezzanine Level)

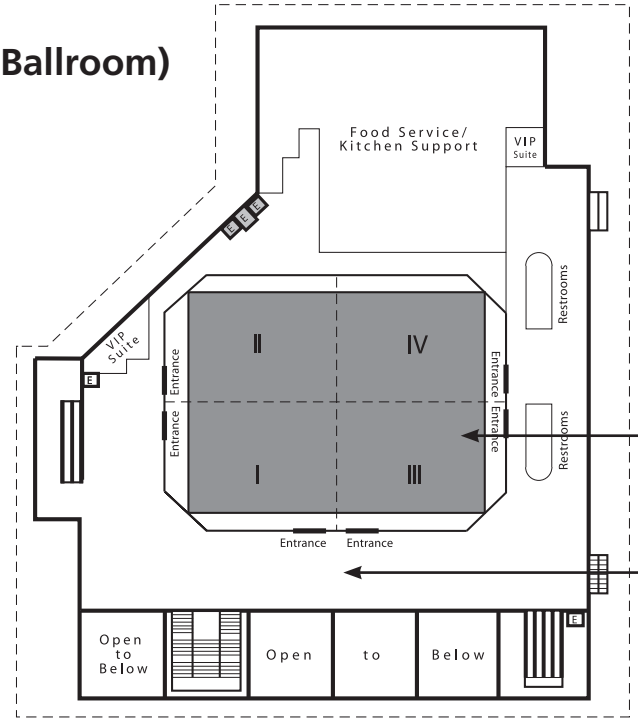


Baltimore Convention Center

Level 300 (Meeting Rooms)



Level 400 (Ballroom)



Ballroom Meeting Rooms

- First Time Attendee Drop By
- Undergraduate Mixer and Poster Award Competition
- Opening Mixer

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

To report a complaint of harassment, please go to the staff office in the VIP Lounge in the Charles Street Lobby.

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

2019 Program Committee

Susan Marqusee, University of California, Berkeley, Co-Chair
Andrej Sali, University of California, San Francisco, Co-Chair
Ruben Gonzalez, Columbia University
Joanna Swain, Cogen Therapeutics
Michael Pusch, CNR, Italy
Anne Kenworthy, Vanderbilt University School of Medicine, Past Co-Chair
Francesca Marassi, Sanford Burnham Prebys Medical Discovery Institute, Past Co-Chair

BPS Officers

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David W. Piston, President-Elect
Lukas Tamm, Past-President
Kalina Hristova, Treasurer
Frances Separovic, Secretary

BPS Council

Term Ending 2019
Jane Clarke
Bertrand Garcia-Moreno
Arthur Palmer
Joanna Swain

Term Ending 2020
Zev Bryant
Teresa Giraldez
Ruben Gonzalez
Marina Ramirez-Alvarado

Term Ending 2021
Linda Columbus
Jenny Ross
David Stokes
Pernilla Wittung-Stafshede

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Anne Kenworthy, Associate Editor
E. Michael Ostap, Associate Editor
Michael Pusch, Associate Editor
Elizabeth Rhoades, Associate Editor
Brian Salzberg, Associate Editor
Tamar Schlick, Associate Editor
Stanislav Shvartsman, Associate Editor
Claudia Steinem, Associate Editor

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Dorothy Chaconas, Director of Meetings & Exhibits
Catie Curry, Publications Coordinator
Jennifer Fraser, Meetings Coordinator
Ally Levine, Sales & Exhibits Manager
Laura Phelan, Communications & Content Manager
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Beth Staehle, Director of Publications
Elizabeth Vuong, Director of Marketing, Communications & Outreach
Stacey Wendelbo, Programs Coordinator
Sean Winkler, Director of Public Affairs & Advocacy
Ray Wolfe, Creative Designer & Systems Engineer
Umi Zhou, Meetings Coordinator

Sorting and Programming of 2019 Abstracts

Sorting and programming of the 2019 Annual Meeting abstracts into poster and platform sessions was completed by: Jane Clark, Patricia Clark, Linda Columbus, Bertand Garcia-Moreno, Rubin Gonzalez, Teresa Giraldez, Anne Kenworthy, William Kobertz, Francesca Marassi, Joseph Mindell, Susan Marqusee, Anna Moroni, Robert Nakamoto, Arthur Palmer, David Piston, Michael Pusch, Marina Ramirez-Alvarado, Arnold Revzin, Jennifer Ross, Catherine A. Royer, Andrej Sali, James Sellers, Frances Separovic, Erin Sheets, Joanna Swain, Eric Sundberg, Pernilla Wittung-Stafshede, Zev Bryant.

General Information

All functions will be held in the *Baltimore 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 Charles Street Lobby. Guest registration is only for admittance to the Opening Mixer on Saturday night and Reception on Monday night. It does not include admission to scientific sessions, posters, or exhibits. There is a $30 fee to reprint a lost or forgotten badge.

Banking and Currency Exchange

Foreign currency exchange and other bank transactions can be done during regular bank business hours at Bank of America, 100 South Charles Street, Baltimore, MD 21201. ATMs are also available in the Baltimore Convention Center.

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

Business Center, 300 Level

The Baltimore 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 Pratt Street Lobby adjacent to Room 334. To contact the business center, call 410-649-7194 or email Eking@abcimaging.com.

Sunday	9:00 AM–12:30 PM
Monday–Friday	8:30 AM–4:30 PM

Career Development Center, Exhibit Hall

Services are available for both those seeking a position and employers with positions to fill. Please note, the career development center is the only place to post job openings. Unauthorized notices placed elsewhere in the Baltimore 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 at the Society Help Desk located at registration in the Charles Street Lobby or in the Society Meeting Office, in the VIP Lounge, Charles Street 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 policy (page VI) that all meeting participants must follow.

Coat Check/Luggage Storage, Charles Street Lobby

The cost is $3.00 per 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–4:00 PM

Dinner Meet-Ups

Interested in making new acquaintances and experiencing the cuisine of Baltimore? Meet at the Society Booth each evening, Sunday through Tuesday, at 6:00 PM where a BPS member will coordinate dinner at a local restaurant.

Exhibits, Exhibit Hall A-E

The Exhibit Hall features the most advanced equipment, products, services, and publications available. A list of exhibitors as of January 18, 2019, can be found beginning on page 170. Please see Addendum for those registered after January 18, 2019.

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

Exhibitor Passport Competition

Pick up a Passport Competition booklet inside the entrance of the Exhibit Hall. Visit participating exhibitors, get your passport stamped, drop your passport at the Society Booth located in the Charles Street Lobby before 2:30 PM Tuesday. Winner will be accounced on Tuesday at 3:00 PM in the Exhibit Hall. You must be present at the drawing to win. Good luck!

Family Room, Room 335

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, Exhibit Hall E

In case of medical emergency, dial 7055 from any house phone or 410-649-7055 from a cell phone. The First Aid room is located behind Hall E. For other minor medical needs, this room will be staffed with First Aid Administrators trained in First Aid Response during the hours below.

Saturday	8:00 AM–6:30 PM
Sunday	7:30 AM–6:30 PM
Monday	7:30 AM–9:00 PM
Tuesday	7:30 AM–6:30 PM
Wednesday	7:30 AM–3:30 PM

Individuals Requiring Assistance
Attendees requiring special assistance during the meeting should visit the Society Meeting Office in the VIP Lounge in the Charles Street Lobby. 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 common areas of the Baltimore Convention Center, excluding the Exhibit Hall.

In addition, the Biophysical Society Cyber Cafe is located in the Charles Street Lobby. 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	7:30 AM–3:00 PM

Mobile App and Desktop Planner
The Biophysical Society's Official Mobile App is available for download in App Store and Google Play Store. iOS and Android Users can search for "bps events" to download the App. We do not support native apps for Windows Mobile and Blackberry; However, those users may access our mobile-friendly Desktop Planner at www.biophysics.org/2019meeting. Using the Mobile App you can view/create schedules, view abstracts/authors/exhibitors, receive event alerts from BPS, share your moments in social media, find/interact virtually with other attendees, and sync itineraries that were created with the Desktop Planner.

Parking
The Baltimore Convention Center does not include a public parking facility. There are many public garages located around the city and within walking distance of the Convention Center.

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. To respect the willingness of presenters to share data at the meeting, as well as their publication opportunities, **recordings of any kind (audio, video, camera, or cell phone) in the session rooms, Exhibit Hall, and poster areas are strictly prohibited.** 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 Baltimore Convention Center Exhibit Hall entrance during the following hours:

Saturday	4:00 PM–7:00 PM
Sunday–Tuesday	9:00 AM–11:00 AM and 1:00 PM–4:00 PM
No Wednesday Pick up	

Poster Sessions, Exhibit Hall A-E
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 1:45 PM–2:45 PM (10:30 AM–11:30 AM on Wednesday); even-numbered posters should present 2:45 PM–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 note paper so that visitors may request an appointment. Abstracts submitted after October 8, 2018, are scheduled each day, Sunday–Wednesday, during the regular poster sessions. These board assignments will begin with "LB."

Posters are to be removed by 5:30 PM on Sunday and Monday, and 4:00 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.

Meditation Room, Room 306
A room will be available for attendees to use for quiet meditation or prayer.

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

Raffles
Exhibitor Raffle: Want to win an Amazon Echo?
Pick up an Exhibitor Passport Competition booklet inside the entrance of the Exhibit Hall. Visit participating exhibitors, talk to them to find out the answer to their question, get your passport stamped, and drop off your passport at the Society Booth located in the Charles Street Lobby before 2:30 PM on Tuesday, March 5. Raffle winner will be announced on Tuesday at 3:00 PM in the Exhibit Hall. 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 Versa! Drop your ticket in the ballot box in the Exhibit Hall. The winner will be announced at 12:30 PM on Wednesday in the Exhibit Hall. You must be present in the Exhibit Hall to win. Good luck!

Stop by the Society Booth to answer the biophysics trivia question for a chance to win a t-shirt each day Saturday–Tuesday.

Registration Hours, Charles Street 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

Restrooms
Restrooms are located in the Exhibit Hall, Charles Street Lobby, three banks are located on the third level, and one bank on the fourth level. A Gender Inclusive bathroom is located on the third level next to Room 313.

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 #bps19
Facebook:	www.facebook.com/biophysicalsociety
Instagram:	@biophysicalsociety
Blog:	www.biophysics.org/blog

Society Meeting Office, VIP Lounge, Charles Street 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

Speaker Ready Room, Room 312

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 audiovisual 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.

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 Baltimore Convention Center. The data projectors will be compatible with both Windows and Mac laptops. Speakers must bring their own laptops. The Society does not provide laptops for those with flash drives or other storage devices.

Taxis

Taxis will be available from the Charles Street Lobby of the Baltimore Convention Center.

Baltimore City Taxi	410-327-7777
Arrow Cab	443-575-4111
County Cab	443-575-4110
Diamond Cab	410-947-3333
Yellow Cab	410-685-1212

Undergraduate Student Lounge, Room 304

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.

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

Mark Your Calendars! Future BPS Annual Meetings

64th Annual Meeting
February 15–19, 2020
San Diego, California

65th Annual Meeting
February 20–24, 2021
Boston, Massachusetts

66th Annual Meeting
February 19–23, 2022
San Francisco, California

67th Annual Meeting
February 18–22, 2023
San Diego, California

Committee Meetings

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

Friday, March 1

3:30 PM–4:30 PM
New Council Orientation
Hilton, Peale C

5:00 PM–9:00 PM
Joint Council Reception, Dinner, and Meeting
Hilton, Peale A/B

Saturday, March 2

8:30 AM–11:30 AM
Joint Council Meeting (continued)
Hilton, Peale A/B

Sunday, March 3

8:30 AM–10:30 AM
Committee for Inclusion and Diversity Meeting
Room 333

12:15 PM–2:15 PM
Public Affairs Committee Meeting
Room 333

3:30 PM–5:00 PM
Early Careers Committee Meeting
Room 333

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

Monday, March 4

8:30 AM–10:30 AM
CPOW Committee Meeting
Room 333

3:30 PM–5:30 PM
Membership Committee Meeting
Room 333

Tuesday, March 5

8:00 AM–9:00 AM
Biophysical Society Business Meeting
Room 324/325/326

9:00 AM–10:30 AM
Subgroup Chairs Meeting
Room 331

3:00 PM–5:00 PM
Education Committee Meeting
Room 333

6:00 PM–10:00 PM
Publications Committee Meeting
Hilton, Calloway

Wednesday, March 6

8:00 AM–11:00 AM
New Council Meeting
Room 331

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

Professional Development & Educational Sessions

The Society's committees have planned a variety of 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, March 3, to Wednesday, March 6, in Room 304.

Sessions in italics will be held in Career Development Center, Exhibit Hall A.

Saturday, March 2, 2019

2:00 PM–4:00 PM	Science Communications Workshop with AAAS**
3:00 PM–4:00 PM	*Leveraging LinkedIn in the PhD Job Search: Networking, Informational Interviews, and More*
3:00 PM–5:00 PM	Undergraduate Mixer and Poster Award Competition

One-on-One Resume and Career Counseling*
1:00 PM–2:20 PM | 4:30 PM–5:30 PM

Sunday, March 3, 2019

7:30 AM–8:30 AM	Postdoctoral Breakfast
9:00 AM–10:00 AM	*Networking for Nerds: How to Create Your DreAM Career*
10:30 AM–11:30 AM	*Green Cards for Scientific Researchers: How to win your EB-1A/NIW Case! with Getson & Schatz, PC*
11:15 AM–3:00 PM	Exploring Careers in Biophysics Day**
11:30 AM–1:00 PM	Undergraduate Student Pizza "Breakfast"
12:00 PM–1:00 PM	*Demystifying the Academic Job Search I: Understanding the Search Process from the Perspective of Search Committees and Decoding Job Announcements*
1:00 PM–2:30 PM	The World Outside the Lab: Many Ways to Use Your PhD Skills
1:00 PM–3:00 PM	Education & Career Opportunities Fair
2:00 PM–3:30 PM	Teaching Science Like We Do Science
2:30 PM–3:30 PM	*The Industry Interview: What you need to do before, during, and after to get the Job*
2:30 PM–4:00 PM	Brexit & Science: Consequences for Research Funding and Immigration Flows
4:00 PM–5:00 PM	*Nailing the Job Talk, or Erudition Ain't Enough*
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 and 2:30 PM–6:00 PM

Monday, March 4, 2019

7:30 AM–8:30 AM	Graduate Student Breakfast
10:00 AM–11:00 AM	*Demystifying the Academic Job Search II: Preparing your Written Application Materials: CV, Cover Letter, and Research Statement*
11:30 AM–12:30 PM	*Networking for Nerds: How to Create Your DreAM Career*
12:30 PM–2:00 PM	The Nuts and Bolts of Preparing Your NSF Grant
1:00 PM–2:30 PM	Understanding the Congressional Budget Process: How Science is Funded
1:30 PM–3:00 PM	Biophysics 101: Gene Editing
2:30 PM–3:30 PM	*The Strategic Postdoc: How to Find & Leverage your Postdoc Experience*
2:30 PM–4:00 PM	Virtual Biophysics: Virtual and Augmented Reality Meets Biophysics
2:30 PM–4:00 PM	Designing and Implementing Strategies to Prevent and Recover from Burnout
2:30 PM–4:00 PM	Speed Networking
4:00 PM–5:00 PM	*Developing Your 30-Second Value Statement (aka Your Elevator Pitch)*

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 5, 2019

9:30 AM–10:30 AM	*Looking Beyond Academia: Identifying Your Career Options using MyIDP, LinkedIn & More*
11:30 AM–12:30 PM	*The Industry Interview: What you need to do before, during, and after to get the Job*
12:00 PM–1:30 PM	Founding, Establishing, and Maintaining a Research Laboratory at Primarily Undergraduate Institutions
12:00 PM–2:00 PM	Postdoc to Faculty Q&A: Transitions Forum and Luncheon
1:15 PM–2:45 PM	Nurturing a More Inclusive STEM Enterprise by Understanding Our Biases
1:30 PM–3:30 PM	The Nuts and Bolts of Preparing Your NIH Grant
1:30 PM–3:00 PM	Industry Panel
2:30 PM–3:30 PM	*Nailing the Job Talk, or Erudition Ain't Enough*

One-on-One Resume and Career Counseling*
8:00 AM–12:00 NOON and 1:30 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, March 2, in the Career Development Center, Exhibit Hall A. 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 Development Center Information

Exhibit Hall A

Andrew Green earned his PhD at the University of California, Berkeley, and has over 17 years of experience working with graduate students, PhDs, and postdocs as a career advisor. Before returning to Berkeley, where he serves as Associate Director of the Career Center, he spent six years on the faculty of Connecticut College. His specialty is working with PhDs and postdocs in the sciences and engineering pursuing professional opportunities in the business, government, and nonprofit sectors as well as those seeking faculty jobs. He has given invited presentations at major scientific meetings and research universities across the country; and appeared in the *Chronicle of Higher Education*, *NatureJobs*, and *The Atlantic Online*.

Alaina G. Levine is an award-winning entrepreneur, STEM career consultant, science journalist, professional speaker and corporate comedian. Her first book, Networking for Nerds, was published by Wiley in July 2015, and beat out Einstein (really!) for the honor of being named one of the Top 5 Books of 2015 by Physics Today Magazine. As President of Quantum Success Solutions, she is a prolific speaker and writer on career development and professional advancement for engineers and scientists. She has delivered over 700 speeches for clients in the US, Europe, Mexico, and Canada, and has written over 350 articles in international publications such as Science, Nature, Scientific American, National Geographic News Watch, IEEE Spectrum, and Mechanical Engineering Magazine. She is a career columnist for Physics Today and the American Physical Society's APS News, and a regular contributor to ScienceCareers.org. @AlainaGLevine

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 Development Center and upload your resume for employers to view on the Job Board both onsite and online. You may also apply for posted jobs.

Sunday, March 3

Constance Agamasu, Frederick National Lab, United States
256-Pos, B31
BIOPHYSICAL INSIGHTS INTO THE KRAS4B-FME-CALMODULIN INTERACTION.

Salomon L. Alires, University of New Mexico, United States
728-Pos, B503
NOVEL SENSORS FOR DETECTING ALZHEIMER'S DISEASE RELATED TAU PROTEIN AGGREGATES.

Lucie Bergdoll, University of California, Los Angeles, United States
269-Pos, B44
VDAC1 CONFORMATIONAL CHANGES INVESTIGATED BY HIGH PRESSURE DEER.

Anne M. Brown, Virginia Tech, United States
230-Pos, B5
MOLECULAR DYNAMICS SIMULATIONS OF GP120 and GP41 OF HIV ENV PROVIDE INSIGHTS INTO STRAIN SPECIFICITY AND THE ROLE OF THE MEMBRANE ENVIRONMENT.

Sriya Byrapuneni, University of Minnesota Twin Cities, United States
584-Pos, B359
IMPACT OF HYPERTROPHIC CARDIOMYOPATHY MUTATIONS ON THE CARDIAC MYOSIN SUPER-RELAXED STATE.

Charles H. Chen, King's College London, United Kingdom
435-Pos, B210
RATIONAL DESIGN OF POLYLEUCINE-BASED ANTIMICROBIAL PEPTIDES AS PROMISING AGENTS AGAINST CANCER CELLS.

Zhen Chen, Rockefeller University, United States
90-Plat
STRUCTURAL INSIGHTS INTO MDN1, AN ~540 KDA AAA PROTEIN REQUIRED FOR RIBOSOME BIOGENESIS.

Rohan Choraghe, University of New Mexico, United States
609-Pos, B384
RHO MEDIATED MECHANICAL FORCE GENERATION THROUGH DECTIN-1.

Megan Cullinan, University of Colorado School of Medicine, United States
179-Plat
MEASURING DYNAMICS OF THE ACID-SENSING ION CHANNEL N-TERMINUS USING TRANSITION METAL ION FRET.

Umidahan Djakbarova, Ohio State University, United States
462-Pos, B237
CELL TO CELL HETEROGENEITY OF CLATHRIN COAT DYNAMICS IS CELL CYCLE DEPENDENT.

Fathima T. Doole, University of Arizona, United States
428-Pos, B203
EFFECT OF BIOPOLYMER TETHERS ON ANTIMICROBIAL PEPTIDE ACTIVITY IN BIOMEMBRANES.

Monica Florescu, Transilvania University of Brasov, Romania
732-Pos, B507
NANOZYME MODIFIED ELECTROCHEMICAL BIOSENSORS AS RAPID SCREENING TOOLS FOR BIOMOLECULES.

Jenisha Ghimire, Tulane University, United States
420-Pos, B195
DISCOVERING NOVEL ANTIMICROBIAL PEPTIDES USING HIGH-THROUGHPUT SCREENING AND RATIONAL VARIATION.

Aparna Gudlur, La Jolla Institute for Allergy and Immunology, United States
215-Plat
CALCIUM SENSING AND CONFORMATIONAL REARRANGEMENTS IN STIM1, THE ER CALCIUM SENSOR.

Dvir Harris, Technion - Israel Institute of Technology
237-Pos, B12
STRUCTURAL REARRANGEMENTS IN THE C-TERMINAL DOMAIN HOMOLOG OF ORANGE CAROTENOID PROTEIN ARE CRUCIAL FOR CAROTENOID TRANSFER.

Jagadish P. Hazra, Indian Institute of Science Education and Research Mohali
91-Plat
DECIPHERING THE MECHANISM OF FORCE DISSEMINATION THROUGH TIP-LINKS IN HEARING.

Bence Hegyi, University of California, Davis, United States
491-Pos, B266
DIABETIC HYPERGLYCEMIA REGULATES POTASSIUM CHANNELS AND ARRHYTHMIAS IN THE HEART VIA AUTONOMOUS CAMKII ACTIVATION BY O-LINKED GLYCOSYLATION.

Stephanie S.M.H. Hoehn, University of Cambridge, United Kingdom
99-Plat
MECHANICS OF CELL SHEET FOLDING - EMBRYONIC INVERSION IN THE GREEN ALGAE VOLVOX.

Adam A. Jabak, Bridgewater State University, United States
690-Pos, B465
INVESTIGATING HOW CHIRALITY OF A THREADING BINUCLEAR RUTHENIUM COMPLEX AFFECTS THE DNA THREADING INTERCALATION USING OPTICAL TWEEZERS.

Robert C. Klipp, University of Colorado School of Medicine, United States
548-Pos, B323
STOMATIN DEPENDENT REGULATION OF THE ACID SENSING ION CHANNELS.

Aravind Kshatri, Universidad de La Laguna, Spain
523-Pos, B298
DIFFERENTIAL REGULATION OF BK CHANNELS BY FRAGILE X MENTAL RETARDATION PROTEIN.

Harish Kumar, National Centre for Biological Sciences, India
142-Plat
UNDERSTANDING THE MOLECULAR PARAMETERS DETERMINING THE PATHOLOGICAL PROPERTIES OF AMYLOID FIBRILS.

Byung Ho Lee, Sungkwunkwan University, South Korea
382-Pos, B157
A NEW DNA INVERSION MECHANISM: RECOMBINATION OF THE DNA FOLDBACK INTERCOIL STRUCTURE.

Chantelle L. Leveille, University of Washington, United States
396-Pos, B171
THE ROLE OF ERGOSTEROL IN PHASE SEPARATION OF YEAST VACUOLE MEMBRANES.

Ao Li, Binghamton University – State University of New York, United States
105-Plat
CHARACTERISTIC CONFORMATIONS OF PSEUDOMONAS QUINOLONE SIGNAL INTERACTING WITH BACTERIAL OUTER MEMBRANE.

Worawan B. Limpitikul, Johns Hopkins University, United States
553-Pos, B328
PROBING L-TYPE CHANNEL CALCIUM-DEPENDENT INACTIVATION -- A BILOBAL MODEL OF CALMODULATION.

Chris Lindsay, University of Oxford, United Kingdom
210-Plat
MODELLING THE ATP BINDING SITE OF RYR2 TO RATIONALISE LIGAND-INDUCED GATING BEHAVIOUR.

Anupa Majumdar, Indian Institute of Science Education and Research Mohali
139-Plat
PROXIMITY RULERS IN AMYLOIDS AND LIQUID DROPLETS OF INTRINSICALLY DISORDERED PROTEINS.

Deniz Meneksedag-Erol, University of Toronto Mississauga, Canada
74-Plat
UNCOVERING THE MOLECULAR BASIS FOR THE CLINICAL N642H MUTATION IN STAT5B USING ATOMISTIC MOLECULAR SIMULATIONS.

Hamed Meshkin, Purdue University, United States
231-Pos, B6
ATOMIC SIMULATIONS OF TRP-CAGE FOLDING BY UMBRELLA SAMPLING USING Q FUNCTION AS REACTION COORDINATE.

Louisa Mezache, Ohio State University, United States
159-Plat
VEGF-INDUCED VASCULAR LEAK PROMOTES ATRIAL FIBRILLATION BY DISRUPTING INTERCALATED DISC NANODOMAINS.

Alexander E. Mosier, Rensselaer Polytechnic Institute, United States
321-Pos, B96
UNVEILING THE IMPACT OF THE NEGATIVE ARM OF THE CIRCADIAN CLOCK ON OUTPUT IN NEUROSPORA CRASSA.

Buyan Pan, University of Pennsylvania, United States
325-Pos, B100
INVESTIGATING THE EFFECT OF ALPHA-SYNUCLEIN POST-TRANSLATIONAL MODIFICATIONS ON SYNAPTIC VESICLE TRAFFICKING.

Andrea Papale, SISSA, Italy
349-Pos, B124
MICRORHEOLOGY OF INTERPHASE NUCLEI: A COMPUTER SIMULATION STUDY.

Nabina Paudyal, University of Texas Health Science Center at Houston, United States
527-Pos, B302
STUDY OF A HETEROMERIC KAINATE RECEPTOR GLUK2/K5 BY PROBING SINGLE-MOLECULE FRET.

Suchi M.D.C. Perera, University of Arizona, United States
268-Pos, B43
STRUCTURAL FLUCTUATIONS IN RHODOPSIN ACTIVATION REVEALED BY NEUTRON SCATTERING.

Nihit Pokhrel, University of Washington, United States
713-Pos, B488
USING COMMITTOR AND ITS DISTRIBUTION TO ASSESS THE CONVERGENCE OF FREE ENERGY CALCULATIONS.

Elias M. Puchner, University of Minnesota, United States
677-Pos, B452
QUANTITATIVE AND MOTION-CORRECTED SUPER-RESOLUTION IMAGING OF ENDOSOME DYNAMICS IN LIVING CELLS.

Vatsal Purohit, Purdue University, United States
88-Plat
TIME-RESOLVED CRYSTALLOGRAPHY MEASUREMENTS ELUCIDATING THE MECHANISM OF BACTERIAL HMG-COA REDUCTASE.

Vani S. Ravichandran, University of Michigan, United States
148-Plat
PROTEIN KINASE C-MEDIATED CARDIAC TROPONIN I S43/45 PHOSPHORYLATION CAUSES CONTRACTILE DYSFUNCTION IN HUMAN HEART FAILURE AND IN RODENTS.

Erika Riederer, Oregon Health and Science University, United States
251-Pos, B26
INVESTIGATION OF EXTRACELLULAR GATE MOVEMENT IN A GLUTAMATE HOMOLOGUE.

Nirakar Sahoo, University of Texas Rio Grande Valley, United States
82-Plat
MODULATION OF KV10.1 POTASSIUM CHANNEL FUNCTION BY INTRACELLULAR HEME.

Premila P. Samuel Mohan Dass, Rutgers University, United States
322-Pos, B97
RESOLVING THE TRANSITION STATES OF HUMAN HEMOGLOBIN ASSEMBLY THROUGH A COMBINATION OF SPECTROSCOPIC STUDIES AND ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS.

Nicolae Sapoval, University of Chicago, United States
238-Pos, B13
A NEW OPEN STRUCTURE OF THE INSULIN DEGRADING ENZYME PROVIDES INSIGHTS INTO THE CONFORMATIONAL TRANSITION OF THE MOLECULE.

Nicoletta Savalli, University of California, Los Angeles, United States
551-Pos, B326
A MUTATION LINKED TO MALIGNANT HYPERTHERMIA IN THE SKELETAL CAV1.1 CHANNEL STABILIZES THE RESTING STATE OF VOLTAGE SENSOR I AND IMPAIRS CHANNEL ACTIVATION.

Yiseul Shin, Florida State University, United States
289-Pos, B64
CHARACTERIZATION OF THE EXTRA-MEMBRANE DOMAINS OF CRGA IN LIPID BILAYERS USING SOLID STATE NMR.

Ashley Simpson, Bay Path University, United States
324-Pos, B99
SGEF GEF ACTIVITY AND ITS REGULATION BY SCRIBBLE AND DLG1.

Louis G. Smith, University of Rochester, United States
705-Pos, B480
EXPLORING HYDROGEN BOND GEOMETRY IN RNA WITH F-SAPT.

Joseph Jose Thottacherry, National Centre for Biological Sciences, India
469-Pos, B244
MECHANOCHEMICAL FEEDBACK CONTROL OF DYNAMIN INDEPENDENT ENDOCYTOSIS MODULATES MEMBRANE TENSION IN ADHERENT CELLS.

Veronica S. Valadares, Federal University of Minas Gerais, Brazil
186-Plat
CHARACTERIZATION OF CONFORMATIONAL DIVERSITY, STABILITY, AND CATALYTIC ACTIVITY OF TCMN, AN ENZYME INVOLVED IN ANTIBIOTIC BIOSYNTHESIS.

Crystal M. Vander Zanden, University of New Mexico, United States
224-Plat
SYNCHROTRON X-RAY SCATTERING STUDIES TO DETERMINE STRUCTURE OF AMYLOID BETA INTERACTIONS WITH LIPID MEMBRANES.

Natalie Weber, Hannover Medical School, Germany
582-Pos, B357
IN HUMAN EMBRYONIC STEM CELL-DERIVED CARDIOMYOCYTES TWITCH KINETICS, ACTION POTENTIAL PARAMETERS AND MYH-mRNA FRACTIONS ARE INDEPENDENT OF THE EXPRESSED MYOSIN HEAVY CHAIN ISOFORM.

Xiyu Yi, University of California, Los Angeles, United States
655-Pos, B430
CUSP ARTIFACTS IN HIGH ORDER SUPERRESOLUTION OPTICAL FLUCTUATION IMAGING (SOFI).

Jiho Yoo, Duke University, United States
267-Pos, B42
CRYO-EM STRUCTURE OF A MITOCHONDRIAL CALCIUM UNIPORTER.

Yanyu Zhu, University of Wisconsin-Madison, United States
680-Pos, B455
RIGIDIFICATION OF THE E. COLI CYTOPLASM BY THE HUMAN ANTIMICROBIAL PEPTIDE LL-37 REVEALED BY SUPERRESOLUTION FLUORESCENCE MICROSCOPY.

Monday, March 4

Wilson R. Adams, Vanderbilt University, United States
1356-Pos, B458
PROBING THE BIOPHYSICAL MECHANISMS OF INFRARED NEURAL STIMULATION WITH NONLINEAR RAMAN IMAGING.

Nicholas S. Anthony, Italian Institute of Technology
1382-Pos, B484
LABEL FREE MICROSCOPY WITH PTYCHOGRAPHY.

Nagendra Athreya, University of Illinois Urbana-Champaign, United States
1441-Pos, B543
DETECTION AND MAPPING OF dsDNA BREAKS USING GRAPHENE NANOPORE TRANSISTOR.

Manuela A. Ayee, Dordt College, United States
820-Plat
DYSLIPIDEMIA INDUCED ENDOTHELIAL STIFFENING IS ACCOMPANIED BY INCREASED MEMBRANE TENSION.

Ivana Ban, University of Zagreb, Croatia
1250-Pos, B352
PIVOTING OF MICROTUBULES DRIVEN BY MINUS END DIRECTED MOTORS LEADS TO THEIR ALIGNMENT TO FORM AN INTERPOLAR BUNDLE.

Suman Chakrabarty, National Chemical Laboratory, India
807-Plat
A THERMODYNAMIC VIEW OF DYNAMIC ALLOSTERY IN A PDZ DOMAIN PROTEIN.

Srirupa Chakraborty, Los Alamos National Laboratory, United States
825-Plat
STRUCTURAL TOPOLOGY OF GLYCOPROTEIN SURFACE NETWORKS USING HIGH THROUGHPUT ATOMISTIC MODELING AND GRAPH THEORY.

Vanessa Checchetto, University of Padua, Italy
1239-Pos, B341
PROBING KV1.3 INTERACTOME WITH PROXIMITY-DEPENDENT BIOTINYLATION.

Eleonora Di Zanni, National Research Council, Italy
856-Plat
INVESTIGATING FUNCTIONAL CONSEQUENCES OF NOVEL DISEASE-CAUSING MUTATIONS OF CLCN7 GENE.

Elizabeth L. Evans, University of Leeds, United Kingdom
1205-Pos, B307
HAEMATOLOGICAL CHARACTERISATION OF MICE WITH PIEZO1 GAIN-OF-FUNCTION MUTATION.

Claire E. Evensen, University of Wisconsin-Madison, United States
1041-Pos, B143
CHARACTERIZING TRANSIENT INTERMEDIATES IN PRODUCTIVE RNAP TRANSCRIPTION INITIATION.

Natalia Fili, University of Kent, United Kingdom
880-Plat
NOVEL TALES ABOUT THE MYOSIN VI TAIL.

Steven D. E. Fried, University of Arizona, United States
1024-Pos, B126
G-PROTEIN-COUPLED RECEPTOR ACTIVATION MEDIATED BY INTERNAL HYDRATION.

Yunhui Ge, Temple University, United States
955-Pos, B57
USING COMPUTATIONAL MODELING TO UNDERSTAND THE BINDING MECHANISM OF DESIGNED CYCLIC β-HAIRPIN TO MDM2.

Zhaleh Ghaemi, University of Illinois Urbana-Champaign, United States
826-Plat
A COMPUTATIONAL HUMAN WHOLE-CELL MODEL REVEALS THE EFFECTS OF SPATIAL ORGANIZATION ON RNA SPLICING.

Gabriella T. Heller, University of Cambridge, United Kingdom
889-Plat
PROBING SPECIFICITY IN DISORDERED PROTEIN INTERACTIONS WITH SMALL MOLECULES USING INTEGRATIVE METHODS.

HONEY PRIYA JAMES, Indian Institute of Technology Bombay
1079-Pos, B181
EFFECT OF CHITOSAN ON MECHANICAL PROPERTIES OF LIPID BILAYERS USING MICROPIPETTE ASPIRATION.

Sina Jazani, Arizona State University, United States
1388-Pos, B490
AN ALTERNATIVE FRAMEWORK FOR FLUORESCENCE CORRELATION SPECTROSCOPY.

Shinhye Jeon, Baruch College – The City University of New York, United States
1341-Pos, B443
LOSS OF MGR2P DESTABILIZES THE TIM23 CHANNEL AND REDUCES MITOCHONDRIAL EMISSION OF REACTIVE OXYGEN SPECIES.

Drake Jensen, Washington University in St. Louis, United States
1043-Pos, B145
REGULATION OF MYCOBACTERIAL RNA POLYMERASE PROMOTER ESCAPE KINETICS BY TRANSCRIPTION FACTORS CARD AND RBPA.

Abir Kabbani, University of Michigan, United States
819-Plat
THE IMPORTANCE OF GLYCOLIPID CROSSLINKING IN ALTERING THE MEMBRANE CURVATURE.

Reema Kathuria, Indian Institute of Science Education and Research
1106-Pos, B208
IMPLICATION OF CHOLESTEROL IN REGULATING THE MEMBRANE-INTERACTION MECHANISM OF VIBRIO CHOLERAE CYTOLYSIN, A BETA-BARREL PORE-FORMING TOXIN.

Justine Keth, University of New Mexico, United States
1152-Pos, B254
SPATIOTEMPORAL DYNAMICS OF RON AND EGFR CROSSTALK AT THE PLASMA MEMBRANE.

Soyeon Kim, University Of Akron, United States
1011-Pos, B113
INVESTIGATING THE ACTIVATION MECHANISM ALTERATION OF RECEPTOR TYROSINE KINASE MUTANTS.

Oisín King, Imperial College London, United Kingdom
759-Plat
ENDOTHELIAL CELL REGULATION OF EXCITATION-CONTRACTION COUPLING IN INDUCED PLURIPOTENT STEM CELL DERIVED MYOCARDIUM.

Di Lang, University of Wisconsin-Madison, United States
1150-Pos, B252
DISRUPTION OF CAVEOLAR MICRODOMAINS CREATES “HOT SPOTS” FOR ATRIAL ECTOPY AND ARRYTHMOGENESIS IN HEART FAILURE MICE.

Zeno Lavagnino, IRCCS Ospedale San Raffaele, Italy
1171-Pos, B273
THE ROLE OF DOPAMINE IN PANCREATIC α-CELLS CALCIUM HETEROGENEITY AND SYNCHRONIZATION MEASURED BY LIGHT-SHEET MICROSCOPY.

Taehyung Chris Lee, University of Toronto, Canada
994-Pos, B96
DYNAMIC INTERACTIONS BETWEEN AN INTRINSICALLY DISORDERED PROTEIN AND ITS BINDING PARTNERS PROBED BY MULTIPARAMETER SINGLE-MOLECULE FLUORESCENCE.

Yi-Hsuan Lin, University of Toronto, Canada
979-Pos, B81
POLYMER THEORY FOR SEQUENCE-SPECIFIC PHASE SEPARATION BEHAVIORS OF CHARGED INTRINSICALLY DISORDERED PROTEINS.

Axel Loewe, Karlsruhe Institute of Technolgy, Germany
1148-Pos, B250
SINUS BRADYCARDIA DUE TO ELECTROLYTE CHANGES AS A POTENTIAL PATHOMECHANISM OF SUDDEN CARDIAC DEATH IN HEMODIALYSIS PATIENTS.

Charlotte Lorenz, Forschungszentrum Juelich, Germany
786-Plat
ASSEMBLY MECHANISM OF FARNESYLATED HGBP1 STUDIED BY TIME-RESOLVED SAXS AND ELECTRON MICROSCOPY.

Joseph A. Lyons, Aarhus University, Denmark
844-Plat
STRUCTURAL INSIGHTS INTO THE FUNCTION AND AUTO-REGULATION OF LIPID FLIPPASES.

Alexandria N. Miller, Memorial Sloan Kettering Cancer Center, United States
791-Plat
CRYO-EM STRUCTURES REVEAL MECHANISMS OF ACTIVATION AND INACTIVATION IN BESTROPHIN CHANNELS.

Julia Miller, Cornell University, United States
840-Plat
A MULTIDRUG AND TOXIN EFFLUX (MATE) TRANSPORTER INVOLVED IN ALUMINUM RESISTANCE IS MODULATED BY A CBL5/CIPK2 CALCIUM SENSOR/PROTEIN KINASE COMPLEX.

Shriyaa Mittal, University of Illinois, United States
908-Pos, B10
SIMULATION GUIDED DESIGN OF SPECTROSCOPY EXPERIMENTS VIA MAXIMIZING KINETIC INFORMATION GAIN.

Morgan E. Morris, Medical University of South Carolina, United States
1339-Pos, B441
MITOCHONDRIAL MEMBRANE POTENTIAL HETEROGENEITY IN CANCER CELLS IS INDEPENDENT OF THE CELL CYCLE AND INFLUENCES RESPONSE TO HYPERPOLARIZING AGENTS.

Riley Payne, University of Pennsylvania, United States
1329-Pos, B431
THE MCU INHIBITOR DS16570511 HAS OFF-TARGET EFFECTS ON MITOCHONDRIAL MEMBRANE POTENTIAL.

Jacqueline Pelham, Rensselaer Polytechnic Institute, United States
981-Pos, B83
CHARACTERIZING TIME-OF-DAY CONFORMATIONAL CHANGES IN THE IDP FREQUENCY AT THE HEART OF THE CIRCADIAN CLOCK IN N. CRASSA USING THE CRAFTY PROTOCOL.

Joseph D. Powers, University of Washington, United States
1305-Pos, B407
PREDICTING AND PREVENTING MYOCARDIAL REMODELING IN A MURINE MODEL OF DILATED CARDIOMYOPATHY.

Alessio Prunotto, École Polytechnique Fédérale de Lausanne, Switzerland
1016-Pos, B118
MOLECULAR SIMULATIONS GIVE INSIGHTS INTO THE NDM-1/MEMBRANE INTERACTION THAT CAUSES RISE OF A SUPER-BACTERIUM.

I**shara Ratnayake**, South Dakota School of Mines and Technology, United States
1275-Pos, B377
TOWARDS AN UNDERSTANDING OF KIDNEY DISEASES ASSOCIATED WITH INHIBITION OF NOTCH SIGNALING PATHWAY BY TRANSMISSION ELECTRON MICROSCOPY.

William M. Rosencrans, Colgate University, United States
1324-Pos, B426
EFFECT OF STEROIDS ON MITOCHONDRIAL METABOLITE CHANNEL FUNCTION AND LIPID MEMBRANE PROPERTIES.

Mark D. Rustad, University of Minnesota, United States
1402-Pos, B504
ELECTRON PARAMAGNETIC RESONANCE ELUCIDATES THE STRUCTURAL MECHANISM BY WHICH SERCA IS ACTIVATED BY DWORF.

Luis Santiago, California State University Northridge, United States
1161-Pos, B263
MECHANISMS OF G PROTEIN-SELECTIVITY IN MUSCARINIC ACETYLCHOLINE RECEPTOR FAMILY.

Santhanam Shanmughapriya, Temple University, United States
770-Plat
MOLECULAR LINK BETWEEN MCU AND MRS2P CHANNELS FOR MITOCHONDRIAL ION HOMEOSTASIS AND ENERGY METABOLISM.

Yu-Ling Shih, Academia Sinica, Taiwan
1070-Pos, B172
ACTIVE TRANSPORT OF MEMBRANE COMPONENTS BY DYNAMIC MIN PROTEIN WAVES.

Parijat Sil, National Centre for Biological Sciences, India
1023-Pos, B125
DYNAMIC ACTIN MEDIATED NANOCLUSTERING OF CD44 REGULATES ITS MESO-SCALE ORGANIZATION AT THE PLASMA MEMBRANE.

Larissa Socrier, Lehigh University, United States
1129-Pos, B231
A NOVEL NITRONE-TROLOX CONJUGATE INHIBITS MEMBRANE LIPID OXIDATION THROUGH SYNERGISTIC ANTIOXIDANT EFFECTS.

Shwetha Srinivasan, Massachusetts Institute of Technology, United States
1372-Pos, B474
EXPLORING CONFORMATIONAL DYNAMICS IN EGFR USING SINGLE-MOLECULE SPECTROSCOPY.

Maiwase Tembo, University of Pittsburgh, United States
1104-Pos, B206
PIP2 POTENTIATES THE CA2+-ACTIVATED CL- CHANNEL TMEM16A IN XENOPUS LAEVIS OOCYTES.

Joseph Tibbs, University of Northern Iowa, United States
1242-Pos, B344
A DYNAMIC TIME STEP METHOD IN CYTOSKELETAL SIMULATIONS.

Noah Trebesch, University of Illinois Urbana-Champaign, United States
1413-Pos, B515
INCORPORATING PROTEINS INTO GEOMETRICALLY COMPLEX, CELL-SCALE MEMBRANE MODELS FOR MOLECULAR DYNAMICS SIMULATIONS.

Erkan Tuncay, Ankara University, Turkey
1238-Pos, B340
SIRTUINS POSITIVELY REGULATE KATP CHANNELS, WHICH CONTRIBUTES TO THEIR CARDIOPROTECTIVE ROLE.

Sanket Walujkar, Ohio State University, United States
1194-Pos, B296
MOLECULAR DYNAMICS SIMULATIONS OF TMC1 HOMOLOGY MODELS.

Jinan Wang, University of Kansas, United States
870-Plat
MECHANISM OF SPECIFIC G PROTEIN COUPLING TO ADENOSINE RECEPTORS.

Vered Wineman-Fisher, University of South Florida, United States
1412-Pos, B514
ION-HYDROXYL INTERACTIONS: FROM HIGH-LEVEL QUANTUM BENCHMARKS TO TRANSFERABLE POLARIZABLE FORCE FIELDS.

Xinxin Woodward, Wayne State University, United States
1110-Pos, B212
SINGLE-LIPID SORTING AND DYNAMICS AT MEMBRANE CURVATURE SITES: THE EFFECTS OF FLUORESCENCE LABELING, COMPOSITION, PHASE, AND TEMPERATURE.

Kristian M. Zapata, Baruch College – The City University of New York, United States
1316-Pos, B418
OPTOGENETIC REGULATION OF MITOCHONDRIAL FUNCTION AND SYNAPTIC PLASTICITY IN VIVO.

Ziliang Zhao, Max Planck Institute of Colloids and Interfaces, Germany
1123-Pos, B225
NANOTUBES TRANSFORM INTO DOUBLE-MEMBRANE SHEETS AT THE INTERFACE BETWEEN TWO AQUEOUS POLYMER SOLUTIONS.

Tuesday, March 5

Lauren E. Ammerman, Southern Methodist University, United States
2155-Pos, B518
EXPLORATIONS OF DRUG TRANSPORT BY P-GLYCOPROTEIN USING MOLECULAR DYNAMICS ENABLED BY HIGH RESOLUTION CRYSTAL STRUCTURES.

Subhas C. Bera, Tata Institute of Fundamental Research Hyderabad, India
1737-Pos, B100
DETERMINATION OF MICROSCOPIC PARAMETERS OF AMYLOID AGGREGATION BY MONITORING REAL-TIME GROWTH USING TIRF MICROSCOPY.

Cathrine C. Bergh, Royal Institute of Technology, Sweden
1955-Pos, B318
UNDERSTANDING THE CONFORMATIONAL DYNAMICS OF A PENTAMERIC LIGAND-GATED ION CHANNEL THROUGH MARKOV STATE MODELING.

Marek Brodzki, University of Wroclaw, Poland
1935-Pos, B298
LOOP G OF THE GABAAR ORTHOSTERIC BINDING SITE IS INVOLVED BOTH IN BINDING AND GATING PROCESSES.

Brian L. Cannon, Loyola University Chicago, United States
1767-Pos, B130
THE EFFECT OF INTRASTRAND BASE-STACKING INTERACTIONS ON THE ENERGETICS AND STRUCTURAL DYNAMICS OF DNA INTERNAL LOOPS.

John Canty, University of California Berkeley, United States
2020-Pos, B383
CARGO ADAPTORS REGULATE THE MECHANICAL PROPERTIES OF MAMMALIAN DYNEIN-DYNACTIN.

Chapin E. Cavender, University of Rochester, United States
1746-Pos, B109
DEVELOPING AN ACCURATE ALL-ATOM FIXED-CHARGE FORCE FIELD FOR RNA WITH IMPLICITLY POLARIZED CHARGES.

Philip Charles, Rensselaer Polytechnic Institute, United States
2070-Pos, B433
ELUCIDATING THE ROLE OF ZINC-BACTERIOCHLOROPHYLL A' IN THE PRIMARY PHOTOCHEMISTRY OF CHLOROACIDOBACTERIUM THERMOPHILUM REACTION CENTERS.

Jeong-Mo Choi, Washington University in St Louis, United States
1727-Pos, B90
INTERNAL STRUCTURE OF NETWORK FLUID CONDENSATES FORMED BY LIQUID-LIQUID PHASE SEPARATION OF A MULTIVALENT OLIGOMERIC PROTEIN AND A DISORDERED LINEAR PEPTIDE.

Jared Collette, University of Melbourne, Australia
2046-Pos, B409
THE FEEDBACK BETWEEN CELLULAR MECHANICS AND CHEMICAL SIGNALLING DURING CYTOSKELETAL REMODELLING.

Anh Cong, University of Minnesota Duluth, United States
2079-Pos, B442
METABOLIC-RESPONSE ASSESSMENT OF MURINE BREAST CANCER CELLS IN 2D AND 3D CULTURES USING TWO-PHOTON FLUORESCENCE LIFETIME IMAGING MICROSCOPY OF INTRINSIC NAD(P)H.

Willow Coyote-Maestas, University of Minnesota, United States
1709-Pos, B72
DIFFERENTIAL DOMAIN INSERTION PERMISSIBILITY IS A MEASURE OF ENGINEERABLE ALLOSTERIC CAPACITY IN ION CHANNELS.

Simli Dey, Tata Institute of Fundamental Research, India
2102-Pos, B465
A RECEPTOR-INDEPENDENT LIPID MEMBRANE-MEDIATED PATHWAY FOR SEROTONIN ACTION.

Natasha Dudzinski, Yale University, United States
1547-Plat
INVESTIGATING MEMBRANE TENSION DYNAMICS IN THE NEURONAL PRESYNAPTIC TERMINAL.

Lourdes Figueroa, Rush University Medical Center, United States
1898-Pos, B261
TRIGGERED CALCIUM EVENTS REVEAL ELECTROPHYSIOLOGICAL ALTERATIONS IN A COHORT OF PATIENTS SUSCEPTIBLE TO MALIGNANT HYPERTHERMIA.

Cristina García Mouton, Complutense University of Madrid, Spain
1835-Pos, B198
HUMAN PICOBIRNAVIRUS CAPSIDS AS POTENTIAL NANOCARRIERS FOR DRUG DELIVERY WITHIN PULMONARY SURFACTANT CONTEXTS.

Justin J. Griffin, University of Utah, United States
2206-Pos, B569
INDEX-MATCHED MICROFLUIDIC CELL ARRAY FOR HIGH THROUGHPUT SINGLE CELL OPTICAL ANALYSIS.

Kapish Gupta, National University of Singapore
1869-Pos, B232
BILE CANALICULI CONTRACTILITY IS REGULATED BY CANALICULAR PRESSURE SENSING VIA PIEZO1.

George Heath, Weill Cornell Medical College, United States
1483-Plat
CLC ANTIPORTER DIMERIZATION DYNAMICS REVEALED BY NOVEL DEVELOPMENTS IN HIGH-SPEED AFM.

Clara Herrera-Arozamena, National Research Council, Spain
1951-Pos, B314
STRUCTURE-ACTIVITY RELATIONSHIP OF POTENT PHOTO-SWITCHABLE NEUROMUSCULAR INHIBITORS.

Malte Hilsch, Humboldt University, Germany
2118-Pos, B481
BINDING OF HANTAVIRUS TO ITS HOST CELL - A SINGLE VIRUS FORCE SPECTROSCOPY STUDY.

Hope Holt, University of South Carolina, United States
2109-Pos, B472
BINDING AND TRANSPORT OF AMYLOID-β BY P-GLYCOPROTEIN: A NOVEL THERAPEUTIC TARGET IN ALZHEIMER'S DISEASE.

Jonathan P. Hulse, University of New Mexico, United States
2193-Pos, B556
EVALUATING PHOTOOXIDATION OF PHOSPHOLIPID MEMBRANES BY A NOVEL SWITCHABLE PHOTOSENSTIZER.

Shashank Jariwala, University of Michigan, United States
2013-Pos, B376
DYNAMICAL EFFECTS OF KIF1A MUTATIONS IN NEURODEVELOPMENTAL DISORDERS.

Darren N. Kahan, University of Chicago, United States
1731-Pos, B94
MOLECULAR FACTORS UNDERLYING STRESS-TRIGGERED PHASE-SEPARATION OF PAB1.

Arti Kataria, Indian Institute of Technology Delhi, India
1643-Pos, B6
RATIONAL TARGETING AND TESTING OF MYCOBACTERIAL L-ASPARAGINASE, ESSENTIAL FOR SURVIVAL OF MTB INSIDE HOSTS.

Maria L. Khan, Cabrini University, United States
1912-Pos, B275
THE ROLE OF UBIQUITIN-PROTEASOME SYSTEM (UPS)-ASSOCIATED GENES IN THE PRESERVATION OF CARDIAC AND MUSCLE FUNCTION IN DROSOPHILA MELANOGASTER.

Srinivasan Krishnan, Boyce Thompson Institute, United States
1974-Pos, B337
STRUCTURE FUNCTION STUDIES OF A PLANT NON SELECTIVE CATION CHANNEL INVOLVED IN DROUGH TOLERANCE.

Emre Kusakci, University of California Berkeley, United States
2031-Pos, B394
THE REGULATORY ROLE OF LIS1 ON THE MECHANICS OF DYNEIN MOTILITY.

Daniel Lauster, Humboldt University, Germany
2113-Pos, B476
HOOKING ON VIRAL GLYCOPROTEINS WITH SINGLE MOLECULE FORCE SPECTROSCOPY TO STUDY SINGLE AND MULTIPLE BOND FORMATIONS.

GeonHui Lee, Korea University
2043-Pos, B406
DETERMINATION OF FIBROBLAST POLARIZATION UNDER THE COMBINATION OF PHYSICAL, MOLECULAR, AND GENETIC CUES.

Victoria T. Lim, University of California, Irvine, United States
2132-Pos, B495
COMPUTATIONAL INSIGHTS ON SMALL MOLECULE BINDING TO THE HV1 PROTON CHANNEL.

Thomas Löhr, University of Cambridge, United Kingdom
2158-Pos, B521
STRUCTURE AND DYNAMICS OF ALZHEIMER'S ASSOCIATED AMYLOID-BETA PEPTIDE.

Philip A. Mang'are, Masinde Muliro University of Science & Technology and Egerton University, Kenya
2217-Pos, B580
ANALYSIS OF THE ACOUSTIC PROPAGATION PARAMETERS OF THE NATURAL SOUNDS OF DELPHINAPTERUS LEUCAS AND ODORRANA TORMOTA FUNDAMENTAL IN THE STARTLE OF THE FEMALE ANOPHELES GAMBIAE.

Rebecca Martinez-Moreno, University of Girona, Spain
1932-Pos, B295
CARDIAC SODIUM CURRENT IS SEVERELY IMPAIRED IN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES FROM BRUGADA SYNDROME PATIENTS.

Hanieh Mazloom-Farsibaf, University of New Mexico, United States
1710-Pos, B73
BAYESIAN ESTIMATION OF THE DIFFUSION CONSTANT FOR MEMBRANE PROTEIN DYNAMICS IN AN ARBITRARY LANDSCAPE OF OBSTRUCTING BOUNDARIES.

Megan R. McCarthy, University of Minnesota Twin Cities, United States
1889-Pos, B252
STRUCTURAL DYNAMICS OF CALMODULIN IN REGULATION OF RYR CALCIUM RELEASE CHANNELS.

Madison Nohner, University of Minnesota Duluth, United States
1681-Pos, B44
UNFOLDING TRANSITIONS AND INTERDOMAIN COUPLING IN HUMAN DYSTROPHIN SPECTRIN REPEATS.

Alper D. Ozkan, Western University of Health Sciences, United States
1872-Pos, B235
FORCE-DEPENDENT CONFORMATIONAL CHANGES IN THE MECHANOSENSITIVE PIEZO1 CHANNEL.

Amelia Palermo, The Scripps Research Institute, United States
1519-Plat
A NETWORK OF ENDOGENOUS METABOLITES MODULATES PROGRAMMED DEATH-LIGAND 1 (PD-L1) EXPRESSION IN MONOCYTIC LEUKEMIA.

George A. Pantelopulos, Boston University, United States
1852-Pos, B215
PROTEIN PARTITIONING TO LIPID DOMAINS IN ALL-ATOM MD SIMULATION.

Yasiru R. Perera, Mississippi State University, United States
2215-Pos, B578
THE ADSORPTION KINETICS OF BIOMOLECULES ON TO PEGYLATED GOLD NANOPARTICLES.

Matthew C. Pharris, Purdue University, United States
2106-Pos, B469
CALCIUM FREQUENCY SETS THE LOCATION OF CALMODULIN-DEPENDENT ENZYME ACTIVATION IN DENDRITIC SPINES.

Zachary D. Piro, University of Wisconsin, United States
1861-Pos, B224
REGION-SPECIFIC STRETCH-INDUCED DISRUPTION OF CAVEOLAE DECREASES EXPRESSION OF MECHANOSENSITIVE CHLORIDE CHANNELS AND STIMULATES FIBROGENESIS PROMOTING ARRHYTHMOGENIC ATRIAL ECTOPY IN FAILING MICE.

Atul Kaushik Rangadurai, Duke University, United States
1779-Pos, B142
WATSON-CRICK LIKE MISMATCHES IN REPLICATION FIDELITY.

Robyn T. Rebbeck, University of Minnesota, United States
1882-Pos, B245
HIGH-THROUGHPUT SCREENING YIELDS ALLOSTERIC INHIBITORS OF LEAKY RYRS FOR THERAPEUTIC DEVELOPMENT.

Alexa M. Salsbury, Virginia Tech, United States
1785-Pos, B148
POLARIZABLE MOLECULAR DYNAMICS SIMULATIONS OF C-KIT ONCOGENE PROMOTER G-QUADRUPLEXES OF DISTINCT CONFORMATIONS.

Achinta Sannigrahi, Indian Institute of Chemical Biology
1850-Pos, B213
AN INTERPLAY BETWEEN KMP-11 INDUCED PHASE ALTERATION OF MACROPHAGE MEMBRANE AND IMMUNE SUPPRESSION DEFINES THE MOLECULAR MECHANISM OF LEISHMANIASIS.

Yahor Savich, University of Minnesota, United States
2010-Pos, B373
MYOSIN ORIENTATION IN A MUSCLE FIBER USING BIFUNCTIONAL SPIN LABELS WITH 4 DEGREES ANGULAR RESOLUTION.

Noah A. Schenk, University of Michigan, United States
1549-Plat
TWO POPULATIONS OF INSULIN GRANULES WITH DISTINCT FUSION PROPERTIES ARE MAINTAINED BY ABC TRANSPORTERS ABCG1 AND ABCA1.

Sonja Schmid, Delft University of Technology, Netherlands
1691-Pos, B54
HIGH BANDWIDTH SENSING OF SINGLE PROTEIN DYNAMICS USING NANOPORES AND DNA ORIGAMI.

Falk Schneider, University of Oxford, United Kingdom
1615-Plat
MEASURING HINDERED DIFFUSION DYNAMICS IN LIVE CELL PLASMA MEMBRANES WITH CONFOCAL AND SUPER-RESOLUTION IMAGING.

Maddie R. Shay, University of Alabama, United States
1645-Pos, B8
STRUCTURAL CHARACTERIZATION OF FOSM FROM MYCOBACTERIUM ABSCESSUS.

Elizabeth M. Smith, University of Minnesota, United States
2165-Pos, B528
DEVELOPMENT AND OPTIMIZATION OF THE Y-FAST:FLUOROGEN SYSTEM FOR SUPER-RESOLUTION IMAGING.

Antonia Stuebler, Texas Tech Health Science Center, United States
1941-Pos, B304
A COMPARISON BETWEEN HOMOMERIC AND HETEROMERIC 5-HT3 RECEPTORS IN RESPONSE TO THE ANTIDEPRESSANT BUPROPION.

Carmen Suay Corredera, Spanish National Center for Cardiovascular Research
2112-Pos, B475
CALIBRATION-INDEPENDENT ATOMIC FORCE MICROSCOPY.

Rasheed Sule, University of California Davis, United States
2089-Pos, B452
EFFECTS OF IBUPROFEN ON MICE LIVER PROTEASOME.

Jane Thibeault, Rensselaer Polytechnic Institute, United States
1586-Plat
HYPERSTABLE PROTEINS IN THE GUT MICROBIOTA: AN EXAMINATION OF THE BACTERIUM BACTEROIDES FRAGILIS.

Ananya Tripathi, University of Minnesota, United States
1911-Pos, B274
EFFECTS OF ACTIN-BINDING COMPOUNDS ON THE ATPASE ACTIVITY OF MYOSIN FROM SKELETAL AND CARDIAC MUSCLE.

Sushree Tripathy, University at Buffalo, United States
1948-Pos, B311
STRUCTURE MEETS FUNCTION: AGONIST ACTIONS AT NEUROTRANSMITTER BINDING SITES.

David M. Wahl, University of Southern Indiana, United States
2160-Pos, B523
MOLECULAR DYNAMICS INVESTIGATION OF THE PHYSICAL BINDING OF THE NNK DIAZONIUM ION TO EXON 5 OF TP53.

Asriel Walker, Wellesley College, United States
2123-Pos, B486
UTILIZING ATOMIC FORCE MICROSCOPY TO EXPLORE THE BIOPHYSICAL CHEMISTRY OF THE BACTERIAL PREDATOR BDELLOVIBRIO BACTERIOVORUS.

Cecilia Wallin, Stockholm University, Sweden
1510-Plat
THE NEURONAL TAU PROTEIN BLOCKS IN VITRO FIBRILLATION OF THE AMYLOID-β (Aβ) PEPTIDE.

Qiaochu Wang, University of Texas Health Science Center, United States
1899-Pos, B262
THE INTERPLAY BETWEEN NAADP AND PI(3,5)P2 IN THE ACTIVATION OF LYSOSOMAL TWO-PORE CHANNEL 2.

Zhihui Wang, Houston Methodist Research Institute, United States
1591-Plat
MULTISCALE MODELING OF DUCTAL CARCINOMA IN SITU.

Gabriella Wheeler, Clemson University, United States
2095-Pos, B458
VELOCITY AND POSITION EFFECTS IN EYE TRACKING.

Yan Yan, Emory University, United States
1575-Plat
SUPERCOILING MAKES PROTEIN-MEDIATED LOOPING OF DNA TETHERS DETERMINISTIC.

Chen-Ching Yuan, University of Washington, United States
1998-Pos, B361
TIME-RESOLVED X-RAY STUDIES OF SKELETAL MUSCLE FROM A DUCHENE MUSCULAR DYSTROPHY RAT MODEL.

Wednesday, March 6

Bryce E. Ackermann, University of California San Diego, United States
2400-Pos, B72
CHARACTERIZING HP1-DRIVEN CHROMATIN COMPACTION USING NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY.

Kseniia Afitska, Institute of Organic Chemistry and Biochemistry Prague, Czech Republic
2438-Pos, B110
STRUCTURAL OPTIMIZATION OF α-SYNUCLEIN FIBRIL GROWTH INHIBITORS.

Daisy Alvarado, St. John's University, United States
2456-Pos, B128
MULTISCALE INVESTIGATION OF MONOMERIC ALPHA-SYNUCLEIN STRUCTURE AND AGGREGATION.

Shruti Arya, University of California Santa Barbara, United States
2436-Pos, B108
TERMINAL CAPPING OF AMYLOIDOGENIC TAU FRAGMENTS MODULATES THEIR FIBRILLATION PROPENSITY.

Shrabasti Bhattacharya, Tata Institute of Fundamental Research, India
2415-Pos, B87
SALT BRIDGES IN UBIQUITIN DETERMINE THE PROTEIN CONFORMATIONAL FLEXIBILITY.

Alessandro Borgia, University of Zurich, Switzerland
2243-Plat
HIGHLY DISORDERED 10:1 COMPLEX OF TWO ANTI-APOPTOTIC, CHROMATIN-REMODELLING INTRINSICALLY DISORDERED PROTEINS.

Mazdak M. Bradberry, University of Wisconsin-Madison, United States
2608-Pos, B280
PIP2 DRIVES CALCIUM-INDEPENDENT ACTIVATION OF TANDEM C2-DOMAIN CALCIUM SENSORS.

Tyler J. Brittain, James Madison University, United States
2380-Pos, B52
CONTROL OF PROTEIN SELF-ASSEMBLY WITH WATER-SOLUBLE PORPHYRINS.

Angela C. Brown, Lehigh University, United States
2553-Pos, B225
MECHANISM OF CATECHIN-MEDIATED INHIBITION OF RTX TOXIN ACTIVITY.

Kelly E. Du Pont, Colorado State University, United States
2424-Pos, B96
MOLECULAR ANALYSIS OF DENGUE NS3 HELICASE FUNCTION.

Yann Fichou, University of California Santa Barbara, United States
2455-Pos, B127
TAU AMYLOID AGGREGATES: THE CHOICE OF PATHWAYS MAKES THE DIFFERENCE.

Miriam Garcia Avila, National Autonomous University of Mexico
2655-Pos, B327
SELECTIVITY AND CHARACTERIZATION OF THE PERMEANT ION EFFECT IN THE RAPIDTRANSITIONS ON THE PORE OF TRPV1 CHANNEL.

Rikhia Ghosh, Max Planck Institute of Colloids and Interfaces, Germany
2530-Pos, B202
BUDDING AND FISSION OF VESICLES INDUCED BY SMALL SOLUTE MOLECULES.

Eleonora Gianti, Temple University, United States
2658-Pos, B330
ACTIVATION OF TRPV1 BY LIPIDS: CAN LIPID TAILS BRIDGE THE GAP BETWEEN THE VANILLOID BINDING SITE AND THE PERIPHERAL CAVITIES?

Syed Saif Hasan, Purdue University, United States
2858-Pos, B530
STRUCTURAL INSIGHTS INTO ENTRY AND ANTIBODY NEUTRALIZATION OF EASTERN EQUINE ENCEPHALITIS VIRUS.

Dalia Hassan, St. John's University, United States
2340-Pos, B12
MOLECULAR DYNAMICS STUDIES OF DYNAMIN OLIGOMERS IN SOLUTION.

Chenyu Huang, Johns Hopkins University, United States
2300-Plat
IMPROVEMENT OF MATURATION STATE OF HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED 3D CARDIAC MICROTISSUES BY DEFINED CHEMICAL FACTORS.

Christian C. Hunley, University of Texas at San Antonio, United States
2767-Pos, B439
THE MISSED ROLE OF CYTOSKELETAL FILAMENTS IN INFORMATION PROCESSING.

Ameya P. Jalihal, University of Michigan, United States
2268-Plat
MULTIMERIC PROTEINS REVERSIBLY FORM CONDENSATES UPON OSMOTIC COMPRESSION.

Sankar Jana, University of St. Andrews, United Kingdom
2801-Pos, B473
TWIN-FRET: A NEW MOLECULAR RULER FOR BIOMOLECULES.

Calem Kenward, Dalhousie University, Canada
2336-Pos, B8
LINKING THE SEQUENCE, ANTI-TUMOR FUNCTION, AND SHARED STRUCTURAL FEATURES OF CLASS IB HYDROPHOBINS.

Ayush Krishnamoorti, The Kincaid School, United States
2751-Pos, B423
CLC CONFORMATIONAL LANDSCAPE AS STUDIED BY SMFRET.

Austin E. Y. T. Lefebvre, University of California Irvine, United States
2727-Pos, B399
A NON-INVASIVE METABOLIC INVESTIGATION OF BREAST CANCER INVASION.

Jeremy M. G. Leung, Occidental College, United States
2534-Pos, B206
COMPUTATIONAL MECHANICAL STUDIES OF E. COLI TYPE-1 PILI ADHESION WITH HOMOGENEOUS SURFACES.

Samira Mali, University of Illinois at Chicago, United States
2784-Pos, B456
ROLES OF NUCLEAR CONFINEMENT, EXCLUDED VOLUME, AND PERSISTENCE ON TAD FORMATIONS, CHROMOSOME TERRITORIES, AND CHROMATIN-NUCLEAR ENVELOPE INTERACTIONS.

Chloe Martens, King's College London, United Kingdom
2755-Pos, B427
DIRECT PROTEIN-LIPID INTERACTIONS SHAPE THE CONFORMATIONAL LANDSCAPE OF SECONDARY TRANSPORTERS.

Tina R. Matin, Weill Cornell Medicine, United States
2762-Pos, B434
MILLISECOND TIME RESOLUTION BY HS-AFM LINE SCANNING OF FAST GLTPH DYNAMICS.

James W. McCormick, University of Texas Southwestern Medical Center, United States
2412-Pos, B84
DETERMINING THE INTERNAL ALLOSTERIC ARCHITECTURE OF DHFR WITH TOTAL SATURATION MUTAGENESIS.

Mehrnaz Mojtabavi, Northeastern University, United States
2874-Pos, B546
STABLE HYBRID NANOPORES FOR BIOMOLECULE SENSING.

Jonathan M. Musila, University of Pennsylvania, United States
2447-Pos, B119
STRUCTURAL EVALUATION OF AROMATIC RESIDUES IN α-SYN AND THEIR ROLE IN GLYCAN BINDING AND CELLULAR UPTAKE.

Gabriel Ortega, University of California Santa Barbara, United States
2298-Plat
UNDERSTANDING THE BIOPHYSICS OF PROTEIN-SURFACE INTERACTIONS.

Sally C. Pias, New Mexico Institute of Mining and Technology, United States
2837-Pos, B509
EXTENDING THE AMBER LIPID FRAMEWORK FOR ATOMISTIC MODELING OF ORGANIC-LIPID CONJUGATES.

Bharat Reddy, University of Chicago, United States
2273-Plat
HIGH-RESOLUTION STRUCTURES OF MSCS IN A LIPID BILAYER: REINTERPRETING "FORCE FROM LIPIDS" ACTIVATION IN MECHANOSENSITIVE CHANNELS.

Saumya Saurabh, Stanford University, United States
2270-Plat
DISSECTION OF PROTEIN FUNCTION WITHIN A BACTERIAL BIOMOLECULAR CONDENSATE BY IN VITRO RECONSTITUTION.

Gustavo Scanavachi, University of São Paulo, Brazil
2393-Pos, B65
UNVEILING THE ROLE OF SURFACTANTS ON AMYLOID-LIKE PROTEIN SELF-ASSEMBLING.

Taylor N. Segally, Indiana University – Purdue University Indianapolis, United States
2344-Pos, B16
DIFFERENTIATING STRUCTURAL CHANGES OF GLYCOPROTEINS IN SOLUTION USING SMALL ANGLE SCATTERING ANALYSIS.

Azam Shafieenezhad, Indiana University – Purdue University Indianapolis, United States
2518-Pos, B190
MEASUREMENTS OF LIPID VESICLE CHARGE IN SOLUTIONS OF ZWITTERIONS.

Kyungsoo Shin, Dalhousie University, United States
2348-Pos, B20
STRUCTURE AND FUNCTION OF HUMAN VITRONECTIN, A KEY MEDIATOR OF HOST-PATHOGEN INTERACTIONS.

Linjia Su, Florida International University, United States
2386-Pos, B58
TIGHT BINDING OF NATURAL POLYPHENOLS TO THE INTRINSICALLY DISORDERED MAMMALIAN HIGH MOBILITY GROUP PROTEIN AT-HOOK 2.

Elisa Venturi, University of Oxford, United Kingdom
2586-Pos, B258
COOPERATIVE GATING AMONG ION-CHANNEL SPECIES IN JUNCTIONAL SARCOPLASMIC RETICULUM.

Nipuna Weerasinghe, University of Arizona, United States
2290-Plat
RHODOPSIN HYDRATION DYNAMICS STUDIED BY SOLID-STATE DEUTERIUM NMR SPECTROSCOPY.

Kiera B. Wilhelm, University of California Berkeley, United States
2631-Pos, B303
A MEMBRANE-ACTIVATED, UNIVERSAL T-CELL RECEPTOR AGONIST.

Katherine L. Wozniak, University of Pittsburgh, United States
2604-Pos, B276
EXTRACELLULAR ZINC CONTRIBUTES TO THE SLOW POLYSPERMY BLOCK.

Lisha Yang, University of Nevada Reno, United States
2668-Pos, B340
BIOPHYSICAL PROPERTIES OF THE ELECTROPERMEABILIZATION-INDUCED MEMBRANE CONDUCTANCE IN PATCH CLAMPED ADRENAL CHROMAFFIN CELLS.

Youngki You, University of Houston, United States
2567-Pos, B239
LIPID MEMBRANE INFLUENCES INTERACTION BETWEEN THE C1 DOMAIN OF MUNC13-1 AND THE ACTIVATOR.

Vesna Zivanovic, Humboldt University, Germany
2803-Pos, B475
CHARACTERIZATION OF LIPIDS IN LEISHMANIA INFECTED CELLS BY SERS MICROSCOPY.

Lejla Zubcevic, Duke University, United States
2659-Pos, B331
CONFORMATIONAL ENSEMBLE OF THE HUMAN TRPV3 ION CHANNEL.

Ancillary Meetings

Saturday, March 2, 9:00 AM–1:00 PM
Society of General Physiologists Winter Council Meeting
Room 333

Sunday, March 3, 5:30 PM–6:30 PM
Korean Biophysicists Meeting
Rooom 318/319/320

Sunday, March 3, 6:00 PM–8:00 PM
Biophysics Austria Mixer
Room 321/322/323

Sunday, March 3, 6:00 PM–8:00 PM
Biophysical Society of Canada Mixer
Pratt Street Ale House
206 W. Pratt Street, Baltimore MD 21201, USA

Tuesday, March 5, 8:00 PM–10:00 PM
SOBLA (The Society for Latinoamerican Biophysicists) Meeting
Room 327/328/329

Notes

Friday, March 1, 2019

Daily Program Summary

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

8:00 AM–5:00 PM	Exhibitor Registration	Charles Street Lobby
8:00 AM–5:00 PM	Drug Discovery for Ion Channels XIX Satellite Meeting	Room 303
8:30 AM–6:00 PM	Working Towards Federating Structural Models and Data Satellite Meeting	Room 301/302
3:00 PM–5:00 PM	Registration	Charles Street Lobby
3:30 PM–4:30 PM	New Council Orientation	Hilton, Peale C
5:00 PM–9:00 PM	Joint Council Reception, Dinner, and Meeting	Hilton, Peale A/B

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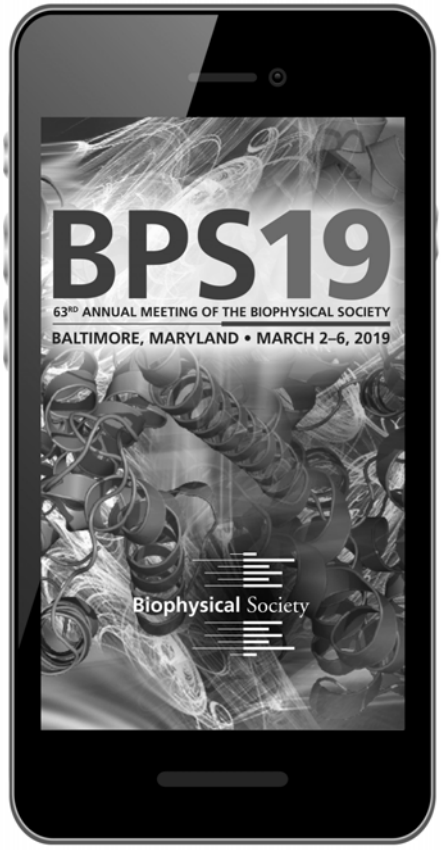

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Friday, March 1

Exhibitor Registration

8:00 AM - 5:00 PM, CHARLES STREET LOBBY

Drug Discovery for Ion Channels XIX Satellite Meeting

8:00 AM - 5:00 PM, ROOM 303

Sponsored by Sophion Bioscience; Nanion Technologies; Metrion Biosciences; SB Drug Discovery; and Evotec AG

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. The advent of higher throughput automated electrophysiology systems has begun to change the face of ion channel drug discovery. Since the inaugural "Drug Discovery for Ion Channels" satellite meeting, there have been many advances in ion channel drug discovery including new instrumentation and techniques. This year's meeting will highlight presentations from users of automated electrophysiology instrumentation as well as other speakers in the field of ion channel drug discovery, including several academic speakers.

8:00 AM **REGISTRATION**

8:45 AM **WELCOME AND OPENING REMARKS**
Niels Fertig

SESSION I
Chair: David Dalrymple

9:00 AM
NPY, HCN1 AND STRESS RESILIENCE.
Keynote Speaker: William Colmers

9:45 AM
USE OF AUTOMATED PATCH CLAMP PLATFORMS TO SUPPORT ION CHANNEL DRUG DISCOVERY. **Stephen Hess**

10:15 AM
SUCCESSFUL DEVELOPMENT OF STATE-DEPENDENT VOLTAGE-GATED ION CHANNEL MODULATORS WITH IN VIVO EFFICACY USING AUTOMATED PATCH CLAMP ASSAYS FOR PRIMARY TARGET POTENCY, SPECIES AND GENE FAMILY SELECTIVITY, AND CARDIAC SAFETY. **Marc Rogers**

10:45 AM **COFFEE BREAK**

SESSION II
Chair: Stephen Hess

11:15 AM
PROTX-II INHIBITS NAV1.7 THROUGH AN ELECTROSTATIC GATING MODULATION MECHANISM. **Tianbo Li**

11:45 AM
TARGET BASED SCREENING ON NAV CHANNELS IN SPIKING HEK CELLS, USING OPTICAL STIMULATION AND RECORDING. **Hongkang Zhang**

12:15 PM
ASSESSMENT OF DIVERSE AND FOCUSSED LIBRARIES FOR ION CHANNEL SCREENING. **David Dalrymple**

12:45 PM **LUNCH (PROVIDED)**

SESSION III
Chair: Marc Rogers

1:45 PM
STIMULATING WITH LIGHT.
Keynote Speaker: Pancho Bezanilla

2:30 PM
NOVEL SMALL MOLECULE NAV CHANNEL BLOCKERS SELECTIVELY TARGETING NOCICEPTORS FOR THE TREATMENT OF COUGH, PAIN AND ITCH. **James Ellis**

3:00 PM
KNOTTIN-ANTIBODY FUSION PROTEINS (KNOTBODIES): A NOVEL BIOLOGICS CLASS TARGETING KV1.3 (AUTOIMMUNITY), NAV1.7 (CHRONIC PAIN) AND ASIC1A (STROKE). **Aneesh Karatt-Vellatt**

3:30 PM **COFFEE BREAK**

SESSION IV
Chair: James Ellis

4:00 PM
PHARMACOLOGY OF VOLTAGE SENSOR TARGETING NAV1.6 INHIBITORS.
Sam Goodchild

4:30 PM
APPLICATION OF HIGH-THROUGHPUT AUTOMATED PATCH-CLAMP TECHNIQUES TO STUDY ION CHANNEL FUNCTION IN CULTURED PRIMARY RAT CORTICAL AND HYPOTHALAMIC NEURONS. **Fern Toh**

5:10 PM **CLOSING REMARKS**
Thomas Binzer

Working Towards Federating Structural Models and Data Satellite Meeting

8:30 AM - 6:00 PM, ROOM 301/302

Structural characterization of complex biomolecular systems increasingly relies on novel integrative modeling methods that combine data from various experimental and computational techniques. This Workshop will focus on an initiative to create an interoperating network of structural biology model and data repositories to enable the archiving of integrative structural models and associated experimental data. This effort follows the recommendations of the wwPDB Hybrid/Integrative Methods Task Force (https://www.wwpdb.org/task/hybrid).

The goals of the Workshop are to:

- Outline the issues involved in developing and maintaining data standards in the different communities
- Outline the issues involved in efficient standards based data exchange among the network of structural biology model and data repositories
- Make a plan for how best to address the recommendations for data standards and data exchange
- Create a process for sustained communication among different communities
- Prepare for writing a white paper summarizing the outcome of the Workshop

As a wwPDB activity, our goal is to facilitate the continued development and usage of the current PDB-Dev repository for integrative models (https://pdb-dev.wwpdb.org), so that the integrative structures archived in PDB-Dev can ultimately become part of the PDB. To do this, we need to define the mechanisms by which all experimental methods used by inte-

grative modeling can be federated with the PDB. This workshop will help create a path to achieve this goal.

8:30 AM **REGISTRATION**

8:45 AM **INTRODUCTION**
Helen Berman

9:00 AM
STATUS REPORT ON INTEGRATIVE MODEL ARCHIVING. **Brinda Vallat**

9:15 AM
PANEL ON MODEL REPRESENTATION, VISUALIZATION, AND VALIDATION.

Chair: Andrej Sali

Participants: Alexandre Bonvin, Frank DiMaio, Gerhard Hummer, Jens Meiler, Emad Tajkhorshid

10:45 AM **COFFEE BREAK**

11:00 AM
PANEL ON COMMUNITY DATA STANDARDS.

Chair: Jill Trewhella

Participants: Cathy Lawson, Gaetano Montelione, Juri Rappsilber, Alex Leitner, Thomas Prisner, David Schriemer, Claus Seidel, Dmitri Svergun, John Westbrook

1:00 PM **LUNCH**

1:40 PM
VISION FOR THE PDB IN 2021. **Stephen K. Burley**

2:00 PM
BREAKOUT DISCUSSION GROUP.

1. Standards
2. Data Exchange
3. Requirements for Validating Data and Models

4:00 PM
REPORT WRITING

5:00 PM
REPORT OUT TO FULL GROUP AND CONCLUSION FOR OPEN REGISTRANTS.

Registration

3:00 PM - 5:00 PM, CHARLES STREET LOBBY

New Council Orientation

3:30 PM - 4:30 PM, HILTON, PEALE C

Joint Council Reception, Dinner, and Meeting

5:00 PM - 9:00 PM, HILTON, PEALE A/B

Saturday, March 2, 2019

Daily Program Summary

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

8:00 AM–6:30 PM	Registration/Exhibitor Registration	Charles Street Lobby
8:30 AM–11:30 AM	Joint Council Meeting	Hilton, Peale A/B
9:00 AM–12:00 PM	Biophysics Between the Lines: Creating Quantitative Resources for Biology Courses	Room 330
9:00 AM–12:40 PM	Bioengineering Subgroup	Room 327/328/329
9:00 AM–1:00 PM	Society of General Physiologists Winter Council Meeting	Room 333
9:00 AM–6:00 PM	Bioenergetics, Mitochondria & Metabolism Subgroup	Room 324/325/326
9:30 AM–5:20 PM	Mechanobiology Subgroup	Room 321/322/323
10:30 AM–3:00 PM	Molecular Biophysics Subgroup	Ballroom II
10:30 AM–6:15 PM	Intrinsically Disordered Proteins Subgroup	Ballroom IV
12:00 PM–6:05 PM	Biopolymers in Vivo Subgroup	Room 301/302/303
12:30 PM–6:00 PM	Nanoscale Biophysics Subgroup	Room 316/317
1:00 PM–5:30 PM	Biological Fluorescence Subgroup	Room 309/310
1:00 PM–6:00 PM	Membrane Structure & Function Subgroup	Ballroom I
1:00 PM–6:15 PM	Cell Biophysics Subgroup	Room 307/308
1:00 PM–6:15 PM	Motility & Cytoskeleton Subgroup	Room 318/319/320
1:00 PM–9:30 PM	Membrane Biophysics Subgroup	Room 314/315
1:00 PM–10:00 PM	Exocytosis & Endocytosis Subgroup	Room 331/332
1:25 PM–5:30 PM	Membrane Transport Subgroup	Ballroom III
2:00 PM–4:00 PM	Science Communications Workshop with AAAS	Room 330
3:00 PM–4:00 PM	Career Development Center Workshop: Leveraging LinkedIn in the PhD Job Search: Networking, Informational Interviews, and More	Exhibit Hall A
3:00 PM–5:00 PM	Undergraduate Mixer and Poster Award Competition	Ballroom Foyer
5:00 PM–6:00 PM	First-Time Attendee Drop By	Ballroom Foyer
5:00 PM–7:00 PM	Opening Mixer	Ballroom Foyer
6:00 PM–7:30 PM	Travel Awardee Reception	Exhibit Hall
6:00 PM–10:00 PM	Poster Viewing	Exhibit Hall C
7:00 PM–10:00 PM	Cryo-EM Subgroup	Ballroom III

Saturday, March 2

Registration/Exhibitor Registration

8:00 AM - 6:30 PM, CHARLES STREET LOBBY

Joint Council Meeting

8:30 AM - 11:30 AM, HILTON, PEALE A/B

Biophysics Between the Lines: Creating Quantitative Resources for Biology Courses

9:00 AM - 12:00 PM, ROOM 330

Speakers
Patricia Soto Becerra, Creighton University
Gina M. Seprebon, Bay Path University
Bertrand Garcia-Moreno, Johns Hopkins University
Jenny Ross, University of Massachusetts Amherst

Bioengineering Subgroup

9:00 AM - 12:40 PM, ROOM 327/328/329

Subgroup Chair
Amir Farnoud, Ohio University

9:00 AM **OPENING REMARKS**

NO ABSTRACT **9:10 AM**
NANOPARTICLE-SUPPORTED LIPID BILAYERS: A PLATFORM FOR INTERROGATING LIPID-PROTEIN INTERACTIONS AT HIGHLY CURVED SURFAXCES. **Ka Yee Lee**

1-SUBG **9:40 AM**
GOLGI-ON-A-CHIP FOR THE CELL-FREE BIO-NANOMANUFACTURING OF PROTEIN THERAPEUTICS. **Susan Daniel**, Alicia Aquino, Matthew DeLisa, Thapakorn Jaroentomeechai, Han-Yuan Liu, Zachary Manzer, Ferra Pinnock, Rohit R. Singh

2-SUBG **10:10 AM**
UTILIZING THE SYNERGISTIC POWER OF MOLECULAR THEORY AND MOLECULAR SIMULATION TO SOLVE BIOENGINEERING PROBLEMS. **Mark Uline**

10:40 AM **BREAK**

10:55 AM **BUSINESS MEETING**

3-SUBG **11:10 AM**
UPSTREAM MIGRATION OF AMOEBOID CELLS: DYNAMICS AND MEMORY. **Daniel Hammer**

NO ABSTRACT **11:40 AM**
IMMUNOENGINEERING IN REGENERATIVE MEDICINE. **Jennifer Elisseeff**

12:10 PM **STUDENT/POSTDOC TALK**

12:30 PM **CLOSING REMARKS**

Society of General Physiologists Winter Council Meeting

9:00 AM - 1:00 PM, ROOM 333

Bioenergetics, Mitochondria & Metabolism Subgroup

9:00 AM – 6:00 PM, ROOM 324/325/326

Subgroup Co-Chairs
Elizabeth Jonas, Yale University
George Porter, University of Rochester

9:00 AM **MORNING INTRODUCTION**
WILLIAM CRAMER & KARIN BUSCH

NO ABSTRACT **9:10 AM**
NEW MECHANISTIC INSIGHTS FROM CRYOEM STRUCTURES OF ATP SYNTHASES. **Werner Kühlbrandt**

4-SUBG **9:40 AM**
A REQUIREMENT FOR CARDIOLIPIN IN THE ORGANIZATION AND FUNCTION OF MITOCHONDRIAL SUPERCOMPLEXES. **William Dowhan**, Eugenia Mileykovskaya, Venkata Mallampalli, Guizhen Fan, Matthew L. Baker, Irina I. Serysheva

5-SUBG **10:10 AM**
RCF1 AND RCF2: CENTRAL ROLE IN CYTOCHROME C OXIDASE ENZYMOLOGY AND SUPPORT OF THE PROTON MOTIVE FORCE.
Rosemary A. Stuart

10:40 AM **BREAK**

6-SUBG **10:55 AM**
STRUCTURE OF THE ALTERNATIVE COMPLEX III IN A SUPERCOMPLEX WITH CYTOCHROME OXIDASE. Chang Sun, Samir Benlekbir, Padmaja Venkatakrishnan, Yuhang Wang, Sangjin Hong, Jonathan P. Hosler, Emad Tajkhorshid, John Rubinstein, **Robert B. Gennis**

7-SUBG **11:25 AM**
QUINONE DIFFUSION IN PHOTOSYNTHETIC MEMBRANES: CHALLENGES CAUSED BY COMPLEX MEMBRANE ARCHITECTURES. **Helmut Kirchhoff**

11:55 AM **LUNCH BREAK**

1:20 PM **YOUNG BIOENERGETICS AWARD**

1:35 PM **AFTERNOON INTRODUCTION**
ELENA DEDKOVA

8-SUBG **1:45 PM**
KETOGENIC DIET: EVIDENCE FOR METABOLIC CONTROL OF NEURONAL EXCITABILITY AND SEIZURES. **Carl Stafstrom**

9-SUBG **2:15 PM**
MULTI-DIMENSIONAL ROLES OF KETONE BODIES IN FUEL METABOLISM, SIGNALING, AND THERAPEUTICS. **Peter Crawford**

10-SUBG **2:45 PM**
KETONE BODIES AS A THERAPEUTIC STRATEGY FOR HEART FAILURE. **Daniel Kelly**

3:15 PM **BREAK**

11-SUBG **3:30 PM**
NOVEL KETONE MONOESTER FOR HUMAN ENDURANCE EXERCISE. **Kieran Clarke**

NO ABSTRACT **4:00 PM**
KETOGENIC DIET REDUCES MIDLIFE MORTALITY AND IMPROVES MEMORY IN AGING MICE. **Eric Verdin**

12-SUBG **4:30 PM**
KETONE BODIES AND THEIR POLYMERS IN HEART FAILURE AND TYPE 2 DIABETES: LESSONS LEARNED FROM THE KETONE ESTER DIET. Phung N. Thai, Lusine Demirkhanyan, M. Todd King, Eleonora Zakharian, Richard Veech, Saul Schaefer, Donald M. Bers, **Elena N. Dedkova**

5:00 PM **BUSINESS MEETING**

7:00 PM **SUBGROUP DINNER**

Mechanobiology Subgroup

9:30 AM - 5:20 PM, ROOM 321/322/323

Subgroup Chair
Kristian Franze, Cambridge University, United Kingdom

9:30 AM **OPENING REMARKS**

13-SUBG **9:35 AM**
NORMALIZING TRANSFORMED CANCER CELLS WITH RIGIDITY SENSING. **Michael Sheetz**

10:05 AM **STUDENT TALK**

10:20 AM **STUDENT TALK**

NO ABSTRACT **10:35 AM**
PHYSICAL ROLE OF HYALURONAN GLYCOCALYX IN CELL ADHESION AND MIGRATION. **Jennifer E. Curtis**, Shlomi Cohen, Patrick Chang, Patrycja Kotowska, Rebecca Keate, Peter Achi, Jessica Faubel, Wenbin Wei, Andres J. Garcia

11:05 AM **BREAK**

14-SUBG **11:20 AM**
WORK AND DISSIPATION IN THE CELL CYTOSKELETON. **Michael Murrell**, Shiladitya Banerjee, Visar Ajeti, Pasha Tabatabai, Andrew Fleszar, Michael Staddon, Daniel Seara, Christian Suarez, Sulaiman Muhammad, Dapeng Bi, David Kovar

11:50 AM **STUDENT TALK**

NO ABSTRACT **12:05 PM**
STRESS FIBERS AND THE CELL CORTEX FORM AN INTEGRATED CONTRACTILE NETWORK. **Manuel Théry**

12:35 PM **LUNCH BREAK**

NO ABSTRACT **2:00 PM**
INTEGRIN-MEDIATED MECHANO-SENSATION IN INNATE IMMUNITY. **Clare Waterman**

2:30 PM **STUDENT TALK**

2:45 PM **STUDENT TALK**

15-SUBG **3:00 PM**
CELL AND EMBRYO-SCALE MECHANISMS DRIVING EPITHELIAL FOLDING. **Matteo Rauzi**

3:30 PM **BREAK**

16-SUBG **3:45 PM**
FLUID FLOWS SHAPING MORPHOLOGY. **Karen Alim**

4:15 PM **STUDENT TALK**

4:30 PM **JOURNAL PANEL**

5:00 PM **CLOSING REMARKS**

5:05 PM **BUSINESS MEETING**

Molecular Biophysics Subgroup

10:30 AM - 3:00 PM, BALLROOM II

Subgroup Chair
Maria Spies, University of Iowa

10:30 AM **OPENING REMARKS**

NO ABSTRACT **10:40 AM**
REAL-TIME MONITORING OF MULTIVALENT DNA RREPAIR COMPLEXES IN ACTION. **Terence Strick**

11:10 AM **STUDENT/POSTDOC TALK**

17-SUBG **11:35 AM**
THE EFFECT OF NUCLEOSOME CONFORMATION ON HISTONE TAIL BINDING AND SPECIFICITY. Emma A. Morrison, Samuel Bowerman, Jeff Wereszczynski, **Catherine Musselman**

12:05 PM **BREAK**

12:15 PM **BUSINESS MEETING**

18-SUBG **12:35 PM**
DYNAMIC PROTEINS AND INTERACTIONS DRIVING HOMOLOGOUS RECOMBINATION: A BRCA2-CENTRIC VIEW. **Claire Wyman**

1:05 PM **SELECTED ABSTRACT**

1:30 PM **SELECTED ABSTRACT**

19-SUBG **2:00 PM**
RECONSTRUCTING 1D FREE-ENERGY LANDSCAPES OF DIVERSE BIO-MOLECULAR SYSTEMS USING AFM. **Thomas T. Perkins**

2:30 PM **CLOSING REMARKS**

Intrinsically Disordered Proteins Subgroup

10:30 AM - 6:15 PM, BALLROOM IV

Subgroup Chair
Tanja Mittag, St. Jude Children's Research Hospital

10:30 AM **BUSINESS MEETING**

1:00 PM **OPENING REMARKS**

NO ABSTRACT **1:10 PM**
TARDIGRADE PROTEINS & DESICCATION TOLERANCE. **Gary J. Pielak**

20-SUBG **1:40 PM**
IDENTIFYING SEQUENCE-DETERMINANTS OF PROTEIN LIQUID-LIQUID PHASE SEPARATION. **Jeetain Mittal**

NO ABSTRACT **2:10 PM**
AGGREGATION AND OACERVATION OF THE TAU PEPTIDE. **Joan-Emma Shea**

2:40 PM **POSTDOC AWARDS ANNOUNCEMENT**

2:45 PM **POSTDOC TALK**

3:05 PM **BREAK**

NO ABSTRACT **3:45 PM**
ANTAGONIZING ABERRANT PHASE SEPARATION OF RNA-BINDING PROTEINS CONNECTED TO ALS/FTD. **James Shorter**

21-SUBG **4:15 PM**
MODULATING ALPHA-SYNUCLEIN AGGREGATION THROUGH IDP-IDP INTERACTIONS. **Jean Baum**

4:45 PM **POSTDOC TALK**

NO ABSTRACT **5:05 PM**
RECONSTITUTED POSTSYNAPTIC DENSITY AS A MOLECULAR PLATFORM FOR UNDERSTANDING SYNAPSE FORMATION AND PLASTICITY. **Mingjie Zhang**

22-SUBG **5:35 PM**
IDPS ENABLE SUBSTRATE SPECIFICITY OF PROTEIN PHOSPHATASES. **Wolfgang Peti**

6:05 PM **CLOSING REMARKS**

Biopolymers in Vivo Subgroup

12:00 PM - 6:05 PM, ROOM 301/302/303

Subgroup Chair
Simon Ebbinghaus, Technische Universität Braunschweig, Germany

12:00 PM **BUSINESS MEETING**

1:00 PM **OPENING REMARKS**

NO ABSTRACT **1:05 PM**
INTERACTOME EXPLORATION REVEALS NEW INSIGHT ON STRUCTURE-FUNCTION RELATIONSHIPS. **Jim Bruce**

1:50 PM **JUNIOR FACULTY AWARD WINNER**

23-SUBG **2:20 PM**
ILLUMINATING THE BLACK BOX OF DNA-PROTEIN INTERACTIONS. **Mark C. Leake**

2:50 PM **STUDENT / POSTDOC TALK**

24-SUBG **3:05 PM**
CONFORMATIONAL DYNAMICS OF A BACTERIAL ACTIN FILAMENT PREDICT IN VIVO FILAMENT LENGTH. **Kerwyn C. Huang**

3:35 PM **BREAK**

25-SUBG **4:00 PM**
PROTEOME AGGREGATION PATTERNS UNDER PROTEOSTASIS STRESS AS SIGNATURES FOR UNDERSTANDING HUNTINGTON'S DISEASE. **Danny M. Hatters**

4:30 PM **STUDENT / POSTDOC TALK**

26-SUBG **4:45 PM**
PROTEIN PHASE SEPARATION AND EMERGENT MATERIAL PROPERTIES. **Shana Elbaum-Garfinkle**

27-SUBG **5:15 PM**
BIOMOLECULAR CONDENSATES AT BACTERIAL CELL POLES FUNCTION TO DRIVE SPATIALLY RESTRICTED SIGNAL PROPAGATION. **Lucy Shapiro**

6:00 PM **ADJOURNMENT**

Nanoscale Biophysics Subgroup

12:30 PM - 6:00 PM, ROOM 316/317

Subgroup Chair
Keir Neuman, NIH

12:30 PM **OPENING REMARKS**

NO ABSTRACT **12:35 PM**
SUPER-RESOLUTION IMAGING OF TRANSCRIPTION IN LIVE MAMMALIAN CELLS. **Ibrahim Cissé**

28-SUBG **1:05 PM**
NANODISCS AND FREE-STANDING BILAYERS FOR SINGLE-MOLECULE STUDIES AT THE LIPID MEMBRANE. **Marie-Eve Aubin-Tam**

29-SUBG **1:35 PM**
VISUALISING SELF-ASSEMBLY OF PORE FORMING PROTEINS ON THEIR TARGET MEMBRANES. **Bart Hoogenboom**

30-SUBG **2:05 PM**
HIGH-THROUGHPUT SUPER-RESOLUTION MICROSCOPY FOR REVEALING MOLECULAR ARCHITECTURE. **Suliana Manley**

2:35 PM **BREAK**

3:05 PM **STUDENT TALK**

3:20 PM **STUDENT TALK**

3:35 PM **STUDENT TALK**

31-SUBG **3:50 PM**
SINGLE-MOLECULE INVESTIGATIONS OF STRUCTURE-ACTIVITY RELATIONSHIPS GUIDING NUCLEIC ACID INTERACTIONS, IN CELL-LIKE CONDITIONS. **Sabrina Leslie**

NO ABSTRACT **4:20 PM**
WEIGHING SINGLE MOLECULES WITH LIGHT. **Philip Kukura**

NO ABSTRACT **4:50 PM**
BIOMOLECULAR ANALYSIS WITH DNA PROBES. **Peng Yin**

5:20 PM **BUSINESS MEETING**

Biological Fluorescence Subgroup

1:00 PM - 5:30 PM, ROOM 309/310

Subgroup Chair
Paul Wiseman, McGill University, Canada

1:00 PM **OPENING REMARKS**

32-SUBG **1:05 PM**
THE COMING OF AGE: FLUORESCENCE INVESTIGATIONS OF THE EARLY CHILDHOOD OF HIV PARTICLES. **Don C. Lamb**

33-SUBG **1:35 PM**
SUPER-RESOLUTION MICROSCOPY WITH DNA MOLECULES: TOWARDS LOCALIZOMICS. **Ralf Jungmann**

NO ABSTRACT **2:05 PM**
MULTIMODAL MICROSCOPY REVEALS STIFFNESS-DEPENDENT NANOSCALE REMODELING OF DIFFERENT ACTIN MODULES DURING CELL PROTRUSION. **Alessandra Cambi**

34-SUBG **2:35 PM**
VISUALIZING TRANSLATION DYNAMICS OF SINGLE MRNAS IN LIVE CELLS. Malgorzata J. Latallo, Shaopeng Wang, Shuying Sun, **Bin Wu**

3:05 PM **BREAK**

3:15 PM **BUSINESS MEETING**

35-SUBG **3:25 PM**
BUILDING BRIGHTER FLUOROPHORES FOR ADVANCED BIOLOGICAL IMAGING. **Luke D. Lavis**

36-SUBG **3:55 PM**
HIGH SPEED 3D IN-VIVO FLUORESCENCE MICROSCOPY. **Elizabeth Hillman**

4:25 PM **RAPID FIRE STUDENT TALKS**

4:45 PM **YOUNG FLUORESCENCE INVESTIGATOR AWARD & LECTURE**

5:00 PM **GREGORIO WEBER AWARD & LECTURE**

5:15 PM **CLOSING REMARKS**

Membrane Structure & Function Subgroup

1:00 PM - 6:00 PM, BALLROOM I

Subgroup Chair
Ilya Levental, University of Texas Health Science Center at Houston

1:00 PM **OPENING REMARKS**

No Abstract **1:05 PM**
NANOPARTICLE-SUPPORTED LIPID BILAYERS: A PLATFORM FOR INTERROGATING LIPID-PROTEIN INTERACTIONS AT HIGHLY CURVED SURFACES. **Jay Groves**

37-Subg **1:35 PM**
PORE-SPANNING MEMBRANES: A VERSATILE TOOL TO INVESTIGATE DYNAMIC PROCESSES OF LIPID BILAYERS. **Claudia Steinem**

38-Subg **2:05 PM**
DECIPHERING NANOMETER-SCALE LIPID STRUCTURE AND PHYSICS TO MODEL MEMBRANE RESHAPING. **Alex Sodt**, Kayla Sapp, Mitchell Dorrell, Andrew H. Beaven

No Abstract **2:35 PM**
JUNIOR FACULTY PRESENTATION
GENETICALLY ENCODED MEMBRANE PROPERTY SENSORS INTERROGATE CELLULAR MEMBRANES WITH REMARKABLE SENSITIVITY. **Robert Ernst**

2:50 PM **BREAK**

No Abstract **3:15 PM**
JUNIOR FACULTY PRESENTATION
CELLULAR FUNCTIONS FOR MEMBRANE VISCOSITY REVEALED BY LIPID ENGINEERING EFFORTS. **Itay Budin**

39-Subg **3:30 PM**
SIGNAL TRANSDUCTION BY METASTABLE MOLECULAR COMPLEXES: FINDINGS BY SINGLE-MOLECULE TRACKING. **Akihiro Kusumi**

40-Subg **4:00 PM**
USING DEUTERIUM NMR TO STUDY STEROLS AND PHOSPOLIPIDS- IS IT JUST A PHASE?. **Jenifer L. Thewalt**

41-Subg **4:30 PM**
NANOPHOTONIC TOOLS TO RESOLVE NANOSCALE DYNAMICS ON BIOLOGICAL MEMBRANES. **Maria Garcia-Parajo**

No Abstract **5:00 PM**
THOMAS E. THOMPSON AWARD LECTURE
BIOLOGICAL HETEROGENEITY, A PHENOTYPIC TRAIT THAT WE HARVESTED TO INVESTIGATE MEMBRANES AND MEMBRANE PROTEINS. **Dimitrios Stamou**

5:40 PM **BUSINESS MEETING**

Cell Biophysics Subgroup

1:00 PM - 6:15 PM, Room 307/308

Subgroup Chair
Jie Xiao, Johns Hopkins University School of Medicine

No Abstract **1:00 PM**
UNSUPERVISED STATISTICAL LEARNING OF THE STRUCTURAL AND KINETIC ELEMENTS IN MULTI-RESOLUTION DYNAMICS. **Haw Yang**, Shuhui Yin, Hao Li

42-Subg **1:30 PM**
HIGH FREQUENCY ACTIVE MICRORHEOLOGY REVEALS MISMATCH IN 3D TUMOR INTRACELLULAR AND EXTRACELLULAR MATRIX VISCOELASTICITY. **Kandice Tanner**

No Abstract **2:00 PM**
EVOLUTIONARY SELF-ORGANIZATION: LESSONS FROM THE YEAST POLARIZATION MACHINERY. **Liedewij Laan**

No Abstract **2:30 PM**
TIO2 NANOPARTICLE-CELL INTERACTIONS: IMPORTANCE OF THE PROTEIN CORONA. **Christine Payne**

3:00 PM **STUDENT/POSTDOC TALK**

3:15 PM **BREAK**

No Abstract **3:45 PM**
GENOME WIDE SINGLE CELL BIOPHYSICS. **Johan Elf**

No Abstract **4:15 PM**
MICROSCOPY-BASED PROTEOMICS. **Jung-Chi Liao**

No Abstract **4:45 PM**
IMAGING CELLULAR RNAS AT SINGLE MOLECULE RESOLUTION WITH FLUORGENIC RNA-MANGO APTAMERS. **David Rueda**

5:15 PM **STUDENT/POSTDOC TALK**

5:30 PM **STUDENT/POSTDOC TALK**

5:45 PM **BUSINESS MEETING**

Motility & Cytoskeleton Subgroup

1:00 PM - 6:15 PM, Room 318/319/320

Subgroup Co-Chairs
William Hancock, Pennsylvania State University
Neil Kad, University of Kent, United Kingdom

1:00 PM **OPENING REMARKS**

43-Subg **1:05 PM**
CYTOSKELETAL DYNAMICS DURING POLARIZED GROWTH. **Magdalena Bezanilla**, Shu-Zon Wu, Carlisle Bascom, Moe Yamada, Xiaohang Chang

44-Subg **1:30 PM**
DISSECTING THE SELF ORGANIZING MECHANISMS DETERMINING BACTERIAL SHAPE USING OPTICAL APPROACHES. **Ethan C. Garner**

1:55 PM **RAPID FIRE STUDENT TALKS**

No Abstract **2:00 PM**
SENSING SOUND OVER A LIFETIME: HOW MYOSIN MOTORS CONTINUALLY SHAPE THE STEREOCILIA CYTOSKELETON. **Jonathan Bird**

2:25 PM **STUDENT/POSTDOC TALK**

2:40 PM **BREAK**

45-Subg **3:00 PM**
RE-DESIGN OF LINEAR MOLECULAR MOTORS. Ryota Ibusuki, Akane Furuta, Kazuhiro Oiwa, Hiroaki Kojima, **Ken'ya Furuta**

46-Subg **3:25 PM**
NOVEL OPTICAL TWEEZERS PROBES: HOW KINESIN MOTORS GET TO THE MICROTUBULE END. **Erik Schaeffer**

3:50 PM **RAPID FIRE STUDENT TALKS**

47-Subg **3:55 PM**
A MYOSIN II NANOMACHINE MIMICKING THE STRIATED MUSCLE. **Pasquale Bianco**, Irene Pertici, Lorenzo Bongini, Giulio Bianchi, Dan Cojoc, Miklós S. Kellermayer, Vincenzo Lombardi

4:20 PM **STUDENT/POSTDOC TALK**

4:35 PM **BUSINESS MEETING**

48-Subg **5:15 PM**
LESSONS FROM THE ACTIN-MYOSIN II FAMILY; DOCKING, MECHANOCHEMISTRY AND MYOPATHIES. **Mike Geeves**

Membrane Biophysics Subgroup

1:00 PM – 9:30 PM, ROOM 314/315

Subgroup Chair
Andrew Plested, Leibniz Institute for Molecular Pharmacology, Germany

1:00 PM **OPENING REMARKS**

49-SUBG **1:05 PM**
COMPARTMENTALIZED DENDRITIC SIGNALING IN THE RETINA.
Jeffrey S. Diamond

NO ABSTRACT **1:35 PM**
MECHANISMS OF LOCAL AND GLOBAL SYNAPTIC SIGNALLING IN OLFACTORY BULB GRANULE CELL DENDRITES. **Veronica Egger**

50-SUBG **2:05 PM**
DENDRITIC, CELLULAR AND CIRCUIT MECHANISMS OF SPATIAL REPRESENTATIONS. **Christoph Schmidt-Hieber**

51-SUBG **2:35 PM**
T-TYPE CA2+ CHANNELS AND LAYER II MEDIAL ENTORHINAL CORTICAL STELLATE CELL EXCITABILITY. Aleksandra Topczewska, Talfan Evans, Wendy Pratt, Neil Burgess, Annette C. Dolphin, **Mala Shah**

3:05 PM **BREAK**

3:20 PM **BUSINESS MEETING**

52-SUBG **3:50 PM**
CONTEXT AND COMPLEXITY: HOW IONIC CONDUCTANCES INTERACT TO CONTROL NEURONAL FIRING. **Bruce Bean**

53-SUBG **4:20 PM**
NEURONAL MECHANISMS UNDERLYING HCN1-DEPENDENT MOTOR BEHAVIOR DEFICITS. **Marlies Oostland**

54-SUBG **4:50 PM**
DENDRITIC INTEGRATION AND VISUAL COMPUTATION IN RETINAL AMACRINE CELLS. **Z. Jimmy Zhou**

5:20 PM **CLOSING REMARKS**

6:30 PM **COLE AWARD RECEPTION & DINNER**

Exocytosis & Endocytosis Subgroup

1:00 PM – 10:00 PM, ROOM 331/332

Subgroup Chair
Amy Lee, University of Iowa

1:00 PM **INTRODUCTORY REMARKS**

1:05 PM **STUDENT/POSTDOC TALK**

1:20 PM **STUDENT/POSTDOC TALK**

1:35 PM **STUDENT/POSTDOC TALK**

1:50 PM **STUDENT/POSTDOC TALK**

55-SUBG **2:05 PM**
REGULATION OF VESICLE ACIDIFICATION AT THE NEURONAL SYNAPSE.
Ira Milosevic

2:40 PM **BREAK**

56-SUBG **2:55 PM**
DYNAMIC CONTROL OF VESICLE PRIMING IN SYNAPTIC SHORT-TERM PLASTICITY. **Nils Brose**

57-SUBG **3:30 PM**
IMAGING THE NANOSCALE STRUCTURE OF ENDOCYTOSIS WITH CORRELATIVE SUPER-RESOLUTION LIGHT AND ELECTRON MICROSCOPY.
Justin W. Taraska, Kem A. Sochacki

4:05 PM **BUSINESS MEETING**

NO ABSTRACT **4:30 PM**
SIR BERNARD KATZ AWARD LECTURE - DIVERSE FUNCTIONS OF THE SYNAPTOTAGMINS. **Ed Chapman**

5:45 PM **CLOSING REMARKS & ADJOURNMENT**

7:00 PM **EXOENDO SUBGROUP DINNER**

Membrane Transport Subgroup

1:25 PM - 5:30 PM, BALLROOM III

Subgroup Chair
Susan Rempe, Sandia National Laboratories

1:25 PM **OPENING REMARKS**

NO ABSTRACT **1:30 PM**
A STRANGE PORE TO HANDLE A STRANGE ION. **Chris Miller**

58-SUBG **2:00 PM**
THE KDPFABC COMPLEX: WHAT HAPPENS WHEN A P-TYPE ATPASE HIJACKS AN ION CHANNEL. Charlott Stock, Lisa Hielkema, Igor Tascon, Dorith Wunnicke, Gert Oostergetel, Inga Haenelt, **Cristina Paulino**

2:30 PM **STUDENT TALK**

59-SUBG **2:50 PM**
DYNAMICS OF CO-TRANSLATIONAL MEMBRANE INTEGRATION.
Thomas F. Miller

3:20 PM **BREAK**

NO ABSTRACT **3:30 PM**
MECHANISM OF LIGAND-GATING IN POTASSIUM CHANNELS.
Crina Nimigean

4:00 PM **STUDENT TALK**

NO ABSTRACT **4:20 PM**
INHIBITOR BINDING TO HUMAN SGLT SUGAR TRANSPORTERS.
Michael Grabe

5:00 PM **BUSINESS MEETING**

Science Communications Workshop with AAAS

2:00 PM - 4:00 PM, ROOM 330

Science communication plays an increasingly important role in society. Communication skills are critical in educating the public on the importance of research and are important career advancement skills. We will be joined by AAAS's Center for Public Engagement for a two-hour, interactive communications workshop. Limit 100 people. Pre-registration was encouraged. Walk-ins accepted on a space-available basis.

Career Development Center Workshop
Leveraging LinkedIn in the PhD Job Search: Networking, Informational Interviews, and More

3:00 PM - 4:00 PM, EXHIBIT HALL A

You've done some exploration and identified some interesting possibilities as the next step after grad school or your postdoc, but is it enough to convince you that research in industry, medical science liaison, data science, etc. is right for you? More importantly, do you know enough to craft a persuasive story about why you're a credible and compelling candidate?

This presentation provides specific examples of how your build out your knowledge of a new, potential career field, and forge valuable connections that can facilitate your successful transition out of academia using LinkedIn, professional societies, informational interviews, and more.

Undergraduate Mixer and Poster Award Competition

3:00 PM - 5:00 PM, BALLROOM FOYER

If you're an undergraduate student, plan on attending this social and scientific mixer! Come meet other undergraduates and learn about their research projects. For undergraduate students who will be presenting during the standard scientific sessions, the mixer provides an opportunity to hone presentation skills before the general poster session begin. Undergraduates listed as co-authors on posters are welcome to practice their poster presentation skills in a less formal setting, even if not listed as the presenting author. Additionally, undergrads presenting as first or second author on a poster may participate in the Undergraduate Poster Award Competition and be recognized for their work. Three students will be selected for a $100 award and recognized by the BPS meeting attendees prior to the 2019 Biophysical Society Lecture. Winners will be selected based on the quality and scientific merit of their research, knowledge of the research problem, contribution to the project, and overall presentation of the poster.

Pre-registration was required to participate in the competition. No onsite registration.

First-Time Attendee Drop By

5:00 PM - 6:00 PM, BALLROOM FOYER

Learn to navigate the meeting! If this is your first time attending a BPS Annual Meeting, you may find it helpful to speak to Society staff and committee members who can help you get the most out of your time at the BPS 2019 Baltimore Annual Meeting.

Opening Mixer

5:00 PM - 7:00 PM, BALLROOM FOYER

All registered attendees are welcome to attend this reception. Cash bar and light refreshments will be offered.

Travel Awardee Reception

6:00 PM - 7:30 PM, EXHIBIT HALL

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, Membership, and Professional Opportunities for Women Committees.

Speaker:
Yves De Koninck, Université Laval

Poster Viewing

6:00 PM - 10:00 PM, EXHIBIT HALL C

Cryo-EM Subgroup

7:00 PM - 10:00 PM, BALLROOM III

Subgroup Chair
Jenny Hinshaw, NIH

7:00 PM **OPENING REMARKS**

60-SUBG **7:05 PM**
MOLECULAR VIEWS INTO CELLULAR FUNCTION BY *IN SITU* CRYO-ELECTRON TOMOGRAPHY. **Julia Mahamid**

61-SUBG **7:30 PM**
CRYOET OF SINGLE PARTICLE CRYOEM GRIDS REVEALS WIDESPREAD, BUT REDUCIBLE, PARTICLE ADSORPTION TO THE AIR-WATER INTERFACE. **Alex J. Noble**, Venkata P. Dandey, Hui Wei, Julia Brasch, Jillian Chase, Priyamvada Acharya, Yong Zi Tan, Zhening Zhang, Laura Y. Kim, Giovanna Scapin, Micah Rapp, Edward T. Eng, William J. Rice, Anchi Cheng, Carl J. Negro

62-SUBG **7:55 PM**
STREAMLINING WORKFLOWS FOR STRUCTURE DETERMINATION BY SINGLE PARTICLE CRYO-EM. **Alberto Bartesaghi**

8:20 PM **BUSINESS MEETING**

NO ABSTRACT **8:35 PM**
STARMAP: ROSETTA REFINEMENT CONTROLLED FROM CHIMERAX. **Thomas Marlovits**

63-SUBG **9:00 PM**
THROUGHPUT AND RESOLUTION WITH A NEXT GENERATION DIRECT DETECTOR. **Scott M. Stagg**, Joshua H. Mendez

64-SUBG **9:25 PM**
NEW DEVELOPMENTS IN THE CISTEM SOFTWARE PACKAGE. **Tim Grant**, Alexis Rohou, Nikolaus Grigorieff

Sunday, March 3, 2019

Daily Program Summary

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

7:00 AM–9:00 AM	**Editorial Board Boot Camp**	**Room 331**
7:30 AM–8:30 AM	**Postdoctoral Breakfast**	**Room 324/325/326**
7:30 AM–5:00 PM	**Registration/Exhibitor Registration**	**Charles Street Lobby**
8:00 AM–10:00 AM	**Poster Viewing**	**Exhibit Hall C**
8:15 AM–10:15 AM	**Symposium: Biological Systems Single Molecule at the Time** **Chair:** *Ben Schuler, University of Zürich, Switzerland* THE MECHANISM OF DYNEIN DIRECTIONALITY. *Ahmet Yildiz* IN SITU IMAGING OF TRANSCRIPTOME AND GENOME IN SINGLE CELLS. *Xiaowei Zhuang* ENDOGENOUSLY ENCODED RIBOSOMAL RNA SEQUENCE VARIATION WITHIN THE ASSEMBLE RIBOSOME CAN REGULATE STRESS RESPONSE GENE EXPRESSION AND PHENOTYPE. *Scott C. Blanchard* PROBING THE DYNAMICS AND INTERACTIONS OF DISORDERED PROTEINS WITH SINGLE-MOLECULE SPECTROSCOPY. *Ben Schuler*	**Ballroom I**
8:15 AM–10:15 AM	**Symposium: Proton-Coupling Bioenergetics** **Chair:** *Liz Carpenter, SGC, University of Oxford, United Kingdom* THE PROTON/ELECTRON COUPLING MECHANISM OF CYTOCHROME C OXIDASE. *Peter R. Rich* HOW THE C-SUBUNIT STOICHIOMETRY OF F1F0 ATP SYNTHASE CONTROLS BIO-ENERGETIC THERMODYNAMIC EFFICIENCY. *Todd P. Silverstein* ADAPTIVE IMMUNITY SHAPED BY LARGE MULTIPROTEIN MEMBRANE COMPLEXES. *Robert Tampé* MITOCHONDRIAL ABC TRANSPORTERS. *Liz Carpenter*	**Ballroom II**
8:15 AM–10:15 AM	**Platform: Molecular Dynamics I**	**Ballroom III**
8:15 AM–10:15 AM	**Platform: Voltage-gated K Channels**	**Ballroom IV**
8:15 AM–10:15 AM	**Platform: Protein Structure and Conformation I**	**Room 307/308**
8:15 AM–10:15 AM	**Platform: Cell Mechanics, Mechanosensing, and Motility**	**Room 309/310**
8:15 AM–10:15 AM	**Platform: Membrane Physical Chemistry I**	**Room 314/315**
8:15 AM–10:15 AM	**Platform: DNA Structure, Dynamics, and Function**	**Room 316/317**
8:30 AM–10:30 AM	**CID Committee Meeting**	**Room 333**
9:00 AM–10:00 AM	**Career Development Center Workshop:** **Networking for Nerds: How to Create Your Dream Career**	**Exhibit Hall A**
9:30 AM–11:00 AM	**Exhibitor Presentation: Mizar Imaging** **Tilt–High-Resolution Light Sheet Imaging**	**Room 303**
10:00 AM–5:00 PM	**Exhibits**	**Exhibit Hall**
10:15 AM–11:00 AM	**Coffee Break**	**Exhibit Hall**
10:30 AM–12:00 PM	**Exhibitor Presentation: HORIBA Scientific** **Unique Fluorescence Molecular Fingerprinting in Action: What Can CCD Detection Do for You?**	**Room 301**
10:30 AM–11:30 AM	**Career Development Center Workshop:** **Green Cards for Scientific Researchers: How to Win Your EB-1A/NIW Case! with Getson & Schatz, PC**	**Exhibit Hall A**

10:45 AM–12:45 PM	**Symposium: Proteins: Exploring Sequence Space via Computation and Experiment** **Chair:** *Polly Fordyce, Stanford University* ENGINEERING AND EVOLUTION OF ALLOSTERIC COMMUNICATION. *Kimberly A. Reynolds* HOW DO PROTEINS EVOLVE. *Daniel Tawfik* HYPERVARIABLE PROTEINS IN MICROBES. *Eugene Koonin* BRINGING ENZYMOLOGY INTO THE GENOMIC ERA: DEVELOPING AND DEPLOYING NEW TOOLS TO QUANTITATIVELY MAP FUNCTIONAL CONNECTIONS THROUGHOUT AN ENZYME. *Polly M. Fordyce*	**Ballroom I**
10:45 AM–12:45 PM	**Symposium: Glutamate Receptors** **Chair:** *Maria Kurnikova, Carnegie Mellon University* OPTICAL CONTROL AND REPORT OF AMPA RECEPTOR ACTIVATION. *Andrew Plested* ALLOSTERIC DYNAMICS AND DRUGGABILITY OF AMPA RECEPTORS. *Ivet Bahar* THE EUKARYOTIC SPECIFIC M4 SEGMENTS ARE ALLOSTERIC CONDUITS FOR NMDA RECEPTOR SIGNALING. *Lonnie Wollmuth* AFTER THE STRUCTURE COMES THE DYNAMICS: MOLECULAR MODELING OF GLUTAMATE RECEPTORS REVEALS LONG-RANGE ALLOSTERIC COUPLING BETWEEN LIGAND BINDING SITE AND CHANNEL GATE. *Maria G. Kurnikova*	**Ballroom II**
10:45 AM–12:45 PM	**Platform: Optical Microscopy and Superresolution Imaging I**	**Ballroom III**
10:45 AM–12:45 PM	**Platform: Membrane Proteins I**	**Ballroom IV**
10:45 AM–12:45 PM	**Platform: Intrinsically Disordered Proteins (IDP) and Aggregates I**	**Room 307/308**
10:45 AM–12:45 PM	**Platform: Cardiac Muscle Mechanics, Structure, and Regulation I**	**Room 309/310**
10:45 AM–12:45 PM	**Platform: Excitation-Contraction Coupling/Cardiac and Skeletal Muscle Electrophysiology I**	**Room 314/315**
10:45 AM–12:45 PM	**Platform: Micro- and Nanotechnology**	**Room 316/317**
11:15 AM–3:00 PM	**Exploring Careers in Biophysics Day**	**Room 321/322/323**
11:30 AM–1:00 PM	**Undergraduate Student Pizza "Breakfast"**	**Room 321/322/323**
11:30 AM–1:00 PM	**Exhibitor Presentation: Leica Microsystems** **Leica SP8 FALCON: A New Way to Generate Fluorescence Lifetime Images at Confocal Speed**	**Room 303**
12:00 PM–1:00 PM	**Career Development Center Workshop: Demystifying the Academic Job Search I:** **Understanding the Search Process from the Perspective of Search Committees and Decoding Job Announcements**	**Exhibit Hall A**
12:15 PM–2:15 PM	**Public Affairs Committee Meeting**	**Room 333**
1:00 PM–2:30 PM	**The World Outside the Lab: Many Ways to Use Your PhD Skills**	**Room 318/319/320**
1:00 PM–3:00 PM	**Education & Career Opportunities Fair**	**Exhibit Hall C**
1:30 PM–3:00 PM	**Exhibitor Presentation: Carl Zeiss Microscopy LLC** **ZEISS Elyra 7 with Lattice SIM, a New Platform for Fast and Gentle 3D Superresolution Microscopy**	**Room 303**
1:45 PM–3:00 PM	**Snack Break**	**Exhibit Hall**
1:45 PM–3:45 PM	**Poster Presentations and Late Posters**	**Exhibit Hall**
2:00 PM–3:30 PM	**Teaching Science Like We Do Science**	**Room 321/322/323**
2:30 PM–3:30 PM	**Career Development Center Workshop:** **The Industry Interview: What you need to do before, during, and after to get the job**	**Exhibit Hall A**
2:30 PM–4:00 PM	**Brexit & Science: Consequences for Research Funding and Immigration Flows**	**Room 327/328/329**
3:30 PM–5:00 PM	**Early Careers Committee Meeting**	**Room 333**
3:30 PM–5:00 PM	**Exhibitor Presentation: Wyatt Technology Corporation** **From Proteins to Exosomes: Tools for Essential Biophysical QC, Characterization, and Isolation**	**Room 303**
4:00 PM–5:00 PM	**Career Development Center Workshop: Nailing the Job Talk, or Erudition Ain't Enough**	**Exhibit Hall A**

4:00 PM–6:00 PM	**Symposium: Integrative Modeling from Macromolecules to Cell** **Chair:** *Zaida Ann Luthey-Schulten, University of Illinois at Urbana-Champaign* MAPPING THE SPATIAL ORGANIZATION OF GENOMES THROUGH DATA INTEGRATION. *Frank Alber* MULTISCALE MODELING OF BIOMOLECULAR PROCESSES BY COMBINING EXPERIMENT AND SIMULATION. *Cecilia Clementi* DEALING WITH DYNAMICS AND DISORDER BY COMBINING SIMULATION AND EXPERIMENT. *Gerhard Hummer* TOWARDS SIMULATING BACTERIAL AND EUKARYOTIC CELLS: INTEGRATION OF EXPERIMENT AND THEORY. *Zaida Ann Luthey-Schulten*	**Ballroom I**
4:00 PM–6:00 PM	**Symposium: Cytoskeleton** **Chair:** *Sabine Petry, Princeton University* PHASE SEPARATION OF TPX2 ENHANCES AND SPATIALLY BIASES MICROTUBULE NUCLEATION. *Sabine Petry* REGULATION OF BIDIRECTIONAL MOTILITY OF KINESIN-5 MOTORS. *Leah Gheber* REGULATION OF MYOSIN MOTORS - FROM SINGLE MOLECULES TO FUNCTIONAL ENSEMBLES. *Claudia Veigel* THE MYOSIN MESA AND HYPERTROPHIC CARDIOMYOPATHY: MUTATIONS TO MECHANISMS TO THERAPIES. *James Spudich*	**Ballroom II**
4:00 PM–6:00 PM	**Platform: Ligand-gated Channels**	**Ballroom III**
4:00 PM–6:00 PM	**Platform: Protein Folding, Pathways, and Stability**	**Ballroom IV**
4:00 PM–6:00 PM	**Platform: Spectroscopy and Single-Molecule Fluorescence**	**Room 307/308**
4:00 PM–6:00 PM	**Platform: Protein-Lipid Interactions: Channels/Structures**	**Room 309/310**
4:00 PM–6:00 PM	**Platform: Intracellular Calcium Signaling, Sparks and Waves**	**Room 314/315**
4:00 PM–6:00 PM	**Platform: Membrane Active Peptides and Toxins**	**Room 316/317**
5:00 PM–7:00 PM	**PI to PI: A Wine & Cheese Mixer**	**Room 324/325/326**
5:30 PM–6:30 PM	**Korean Biophysicists Meeting**	**Room 318/319/320**
5:30 PM–7:00 PM	**Exhibitor Presentation: ELEMENTS SRL** **Portable and Cost-Effective Low-Noise Amplifiers for Electrophysiology and Nanopore Applications**	**Room 303**
6:00 PM–6:30 PM	**Dinner Meet-Ups**	**Society Booth/Charles Street Lobby**
6:00 PM–8:00 PM	**Biophysics Austria Mixer**	**Room 321/322/323**
6:00 PM–8:00 PM	**Biophysical Society of Canada Mixer**	**Pratt Street Ale House**
6:00 PM–9:00 PM	**Student Research Achievement Award (SRAA) Poster Competition**	**Exhibit Hall C**
6:00 PM–10:00 PM	***Biophysical Journal* Editorial Board Dinner**	**Center Club**

Sunday, March 3

Editorial Board Boot Camp

7:00 AM - 9:00 AM, ROOM 331

Postdoctoral Breakfast

7:30 AM - 8:30 AM, ROOM 324/325/326

This breakfast presents an opportunity for postdoctoral Annual Meeting attendees to meet and discuss the issues they face in their current career stage. Panelists this year are married couples with independent careers, and will focus the discussion on work-life balance challenges. Limited to the first 100 attendees.

Speakers
Diane Bovenkamp, BrightFocus Foundation
D. Brian Foster, Johns Hopkins University, School of Medicine
Sunita Patel-Hett, Pfizer, Inc.
Erik Hett, MERCK Exploratory Sciences Center

Registration/Exhibitor Registration

7:30 AM - 5:00 PM, CHARLES STREET LOBBY

Poster Viewing

8:00 AM - 10:00 AM, EXHIBIT HALL C

Symposium
Biological Systems Single Molecule at the Time

8:15 AM - 10:15 AM, BALLROOM I

Chair
Ben Schuler, University of Zürich, Switzerland

65-SYMP **8:15 AM**
THE MECHANISM OF DYNEIN DIRECTIONALITY. **Ahmet Yildiz**

66-SYMP **8:45 AM**
IN SITU IMAGING OF TRANSCRIPTOME AND GENOME IN SINGLE CELLS. **Xiaowei Zhuang**

67-SYMP **9:15 AM**
ENDOGENOUSLY ENCODED RIBOSOMAL RNA SEQUENCE VARIATION WITHIN THE ASSEMBLE RIBOSOME CAN REGULATE STRESS RESPONSE GENE EXPRESSION AND PHENOTYPE. **Scott C. Blanchard**, Chad M. Kurylo, Matt M. Parks, Manuel F. Juette, Boris Zinshteyn, Roger B. Altman, Theresa C. Vincent, Michael R. Wasserman, Jose L. Alejo AMaya, Daniel S. Terry

68-SYMP **9:45 AM**
PROBING THE DYNAMICS AND INTERACTIONS OF DISORDERED PROTEINS WITH SINGLE-MOLECULE SPECTROSCOPY. **Ben Schuler**

Symposium
Proton-Coupling Bioenergetics

8:15 AM - 10:15 AM, BALLROOM II

Chair
Liz Carpenter, SGC, University of Oxford, United Kingdom

69-SYMP **8:15 AM**
THE PROTON/ELECTRON COUPLING MECHANISM OF CYTOCHROME *C* OXIDASE. **Peter R. Rich**, Vivek Sharma

70-SYMP **8:45 AM**
HOW THE C-SUBUNIT STOICHIOMETRY OF F_1F_0 ATP SYNTHASE CONTROLS BIO-ENERGETIC THERMODYNAMIC EFFICIENCY. **Todd P. Silverstein**

71-SYMP **9:15 AM**
ADAPTIVE IMMUNITY SHAPED BY LARGE MULTIPROTEIN MEMBRANE COMPLEXES. **Robert Tampé**

No Abstract **9:45 AM**
MITOCHONDRIAL ABC TRANSPORTERS. **Liz Carpenter**

Platform
Molecular Dynamics I

8:15 AM - 10:15 AM, BALLROOM III

Co-Chairs
Anna Pavlova, Georgia Tech
Jonathan Essex, University of Southampton, United Kingdom

72-PLAT **8:15 AM**
TRANSLATIONAL APPLICATIONS OF PROTEIN STRUCTURE SIMULATION: PREDICTING PHENOTYPE OF MISSENSE VARIANTS. **Matthew D. McCoy**, Subha Madhavan, Sridhar Nimmagadda, Dmitri Klimov, Mohsin S. Jafri

73-PLAT **8:30 AM**
MECHANISM OF PASSENGER CLEAVAGE IN AUTOTRANSPORTER ESPP EXPLORED WITH QM/MM MOLECULAR DYNAMICS SIMULATION. **Anna Pavlova**, James C. Gumpart

74-PLAT **8:45 AM** **TRAVEL AWARDEE**
UNCOVERING THE MOLECULAR BASIS FOR THE CLINICAL N642H MUTATION IN STAT5B USING ATOMISTIC MOLECULAR SIMULATIONS. **Deniz Meneksedag-Erol**, Elvin D. de Araujo, Fettah Erdogan, Hyuk-Soo Seo, Sirano Dhe-Paganon, Patrick T. Gunning, Sarah Rauscher

75-PLAT **9:00 AM**
MODELING VIBRATIONAL STARK EFFECTS USING POLARIZABLE FORCE FIELDS: KSI AS AN EXEMPLAR. **Jonathan W. Essex**, Richard T. Bradshaw, Stephen D. Fried

9:15 AM Flash talks

76-PLAT **9:30 AM**
CONFORMATIONAL FLEXIBILITY OF THE HIV VIF PROTEIN COMPLEX. **K. Aurelia Ball**, Lieza M. Chan, David Stanley, Elise Tierney, Sampriti Thapa, Hai M. Ta, Lily Burton, Jennifer M. Binning, Matthew P. Jacobson, John D. Gross

77-PLAT **9:45 AM**
MOLECULAR MECHANISM OF POTENT CAPSID-TARGETING ANTIRETROVIRAL DRUGS. **Sruthi Murlidaran**, Juan R. Perilla

78-PLAT **10:00 AM**
MOLECULAR DYNAMICS SIMULATIONS OF AN ENTIRE HIV VIRION. Tyler Reddy, **Juan R. Perilla**

Platform
Voltage-gated K Channels

8:15 AM - 10:15 AM, BALLROOM IV

Co-Chairs
Benoit Roux, University of Chicago
Lucie Delemotte, KTH Royal Institute of Technology, Sweden

79-PLAT **8:15 AM**
ATOMIC-LEVEL CHARACTERIZATION OF C-TYPE INACTIVATION FOR VOLTAGE-GATED POTASSIUM CHANNELS SHAKER AND HERG. **Jing Li**, Young Hoon Koh, Ahmed Rohaim, Eduardo Perozo, Benoit Roux

80-PLAT 8:30 AM
C-TYPE INACTIVATION IN $K_V2.1$ CHANNELS. **Carlos A. Villalba-Galea**, Takeharu Kawano, Diomedes E. Logothetis

81-PLAT 8:45 AM
STRUCTURAL BASIS FOR ELECTROMECHANICAL COUPLING IN A HYPERPOLARIZATION-ACTIVATED ION CHANNEL. **Michael D. Clark**, Gustavo Contreras, Rong Shen, Eduardo Perozo

82-PLAT 9:00 AM TRAVEL AWARDEE
MODULATION OF KV10.1 POTASSIUM CHANNEL FUNCTION BY INTRACELLULAR HEME. **Nirakar Sahoo**, Ina Coburger, Kefan Yang, Sandip M Swain, Guido Gessner, Reinhard Kappl, Diana Imhof, Toshinori Hoshi, Roland Schoenherr, Stefan H. Heinemann

83-PLAT 9:15 AM
STRUCTURAL BASIS FOR LIPID-DEPENDENT GATING OF A VOLTAGE-GATED POTASSIUM CHANNEL. **Gaya P. Yadav**, Mahesh Chandak, Liang Shi, Hui Zheng, Qiu-Xing Jiang

84-PLAT 9:30 AM
MOLECULAR DETERMINANTS OF GATING POLARITY IN HYPERPOLARIZATION-ACTIVATED HCN CHANNELS. **John Cowgill**, Vadim Klenchin, Claudia P. Alvarez Baron, Debanjan Tewari, Baron Chanda

85-PLAT 9:45 AM
MOLECULAR SIMULATIONS OF ION PERMEATION, GATING AND SELECTIVITY IN K^+ CHANNELS. **Wojciech Kopec**, Bert L. de Groot

86-PLAT 10:00 AM
VOLTAGE-SENSING RESIDUES IN THE VOLTAGE SENSOR OF THE BK CHANNEL. **Willy R. Carrasquel-Ursulaez**, Ignacio Segura, Yenisleidy Lorenzo, Dario Basaez, Ramon Latorre

Platform
Protein Structure and Conformation I

8:15 AM - 10:15 AM, ROOM 307/308

Co-Chairs
Steven Whitten, Texas State University
Vatsal Purohit, Purdue University

87-PLAT 8:15 AM
CONFORMATIONAL BIAS IN UNFOLDED PROTEINS STUDIED BY SEQUENCE REVERSAL. **Steven T. Whitten**, Lance R. English

88-PLAT 8:30 AM TRAVEL AWARDEE
TIME-RESOLVED CRYSTALLOGRAPHY MEASUREMENTS ELUCIDATING THE MECHANISM OF BACTERIAL HMG-COA REDUCTASE. **Vatsal Purohit**, Calvin Steussy, Tim Schmidt, Chandra J. Critchelow, Tony Rosales, Cynthia Stauffacher, Paul Helquist, Olaf Weist

89-PLAT 8:45 AM
UNDERSTANDING THE MOLECULAR UNDERPINNINGS OF COLLAGEN-PROTEIN INTERACTIONS IN HEALTHY AND PATHOLOGICAL STATES. **Cody L. Hoop**, Jie Zhu, Allysa Kemraj, David A. Case, Jean Baum

90-PLAT 9:00 AM TRAVEL AWARDEE
STRUCTURAL INSIGHTS INTO MDN1, AN ~540 KDA AAA PROTEIN REQUIRED FOR RIBOSOME BIOGENESIS. **Zhen Chen**, Hiroshi Suzuki, Yuki Kobayashi, Ashley C. Wang, Frank DiMaio, Shigehiro A. Kawashima, Thomas Walz, Tarun M. Kapoor

9:15 AM Flash talks

91-PLAT 9:30 AM TRAVEL AWARDEE
DECIPHERING THE MECHANISM OF FORCE DISSEMINATION THROUGH TIP-LINKS IN HEARING. **Jagadish P. Hazra**, Nisha Arora, Sabyasachi Rakshit

92-PLAT 9:45 AM
STRUCTURE DETERMINATION OF ACTIVE FULL LENGTH HUMAN TASPASE1: TOWARDS NOVEL ANTI-CANCER THERAPEUTICS. Jose M. Garcia, **Nirupa Nagaratnam**, Rebecca Jernigan, Gihan Ketawala, Silvia Delker, Thomas Edwards, Derek Mendez, Chufeng Li, Nadia Zatsepin, Raimund Fromme, Liang Tong, Joel Schneider, James Hsieh, Andrew Flint, Petra Fromme

93-PLAT 10:00 AM
ISOTOPICALLY EDITED VIBRATIONAL SPECTRA AND DYNAMICS FOR THREE-STRAND B-SHEET PEPTIDES. DFT SPECTRAL AND MD DYNAMICS SIMULATIONS. **Timothy A. Keiderling**, Heng Chi, Dan McElheny, David Scheerer, Mohammad Shahid Islam, Karin Hauser

Platform
Cell Mechanics, Mechanosensing, and Motility

8:15 AM - 10:15 AM, ROOM 309/310

Co-Chairs
Ritvik Vasan, University of California, San Diego
Aurelia Honerkamp-Smith, Lehigh University

94-PLAT 8:15 AM
MICROTUBULE FUNCTION IN THE MECHANOSENSITIVE REGULATION OF CELL MIGRATION. Shailaja Seetharaman, Bertille Bance, **Sandrine Etienne-Manneville**

95-PLAT 8:30 AM
CELL MIGRATION ON COMPLIANT SUBSTRATES REQUIRES ACTIN POLYMERIZATION BY THE ARP2/3 COMPLEX. **Devin B. Mair**, Matthew Perrone, Jin Zhu, Ceylin Elmasli, Seth H. Weinberg, Rong Li

96-PLAT 8:45 AM
NUMERICAL INVESTIGATION OF LEUKOCYTE ROLLING, ADHESION AND BOND FORMATION ON SURFACE COATED WITH VARYING P-SELECTIN DENSITY. **Grishma S. Prabhukhot**, Rohan Banton, Charles D. Eggleton

97-PLAT 9:00 AM
INFERRING CELL COLONY FORCES ACROSS TIME FROM TIGHT JUNCTION INTERSECTIONS IN HUMAN INDUCED PLURIPOTENT STEM CELLS. **Ritvik Vasan**, C David Williams, Mary M. Maleckar, Padmini Rangamani

9:15 AM Flash talks

98-PLAT 9:30 AM
RELATIONSHIP BETWEEN CELL FORCE, SHAPE, AND MOTION IN COLLECTIVE CELL MIGRATION. Aashrith Saraswathibhatla, **Jacob Notbohm**

99-PLAT 9:45 AM TRAVEL AWARDEE
MECHANICS OF CELL SHEET FOLDING - EMBRYONIC INVERSION IN THE GREEN ALGAE VOLVOX. **Stephanie S.M.H. Hoehn**, Pierre A. Haas, Aurelia R. Honerkamp-Smith, Raymond E. Goldstein

100-PLAT 10:00 AM
NUCLEAR RUPTURE AT SITES OF HIGH CURVATURE COMPROMISES RETENTION OF DNA REPAIR FACTORS. **Irena L. Ivanovska**, Yuntao Xia, Kuangzheng Zhu, Lucas Smith, Cory Alvey, Jerome Irianto, Charlotte Pfeifer, Jiazheng Ji, Dazhen Liu, Sangkyun Cho, Rachel Bennett, Andrea Liu, Roger A. Greenberg, Dennis E. Discher

Platform
Membrane Physical Chemistry I
8:15 AM - 10:15 AM, ROOM 314/315

Co-Chairs
Shelli Frey, Gettysburg College
Wade Zeno, University of Texas at Austin

101-PLAT 8:15 AM
TUNING LENGTH SCALES OF A MODULATED PHASE IN MODEL AND CELL-DERIVED MEMBRANES. **Caitlin E. Cornell**, Allison D. Skinkle, Shushan He, Ilya Levental, Kandice R. Levental, Sarah L. Keller

102-PLAT 8:30 AM
TWISTING OF A MECHANOSENSITIVE MOLECULAR PROBE DETECTS LIPID ORDER IN MEMBRANES. **Giuseppe Licari**, Emad Tajkhorshid

103-PLAT 8:45 AM
HOMEOVISCOUS ADAPTATION IN MAMMALIAN CELL MEMBRANES IN RESPONSE TO DIETARY LIPID PERTURBATIONS. **Kandice R. Levental**, Ilya Levental

104-PLAT 9:00 AM
LIQUID-CRYSTAL PHASE TRANSITIONS IN CELLULAR LIPID DROPLETS. **Julia Mahamid**

105-PLAT 9:15 AM TRAVEL AWARDEE
CHARACTERISTIC CONFORMATIONS OF PSEUDOMONAS QUINOLONE SIGNAL INTERACTING WITH BACTERIAL OUTER MEMBRANE. **Ao Li**, Jeffrey W. Schertzer, Xin Yong

106-PLAT 9:30 AM
MEASURING THE INTERACTION OF POLYGLUTAMINE PEPTIDES WITH LIPID MEMBRANES. Warren A. Campbell, Maxmore Chaibva, Xiang Gao, Ziliang Zhao, Justin Legleiter, **Shelli L. Frey**

107-PLAT 9:45 AM
A LINK BETWEEN PEPTIDE LIPIDATION AND MEMBRANE CURVATURE MODULUS. **John M. Sanderson**, Hannah M. Britt, Jackie A. Mosely

108-PLAT 10:00 AM
INTRINSICALLY DISORDERED PROTEINS SENSE MEMBRANE CURVATURE. **Wade F. Zeno**, Upayan Baul, Wilton T. Snead, Andre C.M. DeGroot, Liping Wang, Eileen M. Lafer, Dave Thirumalai, Jeanne C. Stachowiak

Platform
DNA Structure, Dynamics, and Function
8:15 AM - 10:15 AM, ROOM 316/317

Co-Chairs
Jieqiong Lou, University of Melbourne, Australia
Michele DiPierro, Rice University

109-PLAT 8:15 AM
MSH4-MSH5 INDUCED DNA CONFORMATIONAL CHANGES PROVIDE INSIGHTS INTO ITS ROLE IN MEIOTIC RECOMBINATION. **Sudipta Lahiri**, Bharat Lakhani, Yan Li, Manju M. Hingorani, David L. Beveridge, Ishita Mukerji

110-PLAT 8:30 AM
FLUORESCENCE FLUCTUATION SPECTROSCOPY REVEALS DOUBLE STRAND BREAK RECRUITMENT OF 53BP1 DIMERS AND ASSEMBLY INTO HIGHER-ORDER OLIGOMERS AT THE DNA REPAIR LOCUS. **Jieqiong Lou**, Jee Khor, David Priest, Elizabeth Hinde

111-PLAT 8:45 AM
REPLICATION ORIGINS EXPOSED ON THE SURFACE OF A REPLICATION DOMAIN BY TRANSCRIPTION ELONGATION ARE PREFERENTIALLY FIRED FOR DNA REPLICATION. **Yongzheng Li**

112-PLAT 9:00 AM
ELUCIDATING COMPLIMENTARY BASE SPECIFICITY OF THYMINE DNA GLYCOSYLASE VIA POTENTIAL OF MEAN FORCE MOLECULAR DYNAMICS SIMULATIONS. **Ozge Yoluk**, Alexander C. Drohat, Alexander D. MacKerell

113-PLAT 9:15 AM
RNAP AS A MOVING BARRIER TO LOOP EXTRUSION.
Aafke A. van den Berg, Gordana Wutz, Roman R. Stocsits, Hugo Brandao, Georg Busslinger, Jan-Michael Peters, Leonid Mirny

114-PLAT 9:30 AM
SINGLE MOLECULE IMAGING OF CTCF AND COHESIN. DISSECTING THE DYNAMIC INTERPLAY BETWEEN CHROMATIN LOOP REGULATORS.
Laura Caccianini, Elphege P. Nora, Johannes Nuebler, Agnes LesSaux, Edith Heard, Leonid Mirny, Benoit Bruneau, Maxime Dahan

115-PLAT 9:45 AM
THE THREE-DIMENSIONAL ARCHITECTURE OF THE HUMAN GENOME: IT'S NUCLEAR PHYSICS! **Michele Di Pierro**

116-PLAT 10:00 AM
MEASURING THE PHYSICAL PROPERTIES OF DNA ON A GENOMIC SCALE.
Aakash Basu, Tunc Kayikcioglu, Thuy Ngo, Quicen Zhang, Basilio Cieza Huaman, Miroslav Hejna, Tomas Rube, Jun Song, Taekjip Ha

CID Committee Meeting
8:30 AM - 10:30 AM, ROOM 333

Career Development Center Workshop
Networking for Nerds: How to Create Your Dream Career
9:00 AM - 10:00 AM, EXHIBIT HALL A

Wanna land your dream job? Get ready to network! Most jobs and other game-changing career opportunities are not advertised, and even if they are, there is usually a short-list of candidates already in mind. So how do you find out about and access the 90% of jobs and other opportunities that are "hidden"? In this workshop, we will focus on proven networking strategies and tactics to identify new opportunities, locate decision-makers within organizations, solidify your reputation and brand in the minds of those who hire, and gain access to hidden jobs and game-changing opportunities. Discover how networking and self-promotion can enable you to land or even create your dream job from scratch!

Exhibitor Presentation
Mizar Imaging
9:30 AM - 11:00 AM, ROOM 303

TILT – HIGH-RESOLUTION LIGHT SHEET IMAGING
Mizar Imaging is proud to introduce the Tilt, the first high-resolution light sheet imaging system that is a simple add-on to most inverted microscopes. When installed on your microscope, the Tilt does not interfere with any existing modalities so you can easily add the Tilt to an inverted microscope, including a TIRF or Spinning Disc confocal microscope system, to add the ability to do long term live cell imaging with the lowest possible photobleaching and phototoxicity.

The Tilt is well-suited to image both larger organisms, such as C. elegans, Drosophila, Danio rerio and other similar model organisms as well as imaging high-resolution intracellular dynamics inside single cells. This remarkable diversity is realized because the Tilt can work with any objective on your microscope – from 20x through 150x. There is no limit to what you can do with the Tilt.

The key benefit of light sheet imaging is significantly reducing the photobleaching and phototoxicity of your sample. The Tilt is no exception.

When imaging with the Tilt, cells can be kept alive for hours and even days. This is aided by an optional incubation chamber for the Tilt, which allows for precise control of temperature (heating and cooling available), CO2 and humidity.

The Tilt light-sheet imaging system is the ideal solution for long-term live-cell imaging of a wide array of samples with the added benefit of being a simple, low cost add-on to an existing inverted microscope.

Speaker
Chris Baumann, Sales and Product Manager, Mizar Imaging

Exhibits

10:00 AM - 5:00 PM, EXHIBIT HALL

Coffee Break

10:15 AM - 11:00 AM, EXHIBIT HALL

Exhibitor Presentation
HORIBA Scientific

10:30 AM - 12:00 PM, ROOM 301

UNIQUE FLUORESCENCE MOLECULAR FINGERPRINTING IN ACTION: WHAT CAN CCD DETECTION DO FOR YOU?
Fluorescence is a standard tool for the study of changes on the molecular level, but it is now also becoming an emerging technique for molecular fingerprinting and spectral kinetics. The Duetta™ 2-in-1 fluorescence and absorbance spectrometer from HORIBA Scientific is a unique and powerful benchtop instrument that provides so much more than standard PMT-based scanning benchtop fluorometers. CCD detection technology, and incorporated absorbance measurements, provide more data, with more accuracy, and in less time. In this presentation, HORIBA Scientific will demonstrate two of many methods for which Duetta is uniquely equipped to measure fluorescent samples. First, Duetta can measure protein binding and FRET over the full emission range (250-1100 nm), demonstrating the effects of both donor and acceptor spectra over time with true spectral kinetics. In addition, the method of measuring Absorbance-Transmittance Excitation Emission Matrices (A-TEEMs) gives information about the molecular fingerprint of a mixture for use in component analysis of mixtures. The use of the absorbance detector enables inner-filter effect correction, which can easily be overlooked using standard fluorometers.
Full Spectral Kinetics and FRET
Because Duetta uses a CCD detector for emission detection, kinetics over the entire emission spectrum (250-1100 nm) instead of only at one or two different emission wavelengths. We will demonstrate the binding of a small molecule, 1,8-anilinonaphthalene sulfonate (ANS), to bovine serum albumin protein (BSA) that shows both the decrease in donor emission (BSA) and the increase of the acceptor emission (ANS) as an example of FRET kinetics. The binding of ANS to hydrophobic pockets in BSA is a known phenomenon, but is typically only measured as a kinetics experiment at the ANS emission wavelength of 475 nm. Historically, concentration-dependent experiments where emission spectra are collected over a range of ANS or protein concentrations, or both, are used to show binding kinetics or FRET as well. Duetta easily measures both the donor BSA (tryptophan) emission as well as the acceptor ANS emission during binding and shows that energy transfer occurs over the full spectral range. This is a unique capability for a benchtop fluorometer in the field of biological fluorescence.
A-TEEM Molecular Fingerprinting
The use of fluorescence for molecular fingerprinting is a relatively new concept and just as exciting if not more so than spectral kinetics. In most applications, changes in fluorescence intensity, or wavelength, or both, correlate to changes in physical properties of a sample. A-TEEM is a method of measuring the full fluorescence contour plot of a sample at all excitation wavelengths and all emission wavelengths. The matrix is then corrected for effects of high concentration (inner-filter effect) using the absorbance spectrum. The resulting A-TEEM gives an accurate profile of all emitting species and in turn, gives more information about the content of the sample in question, thus making it a better data set for chemometric and quantitative analysis. Solutions of tryptophan and 2-aminopurine, a fluorescent derivative of adenine, are used to demonstrate 1.) Effects of high absorbance/concentration on the fluorescence profile; and 2.) The A-TEEM profile for detection of multiple components.

Speaker
Karen Gall, Applications Scientist, HORIBA Scientific

Career Development Center Workshop
Green Cards for Scientific Researchers: How to Win Your EB-1A/NIW Case! with Getson & Schatz, PC

10:30 AM - 11:30 AM, EXHIBIT HALL A

Brian Getson is a leading U.S. immigration lawyer who represents scientific researchers in applying for green cards in the EB-1A, EB-1B and NIW categories. Learn about the U.S. immigration process and how to maximize your chances of immigration success during this workshop. He will answer questions and provide free legal consultations after the presentation and throughout BPS 2019 in the Career Development Center.

Symposium
Proteins: Exploring Sequence Space via Computation and Experiment

10:45 AM - 12:45 PM, BALLROOM I

Chair
Polly Fordyce, Stanford University

117-SYMP **10:45 AM**
ENGINEERING AND EVOLUTION OF ALLOSTERIC COMMUNICATION. **Kimberly A. Reynolds**

No Abstract **11:15 AM**
HOW DO PROTEINS EVOLVE. **Daniel Tawfik**

118-SYMP **11:45 AM**
HYPERVARIABLE PROTEINS IN MICROBES. **Eugene Koonin**

119-SYMP **12:15 PM**
BRINGING ENZYMOLOGY INTO THE GENOMIC ERA: DEVELOPING AND DEPLOYING NEW TOOLS TO QUANTITATIVELY MAP FUNCTIONAL CONNECTIONS THROUGHOUT AN ENZYME. Craig Markin, Daniel Mokhtari, Fanny Sunden, Dan Herschlag, **Polly M. Fordyce**

Symposium
Glutamate Receptors

10:45 AM - 12:45 PM, BALLROOM II

Chair
Maria Kurnikova, Carnegie Mellon University

120-SYMP **10:45 AM**
OPTICAL CONTROL AND REPORT OF AMPA RECEPTOR ACTIVATION. **Andrew Plested**

No Abstract **11:15 AM**
ALLOSTERIC DYNAMICS AND DRUGGABILITY OF AMPA RECEPTORS. **Ivet Bahar**

121-SYMP **11:45 AM**
THE EUKARYOTIC SPECIFIC M4 SEGMENTS ARE ALLOSTERIC CONDUITS FOR NMDA RECEPTOR SIGNALING. **Lonnie Wollmuth**

122-Symp 12:15 pm
AFTER THE STRUCTURE COMES THE DYNAMICS: MOLECULAR MODELING OF GLUTAMATE RECEPTORS REVEALS LONG-RANGE ALLOSTERIC COUPLING BETWEEN LIGAND BINDING SITE AND CHANNEL GATE.
Maria G. Kurnikova

Platform
Optical Microscopy and Superresolution Imaging I

10:45 am - 12:45 pm, Ballroom III

Co-Chairs
Andreas Gahlmann, University of Virginia
Rachel Cinco, University of California, Irvine

123-Plat 10:45 am
DNA INTERCALATORS TILT, WOBBLE AND TWIRL; ELUCIDATING THE STRUCTURE OF S-DNA. **Adam Backer**, Andreas S. Biebricher, Graeme A. King, Gijs J. L. Wuite, Iddo Heller, Erwin J. G. Peterman

124-Plat 11:00 am
NUCLEAR DEFORMATION WITH COMBINED AFM AND 3D MULTI-COLOR LIVE-CELL LINE BESSEL SHEET IMAGING. **Chad Hobson**, Evan F. Nelsen, Joe Hsiao, Andrew Stephens, E. Timothy O'Brien, Michael R. Falvo, Richard Superfine

125-Plat 11:15 am
MULTI-MODAL FLUORESCENCE CHARACTERIZATION OF CELL CYCLE PROGRESSION AND CYTOKINESIS. **Rachel Cinco**, Per Niklas Hedde, Leonel Malacrida, Michelle A. Digman, Enrico Gratton

126-Plat 11:30 am
ELIMINATING BACKGROUND NOISE FOR STED SUPER-RESOLUTION MICROSCOPY USING POLARIZATION SWITCHING. **Jong-Chan Lee**, Ye Ma, Kyu Young Han, Taekjip Ha

127-Plat 11:45 am
THE NUCLUEAR PORE COMPLEX AS INTRINSIC REPORTER FOR ISOTROPIC EXPANSION MICROSCOPY. **Paolo Bianchini**, Luca Pesce, Marco Cozzolino, Luca Lanzano', Alberto Diaspro

128-Plat 12:00 pm
MULTICOLOR SINGLE-PARTICLE RECONSTRUCTION OF PROTEIN COMPLEXES. **Christian Sieben**, Niccoló Banterle, Kyle M. Douglass, Pierre Gönczy, Suliana Manley

129-Plat 12:15 pm
INTRACELLULAR ANALYSIS OF INDIVIDUAL CELLS AND ORGANELLES FOR BOTH OXYGEN CONCENTRATION/CONSUMPTION AND NADH FREE/BOUND REDOX STATE USING FLUORESCENCE LIFETIME IMAGING. **Rozhin Penjweini**, Alessio Andreoni, Anahit Gevorgyan, Dan L. Sackett, Jay R. Knutson

130-Plat 12:30 pm
3D IMAGING OF SINGLE CELLS IN BACTERIAL BIOFILMS USING LATTICE LIGHT-SHEET MICROSCOPY. Mingxing Zhang, Ji Zhang, Jie Wang, Alecia M. Achimovich, Arslan A. Aziz, Jacqueline Corbitt, Scott T. Acton, **Andreas Gahlmann**

Platform
Membrane Proteins I

10:45 am - 12:45 pm, Ballroom IV

Co-Chairs
Ana-Nicoleta Bondar, Freie University,Berlin
Anne Hinderliter, University of Minnesota, Duluth

131-Plat 10:45 am
INVESTIGATING HOW MEMBRANE ELASTICITY IMPACTS MEMBRANE PROTEIN FOLDING. **Miranda L. Jacobs**, Neha P. Kamat

132-Plat 11:00 am
AN INNER ACTIVATION GATE CONTROLS TMEM16F PHOSPHOLIPIDS SCRAMBLING. **Trieu Le**, ZhiGuang Jia, Yang Zhang, Son C. Le, Jianhan Chen, Huanghe Yang

133-Plat 11:15 am
PREDICTION OF THE CLOSED CONFORMATION AND INSIGHTS INTO THE MECHANISM OF THE MEMBRANE ENZYME LPXR. **Graham M. Saunders**, Hannah E. Bruce Macdonald, Jonathan W. Essex, Syma Khalid

134-Plat 11:30 am
STUDYING CONFORMATION OF THE VOLTAGE-SENSOR DOMAIN (VSD) OF THE HUMAN KCNQ1 POTASSIUM ION CHANNEL IN PROTEOLIPOSOMES USING EPR SPECTROSCOPY. **Indra D. Sahu**, Gunjan Dixit, Warren Reynolds, Ben Harding, Colleen Jaycox, Fathima Dilhani Mohammed Faleel, Robert M. McCarrick, Charles R. Sanders, Gary A. Lorigan

135-Plat 11:45 am
CRYO-EM STRUCTURES REVEAL BILAYER REMODELING DURING CA^{2+} ACTIVATION OF A TMEM16 SCRAMBLASE. **Maria Falzone**, Jan Rheinberger, Byoung-Cheol Lee, Thasin Peyear, Linda Sasset, Ashleigh Raczkowski, Edward Eng, Annarita Di Lorenzo, Olaf Anderson, Crina Nimigean, Alessio Accardi

136-Plat 12:00 pm
UNCOVERING EUKARYOTIC GLYCOSYLATION MECHANISM BY CRYO-EM. **Lin Bai**, Huilin Li

137-Plat 12:15 pm
FOLDING MECHANISM OF B-HELICAL PASSENGER DOMAINS FROM A BACTERIAL AUTOTRANSPORTER. Anthony Hazel, **Yui Tik Pang**, James C. Gumbart

138-Plat 12:30 pm
MONITORING ROTATION DYNAMICS OF MEMBRANE PROTEIN IN LIVE CELLS. **Youngchan Park**, Sangwon Shin, Hyeonggyu Jin, Jiseong Park, Yeonki Hong, Hyunjoon Song, Daeha Seo

Platform
Intrinsically Disordered Proteins (IDP) and Aggregates I

10:45 am - 12:45 pm, Room 307/308

Co-Chairs
Francesco Aprile, University of Cambridge, United Kingdom
Cecily Campbell-Bezat, D.E. Shaw Research

139-Plat 10:45 am TRAVEL AWARDEE
PROXIMITY RULERS IN amYLOIDS AND LIQUID DROPLETS OF INTRINSICALLY DISORDERED PROTEINS. **Anupa Majumdar**, Debapriya Das, Priyanka Dogra, Shiny Maity, Samrat Mukhopadhyay

140-Plat 11:00 am
ATOMIC LEVEL CHARACTERIZATION OF AN ENSEMBLE OF amYLOID BETA OLIGOMERS. **Cecily K. Campbell-Bezat**, Albert C. Pan, Daniel Jacobson, Shivam Verma, David E. Shaw

141-Plat 11:15 am
ORDERED AND DISORDERED SEGMENTS OF amYLOID BETA DRIVE SEQUENTIAL STEPS OF THE TOXIC PATHWAY. Barun K. Maity, Anand Kant Das, Simli Dey, Ullhas Kaarthi Moorthi, amandeep Kaur, Dayana Surendran, Rucha Pandit, Mamata Kallianpur, Bappaditya Chandra, Murlidharan Chandrakesan, Senthil Arumugam, **Sudipta Maiti**

142-Plat 11:30 am TRAVEL AWARDEE
UNDERSTANDING THE MOLECULAR PARAMETERS DETERMINING THE PATHOLOGICAL PROPERTIES OF amYLOID FIBRILS. **Harish Kumar**, Jayant B. Udgaonkar

11:45 am Flash talks

143-PLAT 12:00 PM
REDOX KINETICS OF THE AMYLOID-BETA-COPPER COMPLEX AND ITS BIOLOGICAL IMPLICATIONS. **Paul Girvan**, Xiangyu Teng, Nicholas J. Brooks, Geoffrey S. Baldwin, Liming Ying

144-PLAT 12:15 PM
MULTIPLE-PHOSPHORYLATION TO IDR IN THE CHROMATIN REMODELER FACT SHOWS AN '*ULTRASENSITIVE*' RESPONSE IN ITS NUCLEOSOME BINDING. **Shin-ichi Tate**

145-PLAT 12:30 PM
TARGETING THE FORMATION OF AMYLOID OLIGOMERS USING RATIONALLY DESIGNED ANTIBODIES. **Francesco A. Aprile**, Pietro Sormanni, Michele Perni, Paolo Arosio, Sara Linse, Tuomas P. Knowles, Christopher M. Dobson, Michele Vendruscolo

Platform
Cardiac Muscle Mechanics, Structure, and Regulation I

10:45 AM - 12:45 PM, ROOM 309/310

Co-Chairs
Jesus Ovejero, King's College London, United Kingdom
Vitold Galkin, Eastern Virginia Medical School

146-PLAT 10:45 AM
ADVANCED MORPHO-FUNCTIONAL ANALYSIS ON VENTRICULAR AND ATRIAL TISSUE REVEALS CROSS-BRIDGE KINETICS ALTERATIONS AND SARCOMERE ENERGETIC IMPAIRMENT IN HCM PATIENTS. **Giulia Vitale**, Erica Lazzeri, Irene Costantini, Francesco Giardini, Giacomo Mazzamuto, Claudia Crocini, Nicoletta Piroddi, Beatrice Scellini, Manuel J Pioner, Cecilia Ferrantini, Chiara Tesi, Francesco S. Pavone, Leonardo Sacconi, Corrado Poggesi

147-PLAT 11:00 AM
TROPOMYOSIN CABLE FORMATION AND ITS INFLUENCE ON THE STRUCTURAL DYNAMICS OF TROPOMYOSIN. Farooq A. Kiani, William Lehman, Stefan Fischer, **Michael J. Rynkiewicz**

148-PLAT 11:15 AM TRAVEL AWARDEE
PROTEIN KINASE C-MEDIATED CARDIAC TROPONIN I S43/45 PHOSPHORYLATION CAUSES CONTRACTILE DYSFUNCTION IN HUMAN HEART FAILURE AND IN RODENTS. **Vani S. Ravichandran**, Tabea M. Schatz, Margaret V. Westfall

149-PLAT 11:30 AM
BETA-MYOSIN HEAVY CHAIN POST-TRANSLATIONAL MODIFICATIONS IN FAILING AND NON-FAILING HUMAN HEARTS. **Michelle S. Parvatiyar**, Rakesh K. Singh, Elizabeth A. Brundage, Bryan A. Whitson, Paul M.L. Janssen, Brandon J. Biesiadecki, J. Renato Pinto

150-PLAT 11:45 AM
A FAMILIAL DILATED CARDIOMYOPATHY MUTATION DECREASES MYOSIN GENERATED TENSION AT THE MOLECULAR LEVEL AND ALTERS MECHANOSENSING AT THE CELLULAR LEVEL. **Sarah R. Clippinger**, Paige E. Cloonan, Lina Greenberg, William Stump, Michael J. Greenberg

151-PLAT 12:00 PM
MYOCARDIAL SLICES - A NOVEL PLATFORM FOR *IN VITRO* BIOMECHANICAL STUDIES. **Fotios Pitoulis**, Samuel A. Watson, Eef Dries, Ifigeneia Bardi, Raquel Nunez-Toldra, Filippo Perbellini, Cesare M. Terracciano

152-PLAT 12:15 PM
LEVERAGING NATURAL CARDIOMYOCYTE VARIABILITY TO DISCOVER NOVEL GENES IN CANONICAL SIGNALING PATHWAYS. **Jeffery A. Clark**, Jonathan D. Weiss, Stuart G. Campbell

153-PLAT 12:30 PM
RECRUITMENT FROM MYOSIN OFF STATE STEEPENS ESPVR IN FINITE ELEMENT MODEL OF LEFT VENTRICLE. **Charles K. Mann**, Zhanqui Liu, Xiaoyan Zhang, Kenneth Campbell, Jonathan Wenk

Platform
Excitation-Contraction Coupling/Cardiac and Skeletal Muscle Electrophysiology I

10:45 AM - 12:45 PM, ROOM 314/315

Co-Chairs
Stephen Cannon, University of California, Los Angeles
Guiling Zhao, University of Maryland School of Medicine

154-PLAT 10:45 AM
OLIGOMERIZATION OF MICROPEPTIDES THAT REGULATE SERCA. **Deo R. Singh**, Ellen Cho, Michael Dalton, Marsha Pribadi, Catherine A. Makarewich, Eric N. Olson, Seth L. Robia

155-PLAT 11:00 AM
THE EFFECT OF THE SK CHANNEL INHIBITOR ICAGEN IN INTACT ATRIA AND ATRIAL CARDIOMYOCYTES. **Sara Dobi**, Godfrey L. Smith

156-PLAT 11:15 AM
THE MECHANISM OF CARDIOVASCULAR PATHOPHYSIOLOGY IN CANTU SYNDROME AND RESPONSE TO GLIBENCLAMIDE IN NOVEL KATP CHANNEL MUTANT MOUSE MODELS. **Conor McClenaghan**, Yan Huang, Carmen Halabi, Theresa Harter, Robert P. Mecham, Maria S. Remedi, Colin G. Nichols

157-PLAT 11:30 AM
OPTOGENETIC CURRENTS IN MYOFIBROBLASTS PRODUCE ACUTE CHANGES IN ELECTROPHYSIOLOGY OF COCULTURED CARDIOMYOCYTES. **Geran Kostecki**, Yu Shi, Dan Reich, Emilia Entcheva, Leslie Tung

158-PLAT 11:45 AM
BLOOD FLOW CONTROL BY ATP-SENSITIVE POTASSIUM CHANNEL IN HEART. **Guiling Zhao**, Humberto C. Joca, W. Jonathan Lederer

159-PLAT 12:00 PM TRAVEL AWARDEE
VEGF-INDUCED VASCULAR LEAK PROMOTES ATRIAL FIBRILLATION BY DISRUPTING INTERCALATED DISC NANODOMAINS. **Louisa Mezache**, Heather Struckman, AMara Greer-Short, Anna Phillips, Alex Martinson, Justin Thomas, Przemyslaw Radwanski, Thomas J. Hund, Rengasayee Veeraraghavan

160-PLAT 12:15 PM
RECOVERY FROM INTRACELLULAR ACIDOSIS TRIGGERS LOSS OF FORCE IN HYPOKALEMIC PERIODIC PARALYSIS. Wentao Mi, Fenfen Wu, Marbella Quinonez, Marino DiFranco, **Steve C. Cannon**

161-PLAT 12:30 PM
S-NITROSYLATION OF CX43 HEMICHANNELS PROMOTES CARDIAC ARRHYTHMIAS IN A DUCHENE MUSCULAR DYSTROPHY MOUSE MODEL. **Mauricio A. Lillo**, Eric Himelman, Lai-Hua Xie, Diego Fraidenraich, Jorge E. Contreras

Platform
Micro- and Nanotechnology

10:45 AM - 12:45 PM, ROOM 316/317

Co-Chairs
Kaipei Qiu, East China University of Science and Technology
Rachael Knoblauch, University of Maryland Baltimore County

162-PLAT 10:45 AM
POROUS ZERO-MODE WAVEGUIDES FOR PICOGRAM-LEVEL DNA SEQUENCING. Vivek S. Jadhav, David P. Hoogerheide, Jonas Korlach, **Meni Wanunu**

163-PLAT 11:00 AM
NURTURING NATURE FOR NANOTECHNOLOGY. **Michael Zwolak**

164-PLAT 11:15 AM
MEASURING THE CONFORMATION OF SINGLE STRANDED DNA USING A DNA ORIGAMI NANO-STRUCTURE. **Yuval Garini**, Efrat Roth, Arkady Bitler, Olga Girshevitz

165-Plat 11:30 AM
NANOPORE DETECTION OF SURPRISING MOLARITY DEPENDENCE OF DNA KNOT COMPLEXITY. **Rajesh K. Sharma**, Liang Dai, Ishita Agrawal, Patrick S. Doyle, Slaven Garaj

166-Plat 11:45 AM
NANOCARRIERS FOR MAGNETICALLY ACTUATED TARGETED DRUG DELIVERY. **Vrinda Sant**, Liping Wang, Grace Jang, Deependra Ban, Jay Seth, Sami Kazmi, Nirav R. Patel, Qingqing Yang, Joon Lee, Woraphong Janetanakit, Shanshan Wang, Brian Head, Gennadi Glinsky, Ratnesh Lal[10]

167-Plat 12:00 PM
QUANTIFYING THE INFLUENCE OF NANOPARTICLE POLYDISPERSITY ON CELLULAR DELIVERED DOSE. **Stuart Johnston**, Matthew Faria, Edmund Crampin

168-Plat 12:15 PM
REVEALING THE DYNAMICS OF SINGLE-MOLECULE REACTIONS IN A SINGLE-MOLECULE NANOREACTOR. **Kaipei Qiu**, Bo Yuan, Yi-Tao Long

169-Plat 12:30 PM
DEVELOPMENT OF A NEW ANTIMICROBIAL PHOTOSENSITIZER FROM BROMINATED CARBON DOTS: METAL-ENHANCED PHOSPHORESCENCE AND SINGLET OXYGEN GENERATION. **Rachael Knoblauch**, Christopher D. Geddes

Exploring Careers in Biophysics Day

11:15 AM - 3:00 PM, Room 321/322/323

This free day for Baltimore-area high school and college students at the BPS 63rd Annual Meeting kicks off with an Undergraduate Student Pizza "Breakfast" which will include a panel discussion on academic and career paths in biophysics. Come prepared to find out about the course of study that aspiring biophysicists undertake, what it means to be a biophysicist, and how biophysicists make important discoveries. Students will also receive information and advice on how to get the most out of attending the Annual Meeting. Attendees may attend any of the meeting's open sessions and activities for the full day, including the Education & Career Opportunities Fair where they can meet with representatives of, and learn about, opportunities from around the world. In addition, there will be some fun, interactive demos for students to learn about groundbreaking techniques in the field. Pre-registration was required. No onsite registration.

Undergraduate Student Pizza "Breakfast"

11:30 AM - 1:00 PM, Room 321/322/323

This "breakfast" for undergraduate students offers a valuable networking and social opportunity to meet other students, Biophysical Society Committee members, and scientists at all career levels to discuss academic goals and questions, and to develop a biophysics career path. The Breakfast will include a panel discussion on academic and career paths in biophysics, with opportunities for questions and answers from the audience - come prepared to find out about the course of study that aspiring biophysicists undertake, what it means to be a biophysicist, and how biophysicists make important discoveries. Space for this session is limited to the first 100 attendees.

Speakers
Elih Velázquez, Naval Medical Research Center
Logan Kaler, University of Maryland
Ashley Simpson, Bay Path University

Exhibitor Presentation
Leica Microsystems

11:30 AM - 1:00 PM, Room 303

LEICA SP8 FALCON: A NEW WAY TO GENERATE FLUORESCENCE LIFETIME IMAGES AT CONFOCAL SPEED
Functional imaging is a rapidly growing field, because understanding the function and interaction of molecules is the key to revealing the underlying biology. In this context, fluorescence lifetime imaging (FLIM) is a powerful tool, providing valuable information beyond spectral imaging. FLIM is immune to concentration artifacts and sensitive to molecular environment, but previous FLIM solutions were slow and difficult to implement, particularly for complex imaging workflows. Therefore, FLIM imaging has so far been limited to specialized laboratories and classical TCSPC has been unable to deliver the speeds needed to address most of the biological processes.

We present SP8 FALCON, the fast, intuitive and totally integrated all-Leica FLIM solution. SP8 FALCON delivers video-rate FLIM with pixel-by-pixel quantification, thanks to a unique combination of fast electronics, sensitive spectral hybrid detectors (Leica HyDs), and a novel concept for measuring time. Photon arrival times can now be recorded at count rates typical for standard confocal imaging. The system has ultra-short dead time, and powerful built-in algorithms take care of the data acquisition and analysis, while keeping accuracy and excellent data quality. This talk explains the technical implementations enabling this new level of performance and explains the new way to generate FLIM images.

SP8 FALCON with STED enables STED-FCS at high count rate and separation of multiple fluorophores spectrally overlapping with nanoscopic resolution.

SP8 DIVE (Leica multiphoton system) with spectrally tunable non-descanned detector (Leica 4Tune detector) combined with FALCON allows metabolic imaging, species separation and in vivo FLIM imaging.

The deep integration of SP8 FALCON into the Leica SP8 platform provides easy access to complex FLIM experiments, enabling fast FLIM-FRET, 3D- and 4D-imaging modes, high-content screening, and autofluorescence component separation.

Career Development Center Workshop
Demystifying the Academic Job Search I: Understanding the Search Process from the Perspective of Search Committees and Decoding Job Announcements

12:00 PM - 1:00 PM, Exhibit Hall A

What goes on inside search committees; the "black box" of the academic job search process? How are they constituted, what are their processes, and what do they look for when assessing applicants? Answers to these and other questions presented by Andrew Green, PhD a veteran of the academic job search and numerous search c ommittees.

Public Affairs Committee Meeting

12:15 PM - 2:15 PM, Room 333

The World Outside the Lab
Many Ways to Use Your PhD Skills

1:00 PM - 2:30 PM, Room 318/319/320

Have you ever wondered how you can apply the skills learned while working on your PhD in a career away from the bench? This panel will explore multiple career options that exist in government, industry, and

academia. Panelists with science backgrounds, now involved in a wide variety of careers, will share their personal experiences.

Speakers
Hermes Taylor-Weiner, 2018-2019 BPS Congressional Fellow
Ann Marie Stanley, Drinker Biddle & Reath LLP
Corinne Zeitler, NIH/NCI

Education & Career Opportunities Fair

1:00 PM - 3:00 PM, EXHIBIT HALL C

This fair will provide the opportunities for candidates to meet with representatives from educational institutions as well as industry and government agencies. Students and postdoctoral candidates will be able to meet with representatives from colleges and universities with leading programs in biophysics. Attendees can connect with representatives from industry and agencies who will provide information about employment and funding opportunities at their institutions/companies. All those attending the meeting are encouraged to attend to learn about the variety of opportunities available and to talk one-on-one with representatives from participating organizations.

Exhibitor Presentation
Carl Zeiss Microscopy LLC

1:30 PM - 3:00 PM, ROOM 303

ZEISS ELYRA 7 WITH LATTICE SIM, A NEW PLATFORM FOR FAST AND GENTLE 3D SUPERRESOLUTION MICROSCOPY
Life sciences research often requires you to measure, quantify and understand the finest details and sub-cellular structures of the sample. Whether you are working with tissue, bacteria, organoids, neurons, living or fixed cells, ZEISS Elyra 7 takes your images beyond the diffraction limit of conventional microscopy to superresolution. Examine the fastest processes in living samples – in large fields of view, in 3D, over long time periods, and with multiple colors.

Lattice SIM enables fast imaging of 3D volumes with resolution down to 120 nm laterally and 300 nm axially. Due to higher light efficiency, the new Lattice SIM technology provides gentle superresolution imaging of living specimens at up to 255 frames per second. Using less light to illuminate the specimen means imaging longer with less bleaching of the sample. The novel Lattice SIM technology allows you to uncover new mechanistic details and quantify the finest subcellular structures in large fields of view.

ZEISS Elyra 7 can be expanded with single molecule localization microscopy (SMLM) for techniques such as PALM, dSTORM and PAINT. ZEISS Elyra 7's SMLM module delivers molecular resolution in large 3D volumes and powerful post-processing algorithms for quantification. Choose freely AMong labels when imaging with resolutions down to 20 nm laterally and 50 nm axially. Count molecules and come to understand, molecule-by-molecule, how individual proteins are arranged within a structural context.

ZEISS Elyra 7 is a flexible research grade live cell microscope from ZEISS. The new Apotome mode allows fast optical sectioning of 3D samples and total internal reflection microscopy provides live imaging capability for membrane and single molecule studies.

Join this workshop and learn how the newest member of the ZEISS imaging portfolio, ZEISS Elyra 7, can help your imaging experiments in completely new ways.

Speaker
Renée Dalrymple, Sales Development Manager, Carl Zeiss Microscopy LLC

Snack Break

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

Poster Presentations and Late Posters

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

Teaching Science Like We Do Science

2:00 PM - 3:30 PM, ROOM 321/322/323

How do we know if our teaching is effective? This interactive, hands-on workshop focuses on practice-applicable, easy-to-use strategies and tools that educators at any level of biophysical science education can use to assess what their students take away from their teaching, and where they might make changes to their educational methods. Moderating and participating educators will have a chance to share their first-hand experiences in round table discussions and collaborate, regardless of the extent of previous knowledge, to construct their personal assessment toolbox. Participants will design an individualized action plan for aligning learning goals with suitable assessment techniques and instructional methods. We will use the means of learning evaluation to bringing biophysics education to life in the lab, the classroom and the community.

Speakers
Gundula Bosch, Johns Hopkins University
Pedro Muino, St. Francis University

Career Development Center Workshop
The Industry Interview: What you need to do before, during, and after to get the job

2:30 PM - 3:30 PM, EXHIBIT HALL A

When does the interview begin? Much sooner than you think: it starts from the first point of contact you have with someone from the organization. And when does it end? Only when the offer is extended and accepted. Learn how to convert conversations and networking into interviews and interviews into job offers in this special presentation focusing on industry positions. Discover what you need to know and do throughout the interview process to demonstrate your value to the company and land the job. We will discuss common mistakes that job seekers make, and specific ways in which you can give yourself a competitive edge in the interview. Both academic and non-academic interviewing tactics will be addressed.

Brexit & Science
Consequences for Research Funding and Immigration Flows

2:30 PM - 4:00 PM, ROOM 327/328/329

In 2016, the United Kingdom surprised the world by voting to leave the European Union. But what does the Brexit referendum mean for the UK and EU scientific communities? Britain is scheduled to leave the European Union on March 29, 2019, and we expect this session will be extremely timely, as the contours of a Brexit Deal should be established at this point. We will host a panel of experts and on-the-ground researchers to discuss what Brexit means for the UK and EU science work force, research funding and international scientific exchange.

Speakers
Andrew Price, Head of Science and Innovation Network for the USA; Regional Manager, Americas, British Embassy, Washington DC
Tony Watts, President, European Biophysical Societies' Association; Biochemistry Department, University of Oxford
Matthias Wilmanns, European Molecular Biology Laboratory, Head of the Unit, Hamburg, Germany

Early Careers Committee Meeting

3:30 PM - 5:00 PM, ROOM 333

Exhibitor Presentation
Wyatt Technology Corporation

3:30 PM - 5:00 PM, ROOM 303

FROM PROTEINS TO EXOSOMES: TOOLS FOR ESSENTIAL BIOPHYSICAL QC, CHARACTERIZATION, AND ISOLATION

In this seminar we will present solutions for some of the key biophysical characterization challengesencountered in the course of biophysical research. The tools to overcome these challenges are based on:

- multi-angle light scattering (MALS) for determining absolute molar mass and size of macromolecules and nanoparticles from small peptides to vesicles;
- dynamic light scattering (DLS) for determining the hydrodynamic radii of particles from 0.2 to 5000 nm;
- asymmetric-flow field-flow fractionation (AF4) for separation and characterization of particle distributions from 1 nm to 10 µm
- composition-gradient MALS (CG-MALS) for label-free analysis of biomolecular interactions to determine binding affinity and absolute stoichiometry in solution

The combination of these measurement techniques with each other and with other methods of automated sample preparation and delivery creates a powerful toolkit that is useful across many fields of experimental bioscience. The presentation will include applications to:

- quality control of proteins and other biomacromolecules to ensure reliable, repeatable studies of structure and interactions
- rapid optimization of crystallization conditions
- analysis of oligomeric state, protein-protein and protein-nucleic acid complexes
- understanding self-assembly, aggregation and fibril formation
- characterization of vesicle size and content, and high-resolution size-based isolation of exosomes and exomeres.

In addition to describing the principles and instrumentation of SEC-MALS, AF4-MALS, CG-MALS and DLS, we will perform a live demo of protein and buffer characterization by automated DLS in microwell plates.

Speaker
Eric Seymour, Senior Application Scientist, Wyatt Technology Corporation

Career Development Center Workshop
Nailing the Job Talk, or Erudition Ain't Enough

4:00 PM - 5:00 PM, EXHIBIT HALL A

Congratulations! You've made it to the finals and are suddenly facing the most important presentation of your life. Answers to your questions about how to structure your presentation, how much detail to include, what they are really looking for, etc.

Symposium
Integrative Modeling from Macromolecules to Cell

4:00 PM - 6:00 PM, BALLROOM I

Chair
Zaida Ann Luthey-Schulten, University of Illinois at Urbana-Champaign

170-SYMP 4:00 PM
MAPPING THE SPATIAL ORGANIZATION OF GENOMES THROUGH DATA INTEGRATION. **Frank Alber**, Polles Guido, Hua Nan, Yildirim Asli, Zhan Yuxiang

171-SYMP 4:30 PM
MULTISCALE MODELING OF BIOMOLECULAR PROCESSES BY COMBINING EXPERIMENT AND SIMULATION. **Cecilia Clementi**

172-SYMP 5:00 PM
DEALING WITH DYNAMICS AND DISORDER BY COMBINING SIMULATION AND EXPERIMENT. **Gerhard Hummer**

173-SYMP 5:30 PM
TOWARDS SIMULATING BACTERIAL AND EUKARYOTIC CELLS: INTEGRATION OF EXPERIMENT AND THEORY. **Zaida Ann Luthey-Schulten**

Symposium
Cytoskeleton

4:00 PM - 6:00 PM, BALLROOM II

Chair
Sabine Petry, Princeton University

174-SYMP 4:00 PM
PHASE SEPARATION OF TPX2 ENHANCES AND SPATIALLY BIASES MICROTUBULE NUCLEATION. **Sabine Petry**

175-SYMP 4:30 PM
REGULATION OF BIDIRECTIONAL MOTILITY OF KINESIN-5 MOTORS. **Leah Gheber**

176-SYMP 5:00 PM
REGULATION OF MYOSIN MOTORS - FROM SINGLE MOLECULES TO FUNCTIONAL ENSEMBLES. **Claudia Veigel**

177-SYMP 5:30 PM
THE MYOSIN MESA AND HYPERTROPHIC CARDIOMYOPATHY: MUTATIONS TO MECHANISMS TO THERAPIES. **James Spudich**

Platform
Ligand-gated Channels

4:00 PM - 6:00 PM, BALLROOM III

Co-Chairs
Sonja Minniberger, Leibniz-Forschungsinstitut für Molekulare Pharmakologie, Germany
Mufeng Li, NINDS, NIH

178-PLAT 4:00 PM
HIGH THROUGHPUT VALIDATION OF NON CANONICAL AMINO ACID INCORPORATION INTO ACID SENSING ION CHANNEL 1A. **Nina Braun**, Søren Friis, Weihua Tian, Eric P. Bennett, Jacob Andersen, Stephan A. Pless

179-PLAT 4:15 PM TRAVEL AWARDEE
MEASURING DYNAMICS OF THE ACID-SENSING ION CHANNEL N-TERMINUS USING TRANSITION METAL ION FRET. **Megan Cullinan**, Prafulla Aryal, John Bankston

180-PLAT 4:30 PM
A MECHANISM FOR DESENSITIZATION OF ALL THREE FUNCTIONAL MAMMALIAN ACID SENSING ION CHANNELS. Yangyu Wu, Zhuyuan Chen, **Cecilia Canessa**

181-PLAT 4:45 PM
A CRITICAL MOBILE DIVALENT CATION SITE IN THE ATP-BINDING POCKET OF P2X3 RECEPTORS THAT CONTROLS CHANNEL GATING. **Mufeng Li**, Yao Wang, Shai D. Silberberg, Motoyuki Hattori, Kenton Swartz

182-PLAT 5:00 PM
STRUCTURAL STUDIES OF MUTANTS OF THE NAK CHANNEL. **Sonja Minniberger**, Saeid Abdolvand, Han Sun, Andrew J. Plested

183-PLAT 5:15 PM
ROLE OF NMDAR-BK COMPLEXES IN THE INTEGRATION OF SYNAPTIC INPUTS OF BARREL CORTEX PYRAMIDAL NEURONS. **Ricardo Gómez**, Laura E. Maglio, Alberto J. Gonzalez-Hernandez, Belinda Rivero-Perez, Teresa Giraldez

184-PLAT 5:30 PM
PROBING STRUCTURAL STATES OF A PENTAMERIC LIGAND-GATED ION CHANNEL WITH SMALL ANGLE NEUTRON SCATTERING. **Marie Lycksell**, Nicolai T. Johansen, Rebecca J. Howard, Lise Arleth, Erik Lindahl

185-Plat 5:45 pm
CRYO-EM REVEALS TWO DISTINCT SEROTONIN-BOUND CONFORMATIONS OF FULL-LENGTH 5-HT3A RECEPTOR. **Sandip Basak**, Yvonne W. Gicheru, Shanlin Rao, Mark S. Sansom, Sudha Chakrapani

Platform
Protein Folding, Pathways, and Stability

4:00 pm - 6:00 pm, Ballroom IV

Co-Chairs
Taras Pogorelov, University of Illinois at Urbana–Champaign
Siwen Zhang, Rensselaer Polytechnic Institute

186-Plat 4:00 pm TRAVEL AWARDEE
CHARACTERIZATION OF CONFORMATIONAL DIVERSITY, STABILITY, AND CATALYTIC ACTIVITY OF TCMN, AN ENZYME INVOLVED IN ANTIBIOTIC BIOSYNTHESIS. **Veronica S. Valadares**, Luan C. Martins, Lara G. R. V. M. Tannus, Adolfo H. Moraes, Elio A. Cino

187-Plat 4:15 pm
INVESTIGATING THE GENERALITY AND BIOPHYSICAL UNDERPINNINGS OF CONSENSUS PROTEIN STABILITY ENHANCEMENT. **Matthew Sternke**, Katherine W. Tripp, Doug Barrick

188-Plat 4:30 pm
PROTEIN-SOLVENT ATTRACTIVE INTERACTIONS DOMINATE THE INVERSE TEMPERATURE DEPENDENCE OF POLYPEPTIDE HYDRATION FREE ENERGIES. Tomar S. Tomar, Michael E. Paulaitis, Lawrence R. Pratt, **Dilip N. Asthagiri**

189-Plat 4:45 pm
MULTI-SCALE SIMULATIONS YIELD INSIGHT INTO PROTEIN DIFFUSION AND STABILITY IN CROWDED ENVIRONMENTS. **Stepan Timr**, Simone Melchionna, Philippe Derreumaux, Fabio Sterpone

190-Plat 5:00 pm
FAST PRESSURE JUMP REVEALS SITE-SPECIFIC PROTEIN DEHYDRATION-FOLDING DYNAMICS. Maxim B. Prigozhin, Yi Zhang, Klaus J. Schulten, Martin Gruebele, **Taras V. Pogorelov**

191-Plat 5:15 pm
SINGLE-MOLECULE FORCE SPECTROSCOPY AND MOLECULAR DYNAMICS SIMULATIONS REVEALS COMPLEX FOLDING LANDSCAPE AND ITS POTENTIAL ROLE IN amYLOID FIBRIL FORMATION IN A PDZ DOMAIN. **Ha H. Truong**, Susan Marqusee

192-Plat 5:30 pm
PROBING PRESSURE EFFECTS ON CORE PACKING OF A REPEAT PROTEIN USING 13C NMR. **Siwen Zhang**, Scott McCallum, Catherine A. Royer

193-Plat 5:45 pm
CHAPERONE-GUIDED CO-TRANSLATIONAL FOLDING. Kaixian Liu, **Kevin Maciuba**, Christian M. Kaiser

Platform
Spectroscopy and Single-Molecule Fluorescence

4:00 pm - 6:00 pm, Room 307/308

Co-Chairs
Julia Widom, University of Oregon
Hui-Ting Lee, Johns Hopkins University

194-Plat 4:00 pm
FRET-FILTERED SPECTROSCOPY TO SIMULTANEOUSLY PROBE LOCAL AND GLOBAL CONFORMATIONS OF NUCLEIC ACIDS. **Julia R. Widom**

195-Plat 4:15 pm
TETHERLESS, PRECISE AND EXTENDED OBSERVATION OF SINGLE-MOLECULE FRET IN AN ANTI-BROWNIAN TRAP. **Hugh Wilson**, Quan Wang

196-Plat 4:30 pm
BAYESIAN NONPARAMETRICS FOR FLUORESCENCE METHODS. **Meysam Tavakoli**, Sina Jazani, Ioannis Sgouralis, Steve Presse

197-Plat 4:45 pm
DNA BASE DAMAGE AND CONSEQUENTIAL POINT MUTATION CONTROLS TELOMERE CONFORMATION AND ELABORATES TELOMERASE EXTENSION ACTIVITY. **Hui-Ting Lee**, Tapas Paul, Joshua Choe, Samantha Sanford, Patricia L. Opresko, Sua Myong

198-Plat 5:00 pm
G-QUADRUPLEX-HELICASE INTERACTIONS AND THE IMPACT OF SMALL MOLECULES. **Parastoo Maleki**, Hamza Balci

199-Plat 5:15 pm
CHROMATIN REMODELING INDUCED BY THE INVASION OF YEAST PIONEER TRANSCRIPTION FACTOR *RAP1* REVEALED BY SINGLE-MOLECULE FRET. **Anne-Marinette Cao**, Maxime Mivelaz, Iuliia Boichenko, Louise Bryan, Slawomir Kubik, David Shore, Beat Fierz

200-Plat 5:30 pm
SINGLE MOLECULE MEASUREMENTS REVEAL CONFORMATIONAL TRANSITIONS DURING DNA CLAMP LOADING AND UNLOADING. **SeungWon Lee**, Eunjin Ryu, Sukhyun Kang, Hajin Kim

201-Plat 5:45 pm
CONFORMATIONAL DYNAMICS RELATED TO MEMBRANE FUSION OBSERVED IN SINGLE VIRAL ENVELOPE GLYCOPROTEINS. Dibyendu Kumar Das, Natasha Durham, Angela Howard, **James B. Munro**

Platform
Protein-Lipid Interactions: Channels/Structures

4:00 pm - 6:00 pm, Room 309/310

Co-Chairs
Wayland Cheng, Washington University School of Medicine
Ololade Fatunmbi, University of Pennsylvania

202-Plat 4:00 pm
TOXIC amYLOID TAPE: A NOVEL MIXED ANTIPARALLEL/PARALLEL BETA-SHEET STRUCTURE FORMED BY ABETA ON GM1 CLUSTERS. **Katsumi Matsuzaki**, Yuki Okada, Kaori Okubo, Keisuke Ikeda, Yoshiaki Yano, Masaru Hoshino, Yoshio Hayashi, Yoshiaki Kiso, Hikari Itoh-Watanabe, Akira Naito

203-Plat 4:15 pm
RECRUITMENT OF ACTIN-BINDING PROTEINS ON THE MEMBRANE INTERFACE: EFFECTS OF CHOLESTEROL ON PROTEIN/PIP2 INTERACTIONS. **Ololade Fatunmbi**, Ryan Bradley, Robert Bucki, Paul Janmey, Ravi Radhakrishnan

204-Plat 4:30 pm
MOLECULAR MECHANISM OF VOLTAGE-GATED CA^{2+} CHANNEL REGULATION BY MEMBRANE PIP_2. **Cheon-Gyu Park**, Byung C. Suh

205-Plat 4:45 pm
PH INDUCED SWITCH BETWEEN DIFFERENT MODES OF CYTOCHROME C BINDING TO CARDIOLIPIN CONTAINING LIPOSOMES. **Bridget Milorey**, Reinhard Schweitzer-Stenner

206-Plat 5:00 pm
MOLECULAR DYNAMICS SIMULATIONS OF KIR2.2 AND CHOLESTEROL REVEAL STATE- AND CONCENTRATION-DEPENDENT BINDING SITES. **Nicolas Barbera**, Manuela A. Ayee, Belinda S. Akpa, Irena Levitan

207-Plat 5:15 pm
DIFFUSION IN NANOPORE CONNECTED BILAYER NETWORKS. **Manon Valet**, Léa-Laetitia Pontani, Élie Wandersman, Alexis Prevost

208-PLAT 5:30 PM
MOLECULAR DYNAMICS SIMULATION AND PHOTO-CROSSLINKING REVEAL A SPECIFIC CHOLESTEROL BINDING SITE FOR THE METABOTROPIC GLUTAMATE RECEPTOR 2. **Markus Kurth**, Rainer Beck, Camilo A. Aponte-Santamaria, Britta Bruegger

209-PLAT 5:45 PM
DIRECT LIPID BINDING IN A PENTAMERIC LIGAND-GATED ION CHANNEL ASSESSED BY NATIVE MASS SPECTROMETRY. **Wayland WL Cheng**

Platform
Intracellular Calcium Signaling, Sparks and Waves

4:00 PM - 6:00 PM, ROOM 314/315

Co-Chairs
Carol Heckman, Bowling Green State University
David Ladd, University of Melbourne, Australia

210-PLAT 4:00 PM TRAVEL AWARDEE
MODELLING THE ATP BINDING SITE OF RYR2 TO RATIONALISE LIGAND-INDUCED GATING BEHAVIOUR. **Chris Lindsay**, Mano Sitsapesan, Wei Mun Chan, Elisa Venturi, William Welch, Maria Musgaard, Rebecca M. Sitsapesan

211-PLAT 4:15 PM
A CRYO-EM BASED STUDY OF A MUTANT CARDIAC RYANODINE RECEPTOR (RYR2). **Kavita A. Iyer**, Ashok R. Nayak, Takashi Murayama, Nagomi Kurebayashi, Montserrat Samso

212-PLAT 4:30 PM
DETECTING RYR CLUSTERS WITH CACLEAN: VALIDATION AND INFLUENCE OF SPATIAL HETEROGENEITY. **David Ladd**, Agne Tilunaite, H. Llewelyn Roderick, Christian Soeller, Edmund Crampin, Vijay Rajagopal

213-PLAT 4:45 PM
FRET-BASED TRILATERATION RESOLVES DISTINCT STRUCTURAL STATES AND TRANSITIONS OF CALMODULIN BOUND TO RYR. **Bengt Svensson**, Robyn T. Rebbeck, Jingyan Zhang, Donald M. Bers, David D. Thomas, Razvan L. Cornea

214-PLAT 5:00 PM
2D+T IMAGING OF CALCIUM SIGNALING MICRODOMAINS IN CARDIAC MYOCYTES. **Mouna Abdesselem**, Guillaume Gilbert, H Llewellyn Roderick, Karin R. Sipido

215-PLAT 5:15 PM TRAVEL AWARDEE
CALCIUM SENSING AND CONFORMATIONAL REARRANGEMENTS IN STIM1, THE ER CALCIUM SENSOR. **Aparna Gudlur**, Ana E. Zeraik, Nupura Hirve, V Rajanikanth, Andrey A. Bobkov, Elizabeth A. Komives, Patrick G. Hogan

216-PLAT 5:30 PM
ABNORMAL CALCIUM LEAK FROM CARDIAC SARCOPLASMIC RETICULUM: NEW INSIGHTS OFFERED BY STATISTICAL PHYSICS. **Anna Maltsev**, Michael D. Stern, Victor A. Maltsev

217-PLAT 5:45 PM
FILOPODIA DYNAMICS ARE AFFECTED BY CATION FLUX THROUGH TRP CHANNELS. **Carol A. Heckman**, Marilyn L. Cayer, Omolade M. Ademuwiya

Platform
Membrane Active Peptides and Toxins

4:00 PM - 6:00 PM, ROOM 316/317

Co-Chairs
Myriam Cotten, College of William and Mary
Georg Pabst, University of Graz, Austria

218-PLAT 4:00 PM
SYNERGISM OF MAGAININS IS NOT COUPLED TO THE FORMATION OF A WELL-DEFINED PEPTIDE PORE. Michael Pachler, Ivo Kabelka, Regina Leber, Ilse Letofsky-Papst, Karl Lohner, Robert Vacha, **Georg Pabst**

219-PLAT 4:15 PM
COMBINING DESIGN STRATEGIES IN ENGINEERING MORE ACTIVE HYBRID ANTIMICROBIAL PEPTIDES. **Anne K. Buck**, Louise E. O. Darling, Donald E. Elmore

220-PLAT 4:30 PM
HIGH-RESOLUTION STRUCTURES OF TWO METALLATED HOST DEFENSE PEPTIDES THAT FEATURE COPPER-DEPENDENT BACTERICIDAL AND CHEMOTACTIC EFFECTS: IMPORTANCE OF HISTIDINE FOR ANTI-INFECTIVE ACTION. **Myriam Cotten**, Alexander Greenwood, Steven Paredes, Yimin Miao, Yawei Xiong, Ella Mihailescu

221-PLAT 4:45 PM
COMPARISON OF THE EFFECTS OF DAPTOMYCIN ON BACTERIAL AND MODEL MEMBRANES. **Ming-Tao Lee**, Pei-Yin Yang, Nicholas E. Charron, Meng-Hsuan Hsieh, Yu-Yung Chang, Wei-Chin Hung, Huey W. Huang

222-PLAT 5:00 PM
LIFE AND DEATH IN A BACTERIAL BIOFILM UNDER ANTIBIOTIC ATTACK CHARACTERIZED BY FLUORESCENCE AND ATOMIC FORCE MICROSCOPY. **Catherine B. Volle**, Kanesha Overton, Helen Greer, Megan A. Ferguson, Eileen M. Spain, Megan E. Nunez

223-PLAT 5:15 PM
INTERACTION OF ANTIMICROBIAL PEPTIDE LL-37 WITH LIPOPOLYSACCHARIDES. Michael Martynowycz, AMY Rice, Konstantin Andreev, Thatyane M. Nobre Pavinatto, Jeff Wereszczynski, **David Gidalevitz**

224-PLAT 5:30 PM TRAVEL AWARDEE
SYNCHROTRON X-RAY SCATTERING STUDIES TO DETERMINE STRUCTURE OF AMYLOID BETA INTERACTIONS WITH LIPID MEMBRANES. **Crystal M. Vander Zanden**, Jaroslaw P. Majewski, Erik B. Watkins, Eva Y. Chi

225-PLAT 5:45 PM
CONFORMATIONAL DISORDER IS REQUIRED FOR TOXIN SECRETION, FOLDING AND CELL INTOXICATION. Darragh Patrick O'Brien, Dominique Durand, Sara Cannella, Alexis Voegele, Patrice Vachette, Sébastien Brier, Daniel Ladant, **Alexandre Chenal**

PI to PI
A Wine & Cheese Mixer

5:00 PM - 7:00 PM, ROOM 324/325/326

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.

Korean Biophysicists Meeting

5:30 PM - 6:30 PM, ROOM 318/319/320

Exhibitor Presentation
ELEMENTS SRL

5:30 PM - 7:00 PM, ROOM 303

PORTABLE AND COST-EFFECTIVE LOW-NOISE AMPLIFIERS FOR ELECTROPHYSIOLOGY AND NANOPORE APPLICATIONS
Ultra-portable and cost-effective amplifier technology is now a reality accessible to any electrophysiology research lab, thanks to Elements microelectronic-based design of custom microchip (ASIC) using standard and low-cost CMOS processes.

Elements provides an integrative solid-state solution to measure currents in the picoampere (10-12 pA) range, with bandwidths up to hundreds of kHz, featuring very low noise recordings, signal digitalization thanks to the internal Analog-to-Digital converter, signal generator, digital data elaboration,and USB powered, all in a tiny form factor (i.e. 42x18x78 mm) or about the size of a point-and-shoot digital camera!

In this presentation, we will be featuring our latest electrophysiology product, the world's smallest integrated patch clamp amplifier, as well as a portable nanopore kit for protein detection using disposable glass nanopore chips.

During the event will be presented these two use cases:

1. ePatch amplifier was used to record the current of HCN channels transiently expressed in HEK293T cells, with the aim to test the effect of Lamotrigine, a widely used anticonvulsant drug, on the biophysical proprieties of the current. Data courtesy of Dr. A. Moroni - University of Milan - Italy and Dr. Bina Santoro - Columbia University - New York – USA

2. Portable Nanopore Reader: example of DNA fragment translocations through glass nanopore chips. Data courtesy of Dr. D. Niedzwiecki, Goeppert– USA

Attend this presentation to learn about:

- The advantages of using a versatile and compact nano-current amplifier technology,
- Portable nanopore solution for protein detection using disposable nanopore chips,
- How the world smallest and cheapest patch clamp amplifier is radically changing voltage-clamp measurements!

Complimentary Italian hors d'oeuvres and drinks will be served! Seating is limited. Be the first to RSVP by emailing info@elements-ic.com to receive a copy of the presentation and be entered in a raffle to receive a free 30-day trial of the ePatch or nanopore Kit amplifier!

Speakers
Federico Thei, CEO, ELEMENTS SRL
Filippo Cona, Software Engineer, ELEMENTS SRL
Alessandro Porro, Application Scientist, ELEMENTS SRL
Serge Kaddoura, NanoscaleLABS

Dinner Meet-Ups

6:00 PM - 6:30 PM, SOCIETY BOOTH/CHARLES STREET LOBBY

Interested in making new acquaintances and experiencing the cuisine of Baltimore? Meet at the Society Booth each evening, Sunday through Tuesday, at 6:00 PM where a BPS member will coordinate dinner at a local restaurant.

Biophysics Austria Mixer

6:00 PM - 8:00 PM, ROOM 321/322/323

Biophysical Society of Canada Mixer

6:00 PM - 8:00 PM, PRATT STREET ALE HOUSE

Student Research Achievement Award (SRAA) Poster Competition

6:00 PM - 9:00 PM, EXHIBIT HALL C

This session features students who are presenting posters at the Meeting and have indicated at the time of abstract submission that they wish to participate in the competition. During the competition, students will give a five-to-seven minute oral presentation of their posters to one or more judges. Winners will be recognized on Monday evening prior to the Biophysical Society Lecture.

Biophysical Journal Editorial Board Dinner

6:00 PM - 10:00 PM, CENTER CLUB

SUNDAY POSTER SESSIONS

1:45 PM–3:45 PM, EXHIBIT HALL C

Below is the list of poster presentations for Sunday of abstracts submitted by October 1. The list of late abstracts scheduled for Sunday is available in the Program Addendum, and those posters can be viewed on boards beginning with LB.

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 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–B34	Protein Structure and Conformation I
B35–B64	Membrane Protein Structures
B65–B81	Protein Structure, Prediction, and Design
B82–B99	Protein Assemblies I
B100–B119	Enzyme Function, Cofactors, and Post-translational Modifications
B120–B144	Chromatin and the Nucleoid
B145–B166	DNA Replication, Recombination, and Repair
B167–B192	Membrane Physical Chemistry I
B193–B214	Membrane Active Peptides and Toxins I
B215–B235	Membrane Structure I
B236–B248	Exocytosis and Endocytosis I
B249–B264	Excitation-Contraction Coupling I
B265–B280	Cardiac Smooth and Skeletal Muscle Electrophysiology I
B281–B298	Voltage-gated K Channels I
B299–B325	Ligand-gated Channels I
B326–B338	Voltage-gated Ca Channels
B339–B361	Cardiac Muscle Regulation
B362–B387	Cell Mechanics, Mechanosensing, and Motility I
B388–B391	Cytoskeletal-based Intracellular Transport
B392–B410	Membrane Pumps, Transporters, and Exchangers I
B411–B425	Cellular Signaling and Metabolic Networks
B426–B452	Optical Microscopy and Superresolution Imaging I
B453–B466	Single-Molecule Spectroscopy I
B467–B496	Molecular Dynamics I
B497–B517.1	Biosensors I

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 - B34)

226-Pos Board B1
A NEW AMINO ACID SIMILARITY MATRIX BASED ON SEQUENCE CORRELATIONS AND STRUCTURAL FEATURES YIELDS COMPLETE SEQUENCE-STRUCTURE CONGRUENCE. **Kejue Jia**

227-Pos Board B2
STRUCTURAL MODELING OF THE REFLECTIN PROTEIN. **Dillion Fox**, Loukas Petridis, Jeremy Smith, Alison Sweeney

228-Pos Board B3
MODELING ELECTROSTATIC FORCE IN PROTEIN-PROTEIN RECOGNITION. **Mihiri Shashikala Hewa Bosthanthirige**, Arghya Chakravorty, Emil Alexov

229-Pos Board B4
COMPUTATIONAL INVESTIGATION OF THE EFFECT OF BACKBONE CHIRAL INVERSIONS ON POLYPEPTIDE STRUCTURE. **Gül H. Zerze**, Pablo Debenedetti, Frank Stillinger

230-Pos Board B5 TRAVEL AWARDEE
MOLECULAR DYNAMICS SIMULATIONS OF GP120 AND GP41 OF HIV ENV PROVIDE INSIGHTS INTO STRAIN SPECIFICITY AND THE ROLE OF THE MEMBRANE ENVIRONMENT. Louis R. Hollingsworth IV, Justin A. Lemkul, Richard D. Gandour, David R. Bevan, **Anne M. Brown**

231-Pos Board B6 TRAVEL AWARDEE
ATOMIC SIMULATIONS OF TRP-CAGE FOLDING BY UMBRELLA SAMPLING USING Q FUNCTION AS REACTION COORDINATE. **Hamed Meshkin**, Fangqiang Zhu

232-Pos Board B7
MULTIPLE-WALKER CURVILINEAR-PATH UMBRELLA SAMPLING SIMULATIONS: TO TRACE PROTEIN-PROTEIN DISSOCIATION TRAJECTORIES AND COMPUTE POTENTIAL OF MEAN FORCE. **Dhananjay C. Joshi**, Jung-Hsin Lin

233-Pos Board B8
ON RESTRAINTS IN END-POINT PROTEIN-LIGAND BINDING FREE ENERGY CALCULATIONS. William Menzer, **Bing Xie**, David D.L. Minh

234-Pos Board B9
PROTEINS THAT TELL TIME. **Andy LiWang**

235-Pos Board B10
MOLECULAR BASIS OF LIGAND SELECTIVITY IN AMINOGLYCOSIDE ACETYLTRANSFERASES. Prashasti Kumar, Matthew J. Cuneo, Brinda Selvaraj, **Engin H. Serpersu**

236-Pos Board B11
STRUCTURAL BASIS OF ENDOCRINE FGF RECOGNITION BY BETA-KLOTHO. **Sangwon Lee**

237-Pos Board B12 TRAVEL AWARDEE
STRUCTURAL REARRANGEMENTS IN THE C-TERMINAL DOMAIN HOMOLOG OF ORANGE CAROTENOID PROTEIN ARE CRUCIAL FOR CAROTENOID TRANSFER. **Dvir Harris**, Adjele Wilson, Fernando Muzzopappa, Nikolai N. Sluchanko, Thomas Friedrich, Eugene G. Maksimov, Diana Kirilovsky, Noam Adir

238-Pos Board B13 TRAVEL AWARDEE
A NEW OPEN STRUCTURE OF THE INSULIN DEGRADING ENZYME PROVIDES INSIGHTS INTO THE CONFORMATIONAL TRANSITION OF THE MOLECULE. **Nicolae Sapoval**, Esmael J. Haddadian, Wei Jen Tang

239-Pos Board B14
STRUCTURE OF A NON-CANONICAL AND FLEXIBLE MIDDLE DOMAIN IN INNER-EAR PROTOCADHERIN-15. **Brandon L. Neel**, Carissa F. Klanseck, Marcos Sotomayor

240-Pos Board B15
SELENIUM NMR SPECTROSCOPY: A VERSATILE PROBE FOR BIOLOGICAL MACROMOLECULES. **Sharon Rozovsky**

241-Pos Board B16
TRANSIENT STRUCTURAL DISTORTION AND OLIGOMERIZATION OF THE CAPSID FORMING PROTEIN ARC IS ATTENUATED BY LIGAND BINDING. Lau Dalby Nielsen, Simon Erlendsson, **Kaare Teilum**

242-Pos Board B17
THE EFFECT OF LITHIUM BINDING ON SECONDARY AND TERTIARY STRUCTURE, HYDROPHOBICITY, THERMODYNAMICS, AND INTERACTIONS WITH INTERACTING PARTNERS OF DREAM. **Samiol Azam**, Jaroslava Miksovska

243-Pos Board B18
INVESTIGATING HOW PROTEIN MIXTURES INTERACT WITH GOLD NANOPARTICLES. **Rebecca A. Hill**, Katarina J. Boulet, Randika Perera, Mack B. Davidson, Nicholas C. Fitzkee

244-Pos Board B19
ION-DEPENDENT BINDING-SITE CONFIGURATIONS IN EF-HAND PROTEINS MEASURED WITH ULTRAFAST INFRARED SPECTROSCOPY. Sean Edington, Thomas R. Middendorf, David Brent Halling, Richard W. Aldrich, **Carlos R. Baiz**

245-Pos Board B20
ALKALINE CONFOMER OF HUMAN DIMERIC CYTOCHROME C. **Haotian Lei**, Bruce E. Bowler

246-Pos Board B21
PRODUCTION AND CHARACTERIZATION OF HTLV-1-ENCODED MITOCHONDRIAL PROTEIN P13II. **Elka R. Georgieva**, Peter P. Borbat, Shuyang Zhang, Andrzej Rajca, Jack H. Freed

247-Pos Board B22
HIGH CONCENTRATION OF INERT SOLUTES (FICOL 70 AND POLYETHELENE GLYCOL 6000) STABILIZE THE NATIVE FORM OF CLARIAS GARIEPIANUS GST (CGGST). **Adedayo A. Fodeke**, Olusanjo I. Adewale, Temidayo Ogumoyole

248-Pos Board B23
INVESTIGATING THE FUNCTION OF MUTL CONFORMATIONAL CHANGES IN MISMATCH REPAIR USING SMFRET. **Sharonda J. LeBlanc**, Pengyu Hao, Malikiya A. Hinds, Andi N. Morgan, Korene Gbozah, Keith R. Weninger, Dorothy A. Erie

249-Pos Board B24
INHERENT FLEXIBILITY AND OLIGOMERIZATION OF CLIC5A AND CLIC6 - A COMPARATIVE STATIC AND DYNAMIC STRUCTURAL STUDY. Alisa Ferofontov, Milit Marom, Moshe Giladi, **Yoni Haitin**

250-Pos Board B25
INTEGRATIVE METHODS FOR PROTEIN DYNAMICS AND AGGREGATION. **Carlo Camilloni**

251-Pos Board B26 TRAVEL AWARDEE
INVESTIGATION OF EXTRACELLULAR GATE MOVEMENT IN A GLUTAMATE HOMOLOGUE. **Erika Riederer**, Francis Valiyaveetil

252-Pos Board B27
SELF-ASSEMBLY OF THE TAU PROTEIN: FIBRIL FORMATION AND COMPLEX COACERVATION. **Joan Emma Shea**

253-Pos Board B28
ENHANCED SAMPLING OF AMYLOID BETA-42 DIMER ENSEMBLE; A NOVEL APPROACH WITH CONFORMATIONAL SYMMETRY. **Levent Sari**, Milo M. Lin

254-Pos Board B29
IDENTIFICATION AND STUDY OF POLYMORPHIC STRUCTURES OF HIERARCHICALLY TWISTED AMYLOID FIBRILS BY ATOMIC FORCE MICROSCOPE. **Sergey K. Sekatskii**, Jiangtao Zhou, Giovanni Dietler

255-Pos Board B30
TETRATRICOPEPTIDES, A VERSATILE PROTEIN INTERACTION MOTIF. **Srihari Shankar**, Jayaraman Sivaraman

256-Pos Board B31 TRAVEL AWARDEE
BIOPHYSICAL INSIGHTS INTO THE KRAS4B-FME-CALMODULIN INTERACTION. **Constance Agamasu**, Rodolfo Ghirlando, Andrew Stephen

257-Pos Board B32
ELECTRIC FIELD MEDIATED DISRUPTION OF BETA AMYLOID; A POTENTIAL NON-INVASIVE THERAPY FOR ALZHEIMER'S DISEASE. **Jahnu Saikia**, Vibin Ramakrishnan

258-Pos Board B33
KINETIC CHARACTERIZATION OF A NOVEL FOSFOMYCIN RESISTANCE ENZYME FROM MYCOBACTERIUM BOLLETII. **Skye R. Travis**, Madeline R. Shay, Matthew K. Thompson

259-Pos Board B34
DEVELOPMENT OF FAST PHOTOCHEMICAL OXIDATION OF PROTEINS FOR *IN VIVO* MODIFICATION IN *CAENORHABDITIS ELEGANS*.
Jessica A. Espino, Lisa M. Jones

Membrane Protein Structures (Boards B35 - B64)

260-Pos Board B35
APPLICATION OF ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY TO PROBE THE STRUCTURAL TOPOLOGY, DYNAMICS AND CONFORMATIONAL CHANGES OF S21 PINHOLIN PROTEIN.
Tanbir Ahammad, Daniel L. Drew, Sophia Rafferty, Indra D. Sahu, Robert McMarrick, Gary A. Lorigan

261-Pos Board B36
ASSESSING DEPTH-DEPENDENCE OF THE AZIDO VIBRATIONAL PROBE GROUP IN BILAYERS USING TRANSMEMBRANE PEPTIDES. **Yanyu Zhao**

262-Pos Board B37
MAPPING THE TOPOLOGICAL CHANGE OF SARCOLIPIN UPON SARCOPLASMIC RETICULUM CA^{2+}-ATPASE BINDING ALONG THE CA^{2+}-TRANSPORT CYCLE BY SOLID-STATE NMR. **Songlin Wang**, Gopinath Tata, Erik Larsen, Daniel Weber, Gianluigi Veglia

263-Pos Board B38
MAPPING THE EXTRACELLULAR LOOPS OF THE SEROTONIN TRANSPORTER USING CROSSLINKING-MASS SPECTROMETRY.
Elizabeth Castellano

264-Pos Board B39
CRYSTALLIZATION OF THE *E. COLI*RIBOSE ABC IMPORTER COMPLEX. **Leang-Chung Choh**, Satchal K. Erramilli, Nicholas Noinaj, Cynthia V. Stauffacher

265-Pos Board B40
DIMERIZATION OF HUMAN ADENOSINE A_{2A}RECEPTOR - IMPACT OF THE C-TERMINUS. **Khanh D. Nguyen**, Susanna Seppala, Michael Vigers, Nicole S. Schonenbach, Songi Han, Michelle A. O'Malley

266-Pos Board B41
STRUCTURAL INSIGHT INTO CWSA AND CRGA INTERACTION IN A LIPID BILAYER WITH SSNMR. **Rongfu Zhang**, Huajun Qin, Riqiang Fu, Tim Cross

267-Pos Board B42 TRAVEL AWARDEE
CRYO-EM STRUCTURE OF A MITOCHONDRIAL CALCIUM UNIPORTER. **Jiho Yoo**, Mengyu Wu, Ying Yin, Mark A. Herzik Jr, Gabriel C. Lander, Seok-Yong Lee

268-Pos Board B43 TRAVEL AWARDEE
STRUCTURAL FLUCTUATIONS IN RHODOPSIN ACTIVATION REVEALED BY NEUTRON SCATTERING. **Suchithranga M.D.C. Perera**, Udeep Chawla, Utsab Shrestha, Debsindhu Bhowmik, Andrey V. Struts, Shuo Qian, Xiang-Qiang Chu, Michael F. Brown

269-Pos Board B44 TRAVEL AWARDEE
VDAC1 CONFORMATIONAL CHANGES INVESTIGATED BY HIGH PRESSURE DEER. **Lucie Bergdoll**, Matthias Elgeti, Wayne Hubbell, Jeff Abramson

270-Pos Board B45
ELUCIDATING OLFACTORY RECEPTOR - ODORANT INTERACTIONS: LEVERAGING DRUG-DESIGN IDEATIONS. **Chiquito J. Crasto**, Anuththara Lokubandara, Vasanth Mandla, Dan Buzatu

271-Pos Board B46
REGULATION OF PROTON TRANSPORT IN TETRAMERIC UCP2 BY AN INTRAMOLECULAR SALT-BRIDGE NETWORK. **Afshan Ardalan**, Stephanie Uwumarenogie, Michael Fish, Shahin Sowlati-Hashjin, Mikko Karttunen, Matthew D. Smith, Masoud Jelokhani-Niaraki

272-Pos Board B47
PROBING THE ACTIVE AND INACTIVE FORMS OF THE BACTERIOPHAGE S21 PINHOLIN PROTEIN SYSTEM USING MAGNETIC RESONANCE SPECTROSCOPY. **Daniel L. Drew**, Tanbir Ahammad, Rachel Serafin, Brandon Butcher, Katherine Clowes, Indra D. Sahu, Robert McMarrick, Gary A. Lorigan

273-Pos Board B48
EXPLORING (PROTEO-) LIPOSOMES FOR MASS SPECTROMETRY.
Melissa Frick, Caroline Haupt, Carla Schmidt

274-Pos Board B49
LIPID-MODULATION OF STHK, A CYCLIC NUCLEOTIDE-GATED CHANNEL. **Philipp A.M. Schmidpeter**, Jan Rheinberger, Di Wu, Haiping Tang, Carol V. Robinson, Crina M. Nimigean

275-Pos Board B50
SITE-DIRECTED LABELING OF TYPE II CANNABINOID RECEPTOR CB2 FOR STRUCTURAL EPR ANALYSIS. **Levi T. Hooper**

276-Pos Board B51
LYSOSOMAL EXOCYTOSIS IMPACTS DECTIN-1 ENDOCYTOSIS AFTER B -GLUCAN STIMULATION. **Akram Etemadi Amin**, Aaron Neumann

277-Pos Board B52
CHARACTERIZATION OF THE INTERACTION BETWEEN TWO INFLUENZA A PROTEINS (M1 AND M2) INVOLVED IN VIRAL ASSEMBLY. **Abigail Wong-Rolle**, Reham Mahgoub, Elizabeth Erler, Kathleen P. Howard

278-Pos Board B53
PROBING STRUCTURE, TOPOLOGY AND DYNAMICS OF KCNE3 IN PROTEOLIPOSOMES USING SITE-DIRECT SPIN LABELING AND EPR SPECTROSCOPY. **Fathima Dhilhani Mohammed Faleel**, Indra D. Sahu, Robert M. McCarrick, Charles R. Sanders, Gary A. Lorigan

279-Pos Board B54
PURIFICATION AND PRELIMINARY CHARACTERIZATION OF HUMAN KCNQ1 (100-370) POTASSIUM ION CHANNEL IN LIPID BILAYERS USING SOLID-STATE NMR SPECTROSCOPY. **Colleen K. Jaycox**, Gunjan Dixit, Indra D. Sahu, Robert McMarrick, Charles R. Sanders, Gary A. Lorigan

280-Pos Board B55
COARSE-GRAINED SIMULATIONS OF TRANSMEMBRANE DOMAIN INTERACTIONS IN SEMAPHROIN-PLEXIN-NEUROPILIN SIGNAL SYSTEM. **Zhiyuan Meng**, Zhenlu Li, Matthias Buck

281-Pos Board B56
STRUCTURAL STUDIES OF MEMBRANE PROTEINS USING PULSED EPR SPECTROSCOPY. **Gary A. Lorigan**, Indra D. Sahu, Daniel L. Drew, Gunjan Dixit, TANBIR AHAMMAD

282-Pos Board B57
STRUCTURAL AND FUNCTIONAL ROLE OF THE SURFACE-EXPOSED LOOPS OF AIL DURING COMPLEMENT-MEDIATED EVASION BY *Y. PESTIS*. **Luz Marina Meneghini**, Chandan Singh, Kyungsoo Shin, L. Miya Fujimoto, Ye Tian, Francesca M. Marassi

283-Pos Board B58
NANODISCS AS A PLATFORM FOR THE STUDY OF HUMAN P-GLYCOPROTEIN IN A MEMBRANE ENVIRONMENT. **Sabrina Lusvarghi**, Suresh Ambudkar

284-Pos Board B59
STRUCTURAL STUDY FOR MEMBRANE PROTEIN USING SOLUTION X-RAY SCATTERING CONTRAST VARIATION. **Xiaobing Zuo**

285-Pos Board B60
STRUCTURE AND MECHANISMS OF AN ANION TRANSPORTER FAMILY. **Robert M. Stroud**, Jonathan Leano, Samir Batarni, Robert Edwards

286-Pos Board B61
MEMBRANE BINDING OF HIV-1 ACCESSORY PROTEIN NEF ON SPARSELY-TETHERED BILAYER LIPID MEMBRANES: AN SPR STUDY. **Christopher Kervick**, Manish Aryal, Frank Heinrich, Thomas E. Smithgall, Mathias Lösche

287-Pos Board B62
FLEXIBLE LINKER REGION IN ENDOPHILIN STRUCTURE AFFECTS ITS THERMOSTABILITY. **Rui Jin**, Tobias Baumgart

288-Pos Board B63
CONTRIBUTIONS OF THE C-TERMINUS AND MUTATIONS TO ADENOSINE RECEPTOR ACTIVITY AND STABILITY. **Kirsten N. Swonger**, Anne S. Robinson

289-Pos Board B64 TRAVEL AWARDEE
CHARACTERIZATION OF THE EXTRA-MEMBRANE DOMAINS OF CRGA IN LIPID BILAYERS USING SOLID STATE NMR. **Yiseul Shin**, Riqiang Fu, Huajune Qin, Timothy A. Cross

Protein Structure, Prediction, and Design (Boards B65 - B81)

290-Pos Board B65
MODELING EPISTASIS USING PROTEIN BIOPHYSICS AND ΦX174. **Casey M. Beard**

291-Pos Board B66
FOURIER-TRANSFORM INFRARED (FTIR) SPECTROSCOPY TRANSMISSION TECHNIQUE FOR ANALYSIS OF CHARACTERISTIC INFRARED BANDS OF PEPTIDE LINKAGE USING DRIED PROTEINS. **Jasmeet Kaur**, Shalmoli Bhattacharyya

292-Pos Board B67
TOWARD ACCURATE PREDICTION AND DESIGN OF KINKED ALPHA HELICES IN MEMBRANE PROTEINS. **Brittany Lasher**, Rebecca F. Alford, Jeffrey J. Gray

293-Pos Board B68
A THERMODYNAMICALLY-RIGOROUS, BIOLOGICALLY-DRIVEN ENERGY FUNCTION FOR MEMBRANE PROTEIN MODELING AND DESIGN. **Rebecca F. Alford**, Patrick Fleming, Karen G. Fleming, Jeffrey J. Gray

294-Pos Board B69
MOLECULAR MODELS OF HUMAN ELASTIN AND ELASTIN BIOMATERIALS. **Anna Tarakanova**

295-Pos Board B70
HPV VLPS AS SCAFFOLDS FOR VACCINE DESIGN. **Thomas Jordan**, Carolyn Barcellona, Danielle Basore, Charlie Clark, Zeyuan Guo, Sharon Isern, Kripa Nand, Gabi Rabasa, Terrence Shoemaker, Giffin Werner, Kai Xia, Xinmeng Yuan, Robert J. Linhardt, Scott Michael, Christopher Bystroff

296-Pos Board B71
REDEFINING THE PROTEIN KINASE CONFORMATIONAL SPACE WITH MACHINE LEARNING. Peter Man-Un Ung, Rayees Rahman, **Avner Schlessinger**

297-Pos Board B72
ELONGATED DENATURED CONFORMATION OF APOAZURIN: CROWDING AND UREA INTERPLAY. **Dirar M. Homouz**, Fabio Zegarra, Michael Kovermann, Andrei G. Gasic, Lucas Babel, Pernilla E. Wittung-Stafshede, Margaret S. Cheung

298-Pos Board B73
EXTENSION PROTEIN ENGINEERING IMPROVES PROTEIN STABILITY AND BINDING. **Matthew J. Dominguez**, Zoey L. Sharp, Valeria Jaramillo Martinez, Benjamin J. Lantz, Elliott J. Stollar

299-Pos Board B74
THERMAL STABILITY OF SINGLE-DOMAIN-ANTIBODIES ESTIMATED BY MD SIMULATIONS. **Narutoshi Kamiya**, Benson Ma, Gert-Jan Bekker

300-Pos Board B75
A MULTI-OBJECTIVE STOCHASTIC OPTIMIZATION APPROACH FOR DECOY GENERATION IN TEMPLATE-FREE PROTEIN STRUCTURE PREDICTION. **Ahmed Bin Zaman**, Amarda Shehu

301-Pos Board B76
EXPERIMENTAL CHARACTERIZATION OF "METAMORPHIC" PROTEINS PREDICTED FROM AN ENSEMBLE-BASED THERMODYNAMIC DESCRIPTION. **James O. Wrabl**, Miranda Russo, Jordan Hoffmann, Keila Sheetz, Andrew Munoz, Vincent J. Hilser

302-Pos Board B77
BIOMOLECULAR SIMULATIONS FOR STRUCTURAL BIOLOGY: INTEGRATING CO-EVOLUTION, SAXS AND FRET. **Alexander Schug**

303-Pos Board B78
COMPUTATIONAL INVESTIGATION OF THE DISSOCIATION PATHWAYS OF PEPTIDES. **Mary C. Sherman**, Luke Metzler, Michael J. Van Stipdonk

304-Pos Board B79
IN SILICO EVOLUTION OF AMINOACYL-TRNA SYNTHETASES FOR INCORPORATION OF NONCANONICAL AMINO ACIDS. **Tiberiu S. Mihaila**, E. James Petersson

305-Pos **Board B80**
INVESTIGATING THE STRUCTURE OF LACCASSES FOR BIOFUELS. **Shahla H. Partowmah**, Robert Collins, Alexei Soares

306-Pos **Board B81**
EXPRESSION, PURIFICATION, AND CRYSTALLIZATION OF THE HUMAN OXIDOREDUCTASE, PYROX-D1: A NEW DESCRIBED CAUSE OF EARLY-ONSET MYOPATHY IN HUMANS. **Isaac L. Scott**, Roger Sutton

Protein Assemblies I (Boards B82 - B99)

307-Pos **Board B82**
A REGULATORY METABOLIC COMPLEX FOR GLUCOSE METABOLISM IN LIVING CELLS: THE GLUCOSOME. **Songon An**

308-Pos **Board B83**
SELF-ASSEMBLY OF GAG IN ETHANOL/WATER MIXTURES EXAMINED BY MOLECULAR DYNAMICS. **Shuting Zhang**, Cuong Trinh, Reinhard Schweitzer-Stenner, Brigita Urbanc

309-Pos **Board B84**
QUANTIFYING A PROTEIN-PROTEIN INTERACTION IN LIVING CELLS. **Shannon L. Speer**, Alex J. Guseman, Gary J. Pielak

310-Pos **Board B85**
KINETIC TRAPPING AND ROBUSTNESS IN PROTEASOME ASSEMBLY. **Anupama Kante**, Eric J. Deeds

311-Pos **Board B86**
IMPROVING THE RECONSTRUCTION OF LOW-RESOLUTION CRYOEM MAP USING ENHANCED MOLECULAR DYNAMICS SIMULATIONS. **Cesar A. Lopez**, Mark Swift, Xiao-Ping Xu, Dorit Hanein, Niels Volkmann, S. Gnanakaran

312-Pos **Board B87**
THE MECHANISM OF ACTION FOR DRUGS THAT UNDERMINE HIV-1 VIRAL CAPSID FORMATION AND ACTIVITY: INSIGHTS FROM LARGE-SCALE COARSE-GRAINED SIMULATIONS. **Alexander J. Pak**, John M. A. Grime, Gregory A. Voth

313-Pos **Board B88**
E. COLI HIGH THROUGHPUT ASSAY IDENTIFIES REGULATORS OF ENDOTHELIAL BARRIERS. **Dario Mizrachi**

314-Pos **Board B89**
TETRAMERIC ASSEMBLY OF THE ONCOGENIC C-TERMINAL BINDING PROTEINS. **William E. Royer**, Andrew G. Bellesis, Anne M. Jecrois, Brendan J. Hilbert, Martin M. Dcona, Steven R. Grossman, Celia A. Schiffer

315-Pos **Board B90**
SHOULD VIRUS CAPSIDS ASSEMBLE PERFECTLY? A SIMPLE EQUILIBRIUM MODEL FOR DEFECTS. **Justin M. Spiriti**, James F. Conway, Daniel M. Zuckerman

316-Pos **Board B91**
STRUCTURES AND FUNCTIONS OF THE HIV-1 PRE-INTEGRATION COMPLEXES. Julien Batisse, Eduardo Bruch, Nicolas Levy, Patrice Gouet, Stéphane Emiliani, Vincent Parissi, **Marc Ruff**

317-Pos **Board B92**
PROBING AND DIFFERENTIATING THE SHELL AND ENZYME PROTEINS OF THE BACTERIAL MICROCOMPARTMENT BY THERMAL SHIFT ASSAY. **Naimat Kalim Bari**, Gaurav Kumar, Simerpreet Kaur, Sharmistha Sinha

318-Pos **Board B93**
MODELING PROTEASOME ASSEMBLY PATHWAYS IN BACTERIA. **Pushpa Itagi**, Eric J. Deeds

319-Pos **Board B94**
EFFECTS OF CHROMOGRANIN A AND B ASSOCIATION ON THE ANION CHANNEL FUNCTION IN THE REGULATED SECRETORY PATHWAY. **Sutonuka Bhar**, Gaya P. Yadav, Mahesh S. Chandak, Qiu-Xing Jiang

320-Pos **Board B95**
USING N^{PRO}AUTOPROTEASE FUSION TECHNOLOGY TO EXPRESS A SEMENOGELIN I PEPTIDE. **Fiona Berry**, Birgitta Frohm, Sara Linse, Karin Akerfeldt

321-Pos **Board B96** **TRAVEL AWARDEE**
UNVEILING THE IMPACT OF THE NEGATIVE ARM OF THE CIRCADIAN CLOCK ON OUTPUT IN *NEUROSPORA CRASSA*. **Alexander E. Mosier**, Jennifer M. Hurley

322-Pos **Board B97** **TRAVEL AWARDEE**
RESOLVING THE TRANSITION STATES OF HUMAN HEMOGLOBIN ASSEMBLY THROUGH A COMBINATION OF SPECTROSCOPIC STUDIES AND ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS. **Premila P. Samuel Mohan Dass**, George N. Phillips, John S. Olson, David A. Case

323-Pos **Board B98**
INTERACTIONS BETWEEN THROMBOMODULIN AND THE COMPLEMENT SYSTEM STUDIED BY SURFACE PLASMON RESONANCE AND DEUTERIUM EXCHANGE MASS SPECTROMETRY. **Jose Giler**, Mary Catherine Rice, Vanessa Wiltsie, Kyler Anderson, Julia R. Koeppe

324-Pos **Board B99** **TRAVEL AWARDEE**
SGEF GEF ACTIVITY AND ITS REGULATION BY SCRIBBLE AND DLG1. **Ashley Simpson**

Enzyme Function, Cofactors, and Post-translational Modifications (Boards B100 - B119)

325-Pos **Board B100** **TRAVEL AWARDEE**
INVESTIGATING THE EFFECT OF ALPHA-SYNUCLEIN POST-TRANSLATIONAL MODIFICATIONS ON SYNAPTIC VESICLE TRAFFICKING. **Buyan Pan**, E. James Petersson, Elizabeth Rhoades

326-Pos **Board B101**
MECHANISTIC STUDY OF PRENYLATED FLAVIN MONONUCLEOTIDE FORMATION. **Szymon Zaczek**, Agnieszka Dybala-Defratyka

327-Pos **Board B102**
STUDY OF THE LYSINE DEPROTONATION MECHANISM IN UBIQUITIN CONJUGATING ENZYME UBC13. **Katherine Elliott**, N. Cole Seward, Heath Hampton, Isaiah Sumner

328-Pos **Board B103**
MOLECULAR DYNAMICS SIMULATIONS REVEAL THE ORIGINS OF THE DISTINCT ACTIVITIES AND SUBSTRATE SELECTIVITIES OF *E. COLI* DEHYDRATASES FABA AND FABZ. Greg J. Dodge, Kara L. Jaremko, **Ashay Patel**, J. Andrew McCammon, Janet L. Smith, Michael D. Burkart

329-Pos **Board B104**
CAN PHOTOLYSIS OF THE CO-C BOND IN COENZYME B_{12}-DEPENDENT ENZYMES BE USED TO MIMIC THE NATIVE REACTION ? **Abdullah Al Mamun**, Pawel M. Kozlowski

330-Pos **Board B105**
PHOSPHORYLATION SITES WITH S/T-P MOTIF: POSSIBLE BASAL ANTI-AGGREGATION MECHANISM. **Min Hyung Cho**, James Wrabl, Vincent Hilser, James Taylor

331-Pos **Board B106**
INVESTIGATING THE CATALYTIC BASE RESIDUES IN THE PHOSPHOGLUCOSE ISOMERASE FROM*THERMOTOGA MARITIMA*. **Katherine Lake**, Nicole Swope, Linda Columbus

332-Pos **Board B107**
A KINETIC STUDY OF LIGAND BINDING AND CONFORMATIONAL CHANGES IN INDUCIBLE NITRIC OXIDE SYNTHASE. **Karin Nienhaus**, Michael Horn, G. Ulrich Nienhaus

333-Pos **Board B108**
ESSENTIAL DETERMINANTS OF THE SUBSTRATE SPECIFICITY OF PTEN. Kirstin Hobiger, Michael G. Leitner, Dominik Oliver, **Christian R. Halaszovich**

334-Pos **Board B109**
ROLE OF THE *RE*-FACE TYR RESIDUE STACKED ON THE FAD PROSTHETIC GROUP IN FERREDOXIN-$NADP^+$ OXIDOREDUCTASE FROM *RHODOPSEUDOMONAS PALUSTRIS* DURING CATALYSIS WITH $NADP^+$/H. **Daisuke Seo**, Issei Hayashi

335-Pos **Board B110**
SUBSTRATE SPECIFICITY OF AN ISOPENTENYL PHOSPHATE KINASE. **Shanteri Singh**, Erin M. Scull

336-Pos **Board B111**
A MICROFLUIDICS-BASED ASSAY FOR MAPPING CONNECTIVITY IN HIGHLY PROFICIENT ENZYMES REVEALS FUNCTIONAL MODULARITY. **Craig J. Markin**, Daniel A. Mokhtari, Fanny Sunden, Daniel Herschlag, Polly M. Fordyce

337-Pos **Board B112**
STRUCTURAL AND DYNAMICAL EFFECTS OF UBIQUITINATION OF KEY LYSINE RESIDUES IN THE HUMAN MYELOPEROXIDASE. UNDERSTANDING THE SIGNALING MECHANISMS INVOLVED IN AUTOIMMUNE RESPONSES IN SYSTEMIC LUPUS ERYTHEMATOSUS. **Daniel Carrillo-Vázquez**, Diana Gómez-Martín, Eduardo Jardón-Valadez

338-Pos **Board B113**
INVESTIGATING THE KEY STRUCTURAL ELEMENTS THAT CONFER SPECIFICITY TO THE ACETYLTRANSFERASES ENZYME FAMILY. **Sara K. Lowe**, Kole J. Runyan, Patricia Soto, Yadilette Rivera-Colón

339-Pos **Board B114**
FUNCTION IDENTIFICATION OF THE PROTEIN PRODUCT OF GENE LIN2722 FROM *LISTERIA INNOCUA*USING COMPUTATIONAL AND IN-VITRO TECHNIQUES. **Mary Sharkawy**, Andrea A. Carter, Paul Craig

340-Pos **Board B115**
INSIGHT INTO WEAK INTERACTIONS BETWEEN CARRIER PROTEINS AND THEIR SUBSTRATES BY CHEMO-ENZYMATIC AND IMPROVED NMR METHODS. **Indrani Pal**, Yousang Hwang, David Meyers, Dominique P. Frueh

341-Pos **Board B116**
LIGHT-INDUCED ACTIVATION OF ORGANO-METALLIC CO-C BOND IN MECBL-DEPENDENT METHIONINE SYNTHASE- QM/MM STUDY. **Arghya P. Ghosh**, Abdullah Al Mamun, Pawel M. Kozlowski

342-Pos **Board B117**
IDENTIFYING THE FUNCTION OF PROTEIN 2O14 USING BIOINFORMATIC AND BIOCHEMICAL TECHNIQUES. **Antonina Flair**, Andrea A. Carter, Paul A. Craig

343-Pos **Board B118**
STRUCTURE-BASED PREDICTION OF POLYPEPTIDE SUBSTRATE SPECIFICITIES OF GLYCOSYLTRANSFERASES. Yashes Srinivasan, **Sai Pooja Mahajan**, Jason Labonte, Matthew P. DeLisa, Jeffrey J. Gray

344-Pos **Board B119**
ENGENDERING CATALYTIC ACTIVITY BY INCREASING DYNAMICS IN A DESIGNED ENZYME. **Jonathan Preston**, Bernard Everson, Fabien Giroud, David Vinyard, Kelly Greenland, Emma Bjerkefeldt, Shelley Minteer, Gary Brudvig, Ronald Koder

Chromatin and the Nucleoid (Boards B120 - B144)

345-Pos **Board B120**
THE REMOVAL OF HISTONES FROM ULTRAFINE ANAPHASE BRIDGES STUDIED BY OPTICAL TWEEZERS. **Dian Spakman**, Andreas S. Biebricher, Graeme A. King, Kata Sarlós, Ian D. Hickson, Erwin J. Peterman, Gijs J. Wuite

346-Pos **Board B121**
SEQUENCE-DEPENDENT ASYMMETRIC UNWRAPPING OF NUCLEOSOMES OF YEAST. **Hidetoshi Kono**, Di Luo, Daiki Kato, Jumpei Nogami, Yasuyuki Ohkawa, Hitoshi Kurumizaka

347-Pos **Board B122**
UNCOVERING A NOVEL FOLDING LANDSCAPE OF THE DROSOPHILA GENOME THROUGH HI-C NORMALIZATION VIA FRACTAL MONTE CARLO DEEP SAMPLING. **Qiu Sun**, Alan Perez-Rathke, Daniel Czajkowsky, Zhifeng Shao, Jie Liang

348-Pos **Board B123**
DIFFUION BEHAVIOR OF SUPURAMOLECULAR PROTEIN ASSEMBLIES IN THE LIVING CELL NUCLEUS. **Shuji Fujii**, Irena Bronshtein, Yuval Garini, Michael Elbaum

349-Pos **Board B124** **TRAVEL AWARDEE**
MICRORHEOLOGY OF INTERPHASE NUCLEI: A COMPUTER SIMULATION STUDY. **Andrea Papale**, Angelo Rosa

350-Pos **Board B125**
LEDGF/P75 DECREASES NUCLEOSOME ACCESSIBILITY. **Khan Cox**, Matthew D. Gibson, Mamuka Kvaratskhelia, Michael G. Poirier

351-Pos **Board B126**
THE EFFECTS OF LINKER HISTONE ISOFORMS ON THE STRUCTURE AND DYNAMICS OF THE CHROMATOSOME. **Dustin C. Woods**, Jeffery M. Wereszczynski

352-Pos **Board B127**
CHROMATIN STRUCTURE REGULATION BY AN EPIGENETIC SWITCH TUNING THE FLEXIBILITY OF THE H1 C-TERMINAL DOMAIN. **Akshay Sridhar**, Stephen Farr, Guillem Portella, Tamar Schlick, Modesto Orozco, Rosana Collepardo-Guevara

353-Pos **Board B128**
BINDING DYNAMICS OF DISORDERED LINKER HISTONE H1 WITH A NUCLEOSOMAL PARTICLE. **Hao Wu**, Yamini Dalal, Garegin A. Papoian

354-Pos **Board B129**
PHASE-SEPARATION DRIVEN HETEROCHROMATIN FORMATION: EXPERIMENT AND THEORY. **Dan Deviri**, Amy R. Strom, Serafin Colmenares, Shelby Wilson, Collin Hickmann, Gary Karpen, Samuel Safran

355-Pos **Board B130**
IN VIVO CHROMATIN COMPACTION CHANGES AS DETECTED BY WATER DIPOLAR RELAXATIONS: THE MOLECULAR CROWDING ROLE REVEALED BY THE ACDAN FLUORESCENCE. **Leonel S. Malacrida**, Lorenzo Scipioni, Enrico Gratton

356-Pos **Board B131**
MODULATION OF THE DNA ACCESSIBILITY IN THE NUCLEOSOME -- INSIGHTS FROM PHYSICS MODELS. **Alexey V. Onufriev**

357-Pos **Board B132**
STRUCTURE AND DYNAMICS OF THE TELOMERIC NUCLEOSOME AND CHROMATIN. **Lars Nordenskiöld**, Aghil Soman, Nikolay Korolev, Surya Wahyu, Sook Yi Wong, Chong Wai Liew, Simon Lattmann, Hsian Ling Teo, John Van Noort, Daniela Rhodes

358-Pos Board B133
MULTI-SCALE SIMULATION OF THE CHROMATIN FIBER TO ELUCIDATE OCT4 GENE REPRESSION. **Michael R. Williams**, Dmitri Kireev

359-Pos Board B134
SURFACE FLUCTUATIONS AND COALESCENCE OF NUCLEOLAR DROPLETS IN THE HUMAN CELL NUCLEUS. **Christina M. Caragine**, Shannon Haley, Alexandra Zidovska

360-Pos Board B135
A PLATFORM FOR INVESTIGATING NUCLEAR ORGANIZATION AND ITS CHANGES DURING HUMAN IPSC DIFFERENTIATION. **Susanne M. Rafelski**

361-Pos Board B136
INTENSITY SORTED FLUORESCENCE CORRELATION SPECTROSCOPY: A NOVEL METHOD TO PROBE NUCLEAR DYNAMICS AND CHROMATIN ORGANIZATION IN LIVING CELLS. **Melody Di Bona**, Simone Pelicci, Isotta Cainero, Giuseppe Vicidomini, Davide Mazza, Michael A. Mancini, Alberto Diaspro, Luca Lanzano'

362-Pos Board B137
EFFECT OF DIFFERENT TRANSCRIPTIONAL STATES ON THE SINGLE GENE DYNAMICS. **Fang-Yi Chu**, Alexandra Zidovska

363-Pos Board B138
DYNAMICAL SIGNATURES OF LOCAL DNA DAMAGE IN LIVE CELLS. **Jonah Eaton**

364-Pos Board B139
DESTABILIZING NUCLEOSOMES AND THE ROLE OF HMGB PROTEINS. **Micah J. McCauley**, Ran Huo, Emily Navarrete, Nicole Becker, Qi Hu, Molly Nelson Holte, Uma Muthurajan, Ioulia Rouzina, Karolin Luger, Georges Mer, L. James Maher III, Nathan Israeloff, Mark C. Williams

365-Pos Board B140
CHROMATIN FOLDING HETEROGENEITY INFERRED FROM HIGH-RESOLUTION NUCLEOSOME STRUCTURES. **Stefjord Todolli**, John Yager, Wilma K. Olson

366-Pos Board B141
HISTONE TAIL-DNA INTERACTIONS: CHARGE REGULATION AND SEQUENCE SPECIFICITY. **Raju Timsina**, Xiangyun Qiu

367-Pos Board B142
MANY-BODY CHROMATIN INTERACTIONS IN SUPER-ENHANCER TADS. **Alan Perez-Rathke**, Qiu Sun, Valentina Boeva, Jie Liang

368-Pos Board B143
QUANTITATIVE MEASUREMENT OF NUCLEOSOME OCCUPANCY AND DNA ACCESSIBILITY. **Razvan V. Chereji**, Terri D. Bryson, Steven Henikoff

369-Pos Board B144
THE CHROMOSOME'S FIGHT AGAINST DISORDER IN E. COLI. **Christopher H. Bohrer**, Elijah Roberts, Jie Xiao

DNA Replication, Recombination, and Repair (Boards B145 - B166)

370-Pos Board B145
DNA MISMATCH REPAIR RELIES ENTIRELY ON STOCHASTIC TRANSACTIONS. **Jiaquan Liu**, Ryang-Geun Lee, Brooke Britton, James London, Jeungphill Hanne, Jong-Bong Lee, Richard Fishel

371-Pos Board B146
DECIPHERING THE ESSENTIAL INTERACTION BETWEEN PRIMASE AND HELICASE IN *MYCOBACTERIUM TUBERCULOSIS*. **Dhakaram P. Sharma**, Ramachandran Vijayan, Syed Arif Abdul Rehman, Samudrala Gourinath

372-Pos Board B147
AFM SHOWS THAT HUMAN CTIP FORMS A TETRAMERIC DUMBBELL-SHAPED PARTICLE WHICH BINDS AND BRIDGES DNA ENDS. **Alejandro Martin-Gonzalez**, Oliver Wilkinson, Hae Joo Kang, Sarah Northall, Dale Wigley, Mark S. Dillingham, Fernando Moreno-Herrero

373-Pos Board B148
NOVEL ASSAY RESOLVES D-LOOP PROCESSING PATHWAYS BY *E. COLI* RECQ AND HUMAN BLM HELICASES. **Gabor M. Harami**, Janos Palinkas, Yeonee Seol, Mate Gyimesi, Zoltan J. Kovacs, Keir C. Neuman, Mihaly Kovacs

374-Pos Board B149
MECHANISM OF SSB DISPLACEMENT BY REPLICATIVE DNA POLYMERASES DURING LAGGING STRAND SYNTHESIS. Fernando Cerron, Grzegorz L. Ciesielski, Laurie S. Kaguni, Francisco J. Cao, **Borja Ibarra**

375-Pos Board B150
SINGLE-MOLECULE MOVIES OF THE INTERPLAY BETWEEN DNA POLYMERASE AND SINGLE STRAND DNA BINDING (SSB) PROTEIN. **Longfu Xu**, Julia Bakx, Seyda Acar, Andreas Biebricher, Erwin J. Peterman, Gijs J. Wuite

376-Pos Board B151
ELUCIDATION OF THE ROLE OF THE INTERACTION BETWEEN RECQ HELICASE AND SSB PROTEIN. Gabor M. Harami, K. Maria Mills, Zoltan J. Kovacs, Yeonee Seol, Veronika Barath, Julianna B. Nemeth, Hajnalka Harami-Papp, Keir C. Neuman, **Mihaly Kovacs**

377-Pos Board B152
NOVEL CONFORMATIONALLY-TAUTOMERIC PROPERTIES OF THE BIOLOGICALLY IMPORTANT AT DNA BASE PAIRS. **Ol'ha Brovarets'**, Kostiantyn Tsiupa

378-Pos Board B153
MUTS HOMOLOG SLIDING CLAMPS SHIELD THE DNA FROM BINDING PROTEINS. **Jeungphill Hanne**, Brooke M Britton, Jonghyun Park, Jiaquan Liu, Juana Martin-Lopez, Nathan Jones, Matthew Schoffner, Piotr Klajner, Ralf Bundschuh, Jong-Bong Lee, Richard Fishel

379-Pos Board B154
SINGLE-MOLECULE STUDIES REVEAL NEW REPLICATION REACTIVATION PATHWAYS OF BACTERIOPHAGE T7. **Bo Sun**, Michelle D. Wang

380-Pos Board B155
NANOPORE DETECTS COMPROMISE BETWEEN SPEED AND PROCESSIVITY OF PCRA HELICASE. **Momcilo Gavrilov**, Ram Tippana, Dmitriy Bobrovnikov, Taekjip Ha

381-Pos Board B156
REPLISOME PRESERVATION BY A SINGLE-STRANDED DNA GATE IN THE CMG HELICASE. **Michael R. Wasserman**, Grant D. Schauer, Michael E. O'Donnell, Shixin Liu

382-Pos Board B157 TRAVEL AWARDEE
A NEW DNA INVERSION MECHANISM: RECOMBINATION OF THE DNA FOLDBACK INTERCOIL STRUCTURE. **Byung Ho Lee**, Soojin Jo, Hyunki Kim, Sung Ha Park, Byung-Dong Kim, Moon Ki Kim

383-Pos Board B158
EXOG DISPLAYS 5'-EXONUCLEASE ACTIVITY ON BOTH SSDNA AND SSRNA. **Anna Karlowicz**, Michal R. Szymanski

384-Pos Board B159
BIOPHYSICAL CHARACTERIZATION OF FULL LENGTH EXOG A HUMAN MITOCHONDRIAL INNER MEMBRANE NUCLEASE. **Andrzej B. Dubiel**, Michal R. Szymanski

385-Pos Board B160
ROLE OF MIS LOCALIZATION OF DNA REPAIR FACTORS IN CELL CYCLE ARREST. **Manasvita Vashisth**, Sangkyun Cho, Dennis Discher

386-Pos Board B161
TRACKING THE ACCELERATION OF DNA REPAIR IN X-RAY IRRADIATED CELLS BY INTERACTION WITH HEALTHY CELLS. **Sha Jin**, Nils Cordes

387-Pos Board B162
DUAL-COLOUR LIVE CELL SINGLE MOLECULE IMAGING REVEALS THE DYNAMICS OF NUCLEOTIDE EXCISION DNA REPAIR COMPLEXES IN E. COLI. **Alexandra M. Moores**, Jingyu Wang, Neil M. Kad

388-Pos Board B163
UNTANGLING DNA MISMATCH REPAIR COMPLEXES WITH SMFRET AND TETHERED PARTICLE MOTION ANALYSIS. **Pengyu Hao**, Sharonda LeBlanc, Dorothy A. Erie, Keith R. Weninger

389-Pos Board B164
MYOSIN VI AND ITS ROLE IN THE DNA DAMAGE RESPONSE. **Alexander Cook**, Yukti Hari Gupta, Tomáš Venit, Piergiorgio Percipalle, Christopher P. Toseland

390-Pos Board B165
MOLECULAR DYNAMICS SIMULATIONS REVEAL MULTIPLE ROLES OF POLYMERASE THUMB DOMAIN DURING PRIMER STRAND TRANSLOCATION IN DNA POLYMERASE III. **Thomas W. Dodd**, Ivaylo Ivanov

391-Pos Board B166
BINDING SPECIFICITY OF*E. COLI* SSB C-TERMINAL TAILS TO SIPS. **Min Kyung Shinn**, Alexander G. Kozlov, Timothy M. Lohman

Membrane Physical Chemistry I (Boards B167 - B192)

392-Pos Board B167
A CALORIMETRIC STUDY OF BRAIN CEREBROSIDES IN MIXTURES WITH CHOLESTEROL, BRAIN CERAMIDE AND PHOSPHOLIPIDS. **Alicia Alonso**, Emilio González-Ramírez, Goni Felix M

393-Pos Board B168
DIRECT IMAGING OF MEMBRANE DOMAINS IN SUB-MICRON LIPID VESICLES BY CRYO-EM. **Caitlin E. Cornell**, Alexander Mileant, Kelly K. Lee, Sarah L. Keller

394-Pos Board B169
THE INFLUENCE OF LIPID COMPOSITION UPON LIPID DOMAIN FORMATION IN THE INNER LEAFLET OF ASYMMETRIC VESICLES USING SPIN-LABELED LIPIDS. **Qing Wang**, Erwin London

395-Pos Board B170
THE ROLE OF CERAMIDE STRUCTURE IN REGULATING THE STABILITY OF MEMBRANE DOMAINS. **Frederick A. Heberle**, Mitchell DiPasquale, Tye Deering, Mark Kester, John Katsaras, Drew Marquardt

396-Pos Board B171 TRAVEL AWARDEE
THE ROLE OF ERGOSTEROL IN PHASE SEPARATION OF YEAST VACUOLE MEMBRANES. **Chantelle L. Leveille**, Caitlin E. Cornell, Alexey J. Merz, Sarah L. Keller

397-Pos Board B172
COMPLEX COACERVATE FORMATION ON A HETEROGENEOUS MEMBRANE. **Andrew Balchunas**, Sarah Veatch

398-Pos Board B173
CHARACTERIZING GIANT PLASMA MEMBRANE VESICLES ISOLATED FROM *XENOPUS LAEVIS* OOCYTES. **Eva S. Chakravorty**

399-Pos Board B174
PHASE BEHAVIOR OF CHOLESTEROL CRYSTALS FORMED IN WATER FROM PURE CHOLESTEROL AND FROM CHOLESTEROL/PHOSPHOLIPID MIXTURES. **Laxman Mainali**, Marta Pasenkiewicz-Gierula, Witold Subczynski

400-Pos Board B175
DPPC LIPID MELTING TRANSITION IN CONCENTRATED SUCROSE SOLUTIONS. Mattia I. Morandi, **Fabrice J. Thalmann**, Monika Kluzek, Andre P. Schroder, Carlos M. Marques

401-Pos Board B176
EFFECTS OF PASSIVE FLIP-FLOP PHOSPHOLIPID AND ASYMMETRIC EXTERNAL FIELDS ON BILAYER PHASE EQUILIBRIA. **Peter Olmsted**, John Joseph Williamson

402-Pos Board B177
INVESTIGATING SINGLE-CELL VARIATION IN MEMBRANE FLUIDITY AND RESPIRATION RATES. Krishna Ojha, Sam Blechman, Joshua Kasburg, **Michael C. Konopka**

403-Pos Board B178
PREPARATION OF ASYMMETRIC CHARGED LARGE UNILAMELLAR VESICLES CONTAINING BOTH CATIONIC AND ANIONIC LIPIDS. **Bingchen Li**, Erwin London

404-Pos Board B179
A NEW METHOD TO PREPARE ASYMMETRIC UNILAMELLAR VESICLES: HEMIFUSION. **Thais A. Enoki**, Gerald W. Feigenson

405-Pos Board B180
TOWARD REALISTIC CELL MEMBRANE MIMICS. **Peter Beltramo**

406-Pos Board B181
TEMPERATURE-CONTROLLED SINGLE-LIPOSOME PROTON PERMEABILITY ASSAY OF EXTREMOPHILE-INSPIRED LIPID MEMBRANES. **Anirvan Guha**, Melissa McGuire, Thomas B. H. Schroeder, Geoffray Leriche, Jerry Yang, Michael Mayer

407-Pos Board B182
APPLICATION OF LONG-TERM AIR-STABLE LIPID BILAYERS FOR WAVEGUIDE-BASED BIOSENSORS. **Christine Pedersen**, Aaron Anderson, Harshini Mukundan, Jessica Kubicek-Sutherland

408-Pos Board B183
NESTING LIPID BILAYERS IN NANOPORES: EFFECT OF PORE DIAMETER ON MACROSCOPIC ORDER AND THE LAYER COUNT. Morteza Jafarabadi, Melanie Chestnut, Antonin Marek, Alexander Nevzorov, **Alex I. Smirnov**

409-Pos Board B184
EFFECT OF SILICA SUPPORT ON ELECTROSTATICS OF LIPID INTERFACES IN NANO-BIO HYBRID SYSTEMS. Erkang Ou, Maxim Voinov, Alex Irving, Alex Smirnov, **Tatyana I. Smirnova**

410-Pos Board B185
IMAGING OF LIPID METABOLISM THROUGH A PHASOR ANALYSIS OF MEMBRANE MICROPOLARITY. **Flavio Di Giacinto**, Marco De Spirito, Giuseppe Maulucci

411-Pos Board B186
PHOTOPHYSICAL CHARACTERIZATION AND MICROSCOPY APPLICATION OF AN ANTHRACENE ANALOGOUS OF LAURDAN. **German Gunther**, Javier Gajardo, Vicente Castro, Catalina Sandoval, Susana A. Sanchez, Leonel Malacrida

412-Pos Board B187
THE ROLE OF PACKING DENSITY ON FLUORESCENCE INTENSITY MEASUREMENTS OF COMMON FLUOROPHORES IN LIPID MONOLAYERS. **Benjamin L. Stottrup**, Dametre Thunberg, Joan C. Kunz

413-Pos Board B188
ITRACONAZOLE PERTURBS BEHAVIOROF FLUORESCENT PROBES IN LIPID BILAYER. Chetan Poojari, Natalia Wilkosz, Piotr Jurkiewicz, Ilpo Vattulainen, Mariusz Kepczynski, **Tomasz Rog**

414-Pos Board B189
EXCITATION OF FLUORESCENT LIPID PROBES ACCELERATES PHOSPHOLIPID VESICLE RUPTURE AND SUPPORTED LIPID BILAYER FORMATION. Ashley M. Baxter, **Nathan J. Wittenberg**

415-Pos Board B190
CONCENTRATION-CONTROLLED FASCINATING VESICLE-FIBRIL TRANSFORMATION USING MEROCYANINE 540 AND 1-OCTYL-3-METHYLIMIDAZOLIUM CHLORIDE. **Rupam Dutta**, Arghajit Pyne, Sangita Kundu, Pavel Banerjee, Nilmoni Sarkar

416-Pos Board B191
A DETAILED MICROSCOPIC INSIGHT INTO THE AGGREGATION BEHAVIORS OF DOXORUBICIN HYDROCHLORIDE IN DIFFERENT MICROHETEROGENEOUS MEDIA. **Arghajit Pyne**, Sangita Kundu, PAVEL BANERJEE, Nilmoni Sarkar

417-Pos Board B192
BIOLOGICAL MEMBRANE SOLUBILIZATION BY STYRENE-MALEIC ACID COPOLYMERS: IMPORTANCE OF POLYMER LENGTH. **Adrian H. Kopf**, Min Xie, Randy Cunningham, Martijn C. Koorengevel, Helene Jahn, Jonas M. Dörr, Rueben Pfukwa, Bert Klumperman, Antoinette J. Killian

Membrane Active Peptides and Toxins I (Boards B193 - B214)

418-Pos Board B193
CHARACTERIZATION OF HYBRIDS MADE FROM TWO MEMBRANE TRANSLOCATING ANTIMICROBIAL PEPTIDES. **Ju Young Kwag**, Hannah Klim, Donald E. Elmore

419-Pos Board B194
MECHANISM OF ACTION OF PH-TRIGGERED, MEMBRANE ACTIVE PEPTIDES. **Sarah Y. Kim**, Anna Pittman, Gavin King, William C. Wimley, Kalina Hristova

420-Pos Board B195 TRAVEL AWARDEE
DISCOVERING NOVEL ANTIMICROBIAL PEPTIDES USING HIGH-THROUGHPUT SCREENING AND RATIONAL VARIATION. **Jenisha Ghimire**, Charles G. Starr, William C. Wimley

421-Pos Board B196
TOXICITY AND STRUCTURE OF ANTIMICROBIAL PEPTIDES DERIVED FROM THE CHEMOKINE, CXCL10. **Peter Bailer**, Amanda E. Ward, Matthew Crawford, Debra Fisher, Lukas K. Tamm, Molly Hughes

422-Pos Board B197
CHARACTERIZATION OF A HISTIDINE CONTAINING ANTIMICROBIAL PEPTIDE WITH PH DEPENDENT ACTIVITY. **Luis Santiago-Ortiz**, Morgan Hitchner, Thaddeus Palmer, Gregory A. Caputo

423-Pos Board B198
MEMBRANE REMODELING INDUCED BY A PH DEPENDANT PORE FORMING PEPTIDE VIA ATOMIC FORCE MICROSCOPY. **Anna Pittman**, Sarah Y. Kim, William C. Wimley, Kalina Hristova, Gavin King

424-Pos Board B199
ELASTIC BEHAVIOR OF MODEL MEMBRANES WITH ANTIMICROBIAL PEPTIDES DEPENDS ON LIPID SPECIFICITY AND D-ENANTIOMERS. Akari Kumagai, Fernando G. Dupuy, Zoran Arsov, Yasmene Elhady, Diamond Moody, Belita Opene, Robert K. Ernst, Berthony Deslouches, Ronald C. Montelaro, Y.P. Peter Di, **Stephanie A. Tristram-Nagle**

425-Pos Board B200
HUMAN ANTIBACTERIAL PEPTIDES MODIFY LATERAL STRUCTURE IN LIPID MONOLAYERS UPON INTERFACIAL ADSORPTION. Thomas Gutsmann, Beate Klösgen, Christian Nehls, Laura Paulowski, **Chen Shen**

426-Pos Board B201
CAN MOLECULAR DYNAMICS SIMULATIONS PREDICT THE EFFECT OF TRUNCATING HISTONE-DERIVED ANTIMICROBIAL PEPTIDES? **Kerry Gao**, Donald E. Elmore

427-Pos Board B202
EFFECTS OF CHOLESTEROL ON FENGYCIN, AN ANTIMICROBIAL LIPOPEPTIDE USING WEIGHTED ENSEMBLE PATH SAMPLING METHOD. **Sreyoshi Sur**, Alan Grossfield

428-Pos Board B203 TRAVEL AWARDEE
EFFECT OF BIOPOLYMER TETHERS ON ANTIMICROBIAL PEPTIDE ACTIVITY IN BIOMEMBRANES. **Fathima T. Doole**, Abhishek Singharoy, Michael F. Brown, Minkyu Kim

429-Pos Board B204
EFFECT OF N-TERMINAL METALATION AND LIPID COMPOSITION ON THE ACTIVITY OF ANTIMICROBIAL PISCIDINS IN MEMBRANES. **Ella Mihailescu**, Roderico Acevedo, Vitalii Silin, Frank Heinrich, Myriam Cotten

430-Pos Board B205
BIOPHYSICAL PROPERTIES OF MAGAININ-TREATED BIOFILMS. **Ryan MacVicar**, Thelma Mashaka, Catherine B. Volle, Megan E. Nunez

431-Pos Board B206
MECHANISTIC STUDIES ON DAPTOMYCIN-INDUCED PHASE-TRANSITIONS ON MODEL LIPID MEMBRANES: EFFECT ON MEMBRANE PERMEABILITY. **Alaina K. Howe**, Stavroula Sofou

432-Pos Board B207
CORRELATION OF AN ANTIMICROBIAL PEPTIDE'S POTENCY AND ITS INFLUENCES ON MEMBRANE ELASTICITY. Wen-Fang Chang, Si-Han Chen, **Yi-Fan Chen**

433-Pos Board B208
MEASURING THE STOICHIOMETRY OF ANTIMICROBIAL PEPTIDES IN NANODISCS WITH NATIVE MASS SPECTROMETRY. **Michael T. Marty**, Lawrence Walker, Marius Kostelic, Elaine Marzluff

434-Pos Board B209
ANTIMICROBIAL PEPTIDOMIMETICS WITH ACTIVITY TOWARDS CANCER CELLS. Konstantin Andreev, Michael W. Martynowycz, Mahesh Lingaraju, Christopher Bianchi, Amram Mor, **David Gidalevitz**

435-Pos Board B210 TRAVEL AWARDEE
RATIONAL DESIGN OF POLYLEUCINE-BASED ANTIMICROBIAL PEPTIDES AS PROMISING AGENTS AGAINST CANCER CELLS. **Charles H. Chen**, Arvin Eskandari, Jenisha Ghimire, William C. Wimley, Kogularamanan Suntharalingam, Martin B. Ulmschneider

436-Pos Board B211
AUREIN 1.2, A SHORT AND POTENT ANTIMICROBIAL PEPTIDE, CHANGES CHARGED LIPID DISTRIBUTION AND LIPID DYNAMICS IN BILAYER. **Shuo Qian**, Veerendra K. Sharma

437-Pos Board B212
THE ROLE OF GREASY RESIDUES IN TEIXOBACTIN DERIVATIVES. **Po-Chao Wen**, Emad Tajkhorshid, Susan B. Rempe

438-Pos Board B213
USE OF A STEREOCHEMICAL STRATEGY TO PROBE THE MECHANISM OF PHENOL-SOLUBLE MODULIN A3 TOXICITY. **Zhihui Yao**, Brian P. Cary, Craig A. Bingman, Samuel H. Gellman

439-Pos Board B214
INVESTIGATING INTRACELLULAR FUNCTIONS OF ANTIMICROBIAL PEPTIDES USING AN INTERNAL GENE EXPRESSION SYSTEMS. **Sattar Taheri-Araghi**, Salimeh Mohammadi, Federico Prokopczuk, Xintian Li

Membrane Structure I (Boards B215 - B235)

440-Pos Board B215
STRUCTURAL PROPERTIES OF INNER AND OUTER MEMBRANE MIMICS OF GRAM-NEGATIVE BACTERIA. **Lisa Marx**, Enrico Semeraro, Karl Lohner, Georg Pabst

441-Pos Board B216
LIPOPOLYSACCHARIDE SIMULATIONS ARE HIGHLY SENSITIVE TO ION PARAMETERS AND PHOSPHATE CHARGE STATE. **Amy Rice**, Jeffery M. Wereszczynski

442-Pos Board B217
DETERMINING VOLUMES OF LIPID COMPONENTS: HIDDEN ASSUMPTIONS HAVE NOT-SO-HIDDEN CONSEQUENCES. John F. Nagle, Richard M. Venable, Ezekiel Maroclo-Kemmerling, Stephanie A. Tristram-Nagle, **Paul E. Harper**, Richard W. Pastor

443-Pos Board B218
EFFECT OF ALCOHOL ON WATER TRANSLOCATION IN ALL-ATOM SIMULATIONS OF OSMOTIC GRADIENT ACROSS LIPID MEMBRANES.
Robert E. Coffman, David D. Busath, Dixon J. Woodbury

444-Pos Board B219
THE EFFECT OF PHLORETIN ON THE THERMOTROPIC BEHAVIOR OF MEMBRANE FORMING LIPIDS. **Svetlana S. Efimova**, Olga S. Ostroumova

445-Pos Board B220
MORPHOLOGY AND DYNAMIC EFFECT OF ERGOSTEROL OR CHOLESTEROL ON DOMAINS PRESENT IN POPC-ESM-STEROL SLB.
Arturo Galván-Hernández, Armando Antillón, Jorge Hernández-Cobos, Ivan Ortega-Blake

446-Pos Board B221
CHOLESTEROL-DEPENDENT BENDING ENERGIES IN BOTH LEAVES PLAY A SIGNIFICANT ROLE IN DETERMINING THE CHOLESTEROL DISTRIBUTION IN THE PLASMA MEMBRANE. David Allender, **Alexander J. Sodt**, Michael Schick

447-Pos Board B222
EFFECT OF STEROL STRUCTURE ON ORDERED LIPID DOMAINS IN SYMMETRIC AND ASYMMETRIC MODEL MEMBRANES. **Johnna R. St Clair**

448-Pos Board B223
INFLUENCE OF STEROL IN TERNARY MIXTURES CONTAINING SPHINGOMYELIN: AN ALL-ATOM MOLECULAR DYNAMICS STUDY.
Fernando Favela-Rosales, Arturo Galván-Hernández, Jorge Hernández-Cobos, Iván Ortega-Blake

449-Pos Board B224
DOES CHOLESTEROL MATTER IN THE LUNG SURFACTANT? A BIOPHYSICAL STUDY ON REALISTIC LUNG SURFACTANT LIPID MIXTURES.
Agnieszka Olzynska, Pauline Delcroix, Lukasz Cwiklik

450-Pos Board B225
RIGIDITY OF ASYMMETRIC AND ASYMMETRICALLY STRESSED MEMBRANES. **Amirali Hossein**, Markus Deserno

451-Pos Board B226
EXTENDING A HIGHLY COARSE-GRAINED LIPID MODEL TO ASYMMETRIC MEMBRANES FOR MD SIMULATIONS. **Samuel Foley**, Markus Deserno

452-Pos Board B227
ALL ATOM SIMULATIONS OF THE INNER AND OUTER LEAFLET OF THE ERYTHROCYTE PLASMA MEMBRANE. **Edward R. Lyman**, Kandice R. Levental, Joseph Lorent, Ilya Levental

453-Pos Board B228
SURFACE ROUGHNESS AND PALMITOYLATION OF TRANSMEMBRANE HELICES INFLUENCE MEMBRANE STRUCTURE AND DYNAMICS. Adéla Melcrová, Marie Olšinová, Marek Cebecauer, **Lukasz Cwiklik**

454-Pos Board B229
THE ROLE OF HYDROPHOBIC MISMATCH ON TRANSMEMBRANE HELIX DIMERIZATION IN LIVING CELLS. Brayan Grau, Matti Javanainen, Maria Jesús García-Murria, **Waldemar Kulig**, Ilpo Vattulainen, Ismael Mingarro, Luis Martínez-Gil

455-Pos Board B230
DEVLOPMENT AND APPLICATION OF*BICELLE BUILDER*IN CHARMM-GUI. **Christopher J. Sohn**

456-Pos Board B231
NANOSCALE STRUCTURE OF LIPID BILAYERS REVEALED BY *IN-SILICO* AND EXPERIMENTAL SMALL ANGLE NEUTRON SCATTERING. **Mitchell Dorrell**, Frederick A. Heberle, John Katsaras, Edward Lyman, Alexander J. Sodt

457-Pos Board B232
EFFECTS OF MONOVALENT SALT ON ETHER-LINKED PHOSPHOLIPID BILAYERS. **Matthew W. Saunders**, Mark Steele, Wyatt Lavigne, Sameer Varma, Sagar A. Pandit

458-Pos Board B233
DISTINCT INTERACTIONS OF SODIUM AND CALCIUM CATIONS AND NEUTRAL PHOSPHOLIPID MEMBRANES AND HOW TO SIMULATE THEM.
Hector Martinez-Seara, Matti Javanainen, Adéla Melcrová, Piotr Jurkiewicz, Pavel Jungwirth, Aniket Magarkar, Martin Hof, Josef Melcr, Ricky Nencini, Samuli O. Ollila

459-Pos Board B234
MEMSURFER: A TOOL FOR ROBUST COMPUTATION AND CHARACTERIZATION OF BILAYER MEMBRANES. Harsh Bhatia, Helgi I. Ingolfsson, **Timothy S. Carpenter**, Felice C. Lightstone, Peer-Timo Bremer

460-Pos Board B235
LDB: LIPID DATABANK FROM THE NMRLIPIDS PROJECT.
Markus S. Miettinen, NMRlipids Collaboration, O. H. Samuli Ollila

Exocytosis and Endocytosis I (Boards B236 - B248)

461-Pos Board B236
DIFFERENTIAL ROLES OF PIONEER PROTEINS IN INITIATION AND STABILIZATION OF EARLY CLATHRIN COAT UNVEILED BY A NOVEL DISASSEMBLY BIAS SCORE. **Xinxin Wang**, Zhiming Chen, Sandra L. Schmid, Gaudenz M. Danuser

462-Pos Board B237 TRAVEL AWARDEE
CELL TO CELL HETEROGENEITY OF CLATHRIN COAT DYNAMICS IS CELL CYCLE DEPENDENT. **Umidahan Djakbarova**, Nathan Willy, Shahriar Shamiluulu, Comert Kural

463-Pos Board B238
CURVATURE GENERATION BY ENDOCYTIC CLATHRIN COATS. Joshua Ferguson, Cemal Cakez, Farah Hasan, Emanuele Cocucci, **Comert Kural**

464-Pos Board B239
HIGH-SPEED ATOMIC FORCE MICROSCOPY (HS-AFM) OF CLATHRIN-COATED PITS. **Grigory Tagiltsev**, Simon Scheuring

465-Pos Board B240
PIP2 LIPIDS AS REGULATORS OF MEMBRANE CURVATURE SENSING BY ENTH DOMAINS. **Alexis Belessiotis-Richards**, Molly M. Stevens, Alfredo Alexander-Katz

466-Pos Board B241
CRYO-EM STUDIES OF CLASSICAL DYNAMINS TO REVEAL THE MECHANISM OF MEMBRANE FISSION. **John Jimah**, Abigail Stanton, Huaibin Wang, Jenny E. Hinshaw

467-Pos Board B242
GTP CONCENTRATION BURSTS LOCALLY AT ENDOCYTIC SITES FOR DYNAMIN-DEPENDENT MEMBRANE FISSON. **Aisha Azhar**, Yuuta Imoto, Shigeki Watanabe

468-Pos Board B243
DYNAMIN-1 DRIVES FISSION OF VESICLES WITHIN 100 MS DURING SYNAPTIC VESICLE ENDOCYTOSIS. **Yuuta Imoto**, Sumana Raychaudhuri, Aisha Azhar, Shigeki Watanabe

469-Pos Board B244 TRAVEL AWARDEE
MECHANOCHEMICAL FEEDBACK CONTROL OF DYNAMIN INDEPENDENT ENDOCYTOSIS MODULATES MEMBRANE TENSION IN ADHERENT CELLS. **Joseph Jose Thottacherry**, Anita Joanna Kosmalska, Susav Pradhan, Parvinder Pal Singh, Xavier Trepat, Ram Vishwakarma, Pramod Pullarkat, Pere Roca-Cusachs, Satyajit Mayor

470-Pos Board B245
THE EFFECT OF ACUTE ATP DEPLETION ON SYNAPTIC VESICLE ENDOCYTOSIS AT THE ULTRASTRUCTURAL LEVEL. **Quan Gan**, Shigeki Watanabe

471-Pos Board B246
QUANTIFYING CEACAM TARGETED LIPOSOME DELIVERY USING IMAGING FLOW CYTOMETRY. **Jason P. Kuhn**, Asya Smirnov, Alison Criss, Linda Columbus

472-Pos Board B247
3D TRAFFICKING OF EPIDERMAL GROWTH FACTOR RECEPTOR IN LIVE CELLS. **Marco A. Alfonzo Mendez**, Harshad Viswasrao, Hari Shroff, Justin W. Taraska

473-Pos Board B248
PHOSPHATIDYLSERINE (PS) EXTERNALIZATION FACILITATES MEMBRANE VESICULATION THROUGH DECREASING MEMBRANE STIFFNESS. **Hongyin Wang**, Joseph H. Lorent, Lakshmi Ganesan, Blanca B. Diaz-Rohrer, Kandice R. Levental, Eric Malmberg, Ilya Levental

Excitation-Contraction Coupling I (Boards B249 - B264)

474-Pos Board B249
CHRONIC EFFECTS OF ALDOSTERONE ON CARDIAC EC COUPLING AND OXIDANT STRESS. **María Guadalupe Montiel-Jaen**, Adrian Monsalvo-Villegas, Guillermo Avila

475-Pos Board B250
UNDERLYING PHYSIOLOGICAL CONDITION ACT AS A CRITICAL FACTOR IN PHENOTYPIC REALIZATIONS OF EXCITATION COUPLING (EC) ABNORMALITIES IN TARGETED CANCER THERAPEUTIC TREATED HIPSC CARDIOMYOCYTES. **Jaehee Shim**

476-Pos Board B251
IMPERACALCIN'S ANTIARRHYTHMIC EFFECTS ARE PRESERVED AT 37^0C IN WHOLE HEARTS FROM A CPVT MOUSE MODEL. Rachael N. Thorson, Jordan Price, Yuriana Aguilar, Carmen R. Valdivia, Héctor Valdivia, **Rafael Mejía-Alvarez**

477-Pos Board B252
IMPAIRED B-ADRENERGIC RESPONSIVENESS IN HFPEF RATS. **Peter J. Kilfoil**, Daniel Soetkamp, Rui Zhang, Jae Cho, Stephan Aynaszyan, Eugenio Cingolani, Eduardo Marbán, Joshua I. Goldhaber

478-Pos Board B253
QUANTITATIVE *IN SILICO* ANALYSIS OF THE ARRHYTHMOGENIC CAMKII-SODIUM-CALCIUM-CAMKII FEEDBACK IN THE FAILING RABBIT VENTRICULAR MYOCYTE. Caroline Liu, Bence Hegyi, Haibo Ni, Donald M. Bers, Eleonora Grandi, **Stefano Morotti**

479-Pos Board B254
LOSS OF DYSTROPHIN ALTERS CALCIUM-HANDLING MATURATION IN RESPONSE TO MICROENVIRONMENT IN HIPSC-CARDIOMYOCYTES FROM DUCHENNE MUSCULAR DYSTROPHY PATIENTS. **J. Manuel Pioner**, Raffaele Coppini, Lorenzo Santini, Chiara Palandri, Flavia Lupi, Marianna Langione, Patrizia Benzoni, Sara Landi, Andrea Barbuti, Chiara Tesi, David L. Mack, Michael Regnier, Camilla Parmeggiani, Corrado Poggesi, Cecilia Ferrantini

480-Pos Board B255
DUAL CALCIUM AND VOLTAGE MAPPING REVEALS DIFFERENCES IN MATURITY OF EXCITATION-CONTRACTION COUPLING IN YOUNG RAT HEARTS. Luke Swift, **Rafael Jaimes**, Nikki G. Posnack

481-Pos Board B256
IN VIVO GENE DELIVERY OF R-CEPIA1ER: A NEW APPROACH TO STUDY $[CA]_{SR}$ HANDLING IN CARDIOMYOCYTES. **Elisa Bovo**, Quan Cao, Daniel Kahn, Roman Nikolaienko, Jody L. Martin, Ivana Y. Kuo, Aleksey V. Zima

482-Pos Board B257
AN AUTOSOMAL DOMINANT MUTATION IN CALSEQUESTRIN 2 CAUSES CPVT WITHOUT CHANGING PROTEIN LEVELS. **Matthew Wleklinski**, Shan Parikh, Bjorn C. Knollmann

483-Pos Board B258
BRIDGING HTS ION CHANNEL AND MYOCYTE DATA. **George O. Okeyo**, Sonja Stoelzle-Feix, Timothy Strassmaier, Krisztina Juhasz, Nadine Becker, Ulrich Thomas, Leo Doerr, Markus Rapedius, Nina Brinkwirth, Claudia Haarmann, Tom Goetze, Matthias Beckler, Michael George, Andrea Brüggemann, Niels Fertig

484-Pos Board B259
THE ABSENCE OF ACTIVE CREATINE KINASE SYSTEM INFLUENCES CARDIAC CALCIUM HANDLING. **Martin Laasmaa**, Jelena Branovets, Niina Karro, Rikke Birkedal, Marko Vendelin

485-Pos Board B260
FUNCTIONAL IMPACT OF CELL CULTURE ON EXCITATION-CONTRACTION COUPLING IN CANINE MYOCYTES. Alida Cooke, Zachary Williams, Samuel Olczyk, Robert J. Goodrow, Jonathan A. Cordeiro, Jacqueline A. Treat, **Gary L. Aistrup**, Jonathan M. Cordeiro

486-Pos Board B261
DOUBLE REGULATION OF CARDIAC EXCITATION-CONTRACTION COUPLING AND OXIDANT STRESS BY PIRFENIDONE. **Adrian Monsalvo-Villegas**, Guillermo Avila

487-Pos Board B262
MECHANICAL LOAD EFFECTS ON CARDIAC ACTION POTENTIAL AND ARRHYTHMOGENIC CA^{2+}ACTIVITIESREVEALED BY A NOVEL PATCH-CLAMP-IN-GEL TECHNOLOGY. **Zhong Jian**, Bence Hegyi, Mark Jaradeh, Zana A. Coulibaly, Yi-je Chen, Kit S. Lam, Leighton T. Izu, Ye Chen-Izu

488-Pos Board B263
THE EFFECTS OF MECHANICAL LOAD ON TRANSMURAL DIFFERENCES IN MECHANO-ELECTRIC FEEDBACK IN SINGLE CARDIOMYOCYTES. Anastasia Khokhlova, Gentaro Iribe, Pavel Konovalov, Leonid Katsnelson, **Olga Solovyova**

489-Pos Board B264
FUNCTIONAL CONNECTOME OF THE MECHANICALLY LOADED CARDIOMYOCYTE II: COORDINATED CHANGES OF SUBSYSTEMS. Zana Coulibaly, Zhong Jian, Rafael Shimkunas, Ye Chen-Izu, **Leighton T. Izu**

Cardiac Smooth and Skeletal Muscle Electrophysiology I (Boards B265 - B280)

490-Pos Board B265
PHARMACOLOGICAL AND ISCHEMIC PRECONDITIONING UP-REGULATE THE EXPRESSION OF SOCS IN ADULT CARDIAC MYOCYTES: ITS PHYSIOLOGICAL SIGNIFICANCE. **Raúl Sampieri**, Joice Thomas, Maria C. Garcia, Elba D Carrillo, Eridani Fuentes, Wilibaldo Orea, Jorge A. Sanchez

491-Pos Board B266 TRAVEL AWARDEE
DIABETIC HYPERGLYCEMIA REGULATES POTASSIUM CHANNELS AND ARRHYTHMIAS IN THE HEART VIA AUTONOMOUS CAMKII ACTIVATION BY *O*-LINKED GLYCOSYLATION. **Bence Hegyi**, Johanna M. Borst, Austen J. Lucena, Logan R.J. Bailey, Julie Bossuyt, Donald M. Bers

492-Pos Board B267
AGE DEPENDENT REGULATION OF CARDIAC SODIUM CHANNEL GAIN OF FUNCTION. **Madison B. Nowak**, David Ryan King, Steven Poelzing, Seth H. Weinberg

493-Pos Board B268
INHIBITON OF PROTEIN KINASE G PRESERVES PROLONGED VENTRICULAR ACTION POTENTIALS VIA IMPROVEMENT OF SLOW-ACTIVATED VOLTAGE-DEPENDENT K^+-CHANNEL CURRENTS IN AGED RAT CARDIOMYOCYTES. **Belma Turan**, Yusuf Olgar, Erkan Tuncay

494-Pos Board B269
THE EFFECTS OF PINACIDIL, AN ATP SENSITIVE K^+ CHANNEL OPENER ON CARDIAC NA^+/CA^{2+} EXCHANGER FUNCTION IN GUINEA PIG CARDIOMYOCYTES. **Keisuke Iguchi**, Masao Saotome, Kanna Yamashita, Takenori Ikoma, Prottoy Hasan, Yuichiro Maekawa, Yasuhide Watanabe

495-Pos Board B270
EXTRACELLULAR PH BUT NOT OSMOTIC PRESSURE MODULATES CL^- CURRENT IN FRESHLY-ISOLATED GUINEA PIG DETRUSOR SMOOTH MUSCLE CELLS. **Viktor Yarotskyy**, Georgi V. Petkov

496-Pos Board B271
ENGINEERING AN OPTOGENETIC SYSTEM FOR POINT-PACING CARDIOMYOCYTES IN CULTURE. Geran Kostecki, Shivani Pandey, Renjun Zhu, Emilia Entcheva, **Leslie Tung**

497-Pos Board B272
INTRODUCING SIMULATED IK1 INTO HUMAN IPSC-CARDIOMYOCYTES USING DYNAMIC CLAMP ON AN AUTOMATED PATCH CLAMP SYSTEM. **Gang Lu**, András Horváth, Nadine Becker, Alan Fabbr, Christian Grad, Michael George, Niels Fertig, Teun P. de Boer

498-Pos Board B273
ESTABLISHING PATHOGENICITY OF NOVEL LQTS8 VARIANT VIA GENOMIC EDITING OF HUMAN IPSC. **Dmytro O. Kryshtal**, Nikhil V. Chavali, Shan S. Parikh, Lili Wang, Andrew M. Glazer, Moore B. Shoemaker, Bjorn C. Knollmann

499-Pos Board B274
EFFECT OF A SMALL MOLECULE ACTIVATOR OF POTASSIUM CURRENTS ON REPOLARIZATION RESERVE IN HIPSC-CARDIOMYOCYTES. Jacqueline A. Treat, Robert J. Goodrow, Gary L. Aistrup, Corina T. Bot, **Jonathan M. Cordeiro**

500-Pos Board B275
HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES AS EARLY-SCREENING PLATFORM OF ANTI-ARRHYTHMIC EFFECTS BY PUFAS. **Alicia de la Cruz**, Rene Barro-Soria, Sara I. Liin, H. Peter Larsson

501-Pos Board B276
OPTOGENETIC CONTROL OF RE-ENTRANT WAVES DEMONSTRATED IN HUMAN INDUCED STEM CELL DERIVED CARDIOMYOCYTES (HIPSC-CMS). **B Adrienne Caldwell**, Miguel Romero Seplvuda, Gil Bub, Alvin Shrier

502-Pos Board B277
EFFECT OF REAL-TIME LEAK CURRENT CORRECTION ON ACTION POTENTIALS RECORDED FROM INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIAC MYOCYTES. **Brian Panama**, Mark Nowak, Brandon Franks, Leigh Korbel, Glenna Bett, Randall Rasmusson

503-Pos Board B278
THE EFFECTS OF NOISE IN BIOLOGICAL EXCITABLE MEDIA. **J. Miguel Romero Sepúlveda**, B. Adrienne Caldwell, Alvin Shrier, Gil Bub

504-Pos Board B279
LONGITUDINAL CARDIOTOXIC EFFECT OF DOXORUBICIN IN A MULTICELLULAR CARDIAC MODEL. **Viviana Zlochiver**, Stacie Edwards, Rosy Joshi-Mukherjee

505-Pos Board B280
A COMPUTATIONAL APPROACH TO PREDICT MECHANISMS OF PHENOTYPIC VARIABILITY IN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES. **Divya C. Kernik**, Stefano Morotti, Garg Priyanka, Joseph C. Wu, Jose Jalife, Eleonora Grandi, Colleen E. Clancy

Voltage-gated K Channels I (Boards B281 - B298)

506-Pos Board B281
MOLECULAR MECHANISMS OF FILTER-LEVEL GATING AND LOSS OF SELECTIVITY IN HERG1 N629D MUTANT FROM MICROSECONDS MD SIMULATIONS. **Williams E. Miranda**, Henry J. Duff, Jiqing Guo, Igor V. Vorobyov, Kevin R. DeMarco, Colleen E. Clancy, Sergei Yu. Noskov

507-Pos Board B282
DYNAMICS OF PORE DOMAIN AFFECTED BY SINGLE MUTATIONS IN S4 SEGMENT OF SHAKER POTASSIUM CHANNEL.
Carlos Alberto Z. Bassetto Jr, Joao Luis Carvalho-de-Souza, Francisco Bezanilla

508-Pos Board B283
SCREENING OF NEGATIVE CHARGES BY CA^{2+}IN THE TURRET REGION CONTROLS KV7.1 INACTIVATION GATING AND IS REGULATED BY PIP2 AND CALMODULIN. **Bernard Attali**, William S. Tobelaim, Maya Lipinsky, Asher S. Peretz, Daniel Yakubovich, Yoav Paas

509-Pos Board B284
QUANTUM CALCULATIONS ON PROTON TRANSPORT IN THE KV1 CHANNEL VOLTAGE SENSING DOMAIN, WITH COMPARISON TO ANALOGS IN BACTERIORHODOPSIN, CYTOCHROME C, AND THE H_V1 PROTON CHANNEL. Alisher M. Kariev, **Michael E. Green**

510-Pos Board B285
MOBILITY OF S3-S4 LINKER MODULATES ACTIVATION PROCESS IN SHAKER POTASSIUM CHANNELS. **Joao L. Carvalho-de-Souza**, Carlos Bassetto Jr, Elizabeth EL Lee, Francisco Bezanilla

511-Pos Board B286
VOLTAGE DEPENDENT GATING OF BK CHANNELS - WHERE IS THE SPRING? **Karl L. Magleby**, Yanyan Geng

512-Pos Board B287
INFLUENCE OF DIMERIC INTERACTIONS ON VOLTAGE SENSING PHOSPHATASE ACTIVITY. **Vamseedhar Rayaprolu**, Perrine Royal, Guillaume Sandoz, Susy C. Kohout

513-Pos Board B288
NATURE UTILIZATION OF THE SLOW INACTIVATION MECHANISM IN VOLTAGE GATED K^+ CHANNELS. **Izhar Karbat**, Hagit Gueta, Tibor Szanto, Shelly Hamer-Rogotner, Orly Dym, Felix Frolow, Dalia Gordon, Gyorgy Panyi, Michael Gurevitz, Eitan Reuveny

514-Pos Board B289
CALCIUM REGULATION OF KV4-KCHIP ION CHANNEL COMPLEXES. **Jonathan G. Murphy**, Dax A. Hoffman

515-Pos Board B290
IN SILICO DETERMINATION OF OPEN CONDUCTING AND INACTIVATED ATOMISTIC K_V11.1 CHANNEL MODELS. **John R. D. Dawson**, Kevin R. DeMarco, Borislava Bekker, Sergei Y. Noskov, Colleen E. Clancy, Igor V. Vorobyov

516-Pos Board B291
THE ROLE OF HCN DOMAIN IN THE FUNCTION OF HCN CHANNELS. **Zejun Wang**, Sebastien Hayoz, Tinatin I. Brelidze

517-Pos Board B292
TRAPPING THE 2,4-K^+-ION BOUND CONFIGURATION OF KCSA'S SELECTIVITY FILTER. Cholpon Tilegenova, D. Marien Cortes, Nermina Jahovic, Emily Hardy, Parameswaran Hariharan, Lan Guan, **Luis G. Cuello**

518-Pos Board B293
QUANTUM CALCULATIONS ON THE K^+ ION IN THE K_V1.2 CHANNEL PORE: HYDRATION AND COSOLVATION. **Alisher M. Kariev**, Michael E. Green

519-Pos Board B294
NOBILETIN INHIBITION OF BK CHANNELS. **Liang Sun**, Lorie Ann Gonzalez, Frank T. Horrigan

520-Pos Board B295
LOSS OF HAX-1 MAY CONTRIBUTE TO THE NEURODEGENERATION CAUSED BY A KV3.3 MUTATION. **Yalan Zhang**, Luis Varela, Klara Szigeti-Buck, Tamas L. Horvath, Leonard K. Kaczmarek

521-Pos Board B296
MODULATION OF KV7.1/KCNE1 CHANNEL ACTIVITY BY NAVB1. **Spencer Mason Webber**, Carlos Villalba-Galea

522-Pos Board B297
STRUCTURAL MODELING OF THE HERG CHANNEL IN AN INACTIVATED STATE AND ITS DRUG INTERACTIONS. **Jan Maly**, Aiyana M. Emigh, Kevin R. DeMarco, Jon T. Sack, Igor Vorobyov, Colleen E. Clancy, Vladimir Yarov-Yarovoy

523-Pos Board B298 TRAVEL AWARDEE
DIFFERENTIAL REGULATION OF BK CHANNELS BY FRAGILE X MENTAL RETARDATION PROTEIN. **Aravind Kshatri**, Alejandro Cerrada, Roger Gimeno, Teresa Giraldez

Ligand-gated Channels I (Boards B299 - B325)

524-Pos Board B299
FÖRSTER RESONANCE ENERGY TRANSFER (FRET) ANALYSIS OF THE C-TERMINAL DOMAIN OF FP-TAGGED HOMOMERIC AND HETEROMERIC AMPARS UPON PHOSPHORYLATION. **Linda G. Zachariassen**, Anne-Sophie Hafner, Daniel Choquet, Anders S. Kristensen

525-Pos Board B300
THE STRUCTURAL ARRANGEMENT AND DYNAMICS OF HOMOMERIC KAINATE RECEPTORS DETERMINED BY SMFRET. **Douglas B. Litwin**, Elisa Carrillo, Sana Shaikh, Vladimir Berka, Vasanthi Jayaraman

526-Pos Board B301
SINGLE-MOLECULE FRET INVESTIGATIONS OF NEGATIVE COOPERATIVITY IN THE NMDA RECEPTOR. **Ryan J. Durham**, Nabina Paudyal, Elisa Carrillo, Vladimir Berka, Vasanthi Jayaraman

527-Pos Board B302 TRAVEL AWARDEE
STUDY OF A HETEROMERIC KAINATE RECEPTOR GLUK2/K5 BY PROBING SINGLE-MOLECULE FRET. **Nabina Paudyal**, Douglas B. Litwin, Vladmir Berka, Elisa Carrillo Flores, Vasanthi Jayaraman

528-Pos Board B303
COMPUTING FREE ENERGY OF THE MAGNESIUM BLOCK IN N-METHYL-D-ASPARTATE RECEPTORS. **Christopher Kottke**, Samaneh Mesbahi-Vasey, Maria G. Kurnikova

529-Pos Board B304
MECHANISM OF AMPA RECEPTOR MODULATION BY GAMMA-8. **Elisa Carrillo Flores**, Sana A. Shaikh, Vasanthi Jayaraman

530-Pos Board B305
MAPPING STRUCTURAL ELEMENTS TO NMDA RECEPTOR ACTIVATION STEPS. **Gary J. Iacobucci**, Han Wen, Matthew Helou, Wenjun Zheng, Gabriela K. Popescu

531-Pos Board B306
GATING OF SINGLE AMPA RECEPTORS CROSS-LINKED AT THE LIGAND BINDING DOMAIN LAYER. **Sebastian Opfermann**, Jelena Baranovic, Andrew J.R. Plested

532-Pos Board B307
COMPUTATIONAL CHARACTERIZATION OF THE BINDING OF NON-COMPETITIVE INHIBITORS TO AMPA RECEPTORS. **Chamali Narangoda**, Serzhan Sakipov, Maria G. Kurnikova

533-Pos Board B308
LIFE IN THE FAST LANE: BINDING TO GLUTAMATE RECEPTORS. Alvin Yu, Hector P. Salazar, Andrew J. Plested, **Albert Y. Lau**

534-Pos Board B309
AGONIST AND INHIBITOR BINDING EFFECTS ON AMPA RECEPTOR INTERNAL STRUCTURE AND DYNAMICS. **Serzhan Sakipov**, Chamali m. Narangoda, Samaneh Mesbahi, Jose C. Flores-Canales, Christopher Kottke, Maria G. Kurnikova

535-Pos Board B310
SUBUNIT-DEPENDENT MODULATION OF AMPAR GATING BY AUXILIARY PROTEINS. **Irene Riva**, Jelena Baranovic, Anna L. Carbone, Andrew J. Plested

536-Pos Board B311
SIGNAL PEPTIDE REPRESSES KAINATE RECEPTOR GLUK1 SURFACE AND SYNAPTIC TRAFFICKING THROUGH DIRECT INTERACTION WITH AMINO-TERMINAL DOMAIN. **Guifang Duan**

537-Pos Board B312
DEVELOPMENT OF A HIGH-THROUGHPUT CA^{2+} FLUX SCREENING ASSAY TO MONITOR CYCLIC NUCLEOTIDE-GATED CHANNEL ACTIVITY AND EVALUATE ACHROMATOPSIA DISEASE MUTANT CHANNEL FUNCTION. **Jacqueline Tanaka**, Cristy Almonte, Elizabeth McDuffie, Laura Jones, Dennis Colussi, Marlene Jacobson

538-Pos Board B313
ALLOSTERIC GATING REARRANGEMENTS OF A PROKARYOTIC CYCLIC NUCLEOTIDE-GATED ION CHANNEL REVEALED WITH PULSED DIPOLAR SPECTROSCOPY. **Eric G.B. Evans**, Jacob L.W. Morgan, Stefan Stoll, William N. Zagotta

539-Pos Board B314
FUNCTIONAL CHARACTERIZATION OF GATING IN A BACTERIAL CYCLIC NUCLEOTIDE-GATED CHANNEL. **Jacob Morgan**, Eric Evans, William Zagotta

540-Pos Board B315
OPPOSING SUBUNITS INTERACT TO STABILIZE THE CLOSED STATE IN HCN2 CHANNELS. **Mahesh Kondapuram**, Sezin Yüksel, Tina Schwabe, Benedikt Frieg, Holger Gohlke, Ralf Schmauder, Klaus Benndorf, Jana Kusch

541-Pos Board B316
UNCOUPLING THE CAMP BINDING DOMAIN FROM THE CHANNEL GATE IN HCN2 CHANNELS. **Sezin Yüksel**, Mahesh Kondapuram, Tina Schwabe, Michele Bonus, Holger Gohlke, Ralf Schmauder, Jana Kusch, Klaus Bendorf

542-Pos Board B317
NUCLEOTIDE MODULATION OF K_{ATP} CHANNELS DISENTANGLED WITH FRET. **Michael C. Puljung**, Samuel Usher, Natascia Vedovato, Frances Ashcroft

543-Pos Board B318
SINGLE MOLECULE FRET REVEALS LIPID INDUCED CONFORMATIONAL CHANGES IN CYTOPLASMIC DOMAIN OF KIR2.1. **Joshua B. Brettmann**, Sun Joo Lee, Shizhen Wang, Colin G. Nichols

544-Pos Board B319
MULTIPLE NUCLEOTIDE-DEPENDENT CONFORMATIONS OF A MYCOBACTERIAL RCK DOMAIN. Alexandre G. Vouga, Katia K. Matychak, Michael E. Rockman, Lisandra Flores, Sebastian Brauchi, **Brad S. Rothberg**

545-Pos Board B320
RCK DOMAINS CAN ASSEMBLE AS HETERO-OCTAMERS AND CONTROL DIFFERENT LIGAND-GATED CHANNELS. **Rita Rocha**, Celso Teixeira Duarte, Joao M. P. Jorge, Joao H. Morais Cabral

546-Pos Board B321
CHARACTERIZING $P2X_2$ MUTANTS ASSOCIATED WITH PROGRESSIVE SENSORINEURAL HEARING LOSS (DFNA41). **Benjamin I. George**, Mufeng Li, Kenton J. Swartz

547-Pos Board B322
ELUCIDATING THE FUNCTION AND CELL-SPECIFIC INTERACTIONS OF P2X7 RECEPTOR VARIANTS LINKED TO MENTAL DISORDERS. **Mette Homann Poulsen**, Jamie Fang, Stephan A. Pless

548-Pos Board B323 TRAVEL AWARDEE
STOMATIN DEPENDENT REGULATION OF THE ACID SENSING ION CHANNELS. **Robert C. Klipp**, John Bankston

549-Pos Board B324
INDIRECT DETERMINANTS OF ION SELECTIVITY IN ACID-SENSING ION CHANNELS AND EPITHELIAL SODIUM CHANNELS. **Zeshan P. Sheikh**, Timothy Lynagh, Anders S. Kristensen, Stephan A. Pless

550-Pos Board B325
MOLECULAR BASIS FOR ION SELECTIVITY IN HETEROMERIC ACID-SENSING ION CHANNELS. **Zeshan P. Sheikh**, Timothy Lynagh, Emelie Flood, Celine Boiteux, Toby W. Allen, Stephan A. Pless

Voltage-gated Ca Channels (Boards B326 - B338)

551-Pos Board B326 TRAVEL AWARDEE
A MUTATION LINKED TO MALIGNANT HYPERTHERMIA IN THE SKELETAL $CA_V1.1$ CHANNEL STABILIZES THE RESTING STATE OF VOLTAGE SENSOR I AND IMPAIRS CHANNEL ACTIVATION. **Nicoletta Savalli**, Fenfen Wu, Marbella Quinonez, Stephen C. Cannon, Riccardo Olcese

552-Pos Board B327
DESIGN AND APPLICATIONS OF THE NEW CALCIUM SENSOR GCAMP-X. Yaxiong Yang, Yuanyuan He, **Xiaodong Liu**

553-Pos Board B328 TRAVEL AWARDEE
PROBING L-TYPE CHANNEL CALCIUM-DEPENDENT INACTIVATION – A BILOBAL MODEL OF CALMODULATION. **Worawan B. Limpitikul**, Joseph L. Greenstein, David T. Yue, Ivy E. Dick, Raimond L. Winslow

554-Pos Board B329
CARDIAC O_2 SENSOR: A TRIO OF HEMEOXYGENASE, CAMKII & CARBOXYL TAIL OF CA^{2+} CHANNEL. **Jose Carlos Fernandez Morales**, Naohiro Yamaguchi, Martin Morad

555-Pos Board B330
TREATMENT OF $CA_V1.2$ CHANNELOPATHIES MAY BE COMPLICATED BY ALTERED CHANNEL INACTIVATION. **Moradeke A. Bamgboye**, Maria Traficante, David T. Yue, Ivy E. Dick

556-Pos Board B331
POSSIBLE MECHANISM OF CALCIUM-DEPENDENT BLOCK OF L-TYPE CALCIUM CHANNEL BY GLACONTRYPHAN-M. Vyacheslav S. Korkosh, Denis B. Tikhonov, **Boris S. Zhorov**

557-Pos Board B332
BETA AMYLOID PEPTIDE (1-42) MEDIATED DYSREGULATION OF L-TYPED VOLTAGE GATED CALCIUM CHANNEL 1.2 THROUGH THE BETA-2 ADRENERGIC RECEPTOR. **Liangying Li**, Jennifer Price, Boram Lee, Johannes Hell

558-Pos Board B333
STRUCTURE MODELLING OF $CA_V1.1$ REVEALS FUNCTIONAL TRANS-DOMAIN INTERACTIONS INVOLVED IN VOLTAGE SENSING. **Monica L. Fernández-Quintero**, Yousra El Ghaleb, Petronel Tuluc, Campiglio Campiglio, Klaus R. Liedl, Bernhard E. Flucher

559-Pos Board B334
SKELETAL Γ1 SUBUNIT MODULATION OF HUMAN $CA_V1.1$ AND $CA_V1.2$ CHANNELS. **Marina Angelini**, Nicoletta Savalli, Taleh Yusifov, Riccardo Olcese

560-Pos Board B335
A LOCAL-CONTROL MODEL OF THE GUINEA PIG VENTRICULAR MYOCYTE ALLOWS UNDERSTANDING OF FORCE-INTERVAL RELATIONS AT THE CALCIUM SPARK LEVEL. **Roshan Paudel**

561-Pos Board B336
HOW DOES THE $A_2Δ$-1 SUBUNIT MODULATE SKELETAL $CA_V1.1$ CHANNELS? **Federica Steccanella**, Nicoletta Savalli, Taleh Yusifov, Giovanni Battista Luciani, Alan Neely, Riccardo Olcese

562-Pos Board B337
AUXILIARY BETA SUBUNITS ARE NOT OBLIGATORY FOR $CA_V1.3$ FUNCTION. **Sharen Rivas**, Johanna Diaz, Henry M. Colecraft, Manu Ben Johny

563-Pos Board B338
PORE-BLOCKING EFFECT OF ISOINDOLINE MDIMP ON VOLTAGE-GATED CALCIUM CHANNELS. **Juan Antonio M. De La Rosa**, Maricela García-Castañeda, Takuya Nishigaki, Juan Carlos Gomora, Teresa Mancilla-Percino, Guillermo Avila

Cardiac Muscle Regulation (Boards B339 - B361)

564-Pos Board B339
TROPONIN-T CARDIOMYOPATHY MUTATIONS DEPRESS ITS INHIBITORY PROPERTIES, *IN VITRO*, AND STIMULATE MYOCARDIAL DYSFUNCTION, *IN VIVO*. **Aditi Madan**, Meera C. Viswanathan, Georg Vogler, Kathleen C. Woulfe, William Schmidt, Bosco Trinh, Sineej Madathil, Cortney Wilson, Larry S. Tobacman, Anthony Cammarato

565-Pos Board B340
THE EFFECT OF PHOSPHORYLATION ON THE STRUCTURE AND TOPOLOGY OF THE SERCA-PLN COMPLEX. **Daniel Weber**, Songlin Wang, Erik Larsen, Tata Gopinath, Gianluigi Veglia

566-Pos Board B341
DIABETES WITH HEART FAILURE INCREASES METHYLGLYOXAL MODIFICATIONS IN THE SARCOMERE WHICH INHIBIT FUNCTION. **Maria Papadaki**, Ronald Holewisnki, Sammantha Previs, Thomas Martin, Marisa Stachowski, Amy Li, Cheavar Blair, Kenneth Campbell, Moravec Christine, Jennifer Van Eyk, Virginie Aubert, David Warshaw, Jonathan Kirk

567-Pos Board B342
TROPONIN I TYROSINE PHOSPHORYLATION: NOVEL REGULATOR OF CARDIAC FUNCTION. Elizabeth A. Brundage, Vikram Shettigar, Ying-Hsi Lin, Brendan Agatisa-Boyle, Mark Jeong, Mark T. Ziolo, **Brandon J. Biesiadecki**

568-Pos Board B343
PREDICTING EFFECTS OF TROPOMYOSIN STIFFNESS ON CARDIAC MUSCLE CONTRACTION USING COARSE-GRAINED STOCHASTIC MODELING. **Yasser Aboelkassem**, Kimberly J. McCabe, Michael Regnier, James B. Bassingthwaighte, Andrew D. McCulloch

569-Pos Board B344
MOLECULAR MECHANISM OF A MUTATION IMPLICATED IN PEDIATRIC-ONSET HEART DISESASE. **Samantha K. Barrick**, Michael J. Greenberg

570-Pos Board B345
LOSS OF BINDING BETWEEN GIANT OBSCURIN AND TITIN RESULTS IN CARDIAC MALADAPTATION. **Alyssa Grogan**, Li-Yen R. Hu, Christopher Ward, Aikaterini Kontrogianni-Konstantopou

571-Pos Board B346
CHARACTERIZATION OF THE ALPHA-KAP FRET BIOSENSOR TO DETERMINE COMPARTMENTALIZED BETA-ADRENERGIC RECEPTOR CAMP SIGNALING IN DISTINCT INTRACELLULAR LOCATIONS. **Michael W. Rudokas**, John P. Post, Alejandra Sataray-Rodriguez, Chase M. Fiore, Shailesh R. Agarwal, Robert D. Harvey

572-Pos Board B347
ENGINEERED THIN FILAMENT MUTATION TO INCREASE CALCIUM SENSITIVITY OF FORCE IN TROPOMYOSIN MUTATION OF DILATED CARDIOMYOPATHY. **Kristina B. Kooiker**, Joseph D. Powers, Jil Tardiff, Michael Regnier, Jennifer Davis, Farid Moussavi-Harami

573-Pos Board B348
THE ROLE OF CARDIAC MYBPC IN REGULATING FRANK STARLING RELATIONSHIPS. **Laurin M. Hanft**, Daniel P. Fitzsimons, Timothy A. Hacker, Richard L. Moss, Kerry S. McDonald

574-Pos Board B349
RESOLVING THE ACTIN LATTICE AND IDENTIFYING THE RELATIVE POSITION OF MYBP-C'S N-TERMINUS IN CARDIAC MUSCLE USING STORM MICROSCOPY. **Sheema Rahmanseresht**, Kyounghwan Lee, Jeffrey Robbins, David M. Warshaw, Roger Craig, Michael J. Previs

575-Pos Board B350
MODULATION OF CALCIUM SENSITIVITY AND TWITCH CONTRACTIONS IN CARDIAC MUSCLE WITH TROPONIN-C MUTATIONS: SIMULATIONS AND EXPERIMENTS. **Srboljub M. Mijailovich**, Momcilo Prodanovic, Lazar Vasovic, Boban Stojanovic, Mladen Maric, Danica Prodanovic, Joseph D. Powers, Jennifer Davis, Michael A. Geeves, Michael Regnier

576-Pos Board B351
C0 IG-DOMAIN OF CARDIAC MYOSIN BINDING PROTEIN-C INTERACTS WITH THE REGULATORY LIGHT CHAIN OF MYOSIN-S1 BOUND TO THE NATIVE CARDIAC THIN FILAMENT. Cristina Risi, Betty Belknap, Samantha Harris, Howard White, **Vitold E. Galkin**

577-Pos Board B352
OBSCURIN IN HEART FAILURE. **Aidan M. Ex-Willey**, Heather R. Manring, Ahmet Kilic, Paul M.L. Janssen, Nathan T. Wright, Maegen A. Ackermann

578-Pos Board B353
BIOPHYSICS OF SERCA2A DWORF COMPLEX AND IMPLICATIONS FOR THERAPEUTIC DESIGN. **Ang Li**, Daniel Stroik, Tory Schaaf, David D. Thomas

579-Pos Board B354
CARDIAC OVEREXPRESSION OF HUMAN ADENYLYL CYCLASE TYPE 8 IN MICE ELICITS PHOSPHORYLATION- DEPENDENT MECHANISMS THAT PERMIT PERPETUAL HEART EXERCISE WHILE CONFERRING PROTECTION AGAINST EXCESSIVE CAMP-PKA SIGNALING. **Khalid Chakir**, Alexey E. Lyashkov, Kirill V. Tarasov, Ismayil Ahmet, Dongmei Yang, Yelena S. Tarasova, Daniel Riordon, Yevgeniya O. Lukyanenko, Thanh Huynh, Karel Pacak, Edward G. Lakatta

580-Pos Board B355
SINGLE MOLECULE VISUALIZATION OF CARDIAC MYOSIN-BINDING PROTEIN C N-TERMINAL FRAGMENTS INTERACTING WITH REGULATED ACTIN FILAMENTS: MECHANISMS OF CALCIUM SENSITIZATION. Alessio V. Inchingolo, Samantha B. Previs, Michael J. Previs, David M. Warshaw, **Neil M. Kad**

581-Pos Board B356
REGULATION OF MYOFILAMENT CONTRACTILE FUNCTION IN HUMAN DONOR AND FAILING HEARTS. **Kerry S. McDonald**, Laurin M. Hanft, Joel C. Robinett, Maya E. Guglin, Kenneth S. Campbell

582-Pos Board B357 TRAVEL AWARDEE
IN HUMAN EMBRYONIC STEM CELL-DERIVED CARDIOMYOCYTES TWITCH KINETICS, ACTION POTENTIAL PARAMETERS AND *MYH*-MRNA FRACTIONS ARE INDEPENDENT OF THE EXPRESSED MYOSIN HEAVY CHAIN ISOFORM. **Natalie Weber**, Kathrin Kowalski, Tim Holler, Ante Radocaj, Martin Fischer, Jeanne de la Roche, Stefan Thiemann, Kristin Schwanke, Alexander Lingk, Uwe Krumm, Birgit Piep, Ullrich Martin, Robert Zweigerdt, Bernhard Brenner, Theresia Kraft

583-Pos Board B358
ADOLESCENT BINGE ALCOHOL EXPOSURE AFFECTS CARDIOVASCULAR FUNCTION. Lizhuo Ai, Edith Perez, Quan Cao, Maxime Heroux, Andrei Zlobin, AnnaDorothea Asimes, Toni R. Pak, **Jonathan A. Kirk**

584-Pos Board B359 TRAVEL AWARDEE
IMPACT OF HYPERTROPHIC CARDIOMYOPATHY MUTATIONS ON THE CARDIAC MYOSIN SUPER-RELAXED STATE. **Sriya Byrapuneni**, Sami Chu, Joseph M. Muretta, David D. Thomas

585-Pos Board B360
A NOVEL A-TROPOMYOSIN MUTATION (D55N) ASSOCIATED WITH FAMILIAL DILATED CARDIOMYOPATHY INCREASES TROPOMYOSIN BINDING TO ACTIN. **Xiaomei Yang**, Michelle A. Recto, Xinyu Zhang, Yuejin Li, Genaro A. Ramirez Correa, William M. Schmidt, Brittney Murray, Anne M. Murphy

586-Pos Board B361
ACTIN-BINDING COMPOUNDS THAT AFFECT THE WEAK-TO-STRONG ACTIN-MYOSIN INTERACTION. **Osha Roopnarine**, David D. Thomas

Cell Mechanics, Mechanosensing, and Motility I (Boards B362 - B387)

587-Pos Board B362
RESCUE OF DNA DAMAGE AFTER CONSTRICTED MIGRATION BY DNA REPAIR FACTOR OVEREXPRESSION. **Yuntao Xia**, Charlotte Pfeifer, Kuangzheng Zhu, Jerome Irianto, Dennis Discher

588-Pos Board B363
SPATIAL SEGREGATION AND BOUNDARY FORMATION IN BREAST CANCER AGGREGATES. **Alex Devanny**, Daniel Lee, Laura Kaufman

589-Pos Board B364
MAPPING THE BIOCHEMICAL INTERACTIONS OF THE MECHANORESPONSIVE CONTRACTILITY CONTROLLER. **Priyanka Kothari**, Vasudha Srivastava, Vasudha Aggarwal, Irina Tchernyshyov, Jennifer Van Eyk, Taekjip Ha, Douglas N. Robinson

590-Pos Board B365
DETERMINING INTEGRIN MOLECULAR TENSION FOR THE RECRUITMENT AND THE ACTIVATION OF FOCAL ADHESION KINASE. **Anwesha Sarkar**, Yingxiao Wang, Xuefeng Wang

591-Pos Board B366
CALPONIN 2 MEDIATES ACTIVATION AND MYOFIBROBLAST-LIKE DIFFERENTIATION OF HUMAN AORTIC VALVE INTERSTITIAL CELLS IN CALCIFIC AORTIC VALVE DISEASE. **Olesya Plazyo**, Xue-Qun Chen, Kenneth S. Campbell, Joy Lincoln, J.-P. Jin

592-Pos Board B367
EFFECTS OF OPSONIN DENSITY ON PHAGOCYTIC BEHAVIOR OF HUMAN NEUTROPHILS. **Emmet A. Francis**, Volkmar Heinrich

593-Pos Board B368
LARGE SCALE SIMULATIONS OF CELL RESOLVED TISSUE BY A CELLULAR POTTS MODEL. **Jakob Rosenbauer**

594-Pos Board B369
VERSATILE AND HIGH-THROUGHPUT MICROFLUIDICS PLATFORM FOR DORSAL CELL MECHANICS. Seungman Park, Yoon Ki Joo, **Yun Chen**

595-Pos Board B370
A COUPLED EXCITABLE NETWORK MODEL DICTATES CORTICAL WAVE PATTERNS AND CONTROLS CELLULAR PROTRUSION MORPHOLOGY. Sayak Bhattacharya, Yuchuan Miao, Peter N. Devreotes, **Pablo A. Iglesias**

596-Pos Board B371
INVESTIGATING APICAL CONSTRICTION FORCE OF MADIN-DARBY CANINE KIDNEY CELLS BY LASER ABLATION. **Keng-hui Lin**

597-Pos Board B372
A MECHANICAL CUSP CATASTROPHE IMPOSES A UNIVERSAL DEVELOPMENTAL CONSTRAINT ON THE SHAPES OF TIP-GROWING CELLS. **Enrique R. Rojas**, Jacques Dumais

598-Pos Board B373
EVOLUTION OF STRESSES AT CELL-GEL INTERFACES DURING CONFINED INTERFACIAL MIGRATION. **Abhishek Mukherjee**, Ramesh Singh, Wenyi Yan, Shamik Sen

599-Pos Board B374
A COMPUTATIONAL MODEL TO UNVEIL THE ROLE OF THE NUCLEUS IN 2D CELL MIGRATION. **Adrian Mourer Rosende**, Hector Gomez

600-Pos Board B375
SPREADING OUT: MODELING THE PHYSICS OF CELL-SUBSTRATE INTERACTION IN CELL SPREADING AND FOCAL ADHESION EVOLUTION. **Magdalena Stolarska**, Aravind R. Rammohan

601-Pos Board B376
ALTERED ERYTHROCYTE BIOPHYSICAL PROPERTIES IN CHRONIC FATIGUE SYNDROME. **Amit K. Saha**, Brendan R. Schmidt, Julie Wilhelmy, Vy Nguyen, Justin K. Do, Vineeth C. Suja, Mohsen Nemat-Gorgani, Anand K. Ramasubramanian, Ronald W. Davis

602-Pos Board B377
COOPERATIVE TRANSPORT BY AMOEBOID CELLS: A CELLULAR TUG-OF-WAR. **Valentino Lepro**, Oliver Nagel, Stefan Klumpp, Reinhard Lipowsky, Carsten Beta

603-Pos Board B378
SCUTOIDS: UNDERSTANDING THE 3D PACKING OF CURVED EPITHELIA. **Javier Buceta**, Gómez-Gálvez Pedro, Pablo Vicente-Munuera, Luis M. Escudero

604-Pos Board B379
ACTIN FLOW DEPENDENT AND INDEPENDENT FORCE TRANSMISSION IN INTEGRIN-MEDIATED ADHESIONS. **Tristan P. Driscoll**, Billy Huang, Sang Joon Ahn, Abhishek Kumar, Martin Schwartz

605-Pos Board B380
MECHANICS OF CELLS - IMPLICATIONS FOR ADHESION AND MOTILITY. **Andreas Janshoff**

606-Pos Board B381
SPATIOTEMPORAL ANALYSIS OF INTEGRIN MOLECULAR TENSION DURING CANCER CELL ADHESION. **Byoung Choul Kim**

607-Pos Board B382
FROM NUCLEI TO ARTIFICIAL CELLS: PROBING THE MECHANICS OF MINIMAL SYSTEMS. **Giulia Bergamaschi**, Andreas Biebricher, Gijs J.L. Wuite

608-Pos Board B383
HIGH TROUGHPUT MICROFLUIDIC CHARACTERIZATION OF ERYTHROCYTE SHAPES AND MECHANICAL VARIABILITY. **Felix Reichel**, Johannes Mauer, Ahmad Ahsan Nawaz, Gerhard Gompper, Jochen R. Guck, Dmitry Fedosov

609-Pos Board B384 TRAVEL AWARDEE
RHO MEDIATED MECHANICAL FORCE GENERATION THROUGH DECTIN-1. **Rohan Choraghe**, Alan Buser, Aaron Neumann

610-Pos Board B385
A MINIMAL MECHANOCHEMICAL MODEL FOR GROWTH CONE DYNAMICS. **Aravind R. Rammohan**, Padmini Rangamani, Magdalena Stolarska

611-Pos Board B386
EXTERNAL HYDRAULIC RESISTANCE INFLUENCES CELL MOTILITY. **Yizeng Li**, Debonil Maity, Sean Sun

612-Pos Board B387
DEVELOPING NUCLEASE-RESISTANT DNA-BASED TENSION SENSOR FOR CELLULAR FORCE IMAGING. **Yuanchang Zhao**, Xuefeng Wang

Cytoskeletal-based Intracellular Transport (Boards B388 - B391)

613-Pos Board B388
KINESIN-1 ACTS INDEPENDENTLY AND ALSO REGULATES KINESIN-3-DEPENDENT TRANSPORT OF SYNAPTOPHYSIN VESICLES IN MAMMALIAN AXONS. **Sandra E. Encalada**

614-Pos Board B389
LATE ENDOSOMAL MEMBRANE-LIPID COMPOSITION IMPARTS CHANGE IN OXYSTEROL-BINDING PROTEIN-RELATED PROTEIN 1L'S (ORP1L) NANOSCALE ORGANIZATION WHICH EFFECTS ORGANELLE MOTILITY. **Shreyasi Thakur**, Peter Relich, Melike Lakadamyali

615-Pos Board B390
RECONSTITUTING MITOTIC CHROMOSOME MOVEMENT *IN VITRO*. **Sagar U. Setru**, Joshua W. Shaevitz, Sabine Petry

616-Pos Board B391
LOCAL ACTIN FILAMENT GEOMETRY DICTATES HOW MYOSIN VA MOLECULAR MOTOR TEAMS TRANSPORT LIPOSOMES THROUGH 3D ACTIN NETWORKS IN VITRO. **Sam Walcott**, Andrew T. Lombardo, Kathleen M. Trybus, David M. Warshaw

Membrane Pumps, Transporters, and Exchangers I (Boards B392 - B410)

617-Pos Board B392
DRUG-BINDING TO DISTINCT SITE OF THE MULTIDRUG EXPORTER P-GLYCOPROTEIN MONITORED BY TRYPTOPHAN FLUORESCENCE. **Ina Urbatsch**, Douglas J. Swartz, Anukriti Singh, Courtney Katz, Sakshi Gautam, Joachim Weber

618-Pos Board B393
P-GLYCOPROTEIN ACTIVITY IS NON-MONOTONICALLY MODULATED BY TRANSMEMBRANE VOLTAGE. **Thomas B.H. Schroeder**, Haiyan Liu, David Sept, Khyati Kapoor, Divya K. Rao, Suresh V. Ambudkar, Michael Mayer

619-Pos Board B394
CONFORMATIONAL COUPLING TO ASYMMETRIC ATP HYDROLYSIS IN THE TRANSPORT CYCLE OF P-GLYCOPROTEIN. **Sepehr Dehghani-Ghahnaviyeh**, Karan Kapoor, Emad Tajkhorshid

620-Pos Board B395
LIPID-MEDIATED INHIBITION MECHANISM OF P-GLYCOPROTEIN. **Karan Kapoor**, Shashank Pant, Emad Tajkhorshid

621-Pos Board B396
MECHANISTIC STUDY OF A PEPTIDASE CONTAINING ABC-TRANSPORTER, EMPLOYING MICROSECOND LEVEL MOLECULAR DYNAMICS SIMULATIONS AND ENHANCED SAMPLING TECHNIQUES. **Dylan S. Ogden**, Vivek Govind Kumar, Mahmoud Moradi

622-Pos Board B397
ELECTROSTATIC LOCK IN THE TRANSPORT CYCLE OF THE MULTIDRUG RESISTANCE TRANSPORTER EMRE. **Josh V. Vermaas**, Susan L. Rempe, Emad Tajkhorshid

623-Pos Board B398
SPONTANEOUS PHOSPHOLIPID BINDING TO THE BACTERIAL FLIPPASE MSBA. **Po-Chao Wen**, Pius Padayatti, Qinghai Zhang, Emad Tajkhorshid

624-Pos Board B399
MAPPING MEMBRANE PROTEIN COMPLEX ASSEMBLY PATHWAYS IN LIVE CELLS WITH PROGRESSIVE ACCEPTOR PHOTOBLEACHING. **Michael P. Dalton**, Ellen E. Cho, Marsha P. Pribadi, Deo R. Singh, Seth L. Robia

625-Pos Board B400
PHOTOCYCLE AND ABNORMAL ACTIVITY OF THE DUAL CHROMOPHORE PROTON PUMP ARCHAERHODOPSIN-4 WITH AND WITHOUT THE SECOND CHROMOPHORE. Xiaoyan Ding, Chao Sun, Haolin Cui, Sijin Chen, Xinyi Dong, Xinru Meng, Ming Wang, Yanan Yang, Weimin Liu, Qixi Mi, Xiao He, Anthony Watts, **Xin Zhao**

626-Pos Board B401
WHAT IS YOUR MACHINE REALLY DOING? SYSTEMATIC EXPLORATION OF ALTERNATIVE MECHANISMS AS APPLIED TO TRANSPORT. **August George**, Michael Grabe, John M. Rosenberg, Daniel M. Zuckerman

627-Pos Board B402
COMPARATIVE ANALYSIS OF PULSED EPR DISTANCE MEASUREMENTS IN AN *E. COLI* COBALAMIN TRANSPORTER IN CELLS VERSUS ISOLATED OUTER MEMBRANES REVEALS NOVEL CONFORMATIONAL CHANGES DEPENDENT ON THE NATIVE ENVIRONMENT. **David Nyenhuis**, Thushani Nilaweera, David S. Cafiso

628-Pos Board B403
AN APPROACH FOR EXPLORING NOVEL CONFORMATIONAL STATES AND MEMBRANE ORGANIZATION OF BTUB IN WHOLE CELLS USING EPR SPECTROSCOPY. **Thushani D. Nilaweera**, David A. Nyenhuis, Robert K. Nakamoto, David S. Cafiso

629-Pos Board B404
LIVE-CELL FRET BIOSENSORS FOR HIGH-THROUGHPUT SCREENING TARGETING THE SERCA2A/PLB COMPLEX. **Dan Stroik**, Samantha Yuen, Evan Kleinboehl, Kevyn Janicek, Tory Schaaf, Razvan Cornea, David Thomas

630-Pos Board B405
THE PHOSPHOLAMBAN PENTAMER FUNCTIONALLY INTERACTS WITH THE SARCOPLASMIC RETICULUM CALCIUM PUMP SERCA. John Paul Glaves, Joseph O. Primeau, L. Michel Espinoza-Fonseca, M. Joanne Lemieux, **Howard S. Young**

631-Pos Board B406
SINGLE-MOLECULE STUDIES OF ATP BINDING TO THE SODIUM PUMP. Sushi Madhira, Don C. Lamb, **Promod R. Pratap**

632-Pos Board B407
THE BRINE SHRIMP'S FIGHT AGAINST HYPERSALINE ENVIRONMENTS REQUIRES A NA/K PUMP WITH REDUCED STOICHIOMETRY. Dylan J. Meyer, Victoria C. Young, Jessica Eastman, Jessica Drenth, Abigail Benson, Kerri Spontarelli, Craig Gatto, **Pablo Artigas**

633-Pos Board B408
EXTRACELLULAR NA^+ INTERACTIONS IN THE WT HNA^+/K^+ATPASE ALPHA 3 AND ALTERNATING HEMIPLEGIA OF CHILDHOOD. **Cristina Moreno Vadillo**, Miguel Holmgren

634-Pos Board B409
EXPRESSION OF THE NA^+/K^+-ATPASE SUBUNITS IN ADULT MOUSE BRAIN ANALYZED BY SINGLE-CELL RNA-SEQ PROFILING. **Song Jiao**, Cristina Moreno Vadillo, Miguel Holmgren

635-Pos Board B410
THE SINGLE CHANNEL CONFIGURATION OF NA/K PUMP. **Pengfei Liang**, Jason Mast, Wei Chen

Cellular Signaling and Metabolic Networks (Boards B411 - B425)

636-Pos Board B411
NEW TOOLS FOR BACTERIAL BIOFILM ELECTROPHYSIOLOGY. **Alan L. Gillman**, Joseph W. Larkin, Edgar Gutierrez, Jordi Garcia-Ojalvo, Alex Groisman, Gurol M. Suel

637-Pos Board B412
PREDICTING TGF-B-INDUCED EPITHELIAL-MESENCHYMAL TRANSITION USING DATA ASSIMILATION. **Mario J. Mendez**, Matthew J. Hoffman, Elizabeth M. Cherry, Christopher A. Lemmon, Seth H. Weinberg

638-Pos Board B413
SIGNALLING GROWTH THROUGH LIPID KINASES. **Sanjeev Sharma**, Swarna Mathre, Visvanathan Ramya, Dhananjay Shinde, Padinjat Raghu

639-Pos Board B414
DYNAMINE-RELATED PROTEIN 1 (DRP1) CONTRIBUTES TO HYPERTENSIVE CARDIAC HYPERTROPHY AND FIBROSIS IN VIVO AND IN VITRO MODEL. **Prottoy Hasan**

640-Pos Board B415
QUANTIFICATION OF DYNAMIC GLUCOKINASE REGULATION IN ISLETS USING A HOMOTRANSFER FRET REPORTER. **Shenq Huey Wong**

641-Pos Board B416
PREDICTION OF METABOLITE CONCENTRATIONS, RATE CONSTANTS AND POST-TRANSLATIONAL REGULATION OF NEUROSPORA CRASSA USING MAXIMUM ENTROPY OPTIMIZATIONS AND REINFORCEMENT LEARNING. **William R. Cannon**, Samuel R. Britton, Mikahl Banwarth-Kuhn, Mark Alber, Jennifer M. Hurley, Meaghan S. Jankowski, Jeremy D. Zucker, Douglas J. Baxter, Neeraj Kumar, Scott E. Baker, Jay C. Dunlap

642-Pos Board B417
TOWARD A MULTISCALE MODEL OF VALVULAR INTERSTITIAL CELLS: AN INTEGRIN-MEDIATED MECHANOTRANSDUCTION MODULE. **Daniel P. Howsmon**, Michael S. Sacks

643-Pos Board B418
CHARACTERIZATION OF THE CONTRIBUTION OF RETINOIC ACID RECEPTOR ISOFORMS IN THE SUPPRESSION OF CARDIAC HYPERTROPHY. **Lauren Parker**, Ni Yang, Brian O'Rourke, D. Brian Foster

644-Pos Board B419
TRANSCRIPTOME AND PROTEOME ALTERATIONS OF MICE THAT OVEREXPRESS ADENYLATE CYCLASE TYPE 8 UNDERLIE A CHRONIC AND MARKED INCREASE IN SINOATRIAL NODE (SAN) AND LEFT VENTRICLE (LV) PERFORMANCE WHILE ENSURING HEART SURVIVAL. **Kirill Tarasov**, Khalid Chakir, Yelena Tarasova, Yevgeniya Lukyanenko, Alexey Lyashkov, Edward G. Lakatta

645-Pos Board B420
THE THERAPEUTIC IMPLICATIONS OF PROTEIN KINASE C INHIBITION IN ENDOTHELIAL DYSFUNCTION INDUCED BY CARDIOPLEGIC-ISCHEMIA/REPERFUSION INJURY. **Justin Kim**, Guangbin Shi, Amy Zhao, Frank Sellke, Jun Feng

646-Pos Board B421
SPLITTING UP: FINDING A NEW WAY TO MONITOR MITOCHONDRIAL CAMKII USING SPLITGFP. **Kevin R. Murphy**, Qinchuan Wang, Jonathan Granger, Gianna Bortoli, Jinying Yang, Xi Zhang, Elizabeth Luczak, Rong Li, Mark E. Anderson

647-Pos Board B422
MINIMIZING THE NUMBER OF MEASUREMENTS REQUIRED TO PREDICT A PHENOTYPIC LANDSCAPE IN BACTERIAL FOLATE METABOLISM. **Andrew D. Mathis**, Judith Boldt, Kimberly A. Reynolds

648-Pos Board B423
THE ROLE OF POOL SIZE MEASUREMENTS IN IMPROVING FLUX ESTIMATIONS IN NON-STATIONARY METABOLIC FLUX ANALYSIS. Anna Sher, **Daniel Fridman**, Jamey Young, Cynthia J. Musante

649-Pos Board B424
PHOSPHOLIPASE CBETA REGULATES STRESS GRANULE FORMATION. **Suzanne F. Scarlata**, Lela Jackson, Androniqi Qifti, Osama Garwain

650-Pos Board B425
SYSTEMS BIOLOGY OF CONTROL AND REGULATION OF SUBSTRATE SELECTION IN CYTOPLASMIC AND MITOCHONDRIAL CATABOLIC NETWORKS. **Sonia Cortassa**, Miguel A. Aon, Steven J. Sollott

Optical Microscopy and Superresolution Imaging I (Boards B426 - B452)

651-Pos Board B426
QUANTIFYING FRET EFFICIENCY BETWEEN FLUORESCENT PROTEINS USING FLUORESCENCE POLARIZATION MICROSCOPY. **Vishnu Rao**

652-Pos Board B427
UNVEILING THE INHIBITORY SYNAPSE ORGANIZATION USING SUPER-RESOLUTION MICROSCOPY. **Silvia Scalisi**, Andrea Barberis, Enrica Maria Petrini, Francesca Cella Zanacchi, Alberto Diaspro

653-Pos Board B428
SUPER-RESOLUTION MICROSCOPY REVEALS THE MOLECULAR ARCHITECTURE OF CENTRIOLE SUBDISTAL APPENDAGES AND ITS ROLE IN MICROTUBULE/GOLGI ANCHORING. Weng Man Chong, T Tony Yang, **Jung-Chi Liao**

654-Pos Board B429
AUTOMATED SINGLE MOLECULE CLUSTERING OF SUPERRESOLUTION DATA AS AN N-BODY PROBLEM. **Peter K. Relich**, Shreyasi Thakur, Melike Lakadamyali

655-Pos Board B430 TRAVEL AWARDEE
CUSP ARTIFACTS IN HIGH ORDER SUPERRESOLUTION OPTICAL FLUCTUATION IMAGING (SOFI). **Xiyu Yi**, Shimon Weiss

656-Pos Board B431
COMPREHENSIVE FLUOROPHORE BLINKING ANALYSIS PLATFORM AS A PREREQUISITE FOR PALM DATA INTERPRETATION. Benedikt K. Rossboth, Rene Platzer, Florian Baumgart, Hannes Stockinger, Gerhard J. Schuetz, Johannes B. Huppa, **Mario Brameshuber**

657-Pos Board B432
THIRD HARMONIC GENERATION IMAGING USING COMMON HISTOLOGICAL DYES. **Alexei Kazarine**, Angelica A. Gopal, Paul W. Wiseman

658-Pos Board B433
MONITORING SELF-ORGANIZATION EVENTS IN THE EARLY EMBRYOGENESIS OF CAENORHABDITIS ELEGANS WITH LIGHTSHEET MICROSCOPY. **Matthias Weiss**, Rolf Fickentscher, Philipp Struntz

659-Pos Board B434
PRECISION OF TIME SUPER-RESOLUTION IMAGING BY EVENT CORRELATION MICROSCOPY. Qinghua Fang, Ying Zhao, **Manfred Lindau**

660-Pos Board B435
METHOD FOR HIGH FREQUENCY TRACKING AND SUB-NM SAMPLE STABILIZATION IN SINGLE-MOLECULE FLUORESCENCE MICROSCOPY. **Patrick Schmidt**, Benjamin Reichert, John Lajoie, Sanjeevi Sivasankar

661-Pos Board B436
MULTI-MODAL SUPERRESOLUTION MICROSCOPY THROUGH SUPERRESOLUTION RADIAL FLUCTUATIONS (SRRF). **Jeffrey Oleske**

662-Pos Board B437
MOLECULAR COUNTING BY PHOTON STATISTICS IN CONFOCAL FLUORESCENCE IMAGING. **Marcelle Koenig**, Caroline Berlage, Paja Reisch, Christian Oelsner, Felix Koberling, Haisen Ta, Rainer Erdmann

663-Pos Board B438
PLASMA MEMBRANE-SELECTIVE VISUALIZATION BY MULTIMODAL TWO-PHOTON IMAGING IN LIVING CELLS USING SECOND HARMONIC GENERATION. **Takaha Mizuguchi**, Masato Yasui, Mutsuo Nuriya

664-Pos Board B439
INTRACELLULAR TRACKING OF INFLUENZA HEMAGGLUTININ IN HUMAN MONOCYTE-DERIVED MACROPHAGES MEASURED BY IMAGE CROSS CORRELATION SPECTROSCOPY. **Angelica A. Gopal**, Alexander I. Makarkov, Nathalie Landry, Brian J. Ward, Paul W. Wiseman

665-Pos Board B440
FLEXIBLE LIGHT-SHEET GENERATION BY FIELD SYNTHESIS. Bo-Jui Chang, Mark Kittisopikul, Kevin M. Dean, **Reto P. Fiolka**

666-Pos Board B441
LINE-SCANNING SPATIAL CORRELATION SPECTROSCOPY FOR STUDYING DYNAMICS IN BIOMEMBRANES. Peng Gao, Xiang Gao, Karin Nienhaus, **G. Ulrich Nienhaus**

667-Pos Board B442
BROWNIAN MOTION USING A PIEZO ACTUATED MICROSCOPE STAGE. **Nicholas A. Vickers**, Sean B. Andersson

668-Pos Board B443
SPATIOFUNCTIONAL ENZYME DROPLETS IN CELLULAR METABOLISM. **Erin L. Kennedy**, Miji Jeon, Patricia S. Boyd, Farhan Augustine, Songon An, Minjoung Kyoung

669-Pos Board B444
CALCIUM INDEPENDENCE OF EPITHELIAL JUNCTIONS IS REGULATED BY PROTEIN MOBILITY. **Emily I. Bartle**, Tara M. Urner, Tejeshwar C. Rao, Andrew P. Kowalczyk, Alexa L. Mattheyses

670-Pos Board B445
PHOTON-FREE CALIBRATION OF CMOS CAMERAS FOR PRECISE SINGLE MOLECULE LOCALIZATION MICROSCOPY RECONSTRUCTION. **Robin Diekmann**, Jonas Ries

671-Pos **Board B446**
SINGLE MOLECULE MEASUREMENTS BASED ON INFORMATION THEORY. **Sheng Liu**, Fang Huang

672-Pos **Board B447**
HUMAN STEM CELL STRUCTURES MEASURED WITH CONCENTRATION-CALIBRATED SUPER-RESOLUTION MICROSCOPY. Derek Thirstrup, **Winfried Wiegraebe**, Allen Institute for Cell Science Team

673-Pos **Board B448**
NUCLEAR PORES AS UNIVERSAL REFERENCE STANDARDS FOR QUANTITATIVE MICROSCOPY. **Jervis V. Thevathasan**, Ulf Matti, Maurice Kahnwald, Sudheer Kumar Peneti, Bianca Nijmeijer, Moritz Kueblbeck, Jan Ellenberg, Jonas Ries

674-Pos **Board B449**
FLUORESCENCE LIFETIME IMAGING MICROSCOPY USING COMPRESSED PHASORS. **Ryan A. Colyer**, Sarah Grant, Sarah Eplett

675-Pos **Board B450**
ILLUMINATING SUN2/KASH HETERO-COMPLEX FORMATION WITHIN THE NUCLEAR ENVELOPE OF LIVING CELLS WITH DUAL-COLOR TIME-SHIFTED MSQ. **Kwang-Ho Hur**, Jared Hennen, John Kohler, Siddarth Reddy Karuka, G.W. Gant Luxton, Joachim D. Mueller

676-Pos **Board B451**
AUTOMATING LOCALIZATION MICROSCOPY. **Joran Deschamps**, Yiming Li, Markus Mund, Jonas Ries

677-Pos **Board B452** **TRAVEL AWARDEE**
QUANTITATIVE AND MOTION-CORRECTED SUPER-RESOLUTION IMAGING OF ENDOSOME DYNAMICS IN LIVING CELLS. **Elias M. Puchner**, Santosh Adhikari

Single-Molecule Spectroscopy I (Boards B453 - B466)

678-Pos **Board B453**
TIME-TAGGED SINGLE PHOTON COUNTING EXAMINATION OF ROTATION OF RECEPTOR-BOUND QUANTUM DOTS. Dongmei Zhang, Jason Pace, Deborah A. Roess, **B. George Barisas**

679-Pos **Board B454**
STABLE OFF-PATH STRUCTURES IN THE FOLDING DYNAMICS OF TWO CONSECUTIVE TELOMERIC DNA G-QUADRUPLEXES. **Emil L. Kristoffersen**, Victoria Birkedal

680-Pos **Board B455** **TRAVEL AWARDEE**
RIGIDIFICATION OF THE *E. COLI* CYTOPLASM BY THE HUMAN ANTIMICROBIAL PEPTIDE LL-37 REVEALED BY SUPERRESOLUTION FLUORESCENCE MICROSCOPY. **Yanyu Zhu**, Sonisilpa Mohapatra, James C. Weisshaar

681-Pos **Board B456**
A DIVISIVE SEGMENTATION AND CLUSTERING SCHEME FOR ACCELERATED AND IMPROVED SINGLE-MOLECULE TIME SERIES IDEALIZATION (DISC). David S. White, Marcel P. Goldschen-Ohm, Randall H. Goldsmith, Baron Chanda

682-Pos **Board B457**
THREE-COLOR SINGLE-MOLECULE FRET AND FLUORESCENCE LIFETIME ANALYSIS OF FAST PROTEIN FOLDING. **Janghyun Yoo**, John M. Louis, Irina V. Gopich, Hoi Sung Chung

683-Pos **Board B458**
INVESTIGATION OF SINGLE PARTICLE TRACKING PERFORMANCE BY DIFFERENT PARTICLE FILTER AND SMOOTHER ALGORITHMS. **Ye Lin**, Sean B. Andersson

684-Pos **Board B459**
BAYESIAN APPROACH TO FLUORESCENCE CORRELATION SPECTROSCOPY DATA ANALYSIS - THE DANGER OF LEAST-SQUARE FITTING. **Helmut H. Strey**

685-Pos **Board B460**
EXPERIMENTAL DISSECTION OF EXCLUDED VOLUME EFFECTS FROM QUINARY INTERACTIONS IN MACROMOLECULAR CROWDING. **Evan J. Burdsall**, Vincent J. Altimari, Brandon F. Jarmusik, Everett D. Spencer, Zachary A. Norris, Michael M. J. Lim, Jeffrey D. Hettinger, Nathaniel V. Nucci

686-Pos **Board B461**
EXTENDING FLUORESCENCE LONGEVITY WITH A LAGUERRE-GAUSSIAN TRAPPING LASER FOR THE COMBINATION OF OPTICAL TRAPPING AND SINGLE MOLECULE FLUORESCENCE. **Zheng Zhang**, Joshua N. Milstein

687-Pos **Board B462**
TOWARD SINGLE MOLECULE FRET STUDIES OF DNA MISMATCH REPAIR IN LIVE BACTERIA. **Pengning Xu**, Andrew Hensley, Edward Chan, Keith R. Weninger

688-Pos **Board B463**
SINGLE-MOLECULAR PULL-DOWN FOR QUANTIFYING EPIGENETIC MODIFICATIONS IN CELL-FREE DNA. **Yang Du**, Yongyao Wang, Jiyan Liu, Jiajie Diao

689-Pos **Board B464**
HIGH-PRECISION FRET REVEALS SEQUENCE DEPENDENT STRUCTURES OF RNA THREE-WAY JUNCTIONS. **Olga Doroshenko**, Hayk Vardanyan, Aiswaria Prakash, Sascha Froebel, Stanislav Kalinin, Simon Sindbert, Oleg Opanasyuk, Christian A. Hanke, Sabine Mueller, Holger Gohlke, Claus A.M. Seidel

690-Pos **Board B465** **TRAVEL AWARDEE**
INVESTIGATING HOW CHIRALITY OF A THREADING BINUCLEAR RUTHENIUM COMPLEX AFFECTS THE DNA THREADING INTERCALATION USING OPTICAL TWEEZERS. **Adam A. Jabak**, Nicholas Bryden, Fredrik Westerlund, Per Lincoln, Micah J. McCauley, Ioulia F. Rouzina, Mark C. Williams, Thayaparan Paramanathan

691-Pos **Board B466**
THREE COLOR SINGLE-MOLECULE FRET OF FAST IDP BINDING AND FOLDING. **Jae-Yeol Kim**, Janghyun Yoo, Hoi Sung Chung

Molecular Dynamics I (Boards B467 - B496)

692-Pos **Board B467**
FAST SIMULATION METHODS FOR CHEMISTRY AND BIOLOGY BASED ON QUANTUM MECHANICS. **Pedro E. M Lopes**

693-Pos **Board B468**
ERROR ANALYSIS FOR SMALL-SAMPLE, HIGH-VARIANCE DATA: CAUTIONS FOR BOOTSTRAPPING AND BAYESIAN BOOTSTRAPPING. **Barmak Mostofian**, Daniel M. Zuckerman

694-Pos **Board B469**
MDFF ERROR ANALYSIS: A TOOL FOR DETERMINING STEREOCHEMICAL AND THERMODYNAMIC CORRECT STRUCTURES. **Daipayan Sarkar**, John Vant, Mrinal Shekhar, Jane S. Richardson, Robert Skeel, Abhishek Singharoy

695-Pos **Board B470**
LOOS: A TOOL FOR MAKING TOOLS TO ANALYZE MOLECULAR DYNAMICS SIMULATIONS. **Alan Grossfield**, Tod D. Romo

696-Pos **Board B471**
ON THE VALIDITY OF HYDROGEN MASS REPARTITIONING FOR CHARMM36 MEMBRANE SYSTEMS IN NAMD. **James C. Gumbart**, Curtis Balusek, Hyea Hwang, Chun Hon Lau, Karl Lundquist, Anthony Hazel, Anna Pavlova, Diane Lynch, Patricia Reggio, Yi Wang

697-Pos **Board B472**
OPTIMAL TEMPERATURE AND PRESSURE EVALUATIONS IN MOLECULAR DYNAMICS SIMULATIONS WITH A LARGE TIME STEP. **Jaewoon Jung**, Chigusa Kobayashi, Yuji Sugita

698-Pos Board B473
DETERMINING FREE ENERGY DIFFERENCES THROUGH NON-LINEAR MORPHING. **Martin Reinhardt**, Helmut Grubmueller

699-Pos Board B474
EXPLORING OPTIMAL RESOURCE ALLOCATION FOR WEIGHTED ENSEMBLE RESAMPLING OF RARE EVENTS. **Jeremy T. Copperman**, David Aristoff, Daniel M. Zuckerman

700-Pos Board B475
NEW TOOLS FOR CONFORMATIONAL AND BINDING FREE ENERGY SIMULATIONS. Giacomo Fiorin, Grace Brannigan, **Jérôme Hénin**

701-Pos Board B476
OPTIMIZED PARAMETERS FOR THE DRUDE POLARIZABLE FORCE FIELD FOR SMALL ORGANIC MOLECULES. **Chetan Rupakheti**, Alexander D. MacKerell, Benoit Roux

702-Pos Board B477
POLARIZABLE GENERAL FORCE FIELD FOR DRUG-LIKE MOLECULES: DRUDE GENERAL FORCE FIELD (DGENFF). **Payal Chatterjee**, Esther Heid, Christian Schröder, Alexander D. MacKerell

703-Pos Board B478
COMPARISON OF FUNCTIONAL GROUP AFFINITY PATTERNS FROM THE ADDITIVE VERSUS DRUDE POLARIZABLE FORCE FIELDS FROM THE SITE-IDENTIFICATION BY LIGAND COMPETITIVE SATURATION (SILCS) APPROACH. **Himanshu Goel**, Delin Sun Sun, Wenbo Yu, Alexander D. MacKerell

704-Pos Board B479
GROMAPS: A GROMACS-BASED TOOLSET TO ANALYSE DENSITY MAPS DERIVED FROM MOLECULAR DYNAMICS SIMULATIONS. Rodolfo Briones, Christian Blau, Carsten Kutzner, Bert L. de Groot, **Camilo Aponte-Santamaría**

705-Pos Board B480 TRAVEL AWARDEE
EXPLORING HYDROGEN BOND GEOMETRY IN RNA WITH F-SAPT. **Louis G. Smith**, Chapin E. Cavender, Alan Grossfield, David H. Mathews

706-Pos Board B481
MARKOV MODELING OF PROTEIN DIFFUSION ON TELOMERIC DNA. **Milosz Wieczor**, Antoni Marciniak, Jacek Czub

707-Pos Board B482
CAPTURING THE COOPERATIVITY OF BACKBONE HYDROGEN BONDING WITH POLARIZABLE FORCE FIELDS. **Jing Huang**

708-Pos Board B483
WATERFALL SAMPLING: AN ONLINE SEQUENTIAL MONTE CARLO STRATEGY FOR CONFORMATIONAL SAMPLING OF BIOMOLECULAR SYSTEMS. **Mir Ishruna Muniyat**, Justin L. MacCallum

709-Pos Board B484
CHARTING THE HYDROPHOBIC EFFECT: COMPUTING SPATIALLY RESOLVED ABSOLUTE HYDRATION SHELL ENTROPIES. **Leonard P. Heinz**, Helmut Grubmueller

710-Pos Board B485
HAMILTONIAN REPLICA EXCHANGE FOR ENHANCED SAMPLING OF THE CONFORMATIONAL LANDSCAPE FOR INTRINSICALLY DISORDERED PROTEINS. **Justin SH Kim**, Sarah Rauscher

711-Pos Board B486
PROTEIN-WATER AND SOLVENT-MEDIATED INTERACTIONS IN MULTI-SCALE SIMULATIONS. **Matthias Heyden**

712-Pos Board B487
CONNECTIVITY, DYNAMICS AND BIOMOLECULAR ENERGY TRANSPORT. **Justin Elenewski**, Kirill Velizhanin, Michael Zwolak

713-Pos Board B488 TRAVEL AWARDEE
USING COMMITTOR AND ITS DISTRIBUTION TO ASSESS THE CONVERGENCE OF FREE ENERGY CALCULATIONS. **Nihit Pokhrel**, Lutz Maibaum

714-Pos Board B489
ENHANCED SAMPLING, KINETICS CALCULATION AND STRUCTURAL DATABASE ANALYSIS AIMING AT COMPUTATIONAL DRUG DESIGN. **Kei Moritsugu**, Tohru Terada, Yoshihiko Nishino, Akinori Kidera

715-Pos Board B490
WHEN ADDITIVE MOLECULAR DYNAMICS FAILS: QUANTUM EFFECTS IN CALCIUM-DEPENDENT LECTIN/CARBOHYDRATE COMPLEX. **Martin Lepsik**, Mickael G. Lelimousin, Emanuele Paci, Anne Imberty

716-Pos Board B491
OVERCOMING THE EMBEDDABILITY PROBLEM: A MORE ROBUST CALCULATION OF KINETIC INFORMATION FROM SPARSELY SAMPLED MOLECULAR DYNAMICS SIMULATIONS. **Curtis Goolsby**, Mahmoud Moradi

717-Pos Board B492
HETEROGENEOUS SOLVATION IN DISTINCTIVE PROTEIN-PROTEIN INTERFACES REVEALED BY MOLECULAR DYNAMICS SIMULATIONS. **Clarisse Gravina Ricci**, James A. McCammon

718-Pos Board B493
COMPARING BINDING AFFINITY RESULTS FROM PYROSETTA AND COARSE-GRAINED SIMULATIONS. **Kyle P. Martin**, F. Marty Ytreberg

719-Pos Board B494
EXTENSION OF THE FORCE MATCHING METHOD TO ANISOTROPIC COARSE-GRAINED TRANSFERABLE FORCE FIELDS: APPLICATION TO THE UNRES MODEL OF PROTEINS. **Jozef A. Liwo**, Cezary R. Czaplewski

720-Pos Board B495
COMPARISON OF FORCEFIELDS IN THE PREDICTION OF INTRINSIC RESIDUE-SPECIFIC BACKBONE DIHEDRAL ANGLE DISTRIBUTIONS OF BLOCKED AMINO ACIDS. **Jared M. Lalmansingh**, Jeong-Mo Choi, Rohit V. Pappu

721-Pos Board B496
DEVELOPMENT OF A NEW CALCIUM ION MODEL FOR SIMULATING BIOMOLECULES. Aihua Zhang, Hua Yu, Chunhong Liu, **Chen Song**

Biosensors I
(Boards B497 - B517.1)

722-Pos Board B497
HOW TO MAKE EXCITABLE CELLS. **Merrilee A. Thomas**

723-Pos Board B498
ROLE OF ELECTRIC FIELD CHANGES IN FLUORESCENCE RESPONSE OF RED FLUORESCENT GENETICALLY-ENCODED CA^{2+} INDICATORS. **Rosana S. Molina**, Thomas E. Hughes, Mikhail Drobizhev

724-Pos Board B499
A VOLTAGE DEPENDENT HETEROTRIMERIC FRET SIGNAL SUGGESTS MULTIMERIC ASSOCIATION FOR THE VOLTAGE SENSING DOMAIN OF THE VOLTAGE SENSING PHOSPHATASE. **Lee Min Leong**, Bok Eum Kang, Bradley J. Baker

725-Pos Board B500
SURFACE-ENHANCED RAMAN SPECTROSCOPY (SERS)-ACTIVE NANOPIPETTE FOR SINGLE CELL INTRACELLULAR PH SENSING. **Jing Guo**, jin He

726-Pos Board B501
LABEL-FREE ENZYME ACTIVITY MEASUREMENTS WITH QUANTUM-LIMITED BIOSENSORS. **Arvind Balijepalli**, Son T. Le, Nicholas B. Guros, Antonio Cardone, Niranjana D. Amin, Jeffery B. Klauda, Harish C. Pant, Curt A. Richter

727-Pos Board B502
LUMINESCENT MOLECULAR SENSORS FOR THE SELECTIVE DETECTION OF NEURODEGENERATIVE DISEASE PROTEIN PATHOLOGY IN CSF. **Florencia Monge**, Adeline Fanni, Shanya Jiang, David G. Whitten, Kiran Bhaskar, Eva Y. Chi

728-Pos Board B503 TRAVEL AWARDEE
NOVEL SENSORS FOR DETECTING ALZHEIMER'S DISEASE RELATED TAU PROTEIN AGGREGATES. **Salomon L. Alires**, Florencia A. Monge, David G. Whitten, Eva Y. Chi

729-Pos Board B504
ELECTRIC FIELD AND IONIC STRENGTH DEPENDENT TRANSLOCATION OF TAU PROTEIN THROUGH SOLID-STATE NANOPORE. **Mitu C. Acharjee**, Haopeng Li, Jiali Li

730-Pos Board B505
A-SYNUCLEIN INTERACTION WITH AND TRANSLOCATION BY THE MSPA PORIN. **Philip A. Gurnev**, David P. Hoogerheide, Jens H. Gundlach, Andrew H. Laszlo, Sergey M. Bezrukov

731-Pos Board B506
NANOPORE SPECTROSCOPY: A SINGLE MOLECULE APPROACH TO ANALYZE PROTEIN STRUCTURAL DYNAMICS. **Min Chen**, Xin Li

732-Pos Board B507 TRAVEL AWARDEE
NANOZYME MODIFIED ELECTROCHEMICAL BIOSENSORS AS RAPID SCREENING TOOLS FOR BIOMOLECULES. **Monica Florescu**, Melinda David, Adrian Serban

733-Pos Board B508
TEMPERATURE STUDIES REVEAL THE ROLES OF ENTROPY AND ENTHALPY IN POLYMER-PORIN INTERACTIONS. **Joseph W. Robertson**, Joseph Reiner, Christopher Angevine, Nuwan Kothalawala, Amala Dass

734-Pos Board B509
IMPROVED BILAYER MEMBRANE STABILITY FOR NANOPORE SENSING APPLICATIONS. **Xinqi Kang**, Mohammad Amin Alibakhshi, Meni Wanunu

735-Pos Board B510
LABEL-FREE DETECTION OF SOLO OLIGONUCLEOTIDE LESION BASED ON SITE-DIRECT MUTAGENIZED AEROLYSIN NANOPORE. **Jiajun Wang**, Mengyin Li, Jie Yang, Xue-yuan Wu, Jin Huang, Yi-lun Ying, Yi-tao Long

736-Pos Board B511
KINETIC ANALYSIS OF SINGLE MOLECULE ELECTRODIFFUSION IN A BIOLOGICAL NANOPORE WITH TWO BINDING SITES. Norbert Ankri, Mordjane Boukhet, Gerhard Baaken, Murugappan Muthukumar, **Jan C. Behrends**

737-Pos Board B512
OPTIMIZING NUCLEIC ACID BIOMARKER DETECTION IN A SOLID-STATE NANOPORE THROUGH PROBABILISTIC MODELING. **Samuel Bearden**, Osama K. Zahid, Adam R. Hall

738-Pos Board B513
REAL- TIME NANOPORE COUTING OF AMPLICONS FOR ULTRASENSITIVE AND LABLE- FREE SEQUENCE -SPECIFIC DNA DETECTION. **Zifan Tang**, Weihua Guan

739-Pos Board B514
DNA BASED NANOPORE SENSING. **Haichen Wu**

740-Pos Board B515
EMBEDDING SINGLE METAL IONS WITHIN A BIOLOGICAL NANOPORE FOR AMPLIFIED ION AND SSDNA SENSING. **Jiao Cao**, Shuo Huang

741-Pos Board B516
HIGH-THROUGHPUT OPTICAL SENSING FROM IMMOBILIZED BIOLOGICAL NANOPORES IN A MICRO-BILAYER ARRAY. **Yuqin Wang**, Shuo Huang

742-Pos Board B517
MICROSCOPIC IMAGING OF RESTRICTION ENGINEERED BIOLOGICAL NANOPORES FOR HIGHLY SPECIFIC SPOTTING OF EPIGENETIC MARKERS. **Shuo Huang**

742.1-Pos Board B517.1
DEVELOPMENT OF PHOTOACTIVATABLE OPTICAL BIO-SENSORS OF PHYSIOLOGICL ACTIVITIES. **Sungmoo Lee**, Yoon-Kyu Song, Bradley J. Baker.

Student Research Achievement Award (SRAA) Poster Competition

These posters will be displayed for judging on Sunday, March 3, 6:00 PM–9:00 PM, in the SRAA poster board area marked S1–S188, 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 applicant's name is listed. Please refer to the full abstract for all authors. **Please also note that only applicants and judges will be allowed in S poster area on Sunday evening.**

Bioenergetics, Mitochondria & Metabolism

Board S1
REGULATION OF PROTON TRANSPORT IN TETRAMERIC UCP2 BY AN INTRAMOLECULAR SALT-BRIDGE NETWORK.
Afshan Ardalan (271-Pos / B46)

Board S2
STRUCTURAL REARRANGEMENTS IN THE C-TERMINAL DOMAIN HOMOLOG OF ORANGE CAROTENOID PROTEIN ARE CRUCIAL FOR CAROTENOID TRANSFER.
Dvir Harris (237-Pos / B12)

Board S3
MITOCHONDRIAL MEMBRANE POTENTIAL HETEROGENEITY IN CANCER CELLS IS INDEPENDENT OF THE CELL CYCLE AND INFLUENCES RESPONSE TO HYPERPOLARIZING AGENTS.
Morgan E. Morris (1339-Pos / B441)

Board S4
MINIMIZING THE NUMBER OF MEASUREMENTS REQUIRED TO PREDICT A PHENOTYPIC LANDSCAPE IN BACTERIAL FOLATE METABOLISM.
Andrew D. Mathis (647-Pos / B422)

Board S5
MITOCHONDRIAL MEMBRANE POTENTIAL OSCILLATIONS PERSIST DURING REPERFUSION AFTER ISCHEMIA IN MCU KNOCKOUT CARDIOMYOCYTES.
Deepthi Ashok (1328-Pos / B430)

Board S6
MODELING THE INSERTION OF HEXOKINASE IN THE MITOCHONDRIAL OUTER MEMBRANE AND ITS COMPLEX FORMATION WITH VDAC.
Nandan Haloi (1319-Pos / B421)

Board S7
MODULATION OF ORIENTATIONAL DYNAMICS OF EXCITATORY AMINO ACID TRANSPORTER-1 BY CHOLESTEROL.
Shashank Pant (2758-Pos / B430)

Bioengineering

Board S8
UNDERSTANDING CARDIAC TUBE FORMATION IN DEVELOPING DROSOPHILA EMBRYOS USING LIGHT SHEET MICROSCOPY AND CARDIAC DRUG SCREENING.
Christopher McFaul (2162-Pos / B525)

Board S9
LUMINESCENT MOLECULAR SENSORS FOR THE SELECTIVE DETECTION OF NEURODEGENERATIVE DISEASE PROTEIN PATHOLOGY IN CSF.
Florencia Monge (727-Pos / B502)

Board S10
ENGINEERING NOVEL GENETICALLY ENCODED VOLTAGE INDICATORS BASED ON INTRA-PROTEIN ELECTRON TRANSFER.
Martin J. Iwanicki (1355-Pos / B457)

Board S11
DOES MEMBRANE ASYMMETRY AFFECT NANOPARTICLE-MEMBRANE INTERACTIONS.
Saeed Nazemidashtarjandi (2877-Pos / B549)

Board S12
ROLES OF NUCLEAR CONFINEMENT, EXCLUDED VOLUME, AND PERSISTENCE ON TAD FORMATIONS, CHROMOSOME TERRITORIES, AND CHROMATIN-NUCLEAR ENVELOPE INTERACTIONS.
Samira Mali (2784-Pos / B456)

Board S13
STABLE HYBRID NANOPORES FOR BIOMOLECULE SENSING.
Mehrnaz Mojtabavi (2874-Pos / B546)

Board S14
OPTOGENETIC CONTROL OF RE-ENTRANT WAVES DEMONSTRATED IN HUMAN INDUCED STEM CELL DERIVED CARDIOMYOCYTES (HIPSC-CMs).
Bridget Caldwell (501-Pos / B276)

Board S15
THE EFFECTS OF NOISE IN BIOLOGICAL EXCITABLE MEDIA.
José Miguel Romero Sepúlveda (503-Pos / B278)

Board S16
RAPID LIGHT-TRIGGERED SPATIAL REORGANIZATION OF PROTEINS IN LIVING BACTERIA CELLS.
Ryan J. McQuillen (2702-Pos / B374)

Board S17
EFFECT OF CHITOSAN ON MECHANICAL PROPERTIES OF LIPID BILAYERS USING MICROPIPETTE ASPIRATION.
Honey Priya James (1079-Pos / B181)

Board S18
ENUMERATING VIABLE N-STATE MARKOV MODELS OF SODIUM CHANNEL DYNAMICS.
Kathryn Mangold (1921-Pos / B284)

Board S19
PURIFICATION OF AN ENGINEERED MEMBRANE PROTEIN FHUA FOR SIZE-DEPENDENT SEPARATION.
Alina Thokkadam (1712-Pos / B75)

Board S20
HOW LIGAND BINDING ALTERS THE DYNAMICS OF TOLL-LIKE RECEPTOR 4 (TLR4) AND ITS CO-RECEPTOR MYELOID DIFFERENTIATION FACTOR 2 (MD-2): A MOLECULAR DYNAMICS SIMULATION.
Alireza Tafazzol (2150-Pos / B513)

Board S21
EXPLORING THE EFFECTS OF DIRECTED EVOLUTION ON THE DYNAMICS OF ARTIFICIAL RETRO ALDOLASES.
Joseph Schafer (2131-Pos / B494)

Board S22
CONTROLLED PHOTOSENSITIZING ACTIVITY OF OLIGOMERIC P-PHENYLENE ETHYNYLENES ON AMYLOID-β FIBRILS.
Adeline M. Fanni (1353-Pos / B455)

Biological Fluorescence

Board S23
STUDY OF A HETEROMERIC KAINATE RECEPTOR GLUK2/K5 BY PROBING SINGLE-MOLECULE FRET.
Nabina Paudyal (527-Pos / B302)

Board S24
HIGH-PRECISION FRET REVEALS SEQUENCE DEPENDENT STRUCTURES OF RNA THREE-WAY JUNCTIONS.
Olga Doroshenko (689-Pos / B464)

Board S25
INTERACTIONS BETWEEN A BIOFLAVONOID AND G-QUADRUPLEX DNA AT THE ENSEMBLE AND SINGLE-MOLECULE LEVEL.
Sneha Paul (1364-Pos / B466)

Board S26
FRET AT THE SINGLE MOLECULE LEVEL USING MOLECULAR BRIGHTNESS AND FLUORESCENCE CORRELATION SPECTROSCOPY.
Robert Miller (2814-Pos / B486)

Board S27
COMPUTATIONAL AND EXPERIMENTAL INVESTIGATION OF CARDIAC TROPONIN T R173Q, R173W AND Δ160E MUTATION SPECIFIC CORRELATES TO DISEASE.
Andrea E. Deranek (1307-Pos / B409)

Board S28
A DECOY FOLDING NUCLEUS CAN MODULATE PROTEIN FOLDING KINETICS.
Anirban Das (1670-Pos / B33)

Board S29
LIGHT-INDUCED ACTIVATION OF ORGANO-METALLIC CO-C BOND IN MECBL-DEPENDENT METHIONINE SYNTHASE- QM/MM STUDY.
Arghya P. Ghosh (341-Pos / B116)

Board S30
DETAILED KINETICS OF RNA FOLDING PATHWAYS AND THERMODYNAMIC ORIGINS OF CROWDING BY SINGLE-MOLECULE FRET.
Hsuan-Lei Sung (1370-Pos / B472)

Board S31
STRUCTURAL REARRANGEMENT OF DNA FOR CRISPR-CAS9 NUCLEASE SPECIFICITY REGULATED BY THE REC2 DOMAIN.
Keewon Sung (2506-Pos / B178)

Board S32
AUTOMATED AND OPTIMALLY FRET-ASSISTED STRUCTURAL MODELING.
Mykola Dimura (1647-Pos / B10)

Board S33
INVESTIGATING THE KEY STRUCTURAL ELEMENTS THAT CONFER SPECIFICITY TO THE ACETYLTRANSFERASES ENZYME FAMILY.
Sara K. Lowe (338-Pos / B113)

Biopolymers in vivo

Board S34
DEVELOPMENT OF AN ATOMISTIC STRUCTURE OF MYOSIN BOUND CARDIAC THIN FILAMENT AND FREE ENERGY DETERMINATION OF THE CLOSE TO OPEN TRANSITION.
Anthony Baldo (1297-Pos / B399)

Board S35
DISULFIDE BONDS MODULATE LYSOZYME FOLDING PATHWAYS.
Aswathy Muttathukattil Narayanan (945-Pos / B47)

Board S36
IDENTIFYING INTERMEDIATE STATES IN PRION PROTEIN FOLDING PATHWAY: A POSSIBLE PRECURSOR TO THE MISFOLDED STATE?
Balaka Mondal (944-Pos / B46)

Board S37
QUANTIFYING DNA ELASTICITY IN THE COURSE OF BINDING OF SMALL MOLECULE TO DNA.
Anurag Singh (1774-Pos / B137)

Board S38
THE EARLIEST STAGES OF A PROTEIN'S LIFE INFLUENCES ITS LONG-TERM SOLUBILITY AND STRUCTURAL ACCURACY.
Matthew D. Dalphin (949-Pos / B51)

Board S39
RIGIDIFICATION OF THE E. COLI CYTOPLASM BY THE HUMAN ANTIMICROBIAL PEPTIDE LL-37 REVEALED BY SUPERRESOLUTION FLUORESCENCE MICROSCOPY.
Yanyu Zhu (680-Pos / B455)

Cell Biophysics

Board S40
IN VIVO CELL TRACKING AND CLEARED TISSUE IMAGING WITH EXTENDED FIELD OF VIEW SELECTIVE PLANE ILLUMINATION MICROSCOPY.
Leonardo A. Saunders (2808-Pos / B480)

Board S41
β-ADRENERGIC PATHWAY IS ENHANCED BY HORMONE-INDUCED MATURATION OF HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES (IPS-CM).
David Carreras (1896-Pos / B259)

Board S42
CARDIAC SODIUM CURRENT IS SEVERELY IMPAIRED IN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES FROM BRUGADA SYNDROME PATIENTS.
Rebecca Martinez-Moreno (1932-Pos / B295)

Board S43
NON-RYR CALCIUM LEAK OF THE SARCOPLASMIC RETICULUM IS GOVERNED BY TRPC1 IN CARDIOMYOCYTES.
Azmi A. Ahmad (1901-Pos / B264)

Board S44
USING SCAM TO INVESTIGATE RECONFIGURATION OF MOLECULAR DETERMINANTS IN D1-S6 DURING SLOW INACTIVATION OF hNAV1.4.
Jon M. Beard (1926-Pos / B289)

Board S45
STRUCTURAL ANALYSIS OF MOUSE PLATELETS USING SERIAL BLOCK-FACE SCANNING ELECTRON MICROSCOPY.
Kenny Ling (2845-Pos / B517)

Board S46
SIGNALLING GROWTH THROUGH LIPID KINASES.
Sanjeev Sharma (638-Pos / B413)

Board S47
METABOLIC-RESPONSE ASSESSMENT OF MURINE BREAST CANCER CELLS IN 2D AND 3D CULTURES USING TWO-PHOTON FLUORESCENCE LIFETIME IMAGING MICROSCOPY OF INTRINSIC NAD(P)H.
Anh Cong (2079-Pos / B442)

Board S48
A MEMBRANE-ACTIVATED, UNIVERSAL T-CELL RECEPTOR AGONIST.
Kiera Wilhelm (2631-Pos / B303)

Cryo-EM

Board S49
MULTI-STEP 2D PROTEIN CRYSTALLIZATION VIA STRUCTURAL CHANGES WITHIN AN ORDERED LATTICE.
Jonathan Herrmann (963-Pos / B65)

Board S50
BIOPHYSICAL CHARACTERIZATION OF FULL LENGTH EXOG A HUMAN MITOCHONDRIAL INNER MEMBRANE NUCLEASE.
Andrzej B. Dubiel (384-Pos / B159)

Board S51
INVESTIGATING THE STRUCTURAL MECHANISM OF THE STALLED BACTERIAL RIBOSOME BOUND TO A DRUG THAT TARGETS TRANS-TRANSLATION.
Atousa Mehrani (2848-Pos / B520)

Board S52
THE STRUCTURAL BASIS FOR RELEASE FACTOR ACTIVATION DURING TRANSLATION TERMINATION REVEALED BY TIME-RESOLVED CRYOGENIC ELECTRON MICROSCOPY.
Ziao Fu (2853-Pos / B525)

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Board S53
RATIONAL TARGETING AND TESTING OF MYCOBACTERIAL L-ASPARAGINASE, ESSENTIAL FOR SURVIVAL OF MTB INSIDE HOSTS.
Arti Kataria (1643-Pos / B6)

Board S55
MECHANOCHEMICAL FEEDBACK CONTROL OF DYNAMIN INDEPENDENT ENDOCYTOSIS MODULATES MEMBRANE TENSION IN ADHERENT CELLS.
Joseph J. Thottacherry (469-Pos / B244)

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SPATIOTEMPORAL DYNAMICS OF RON AND EGFR CROSSTALK AT THE PLASMA MEMBRANE.
Justine Keth (1152-Pos / B254)

Intrinsically Disordered Proteins

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A RECEPTOR-INDEPENDENT LIPID MEMBRANE-MEDIATED PATHWAY FOR SEROTONIN ACTION.
Simli Dey (2102-Pos / B465)

Board S58
DIVULGING CHARACTERISTIC FEATURES OF THE NOVEL α-SYNUCLEIN OLIGOMERS AUGMENTING PARKINSON'S DISEASE.
Animesh Mondal (915-Pos / B17)

Board S59
THE INTERPLAY OF STRUCTURAL AND CELLULAR BIOPHYSICS CONTROLS THE CLUSTERING OF MULTIVALENT SIGNALING MOLECULES: THE NEPHRIN-NCK-NWASP SYSTEM.
Aniruddha Chattaraj (1165-Pos / B267)

Board S60
COMPARISON OF FORCEFIELDS IN THE PREDICTION OF INTRINSIC RESIDUE-SPECIFIC BACKBONE DIHEDRAL ANGLE DISTRIBUTIONS OF BLOCKED AMINO ACIDS.
Jared M. Lalmansingh (720-Pos / B495)

Board S61
WHAT MODULATES THE USP7 FUNCTION...A DYNAMIC POCKET OR INTER-REGULATORY DOMAINS?
Mitul Srivastava (1686-Pos / B49)

Board S62
INSIGHT INTO AMYLOID INTERACTIONS: MOLECULAR DYNAMICS SIMULATIONS OF MODEL PEPTIDE FRAGMENTS.
Nicholas A. Cramer (2159-Pos / B522)

Board S63
BIOPHYSICAL CHARACTERIZATION OF DIFFERENCES IN DOMAIN-DOMAIN INTERACTIONS BETWEEN THE APOLIPOPROTEIN E4 AND E3.
Subhrajyoti Dolai

Board S64
CHARACTERISTICS OF THE BINDING INTERACTION BETWEEN PDX1 AND SPOP.
Grace A. Usher (993-Pos / B95)

Board S65
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Kseniia Afitska (2438-Pos / B110)

Board S66
TIGHT BINDING OF NATURAL POLYPHENOLS TO THE INTRINSICALLY DISORDERED MAMMALIAN HIGH MOBILITY GROUP PROTEIN AT-HOOK 2.
Linjia Su (2386-Pos / B58)

Board S67
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Megan Cohan (992-Pos / B94)

Board S68
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Min Kyung Shinn (391-Pos / B166)

Board S69
OBSERVATION OF STRUCTURAL GROWTH OF FIBRILS OF AMYLIN PROTEIN.
Suparna Khatun (2437-Pos / B109)

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Board S70
UNFOLDING TRANSITIONS AND INTERDOMAIN COUPLING IN HUMAN DYSTROPHIN SPECTRIN REPEATS.
Lisa Ito, Madison Nohner (1681-Pos / B44)

Board S71
THE HCM-CAUSING Y235S CMYBPC MUTATION ACCELERATES CONTRACTILE FUNCTION BY ALTERING C1 DOMAIN STRUCTURE.
Chang Yoon Doh (1312-Pos / B414)

Board S72
PHYSICAL MODEL FOR CELL MIGRATION GUIDED BY ELASTIC PROPERTIES OF THE SUBSTRATE.
Susana Márquez (2714-Pos / B386)

Board S73
PROBING THE INTERACTION BETWEEN RECEPTOR TYROSINE KINASES AND TRANSMEMBRANE ADHESION PROTEINS.
Taylor P. Light (1153-Pos / B255)

Membrane Biophysics

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Nawid Madjroh (1956-Pos / B319)

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PHOSPHATIDYLINOSITOL INHIBITS TRPV1 VIA ITS VANILLOID BINDING SITE.
Aysenur T. Yazici (2660-Pos / B332)

Board S76
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Clara Herrera-Arozamena (1951-Pos / B314)

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Erin R. Tyndall (2568-Pos / B240)

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Ryan J. Durham (526-Pos / B301)

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Sreyoshi Sur (427-Pos / B202)

Board S80
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Sushree Tripathy (1948-Pos / B311)

Board S81
ALLOSTERIC MODULATION OF CA2+-ACTIVATED CL-CHANNLES TMEM16A BY PIP2 AND CAMKII.
Woori Ko (1103-Pos / B205)

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Brooke Ahern (1177-Pos / B279)

Board S83
PIP2 POTENTIATES THE CA2+-ACTIVATED CL- CHANNEL TMEM16A IN XENOPUS LAEVIS OOCYTES.
Maiwase Tembo (1104-Pos / B206)

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Parijat Sil (1023-Pos / B125)

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Reema Kathuria (1106-Pos / B208)

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Elif S. Koksal (1081-Pos / B183)

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Hanieh Mazloom-Farsibaf (1710-Pos / B73)

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Raymundo Rodríguez López (1802-Pos / B165)

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EXPLORING (PROTEO-) LIPOSOMES FOR MASS SPECTROMETRY.
Melissa Frick (273-Pos / B48)

Board S90
MEMBRANES MATTER: PREDICTING DRUG TOXICITY.
R Lea Sanford (2536-Pos / B208)

Board S91
MECHANISM OF ACTION OF PH-TRIGGERED, MEMBRANE ACTIVE PEPTIDES.
Sarah Y. Kim (419-Pos / B194)

Board S92
THE ROLE OF ERGOSTEROL IN PHASE SEPARATION OF YEAST VACUOLE MEMBRANES.
Chantelle Leveille (396-Pos / B171)

Board S93
PREDICTING SPECTRAL PROPERTIES OF POLARITY SENSITIVE DYES WITH QM/MM SIMULATION.
Swapnil Baral (1111-Pos / B213)

Board S94
EFFECT OF BIOPOLYMER TETHERS ON ANTIMICROBIAL PEPTIDE ACTIVITY IN BIOMEMBRANES.
Fathima T. Doole (428-Pos / B203)

Board S95
INCORPORATING PROTEINS INTO GEOMETRICALLY COMPLEX, CELL-SCALE MEMBRANE MODELS FOR MOLECULAR DYNAMICS SIMULATIONS.
Noah Trebesch (1413-Pos / B515)

Board S96
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Zachary R. Cohen (2527-Pos / B199)

Board S97
SINGLE-LIPID SORTING AND DYNAMICS AT MEMBRANE CURVATURE SITES: THE EFFECTS OF FLUORESCENCE LABELING, COMPOSITION, PHASE, AND TEMPERATURE.
Xinxin Woodward (1110-Pos / B212)

Board S98
MECHANISM OF EPHA2 DIMERIZATION IN RESPONSE TO MONOMERIC LIGANDS.
Elmer A. Zapata-Mercado (1155-Pos / B257)

Board S99
HUMAN PICOBIRNAVIRUS CAPSIDS AS POTENTIAL NANOCARRIERS FOR DRUG DELIVERY WITHIN PULMONARY SURFACTANT CONTEXTS.
Cristina García Mouton (1835-Pos / B198)

Board S100
CHARACTERIZING P2X2 MUTANTS ASSOCIATED WITH PROGRESSIVE SENSORINEURAL HEARING LOSS (DFNA41).
Benjamin I. George (546-Pos / B321)

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Board S101
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Alexandre G. Vouga (2691-Pos / B363)

Board S102
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Federica Castellani (2834-Pos / B506)

Board S103
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Han Wen (2584-Pos / B256)

Board S104
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Pengyu Zheng (1206-Pos / B308)

Board S105
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Kehan Chen (2741-Pos / B413)

Board S106
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Nara L. Chon (1971-Pos / B334)

Board S107
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Sayane Shome (1719-Pos / B82)

Board S108
MOLECULAR MECHANISMS OF FILTER-LEVEL GATING AND LOSS OF SELECTIVITY IN HERG1 N629D MUTANT FROM MICROSECONDS MD SIMULATIONS.
Williams E. Miranda (506-Pos / B281)

Board S109
CLC CONFORMATIONAL LANDSCAPE AS STUDIED BY SMFRET.
Ayush Krishnamoorti (2751-Pos / B423)

Board S110
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Naimat Kalim Bari

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SPECTRAL ASSIGNMENT OF LYSOZYME COLLECTIVE VIBRATIONS.
Yanting Deng (2797-Pos / B469)

Board S112
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Abigail D. Wilson (1887-Pos / B250)

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SGEF GEF ACTIVITY AND ITS REGULATION BY SCRIBBLE AND DLG1.
Ashley Simpson (324-Pos / B99)

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Hao-Che Wang (1042-Pos / B144)

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Marika Musielak (2092-Pos / B455)

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Soyeon Kim (1011-Pos / B113)

Board S117
GPU ACCELERATED COMPUTATION OF ISOTROPIC CHEMICAL SHIFTS OFFERS NEW DIMENSION OF STRUCTURE REFINEMENT IN LARGESCALE MOLECULAR DYNAMICS SIMULATION.
Alexander J. Bryer (2826-Pos / B498)

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Ankita Sarkar (2356-Pos / B28)

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Byung Ho Lee (382-Pos / B157)

Board S120
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Carmen Suay Corredera (2112-Pos / B475)

Board S121
MOLECULAR DYNAMICS INVESTIGATION OF THE PHYSICAL BINDING OF THE NNK DIAZONIUM ION TO EXON 5 OF TP53.
David Wahl (2160-Pos / B523)

Board S122
EXAMINING THE REFOLDING OF PERTURBED PROTEIN STRUCTURE INTERMEDIATES USING VARIOUS MOLECULAR MECHANICS FORCE FIELDS.
David Wang (2136-Pos / B499)

Board S123
MORPHOLOGY OF GOLD NANORODS OBTAINED IN THE PRESENCE OF OLIGOMERIC SURFACTANTS.
Joanna Maksim (2213-Pos / B576)

Board S124
GOLD NANORIBBONS AS SUPPORT MATERIAL FOR NANOSENSORS.
Joanna P. Patalas (2196-Pos / B559)

Board S125
SAXS AND SPECTROSCOPIC STUDIES OF SYNTHESIS PROCEDURES OF NANORODS.
Karolina Rucinska (2212-Pos / B575)

Board S126
INVESTIGATING THE STRUCTURE OF LACCASSES FOR BIOFUELS.
Shahla H. Partowmah (305-Pos / B80)

Board S127
THE STRUCTURAL ARRANGEMENT AND DYNAMICS OF HOMOMERIC KAINATE RECEPTORS DETERMINED BY SMFRET.
Douglas B. Litwin (525-Pos / B300)

Motility & Cytoskeleton

Board S128
DIFFERENTIAL ACTIN BINDING AFFINITY LEADS TO PROTEIN SORTING IN A RECONSTITUTED ACTIVE COMPOSITE LAYER.
Abrar A. Bhat (1085-Pos / B187)

Board S129
FLEXURAL RIGIDITY OF MICROTUBULES MEASURED WITH NANOMETER-LEVEL LOCALIZATION PRECISION.
Hang Zhou (2015-Pos / B378)

Board S130
IMPACT OF HUMAN BETA-CARDIAC MYOSIN MUTATION IMPLICATED IN BOTH HYPERTROPHIC AND DILATED CARDIOMYOPATHY.
Wanjian Tang (1300-Pos / B402)

Board S131
TUNING OF MEMBRANE SPHINGOLIPID CONTENT INFLUENCES THE LINKS OF OUTER-LEAFLET MEMBRANE LIPID DYNAMICS TO CHOLESTEROL AND CYTOSKELETON.
Anjali Gupta (1077-Pos / B179)

Board S132
PROBING THE CHAPERONE ACTIVITY OF ERYTHROID SPECTRIN.
Dipayan Bose (946-Pos / B48)

Board S133
ONE NANOMETER PRECISION BY BAYESIAN GROUPING OF LOCALIZATIONS.
Mohamadreza Fazel (1435-Pos / B537)

Nanoscale Biophysics

Board S134
AFM SHOWS THAT HUMAN CtIP FORMS A TETRAMERIC DUMBBELL-SHAPED PARTICLE WHICH BINDS AND BRIDGES DNA ENDS.
Alejandro Martin-Gonzalez (372-Pos / B147)

Board S135
PEPTIDE ASSISTED SUPRAMOLECULAR POLYMERIZATION OF THE ANIONIC PORPHYRIN MESO-TETRA(4-SULFONATOPHENYL)PORPHINE.
Eric Kohn (2365-Pos / B37)

Board S136
LABEL-FREE CHROMATIN-DNA IMAGING BY CIRCULAR POLARIZED LIGHT SCATTERING SCANNING MICROSCOPY.
Riccardo Marongiu (2475-Pos / B147)

Board S137
METAL OXIDE COATING OF SILVER NANOPARTICLES TO IMPROVE THEIR PHYSICOCHEMICAL AND OPTICAL PROPERTIES.
Soha AbdelHamied Mohamed (2210-Pos / B573)

Board S138
A NOVEL VIEWPOINT TO ANALYZE STRUCTURED ILLUMINATION MICROSCOPY (SIM) DATA.
Isotta Cainero (2166-Pos / B529)

Board S139
CHARACTERIZATION OF ONC112 EFFECT ON RIBOSOMES AND ASSOCIATED PROTEINS IN LIVE E. COLI CELLS USING SUPERRESOLUTION MICROSCOPY.
Mainak Mustafi (1794-Pos / B157)

Board S140
OPTIMIZING ASTIGMATISM FOR 3D STOCHASTIC OPTICAL RECONSTRUCTION MICROSCOPY.
Alondra Escobar (2172-Pos / B535)

Board S141
CONVERTING FRET SIGNAL INTO FORCE INFORMATION USING SHORT LOOPED DNA AS FORCE TRANSDUCER.
Golam Mustafa (2187-Pos / B550)

Board S142
ELECTRIC FIELD MEDIATED DISRUPTION OF BETA AMYLOID; A POTENTIAL NON-INVASIVE THERAPY FOR ALZHEIMER'S DISEASE.
Jahnu Saikia (257-Pos / B32)

Monday, March 4, 2019

Daily Program Summary

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

7:30 AM–8:30 AM	**Graduate Student Breakfast**	**Room 321/322/323**
7:30 AM–5:00 PM	**Registration/Exhibitor Registration**	**Charles Street Lobby**
8:00 AM–10:00 PM	**Poster Viewing**	**Exhibit Hall**
8:15 AM–10:15 AM	**Symposium: Large Macromolecular Machines in the Cell** **Chair:** *Titia Sixma, Netherlands Cancer Institute, The Netherlands* CRYO-EM STRUCTURE OF HUMAN TELOMERASE AND NEW INSIGHT INTO ITS ASSEMBLY AND FUNCTION. *Kelly Nguyen* HIGH-RESOLUTION MODELING AND SIMULATION OF CELLULAR STRUCTURES AND PROCESSES, ONE ATOM AT A TIME. *Emad Tajkhorshid* STRUCTURE-FUNCTION MAPPING OF THE NUCLEAR PORE COMPLEX. *Michael P. Rout* STEPPING THROUGH DNA MISMATCH REPAIR INITIATION. *Titia K. Sixma*	**Ballroom I**
8:15 AM–10:15 AM	**Symposium: Biological Membranes and Vesicles** **Chair:** *John Briggs, MRC Laboratory of Molecular Biology, United Kingdom* STRUCTURAL CELL BIOLOGY OF VIRUS-HOST INTERACTIONS. *Kay Grünewald* UNCOVERING THE MECHANISMS OF CLATHRIN-MEDIATED ENDOCYTOSIS USING QUANTITATIVE BIOLOGY APPROACHES. *Julien Berro* CROWDING IN THE CELLULAR CONTEXT: TALES OF CLUSTERS AND DYNAMICS. *Michael Feig* REVEALING THE STRUCTURES OF TRAFFICKING VESICLES AND ENVELOPED VIRUSES USING CRYO-ELECTRON TOMOGRAPHY. *John Briggs*	**Ballroom II**
8:15 AM–10:15 AM	**Platform: Protein-Small Molecule Interactions**	**Ballroom III**
8:15 AM–10:15 AM	**Platform: Excitation-Contraction Coupling/Cardiac and Skeletal Muscle Electrophysiology II**	**Ballroom IV**
8:15 AM–10:15 AM	**Platform: Energy Transducing Complexes and Mitochondria in Cell Life and Death**	**Room 307/308**
8:15 AM–10:15 AM	**Platform: Microtubules, Structure, Dynamics and Associated Proteins**	**Room 309/310**
8:15 AM–10:15 AM	**Platform: Protein Assemblies/Enzyme Function, Cofactors and Post-translational Modifications I**	**Room 314/315**
8:15 AM–10:15 AM	**Platform: Biomolecular Methods In and Out of Cells**	**Room 316/317**
8:30 AM–10:30 AM	**CPOW Committee Meeting**	**Room 333**
9:30 AM–11:00 AM	**Exhibitor Presentation: Bruker Corporation** **Advances In Dye Development and Microscopy for Live Cell Superresolution Microscopy with the Vutara 352**	**Room 303**
10:00 AM–11:00 AM	**Career Development Center Workshop:** **Demystifying the Academic Job Search II: Preparing Your Written Application Materials:** **CV, Cover Letter, and Research Statement**	**Exhibit Hall A**
10:00 AM–5:00 PM	**Exhibits**	**Exhibit Hall**
10:15 AM–11:00 AM	**Coffee Break**	**Exhibit Hall**
10:15 AM–11:15 AM	**New Member Welcome Coffee**	**Room 321/322/323**
10:30 AM–12:00 PM	**Exhibitor Presentation: Bruker Corporation** **Using NMR (Nuclear Magnetic Resonance) and EPR (Electron Paramagnetic Resonance) in Biophysics**	**Room 301**
10:45 AM–12:45 PM	**Symposium: Phase Separations in the Cell** **Chair:** *Geeta Narlikar, University of California, San Francisco* PHASE SEPARATION: PREDICTION AND ROLE IN BIOLOGICAL REGULATION. *Julie D. Forman-Kay* A PROTEIN CONDENSATE DRIVES ACTIN-INDEPENDENT ENDOCYTOSIS. *Stephen Michnick* MAKING AND BREAKING THE SYMMETRY BETWEEN SEQUENCE-SPECIFIC CONFORMATIONAL AND PHASE BEHAVIORS OF DISORDERED PROTEINS. *Rohit V. Pappu* THE ROLE OF PHASE-SEPARATION IN HETEROCHROMATIN. *Geeta Narlikar*	**Ballroom I**

10:45 AM–12:45 PM	**Symposium: Regulation of Cardiomyocyte Beating** **Chair:** *Beth L. Pruitt, University of California, Santa Barbara* MULTIMERIC PROTEIN COMPLEXES IN REGULATION OF CARDIOMYOCYTE CALCIUM CYCLING AND SURVIVAL. *Litsa Kranias* SLOW AND FAST TIME SCALES IN CARDIOMYOCYTE BEATING. *Ohad Cohen* WHY AND WHEN YOUR NEXT HEARTBEAT WILL OCCUR. *Edward G. Lakatta* INVITED SPEAKER: MECHANOBIOLOGY OF ENGINEERED HIPSC CARDIOMYOCYTES. *Beth L. Pruitt*	**Ballroom II**
10:45 AM–12:45 PM	**Symposium: Future of Biophysics** **Co-Chairs:** *Susan Marqusee, University of California, Berkeley, Andrej Sali, University of California, San Francisco* LIVE CELL IMAGING OF RNA DYNAMICS IN MAMMALIAN CELLS USING RIBOGLOW, A RIBOSWITCH-BASED FLUORESCENCE TAGGING PLATFORM. *Esther Braselmann* SCULPTING EMBRYOS VIA CONTROLLED FLUID-TO-SOLID TISSUE TRANSITIONS. *Otger Campas* OPTICAL DISSECTION OF CLASS C GPCR ASSEMBLY, ACTIVATION, AND SIGNALING MECHANISMS. *Joshua Levitz* MESOSCALE ARCHITECTURE OF B-CELLS UPON STIMULATION WITH GLUCOSE AND EX-4. *Kate L. White*	**Ballroom III**
10:45 AM–12:45 PM	**Platform: Protein Dynamics and Allostery I**	**Ballroom IV**
10:45 AM–12:45 PM	**Platform: Membrane Structure**	**Room 307/308**
10:45 AM–12:45 PM	**Platform: Computational Methods and Bioinformatics**	**Room 309/310**
10:45 AM–12:45 PM	**Platform: Protein Structure and Conformation II**	**Room 314/315**
10:45 AM–12:45 PM	**Platform: Membrane Pumps, Transporters, and Exchangers**	**Room 316/317**
11:00 AM–12:30 PM	**Annual Meeting of the Student Chapters**	**Room 324/325/326**
11:30 AM–12:30 PM	**Career Development Center Workshop:** **Networking for Nerds: How to Create Your Dream Career**	**Exhibit Hall A**
11:30 AM–1:00 PM	**Exhibitor Presentation: Asylum Research** **Capturing Biochemical Reactions with Video-Rate AFM**	**Room 303**
12:30 PM–2:00 PM	**The Nuts and Bolts of Preparing Your NSF Grant**	**Room 321/322/323**
12:30 PM–2:00 PM	**Exhibitor Presentation: Nanion Technologies** **Ion Channels and Transporters in the Spotlight**	**Room 301**
1:00 PM–2:30 PM	**Understanding the Congressional Budget Process:** **How Science is Funded**	**Room 318/319/320**
1:30 PM–3:00 PM	**Biophysics 101: Gene Editing**	**Room 307/308**
1:30 PM–3:00 PM	**Exhibitor Presentation: Bruker Corporation** **Investigating Dynamic Biological Processes with High-Speed, High-Resolution Correlative AFM-Light Microscopy**	**Room 303**
1:45 PM–3:00 PM	**Snack Break**	**Exhibit Hall**
1:45 PM–3:45 PM	**Poster Presentations and Late Posters**	**Exhibit Hall**
2:15 PM–3:45 PM	**Virtual Biophysics: Virtual and Augmented Reality Meets Biophysics**	**Room 324/325/326**
2:30 PM–3:30 PM	**Career Development Center Workshop: The Strategic Postdoc:** **How to Find & Leverage your Postdoc Experience**	**Exhibit Hall A**
2:30 PM–4:00 PM	**Speed Networking**	**Mezzanine Level**
2:30 PM–4:00 PM	**Designing and Implementing Strategies to Prevent and Recover from Burnout**	**Room 321/322/323**
2:30 PM–4:00 PM	**Exhibitor Presentation: Alvéole** **Bioengineering Relevant Cellular Microenvironments With PRIMO®**	**Room 301**
3:30 PM–5:00 PM	**Exhibitor Presentation: NanoSurface Biomedical** **Biomimetic Cell Culture Platforms for Enhancing Cell Biology Studies**	**Room 303**
3:30 PM–5:30 PM	**Membership Committee Meeting**	**Room 333**
4:00 PM–5:00 PM	**Career Development Center Workshop:** **Developing Your 30-Second Value Statement (aka Your Elevator Pitch)**	**Exhibit Hall A**

4:00 PM–6:00 PM	**Symposium: Chromatin Organization and Regulation: From Physical Principles to Biological Phenomena** **Chair:** *Karolin Luger, University of Colorado Boulder* DNA SHAPE SHIFTING AS A GENE THERAPY TOOL. *Lynn Zechiedrich* CHROMOSOME ORGANIZATION BY LOOP EXTRUSION AND PHASE SEPARATION. *Leonid Mirny* HOW TO READ AND WRITE MECHANICAL INFORMATION IN DNA MOLECULES. *Helmut Schiessel* OFF TO THE RACES - QUANTITATING THE RECRUITMENT OF PROTEINS TO SITES OF DNA DAMAGE. *Karolin Luger*	**Ballroom I**
4:00 PM–6:00 PM	**Symposium: Synthetic Biology** **Chair:** *Luis Serrano, Centre for Genomic Regulation, Spain* SYNTHETIC BIOLOGY APPROACHES TO BIO-ORTHOGONAL CHEMISTRY. *Michelle Chang* SYNTHETIC ELECTROPHYSIOLOGY. *Adam Cohen* MECHANISMS, DIVERSITY AND OPTOGENETIC APPLICATIONS OF CHANNELRHODOPSINS FROM CRYPTOPHYTE ALGAE. *Elena G. Govorunova* ENGINEERING OF MYCOPLASMA PNEUMONIAE AS A THERAPEUTIC VEHICLE TO TREAT LUNG DISEASES. *Luis Serrano*	**Ballroom II**
4:00 PM–6:00 PM	**Platform: Ion Channels, Pharmacology, and Disease**	**Ballroom III**
4:00 PM–6:00 PM	**Platform: Optical Microscopy and Superresolution Imaging II**	**Ballroom IV**
4:00 PM–6:00 PM	**Platform: Membrane Receptors and Signal Transduction**	**Room 307/308**
4:00 PM–6:00 PM	**Platform: Myosin and Skeletal/Smooth Muscle Mechanics, Structure, and Regulation**	**Room 309/310**
4:00 PM–6:00 PM	**Platform: Intrinsically Disordered Proteins (IDP) and Aggregates II**	**Room 314/315**
4:00 PM–6:00 PM	**Platform: Macromolecular Interactions and Effects on Membranes**	**Room 316/317**
4:30 PM–6:00 PM	**Exhibitor Presentation: Molecular Devices** **Supercharge Your Patch-Clamp Data Acquisition and Analysis with the NEW Axon pCLAMP 11 Software**	**Room 301**
5:30 PM–7:00 PM	**Exhibitor Presentation: LUMICKS** **A Versatile Platform For High-Resolution Single-Molecule Research: Expanding Capabilities and Exploring New Possibilities**	**Room 303**
6:00 PM–6:30 PM	**Dinner Meet-Ups**	**Society Booth/Charles Street Lobby**
8:00 PM–9:00 PM	**Awards and 2019 Biophysical Society Lecture**	**Ballrooms I-IV**
9:30 PM–12:00 AM	**Reception and Dance**	**Hilton, Key Ballroom**
9:30 PM–12:00 AM	**Reception and Quiet Room**	**Hilton, Peale A/C**

Monday, March 4

Graduate Student Breakfast

7:30 AM - 8:30 AM, ROOM 321/322/323

This breakfast presents an opportunity for graduate student Annual Meeting attendees to meet and discuss the issues they face in their current career stage. Limited to the first 100 attendees.

Speakers
Lamar Mair, Weinberg Medical Physics
Frank Sachse, University of Utah

Registration/Exhibitor Registration

7:30 AM - 5:00 PM, CHARLES STREET LOBBY

Poster Viewing

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

Symposium
Large Macromolecular Machines in the Cell

8:15 AM - 10:15 AM, BALLROOM I

Chair
Titia Sixma, Netherlands Cancer Institute, The Netherlands

743-SYMP 8:15 AM
CRYO-EM STRUCTURE OF HUMAN TELOMERASE AND NEW INSIGHT INTO ITS ASSEMBLY AND FUNCTION. **Kelly THD Nguyen**, Jane Tam, Robert Alexander Wu, Basil J. Greber, Eva Nogales, Kathleen Collins

744-SYMP 8:45 AM
HIGH-RESOLUTION MODELING AND SIMULATION OF CELLULAR STRUCTURES AND PROCESSES, ONE ATOM AT A TIME. **Emad Tajkhorshid**

745-SYMP 9:15 AM
STRUCTURE-FUNCTION MAPPING OF THE NUCLEAR PORE COMPLEX. **Michael P. Rout**

746-SYMP 9:45 AM
STEPPING THROUGH DNA MISMATCH REPAIR INITIATION. Rafael Fernandez-Leiro, Doreth Bhairosing-Kok, Flora Groothuizen, Laffeber Charlie, Joyce H. Lebbink, Peter Friedhoff, Meindert Lamers, **Titia K. Sixma**

Symposium
Biological Membranes and Vesicles

8:15 AM - 10:15 AM, BALLROOM II

Chair
John Briggs, MRC Laboratory of Molecular Biology, United Kingdom

NO ABSTRACT 8:15 AM
STRUCTURAL CELL BIOLOGY OF VIRUS-HOST INTERACTIONS. **Kay Grünewald**

747-SYMP 8:45 AM
UNCOVERING THE MECHANISMS OF CLATHRIN-MEDIATED ENDOCYTOSIS USING QUANTITATIVE BIOLOGY APPROACHES. **Julien Berro**

748-SYMP 9:15 AM
CROWDING IN THE CELLULAR CONTEXT: TALES OF CLUSTERS AND DYNAMICS. **Michael Feig**

NO ABSTRACT 9:45 AM
REVEALING THE STRUCTURES OF TRAFFICKING VESICLES AND ENVELOPED VIRUSES USING CRYO-ELECTRON TOMOGRAPHY. **John Briggs**

Platform
Protein-Small Molecule Interactions

8:15 AM - 10:15 AM, BALLROOM III

Co-Chairs
Alex Dickson, Michigan State University
Rezvan Shahoei, University of Illinois at Urbana-Champaign

749-PLAT 8:15 AM
MAPPING LIGAND BINDING LANDSCAPES USING WEIGHTED ENSEMBLES OF TRAJECTORIES. **Alex Dickson**

750-PLAT 8:30 AM
THE RELEVANCE OF CONFORMATIONAL ENTROPY FOR PROTEIN LIGAND INTERACTIONS: THE CASE OF BIOTIN AND STREPTAVIDIN. **Mona Sarter**, Andreas M. Stadler, Doreen Niether, Bernd W. Koenig, Michaela Zamponi, Lohstroh Wiebke, Simon Wiegand, Joerg Fitter

751-PLAT 8:45 AM
STRUCTURAL AND FUNCTIONAL CHARACTERIZATION OF PERIPLASMIC SIALIC ACID BINDING PROTEINS FROM PATHOGENIC BACTERIA. **Thanuja Gangi Setty**, Ramaswamy S

752-PLAT 9:00 AM
MECHANICAL STRENGTH OF CATCH BOND FORMING FIMH AND MANNOSE. **Laura A. Carlucci**, Keith Johnson, Wendy E. Thomas

753-PLAT 9:15 AM
MENTHOL BINDS TO EXTRACELLULAR AND TRANSMEMBRANE DOMAINS OF THE HUMAN A4B2 NICOTINIC RECEPTOR. **Rezvan Shahoei**, Emad Tajkhorshid

754-PLAT 9:30 AM
MOLECULAR DETERMINANTS OF NON-OXIME BISPYRIDINIUM ACTIVITY AT ADULTS MUSCLE NACHRS. **Max Epstein**

755-PLAT 9:45 AM
TARGETING THE MRNAS TRANSLATION PROCESS: A NOVEL THEORETICAL BASED APPROACH TO DESIGN TAILORED ANTICANCER AGENTS. **Daniele Di Marino**, Stefano Raniolo, Alessandro Gori, Vittorio Limongelli

756-PLAT 10:00 AM
PROTEIN DATABANK SURVEY HINTS INTO THE EMERGENCE OF PROTEIN-ADENINE RECOGNITION IN EVOLUTION. Aya Narunsky, Ron Solan, Amir Kessel, Rachel Kolodny, **Nir Ben-Tal**

Platform
Excitation-Contraction Coupling/Cardiac and Skeletal Muscle Electrophysiology II

8:15 AM - 10:15 AM, BALLROOM IV

Co-Chairs
Sabine Lotteau, Smidt Heart Institute
Filip Van Petegem, University of British Columbia, Canada

757-PLAT 8:15 AM
L-TYPE CALCIUM CHANNELS ARE A MAJOR SOURCE OF PLASMALEMMEL CALCIUM INFLUX FOR DROSOPHILA CARDIOMYOCYTES. **Worawan B. Limpitikul**, Meera C. Viswanathan, Brian O'Rourke, David T. Yue, Anthony Cammarato

758-PLAT 8:30 AM
EFFICIENT HIGH-THROUGHPUT SCREENING FOR TYPE 1 RYANODINE RECEPTOR INHIBITORS USING ER CA^{2+}MEASUREMENTS. **Takashi Murayama**, Nagomi Kurebayashi, Mari Yuasa-Ishigami, Shuichi Mori, Haruo Ogawa, Junji Suzuki, Kazunori Kanemaru, Masamitsu Iino, Hiroyuki Kagechika, Takashi Sakurai

759-Plat 8:45 am TRAVEL AWARDEE
ENDOTHELIAL CELL REGULATION OF EXCITATION-CONTRACTION COUPLING IN INDUCED PLURIPOTENT STEM CELL DERIVED MYOCARDIUM. **Oisín King**, Fatemeh Kermani, Brian Wang, Warrapong Kit-Anan, Jerome Fourre, Anna M. Randi, Cesare M. Terracciano

760-Plat 9:00 am
BIOCHEMICAL AND EPIGENETIC MODIFICATIONS OCCUR IN MUSCLES OF PATIENTS WITH SELENOPROTEIN N RELATED CONGENITAL MYOPATHY. Christoph Bachmann, Nicol Voermans, Heinz Jungbluth, Francesco Muntoni, Francesco Zorzato, **Susan Treves**

761-Plat 9:15 am
STRUCTURAL INSIGHTS INTO RECOGNITION OF RYANODINE RECEPTORS BY PKA. Omid Haji-Ghassemi, Zhiguang Yuchi, **Filip Van Petegem**

762-Plat 9:30 am
ACUTE GENETIC ABLATION OF SODIUM-CALCIUM EXCHANGE: ADAPTATIONS OF EXCITATION-CONTRACTION COUPLING AND CALCIUM REGULATION. **Sabine Lotteau**, Rui Zhang, Christina Grabar, Stephan Aynaszyan, Xin Yue, Yushun Zhang, Kenneth D. Philipson, Michela Ottolia, Joshua I. Goldhaber

763-Plat 9:45 am
MUSCLES FROM CALSEQUESTRIN-1 KNOCKOUT MICE CONTAIN PREASSEMBLED CALCIUM ENTRY UNITS THAT PROVIDE CONSTITUTIVELY ACTIVE STORE-OPERATED CALCIUM ENTRY. **Antonio Michelucci**, Simona Boncompagni, Laura Pietrangelo, Robert Dirksen, Feliciano Protasi

764-Plat 10:00 am
NOVEL MORPHOLOGICAL AND FUNCTIONAL INSIGHTS IN PYTHON CARDIAC BIOLOGY. **Claudia Crocini**, Kathleen C. Woulfe, Leslie A. Leinwand

Platform
Energy Transducing Complexes and Mitochondria in Cell Life and Death

8:15 am - 10:15 am, Room 307/308

Co-Chairs
William Cramer, Purdue University
Santhanam Shanmughapriya, Pennsylvania State University

765-Plat 8:15 am
STRUCTURE-BASED CHANGE IN THE RATE-LIMITING STEP OF PHOTOSYNTHETIC ELECTRON TRANSPORT. **William A. Cramer**, J. Ness, S. Saif Hasan, Katherine Ehringer, Sejuti Naurin, Valentyn Stadnytskyi, Iskander M. Ibrahim, Sujith Puthiyaveetil

766-Plat 8:30 am
CHEMOMECHANICAL COUPLING OF MITOCHONDRIAL COMPLEX I. **Chitrak Gupta**, Umesh Khaniya, Chun Kit Chan, Marilyn Gunner, Christophe Chipot, Francois Dehez, Abhishek Singharoy

767-Plat 8:45 am
A NEW SYNTHETIC FRET SENSOR TO ANALYZE ALLOSTERIC AMPK ACTIVATION AND CELLULAR ENERGY STATE. **Uwe Schlattner**, Martin Pelosse, Imre Berger

768-Plat 9:00 am
HOW THE NANOARCHITECTURE OF CARDIAC MUSCLE MITOCHONDRIA AFFECTS FUNCTION: LESSONS FROM COMPUTER SIMULATIONS. **Carmen A. Mannella**, Zheng Liu, Chyongere Hsieh, Nasrin Afzal, Raquel A. Adams, M. Saleet Jafri, W. Jonathan Lederer

769-Plat 9:15 am
HUMAN VDAC3 FORMS VDAC1-TYPE ANIONIC CHANNELS THAT ARE HIGH-CONDUCTING, PERMEABLE TO METABOLITES, AND REGULATED BY CYTOSOLIC PROTEINS. **Maria Queralt-Martin**, Lucie A. Bergdoll, Jeff Abramson, Daniel Jacobs, Oscar Teijido Hermida, David P. Hoogerheide, Sergey M. Bezrukov, Tatiana K. Rostovtseva

770-Plat 9:30 am TRAVEL AWARDEE
MOLECULAR LINK BETWEEN MCU AND MRS2P CHANNELS FOR MITOCHONDRIAL ION HOMEOSTASIS AND ENERGY METABOLISM. **Shanmughapriya Santhanam**, Xueqian Zhang, Jianliang Song, Joseph Y. Cheung, Peter Basile Stathopulos, Muniswamy Madesh

771-Plat 9:45 am
MITOCHONDRIAL MEGACHANNEL RESIDES IN MONOMERIC ATP SYNTHASE. **Nelli Mnatsakanyan**, Han-A Park, Wu Jing, Marc C. Llaguno, Besnik Murtishi, Maria Latta, Ellie Davis, Paige Miranda, Youshan Yang, Fred Sigworth, Elizabeth A. Jonas

772-Plat 10:00 am
MITOCHONDRIAL CREATINE KINASE ATTENUATES ROS EMISSION AND IMPROVES MYOCYTE SURVIVAL AFTER ROS IN THE FAILING HEART. **Gizem Keceli**, Joevin Sourdon, Ashish Gupta, Carlo G. Tocchetti, Bongsoo Park, Jacopo Agrimi, Michelle Leppo, Genaro A. Ramirez-Correa, Shyam S. Biswal, Nazareno Paolocci, Robert G. Weiss

Platform
Microtubules, Structure, Dynamics and Associated Proteins

8:15 am - 10:15 am, Room 309/310

Co-Chairs
Annapurna Vemu, NIH
William Hancock, Pennsylvania State University

773-Plat 8:15 am
SEVERING ENZYMES AMPLIFY MICROTUBULE ARRAYS THROUGH LATTICE GTP-TUBULIN INCORPORATION. **Annapurna Vemu**, Ewa Szczesna, Elena A. Zehr, Jeffrey O. Spector, Nikolaus Grigorieff, Alexandra M. Deaconescu, Antonina Roll-Mecak

774-Plat 8:30 am
DIRECT OBSERVATION OF INDIVIDUAL TUBULIN DIMERS BINDING TO GROWING MICROTUBULES. **Keith J. Mickolajczyk**, Elisabeth Geyer, Tae Kim, Luke Rice, William O. Hancock

775-Plat 8:45 am
COMPUTATIONAL MODELING AND CRYO ELECTRON TOMOGRAPHY REVEAL A NEW MECHANISM FOR MICROTUBULE ASSEMBLY AND DYNAMICS. **Nikita B. Gudimchuk**, Evgeni V. Ulyanov, Eileen O'Toole, Dmitrii S. Vinogradov, Fazly I. Ataullakhanov, J. Richard McIntosh

776-Plat 9:00 am
DYNAMIC INSTABILITY AND TREADMILLING COEXIST FOR IN VITRO MICROTUBULES. **Goker Arpag**, Marija Zanic

777-Plat 9:15 am
ACTIVE FLUCTUATIONS OF MICROTUBULE NETWORKS FACILITATE FASTER MOTILITY OF DYNEIN. **Yasin Ezber**

778-Plat 9:30 am
OXIDATIVE STRESS RESTRUCTURES THE CELLULAR MICROTUBULE CYTOSKELETON VIA REPAIR-MEDIATED RESCUE EVENTS.
Rebecca R. Goldblum, Kyle White, Mark McClellan, Joseph M. Metzger, Melissa K. Gardner

779-Plat 9:45 am
TAU'S PROLINE RICH REGION DOMINATES TUBULIN BINDING.
Kristen McKibben, Elizabeth Rhoades

780-Plat 10:00 am
MECHANISMS OF BIDIRECTIONAL TRANSPORT OF MISALIGNED CHROMOSOMES IN MITOSIS. **Saad Ansari**, Zachary Gergely, Christopher Edelmaier, Nicolas Santander, Patrick Flynn, Adam Lamson, Matthew A. Glaser, J. Richard McIntosh, Meredith D. Betterton

Platform
Protein Assemblies/Enzyme Function, Cofactors and Post-translational Modifications I

8:15 AM - 10:15 AM, ROOM 314/315

Co-Chairs
Peter Schuck, NIBIB NIH
Charlotte Lorenz, Forschungszentrum Jülich, Germany

781-PLAT 8:15 AM
MEASURING MACROMOLECULAR SIZE-DISTRIBUTIONS AND INTERACTIONS AT HIGH CONCENTRATIONS BY SEDIMENTATION VELOCITY. Sumit K. Chaturvedi, Jia Ma, Patrick H. Brown, Huaying Zhao, **Peter Schuck**

782-PLAT 8:30 AM
PHYSIOLOGICALLY-RELEVANT CROWDING EFFECTS ON THE SH3-SON OF SEVENLESS INTERACTION. **Samantha S. Stadmiller**, Jhoan Sebastian Aguilar, Gary J. Pielak

783-PLAT 8:45 AM
A CONSERVED ASPARAGINE IN A UBIQUITIN CONJUGATING ENZYME PROMOTES A REACTIVE SUBSTRATE GEOMETRY. **Isaiah Sumner**, Walker M. Jones, Aaron G. Davis, R. Hunter Wilson, Katherine L. Elliott

784-PLAT 9:00 AM
DIRECT OBSERVATION OF PROTEIN TRANSLOCATION BY THE 26S PROTEASOME. **Erik Jonsson**, Jared Bard, Erika M. López-Alfonzo, Ellen Goodall, Ken Dong, Andreas Martin

785-PLAT 9:15 AM
CHARACTERIZATION OF THE ASSEMBLY AND DISASSEMBLY OF CAPSID PROTEINS DERIVED FROM HEPATITIS B VIRUS. **Maelenn Chevreuil**, Sonia Fieulaine, Laetitia Poncet, Karen Perronet, Thomas Zinn, Eric Jacquet, Naima Nhiri, Stephane Bressanelli, Guillaume Tresset

786-PLAT 9:30 AM TRAVEL AWARDEE
ASSEMBLY MECHANISM OF FARNESYLATED HGBP1 STUDIED BY TIME-RESOLVED SAXS AND ELECTRON MICROSCOPY. **Charlotte Lorenz**, Andreas M. Stadler

787-PLAT 9:45 AM
PROTEIN SELF-ASSEMBLY DRIVES SURFACE LAYER BIOGENESIS AND MAINTENANCE IN *C. CRESCENTUS*. **Jonathan Herrmann**, Colin Comerci, Joshua Yoon, Fatemeh Jabbarpour, Lucy Shapiro, Soichi Wakatsuki, William E. Moerner

788-PLAT 10:00 AM
QUENCHABLE PROBES FOR IMAGING OXIDATIVE STRESS IN VIVO. **Oshini Ekanayake**, Sam Scinto, Joseph Fox, Sharon Rozovsky

Platform
Biomolecular Methods In and Out of Cells

8:15 AM - 10:15 AM, ROOM 316/317

Co-Chairs
Ryan Russell, University of Delaware
Jill Trewhella, The University of Sydney, Australia

789-PLAT 8:15 AM
ATOMIC STRUCTURE OF NEARLY INDESTRUCTIBLE PILI FROM A HYPERTHERMOPHILIC ACIDOPHILE. **Fengbin Wang**, Virginija Cvirkaite-Krupovic, Joe S. Wall, David Prangishvili, Mart Krupovic, Edward H. Egelman

790-PLAT 8:30 AM
CHARACTERIZING FUNCTIONAL STATES OF A MODEL LIGAND-GATED ION CHANNEL BY CRYO-ELECTRON MICROSCOPY. **Urska Rovsnik**, Rebecca Howard, Bjorn Forsberg, Marta Carroni, Erik Lindahl

791-PLAT 8:45 AM TRAVEL AWARDEE
CRYO-EM STRUCTURES REVEAL MECHANISMS OF ACTIVATION AND INACTIVATION IN BESTROPHIN CHANNELS. **Alexandria N. Miller**, George Vaisey, Stephen B. Long

792-PLAT 9:00 AM
OUTCOMES OF THE CRYO-EM MAP AND MODEL CHALLENGES. **Catherine L. Lawson**, Andriy Kryshtafovych, Grigore Pintilie, Helen M. Berman, Wah Chiu

793-PLAT 9:15 AM
A COMPLETE ATOMIC MODEL FOR LETHOCERUS FLIGHT MUSCLE MYOSIN FILAMENT. **Hamidreza Rahmani**, Nadia Daneshparvar, Zhongjun Hu, Dianne Taylor, Robert J. Edwards, Kenneth A. Taylor

794-PLAT 9:30 AM
COMPUTATIONAL ASSESSMENT OF DISTANCE RESTRAINT REQUIREMENTS FOR ACCURATE PROTEIN STRUCTURE DETERMINATION BY MAS NMR. **Ryan W. Russell**, Matthew Fritz, Jodi Kraus, Caitlin M. Quinn, Angela M. Gronenborn, Tatyana Polenova

795-PLAT 9:45 AM
INTRACELLULAR METAL SPECIATION IN STREPTOCOCCUS SANGUINIS IS PIVOTAL FOR REDOX MAINTENANCE. **Cody Murgas**, Ashley K. Forney, Shannon Baker, Seon-Sook An, Todd O. Kitten, Heather R. Lucas

796-PLAT 10:00 AM
RELIABLE BIOMOLECULAR STRUCTURAL MODELLING WITH SMALL-ANGLE SCATTERING. **Jill Trewhella**

CPOW Committee Meeting

8:30 AM - 10:30 AM, ROOM 333

Exhibitor Presentation
Bruker Corporation

9:30 AM - 11:00 AM, ROOM 303

ADVANCES IN DYE DEVELOPMENT AND MICROSCOPY FOR LIVE CELL SUPER RESOLUTION MICROSCOPY WITH THE VUTARA 352
Expanding the frontier of super-resolution imaging requires advances in both microscopy hardware and fluorescent labels. Here we describe a cooperative effort to improve both technological fronts with the ultimate goal of live-cell super-resolution microscopy. Bruker's Vutara 352 super-resolution microscope has been designed for live-cell super-resolution microscopy with both high spatial and temporal resolution capabilities. The patented biplane module allows simultaneous two-color imaging in 3D while the sCMOS detector enables fast imaging of biological phenomena. Although this microscope system is capable of live-cell super-resolution imaging, it has been stymied by limitations in the current generation of live-cell-compatible fluorophores. Extant live-cell probes are either fluorescent proteins with low photon counts—and therefore low localization precision—or organic dyes, which require high laser power resulting in phototoxicity in living samples. To remedy this problem, we developed spontaneously blinking (SB) versions of the Janelia Fluor and Alexa Fluor dyes, which blink under physiological conditions at low laser power while still providing high photon counts. In particular, the spontaneously blinking Janelia Fluor 549 (SB-JF549) and red-shifted SB-JF646 are cell-permeable and are easily conjugated to HaloTag or SNAP-tag ligands, making them ready to use in live cell multi-color superresolution experiments. The SB dyes, in combination with the Vutara 352, provide a powerful methodology for simultaneous imaging, localization and visualization of live-cell single-molecule localization data, while offering numerous statistical tools to quantify the data into publishable results.

Speaker
Robert Hobson, Applications Scientist, Bruker Corporation

Career Development Center Workshop Demystifying the Academic Job Search II: Preparing your Written Application Materials: CV, Cover Letter, and Research Statement

10:00 AM - 11:00 AM, EXHIBIT HALL A

Over 90% of the cuts in a typical academic job search are made on the basis of your written application materials. Given the large number of candidates in a typical applicant pool, your documents must convey the most important information about you in the most clear and efficient manner. Learn about how your materials should differ based on the type of institution and/or program, and how to create "glanceable" documents to speak most effectively on your behalf.

Exhibits

10:00 AM - 5:00 PM, EXHIBIT HALL

Coffee Break

10:15 AM - 11:00 AM, EXHIBIT HALL

New Member Welcome Coffee

10:15 AM - 11:15 AM, ROOM 321/322/323

Calling all new BPS members! Come and mingle with BPS Staff, Society Council, and program members as you learn about the Society's activities. Current members are welcome to come and meet with new members.

Exhibitor Presentation Bruker Corporation

10:30 AM - 12:00 PM, ROOM 301

USING NMR (NUCLEAR MAGNETIC RESONANCE) AND EPR (ELECTRON PARAMAGNETIC RESONANCE) IN BIOPHYSICS

Magnetic resonance offers many insights into how biological systems function. The two techniques shed light on the identity of species, dynamics, and structures of proteins, peptides, nucleotides, and lipids. The speakers will present an overview of these techniques and applications for people who may be new to the field and wish to incorporate them in their studies.

NMR is a valuable tool for the study of structures and dynamic processes of proteins, peptides and nucleotides. NMR is also well suited to study the interaction of such molecules. Various NMR methods exist to study the interaction of proteins with small molecules in drug discovery, interactions of proteins with each other or with peptides and nucleotides.

In drug discovery fragment based screening by NMR is a well-established technique. A brief presentation of these methods will be included.

The investigation of interaction between larger molecules is facilitated by several NMR methods and by the use of isotopic labeling. Interactions such as protein oligomerization, protein-protein and proteinnucleotide interaction in solutions can be investigated. An overview of these techniques and applications will be included.

In contrast to NMR, EPR detects unpaired electrons in free radicals and transition metal ions. One electron transfer reactions result in unpaired electrons. Examples of paramagnetic species encountered in biology are:

- ROS (Reactive Oxygen Species), RNS (Reactive Nitrogen Species)
- Amino acid radicals such as tyrosine and tryptophan radicals
- Paramagnetic intermediates in photosynthesis
- Metalloenzymes

In addition to these naturally occurring paramagnetic species, spin labels can be incorporated into a number of biomolecules via SDSL (Site Directed Spin Labeling). Applications and techniques are:

- Motional dynamics of proteins, peptides, and nucleotides via linsehape analysis
- Accessibility studies in membrane proteins or peptides via saturation measurements
- Distance measurements (2-8 nm) via DEER (Double Electron-Electron Resonance) to complement other structural methods such as X-ray, NMR, CryoEM and FRET

An introduction to the techniques and applications will be presented.

Speakers
Ralph Weber, Senior Application Scientist, Bruker Corporation
Clemens Anklin, Vice President Applications, Bruker Corporation

Symposium Phase Separations in the Cell

10:45 AM - 12:45 PM, BALLROOM I

Chair
Geeta Narlikar, University of California, San Francisco

797-SYMP 10:45 AM
PHASE SEPARATION: PREDICTION AND ROLE IN BIOLOGICAL REGULATION. Robert M. Vernon, Brian Tsang, Tae Hun Kim, Andrew Chong, **Julie D. Forman-Kay**

798-SYMP 11:15 AM
A PROTEIN CONDENSATE DRIVES ACTIN-INDEPENDENT ENDOCYTOSIS. **Stephen Michnick**, Louis-Philippe Bergeron-Sandoval, Rohit Pappu, Paul François, Adam G. Hendricks, Allen J. Ehrlicher, Hossein Khadivi Heris

799-SYMP 11:45 AM
MAKING AND BREAKING THE SYMMETRY BETWEEN SEQUENCE-SPECIFIC CONFORMATIONAL AND PHASE BEHAVIORS OF DISORDERED PROTEINS. **Rohit V. Pappu**

800-SYMP 12:15 PM
THE ROLE OF PHASE-SEPARATION IN HETEROCHROMATIN. **Geeta Narlikar**, Serena Sanulli, John D. Gross, Patrick Griffin, Mike Trnka

Symposium Regulation of Cardiomyocyte Beating

10:45 AM - 12:45 PM, BALLROOM II

Chair
Beth L. Pruitt, University of California, Santa Barbara

801-SYMP 10:45 AM
MULTIMERIC PROTEIN COMPLEXES IN REGULATION OF CARDIOMYOCYTE CALCIUM CYCLING AND SURVIVAL. **Litsa Kranias**

802-SYMP 11:15 AM
SLOW AND FAST TIME SCALES IN CARDIOMYOCYTE BEATING. **Ohad Cohen**, Samuel Safran

803-SYMP 11:45 AM
WHY AND WHEN YOUR NEXT HEARTBEAT WILL OCCUR. **Edward G. Lakatta**

804-SYMP 12:15 PM
INVITED SPEAKER: MECHANOBIOLOGY OF ENGINEERED HIPSC CARDIOMYOCYTES. **Beth L. Pruitt**

Symposium
Future of Biophysics

10:45 AM - 12:45 PM, BALLROOM III

Co-Chairs
Susan Marqusee, University of California, Berkeley
Andrej Sali, University of California, San Francisco

NO ABSTRACT **10:45 AM**
LIVE CELL IMAGING OF RNA DYNAMICS IN MAMMALIAN CELLS USING RIBOGLOW, A RIBOSWITCH-BASED FLUORESCENCE TAGGING PLATFORM. **Esther Braselmann**

NO ABSTRACT **11:15 AM**
SCULPTING EMBRYOS VIA CONTROLLED FLUID-TO-SOLID TISSUE TRANSITIONS. **Otger Campas**

NO ABSTRACT **11:45 AM**
OPTICAL DISSECTION OF CLASS C GPCR ASSEMBLY, ACTIVATION, AND SIGNALING MECHANISMS. **Joshua Levitz**

NO ABSTRACT **12:15 PM**
MESOSCALE ARCHITECTURE OF B-CELLS UPON STIMULATION WITH GLUCOSE AND EX-4. **Kate L. White**

Platform
Protein Dynamics and Allostery I

10:45 AM - 12:45 PM, BALLROOM IV

Co-Chairs
Jose Caro, University of Pennsylvania
Joseph Rehfus, Johns Hopkins University

805-PLAT **10:45 AM**
TARGETING CONFORMATIONAL ENTROPY TO MODULATE BINDING AFFINITY. **José A. Caro**, Shannen Cravens, Kathleen G. Valentine, A. Joshua Wand

806-PLAT **11:00 AM**
E. COLI ADENYLATE KINASE EXHIBITS INTER-DOMAIN COUPLING. **Joseph E. Rehfus**, Vincent J. Hilser

807-PLAT **11:15 AM** **TRAVEL AWARDEE**
A THERMODYNAMIC VIEW OF DYNAMIC ALLOSTERY IN A PDZ DOMAIN PROTEIN. AMit Kumawat, **Suman Chakrabarty**

808-PLAT **11:30 AM**
STRUCTURAL FLUCTUATIONS ARE KEY TO ALLOSTERIC STIMULATION OF NDV HEMAGGLUTININ-NEURAMINIDASE. **Nalvi D. Duro**, Sameer Varma

809-PLAT **11:45 AM**
SINGLE-MOLECULE FLUORESCENCE MEASUREMENTS OF TRANSIENT PROTEIN COMPLEXES DETERMINED VIA DIFFUSION-INDEPENDENT MICROFLUIDIC MIXING. **Johann Thurn**, Bjorn Hellenkamp, Thorsten Hugel

810-PLAT **12:00 PM**
STRUCTURAL DYNAMICS COUPLE SUBSTRATE-INDUCED ALLOSTERIC RESPONSES WITH DOMAIN COMMUNICATION IN NONRIBOSOMAL PEPTIDE SYNTHETASES. Subrata H. Mishra, Aswani K. Kancherla, Kenneth Marincin, Santrupti Nerli, Nikolaos Sgourakis, Daniel Dowling, **Dominique P. Frueh**

811-PLAT **12:15 PM**
MARKOV STATE MODEL OF INFLUENZA HEMAGGLUTININ REVEALS STRUCTURAL BASIS FOR GROUP 1 INFLUENZA INHIBITION BY ARBIDOL. **Sarah E. Kochanek**, Rommie E. AMaro

812-PLAT **12:30 PM**
A GENERAL METHOD TO DESIGN ALLOSTERIC CONFORMATIONAL SWITCHES. **Ronald L. Koder**, Peter J. Schnatz, Joseph Brisendine, Craig Liang, Bernard H. Everson, Cooper French

Platform
Membrane Structure

10:45 AM - 12:45 PM, ROOM 307/308

Co-Chairs
Sarah Shelby, University of Michigan
Ingela Parmryd, University of Gothenburg, Sweden

813-PLAT **10:45 AM**
LIPID BILAYER STRUCTURE REFINEMENT WITH SAXS/SANS BASED RESTRAINED ENSEMBLE MOLECULAR DYNAMICS. **Yevhen K. Cherniavskyi**, D. Peter Tieleman

814-PLAT **11:00 AM**
DISTRIBUTION OF MECHANICAL STRESS IN THE *ESCHERICHIA COLI* CELL ENVELOPE. **Sunny Hwang**, Nicolo Paracini, Jerry M. Parks, Jeremy H. Lakey, James C. Gumbart

815-PLAT **11:15 AM**
MICRODOMAIN STRUCTURE AND MECHANICAL PROPERTIES OF LIPID MONOLAYERS MIMICKING RED BLOOD CELL MEMBRANES UNDER OXIDATIVE STRESS. **Bob-Dan Lechner**, Paul Smith, Peter C. Winlove, Chris D. Lorenz, Peter G. Petrov

816-PLAT **11:30 AM**
PHASE PARTITIONING OF PEPTIDE ANCHORS IN PLASMA MEMBRANE VESICLES PREDICTS THEIR RECRUITMENT TO B CELL RECEPTOR CLUSTERS IN LIVE CELLS. **Sarah A. Shelby**, Ivan C. Serrano, Kandice R. Levental, Ilya Levental, Sarah L. Veatch

817-PLAT **11:45 AM**
MEMBRANE TOPOGRAPHY CREATES THE APPEARANCE OF ANOMALOUS DIFFUSION. **Ingela Parmryd**, Jeremy Adler, Ida-Maria Sintorn, Robin Strand

818-PLAT **12:00 PM**
INTERACTION OF LIPIDS WITH VOLTAGE-GATED ION CHANNEL PROTEINS. Nidhin Thomas, Kranthi Kiran Mandadapu, **Ashutosh Agrawal**

819-PLAT **12:15 PM** **TRAVEL AWARDEE**
THE IMPORTANCE OF GLYCOLIPID CROSSLINKING IN ALTERING THE MEMBRANE CURVATURE. **Abir Kabbani**, Krishnan Raghunathan, Anne Kenworthy, Wayne Lencer, Christopher V. Kelly

820-PLAT **12:30 PM** **TRAVEL AWARDEE**
DYSLIPIDEMIA INDUCED ENDOTHELIAL STIFFENING IS ACCOMPANIED BY INCREASED MEMBRANE TENSION. **Manuela A. Ayee**, Irena Levitan

Platform
Computational Methods and Bioinformatics

10:45 AM - 12:45 PM, ROOM 309/310

Co-Chairs
Swagata Pahari, Clemson University
Zhaleh Ghaemi, University of Illinois at Urbana–Champaign

821-PLAT **10:45 AM**
MEMBRANE PERMEABILITY FROM CONVENTIONAL MD SIMULATIONS: COUNTING TRANSITIONS VS. BAYESIAN ANALYSIS. **Andreas Krämer**, Richard M. Venable, Eric Z. Wang, Bernard R. Brooks, Richard W. Pastor

822-PLAT **11:00 AM**
COMPUTING LONG TIME DYNAMICS USING DYNAMICALLY CORRECTED KINETIC MONTE CARLO (DC-KMC). **Animesh Agarwal**, Cesar A. Lopez, Nicolas W. Hengartner, Sandrasegaram Gnanakaran, Arthur F. Voter

823-PLAT **11:15 AM**
DYNAMIC COMBINATORIAL ANALYSIS OF LOCAL CONFIGURATIONS IN MOLECULAR DYNAMICS SIMULATION: FREQUENT ITEMSET MINING AND HIERARCHICAL HIDDEN MARKOV MODEL. **Ka Chun Ho**, Donald Hamelberg

824-Plat 11:30 am
SURFACE-FREE PROTOCOL FOR COMPUTING PKA'S (DELPHIPKA): APPLICATIONS TO PROTEIN-PROTEIN INTERACTIONS. **Swagata Pahari**, Lexuan Sun, Emil Alexov

825-Plat 11:45 am TRAVEL AWARDEE
STRUCTURAL TOPOLOGY OF GLYCOPROTEIN SURFACE NETWORKS USING HIGH THROUGHPUT ATOMISTIC MODELING AND GRAPH THEORY. **Srirupa Chakraborty**, Zachary Berndsen, Cesar Lopez, Andrew Ward, Bette Korber, Nicolas Hengartner, S. Gnanakaran

826-Plat 12:00 pm TRAVEL AWARDEE
A COMPUTATIONAL HUMAN WHOLE-CELL MODEL REVEALS THE EFFECTS OF SPATIAL ORGANIZATION ON RNA SPLICING. **Zhaleh Ghaemi**, Zaida Luthey-Schulten

827-Plat 12:15 pm
THE ROLE OF CELLULAR REPLICATIVE LIFESPAN AND STEM CELL DYNAMICS ON CORNEAL EPITHELIUM HOMEOSTASIS AND PATTERN FORMATION. Lior Strinkovsky, Evgeni Havkin, **Yonatan Savir**

828-Plat 12:30 pm
4D CELL BIOLOGY: BIG DATA IMAGE ANALYTICS AND LATTICE LIGHT-SHEET IMAGING REVEAL DYNAMICS OF CLATHRIN-MEDIATED ENDOCYTOSIS IN STEM CELL-DERIVED INTESTINAL ORGANOIDS. **Johannes Schöneberg**, Daphné Dambournet, Tsung-Li Liu, Ryan Forster, Dirk Hockemeyer, Eric Betzig, David G. Drubin

Platform
Protein Structure and Conformation II

10:45 am - 12:45 pm, Room 314/315

Co-Chair
Andrea Soranno, Washington University in St. Louis
Gwladys Riviere, University of Florida

829-Plat 10:45 am
SINGLE-MOLECULE CONFORMATIONAL ANALYSIS OF APOLIPOPROTEIN E. Melissa D. Stuchell-Brereton, Berevan Baban, Greg DeKoster, Carl Frieden, **Andrea Soranno**

830-Plat 11:00 am
A NEW STEP TO ELUCIDATE MOLECULAR MECHANISMS INVOLVED IN CARIES FORMATION: NMR CHARACTERIZATION OF THE C3 DOMAIN FROM *STREPTOCOCCUS MUTANS* ADHESIN P1. **Gwladys Riviere**, Joanna Long, Jeanine Brady

831-Plat 11:15 am
FIBRIL STRUCTURE OF ABETA40 VISUALIZED BY CRYO-ELECTRON MICROSCOPY AND SOLID-STATE NMR. **Ujjayini Ghosh**, Robert Tycko

832-Plat 11:30 am
MOLECULAR MODELING OF THE ALPHA GLOBIN/ENOS COMPLEX VIA CROSSLINKING MASS SPECTROMETRY. **T. C. Stevenson Keller**, Brant E. Isakson, Linda Columbus

833-Plat 11:45 am
HYDROGEN EXCHANGE MASS SPECTROMETRY GUIDED DOCKING GENERATES ATOMIC RESOLUTION EPITOPES FOR SINGLE-CHAIN CAMELID ANTIBODY-ANTIGEN COMPLEXES. **Jing Zhou**, Jeliazko Jeliazkov, Yuqi Shi, David Weis, Jeff Gray

834-Plat 12:00 pm
REVEALING MULTIPLE CONFORMATIONS OF PROTEINS AT LONG DISTANCES BY USING SINGULAR VALUE DECOMPOSITION METHOD IN PULSED DIPOLAR ESR SPECTROSCOPY. **Madhur Srivastava**, Jack H. Freed

835-Plat 12:15 pm
COEVOLUTIONARY LANDSCAPES OF KINASE FAMILY PROTEINS. **Allan Haldane**, Peng He, William F. Flynn, Ronald M. Levy

836-Plat 12:30 pm
STRUCTURE BASED SEARCH FOR MULTIPLE BINDING SITES OF SOS1 PR DOMAIN RECOGNIZES AN UNCOVERED MOTIF FAVORING GRB2-SOS1 ASSOCIATION. **Tsung-Jen Liao**, Hyunbum Jang, Ruth Nussinov, David Fushman

Platform
Membrane Pumps, Transporters, and Exchangers

10:45 am - 12:45 pm, Room 316/317

Co-Chairs
Jacob Keller, HHMI
Rachelle Gaudet, Harvard University

837-Plat 10:45 am
ON THE NATURE OF THE HIGH-AFFINITY IODIDE BINDING SITE OF THE NA^+/I^- SYMPORTER (NIS). **Silvia Ravera**, Juan P. Nicola, Xuelang Mu, Ignacia Echeverría, Yuly E. Sanchez, L. Mario Amzel, Nancy Carrasco

838-Plat 11:00 am
AN ELECTROSTATIC SWITCH FOR GATING THE ELECTROMECHANICAL ACTIVITY OF SLC26A5 (PRESTIN). **Dominik Oliver**, Dmitry Gorbunov, Julia Hartmann, Dominik Lenz, Vijay Renigunta

839-Plat 11:15 am
MECHANICS OF AN NRAMP-FAMILY TRANSITION METAL TRANSPORTER. Aaron T. Bozzi, Christina M. Zimanyi, Lukas B. Bane, John M. Nicoludis, Brandon K. Lee, Casey H. Zhang, **Rachelle Gaudet**

840-Plat 11:30 am TRAVEL AWARDEE
A MULTIDRUG AND TOXIN EFFLUX (MATE) TRANSPORTER INVOLVED IN ALUMINUM RESISTANCE IS MODULATED BY A CBL5/CIPK2 CALCIUM SENSOR/PROTEIN KINASE COMPLEX. **Julia Miller**, Alison Coluccio, Jan Niklas Offenborn, Anette Mähs, Jörg Kudla, Leon Kochian, Miguel Piñeros

841-Plat 11:45 am
THE NEW "PATCH CLAMPING" FOR TRANSPORTERS: OSCILLATING PERFUSION AND QUANTITATIVE FUNCTIONAL IMAGING OF BIOSENSORS FOR TRANSPORTER FUNCTIONAL MEASUREMENTS. **Jacob P. Keller**

842-Plat 12:00 pm
ALLOSTERIC MODULATION OF ATP HYDROLYSIS OF THE MOUSE P-GLYCOPROTEIN BY SUBSTRATES AND INHIBITORS. **Reza Dastvan**, Smriti Mishra, Yelena B. Peskova, Robert K. Nakamoto, Hassane S. Mchaourab

843-Plat 12:15 pm
VACUOLAR H^+-ATPASE IN THE NUCLEAR MEMBRANES REGULATE NUCLEO-CYTOSOLIC PROTON GRADIENTS. **Raul Martinez-Zaguilan**, Juliana Santos, Arnoldo Facanha, Souad R. Sennoune

844-Plat 12:30 pm TRAVEL AWARDEE
STRUCTURAL INSIGHTS INTO THE FUNCTION AND AUTO-REGULATION OF LIPID FLIPPASES. **Joseph A. Lyons**, Milena Laban, Dovile Januliene, Jakob Ulstrup, Cedric Montigny, Thibaud Dieudonne, Valentine Guinot, Werner Kuehlbrandt, Guillaume Lenoir, Arne Moeller, Poul Nissen

Annual Meeting of the Student Chapters

11:00 am - 12:30 pm, Room 324/325/326

BPS Student Chapter members are invited to attend the Student Chapter Meeting! At the event, Student Chapters from around the world will exchange best practices (and share challenges!) in marketing their chapters and recruiting members, performing community outreach in science, and hosting chapter events. This event is open only to students currently in a BPS Student Chapter.

Moderators
Allen Price, Emmanuel College
Seth Weinberg, Virginia Commonwealth University

Career Development Center Workshop
Networking for Nerds: How to Create Your Dream Career

11:30 AM - 12:30 PM, Exhibit Hall A

Wanna land your dream job? Get ready to network! Most jobs and other game-changing career opportunities are not advertised, and even if they are, there is usually a short-list of candidates already in mind. So how do you find out about and access the 90% of jobs and other opportunities that are "hidden"? In this workshop, we will focus on proven networking strategies and tactics to identify new opportunities, locate decision-makers within organizations, solidify your reputation and brand in the minds of those who hire, and gain access to hidden jobs and game-changing opportunities. Discover how networking and self-promotion can enable you to land or even create your dream job from scratch!

Exhibitor Presentation
Asylum Research

11:30 AM - 1:00 PM, Room 303

CAPTURING BIOCHEMICAL REACTIONS WITH VIDEO-RATE AFM
Oxford Instruments Asylum Research will present the latest data acquired with its Cypher VRS, the world's first and only full-featured video-rate AFM. The Cypher VRS Atomic Force Microscope sets a new standard with easy operation—enabling high resolution imaging of dynamic events at high speeds, up to 625 lines/second which corresponds to about 10 frames per second. This speed is about 300x faster than typical AFMs and 10x faster than current "fast scanning" AFMs.

One of the strengths of traditional AFMs is its capability to monitor dynamic events in near-native conditions (i.e. in liquid at biologically relevant temperatures). However, capturing biological processes in real-time has been challenging up until now. Video rate AFMs provide that temporal resolution, allowing researchers to observe the progression of these reactions and capture kinetics. Video rate AFMs have allowed researchers to conduct a new set of experiments including biochemical reactions, membrane dynamics, conformational changes, self-assembly and degradation. In most cases, the spatial resolution is not compromised enabling researchers to locate the target or active site while tracking the progression of the reaction. They can observe structural dynamics of biomolecules and then correlate it to their function.

We will present a set of data to illustrate the potential of this new capability. Examples include DNA digestion and cleavage, DNA origami conformation changes, protein fiber assembly, membrane dynamics including molecular structure and rearrangement in the bacteriorhodopsin membrane, lipid bilayer growth, assembly of Type I collagen into fibrils and dynamic motion of CTAB hemi-micelles at the solid (HOPG) – liquid (aqueous buffer) interface.

Speaker
Sophia Hohlbauch, Applications Scientist, Asylum Research

The Nuts and Bolts of Preparing Your NSF Grant

12:30 PM - 2:00 PM, Room 321/322/323

The National Science Foundation's Biological Sciences Directorate strongly supports biophysics researchers through its Division of Molecular and Cellular Biosciences. The division has awarded over $160 million in funding to researchers in 41 states. At this session, program directors and officers with expertise in biophysics will be providing details on the NSF grant-making process as it stands in 2019, with a particular emphasis on grant writing and submission for new and early career investigators.

Speaker
Engin Serpersu, Program Director, Division of Molecular and Cellular Biosciences, NSF

Exhibitor Presentation
Nanion Technologies

12:30 PM - 2:00 PM, Room 301

ION CHANNELS AND TRANSPORTERS IN THE SPOTLIGHT
Nanion Technologies is the leading solution provider for electrophysiologists since 2002. If you are studying ion channels and electrogenic transporters, our chip- and plate-based devices are well suited to advance your research and screening projects. In our portfolio, you will find instrumentation for automated patch clamp, bilayer recordings, SSM-based electrophysiology, impedance and extracellular field recordings, covering the needs for low, medium and high throughput assays. Our workshop will start with an introduction by Dr. Niels Fertig (CEO, Nanion) and Dr. Andrea Brüggemann (CSO, Nanion), as a guide through the overall capabilities of Nanion´s technology portfolio. In continuation, we will welcome our speakers, Dr. Jean-Francois Rolland (Axxam) and Prof. Dr. Randy Stockbridge (University of Michigan), among others.

As a part of our workshop, Dr. Rolland will focus on his recent work on assay development in ion channel drug discovery, using the high throughput automated patch clamp screening platform, the SyncroPatch 384/768PE. Application areas of this powerful system, recording from up to 768 cells simultaneously, range from high throughput screening (HTS), cardiac safety assessment and efficacy screening, to the analysis of ion channel mutations. The SyncroPatch 384/768PE supports voltage- and current clamp recordings, temperature control, and minimal cell usage. In addition to the use of stably transfected cell lines, more challenging cell assays including stem cell-derived cells, transiently transfected cells or primary cells can be used successfully. In this presentation Dr. Rolland will also discuss the highly promising approach of using optogenetics combined with automated patch clamp technology in HTS. This method, using light to modulate molecular events in a targeted manner in living cells, could lead to cheaper, faster and highly reliable assays, suitable for running the early steps of ion channels' drug discovery programs, especially when combined to automated electrophysiology. Among others, data obtained from Axxam´s bPAC-HCN2 cell line that was successfully assayed on SyncroPatch 384PE, will be presented.

In continuation, Dr. Stockbridge will be focused on electrogenic transporter assay technology, the SURFE2R. The SURFE2R N1 (single channel) and SURFE2R 96SE (96 channels) technologies enable label-free real time measurements of electrogenic transporter protein activity. Employing SSM (solid supported membrane)-based electrophysiology, the SURFE2R instruments compensate for the low turnover rate of these proteins by measurement of up to 109 transporters in parallel. Dr. Stockbridge, as an expert in measuring membrane transport function, will present her recent data obtained on the SURFE2R N1 instrument. She has undertaken a comparative mechanistic analysis to understand how drug export function evolved in the SMR (small multidrug resistance) exporters family. This involved screening panels of potential substrates (drugs and other compounds) to understand how substrate specificity differs among the drug exporters, guanidinium exporters, and various evolutionary intermediates.

The Nanion team is excited to meet you at our workshop. Join us to learn more about how our "smart tools for electrophysiologists" can help take your research to the next level!

Speakers
Andrea Brüggemann, CSO, Nanion Technologies
Niels Fertig, CEO, Nanion Technologies
Jean-Francois Rolland, Head of Electrophysiology, Axxam
Randy Stockbridge, Assistant Professor, University of Michigan

Understanding the Congressional Budget Process
How Science is Funded

1:00 PM - 2:30 PM, ROOM 318/319/320

In 2018, Congress approved a major budget deal that raised the discretionary spending caps for the first time since sequestration. However, when this budget deal expires in 2019, Congress will face a potential funding cliff. How will the National Institutes of Health (NIH), the National Science Foundation (NSF), and other science-related agencies do under the next budget deal? Will Congress even pass a new budget deal? Which agencies fund scientific research and how does Congress negotiate their funding levels? Join our panel of government and industry insiders as we explore how the Congressional budget is developed, historical trends in science funding, and what the future may hold!

Panelist
Tiffany Kaszuba, Deputy Director, Coalition for Health Funding

Biophysics 101
Gene Editing

1:30 PM - 3:00 PM, ROOM 307/308

Gene editing refers to the modification of genetic material in living organisms by introducing insertions, deletions or base-pair changes. These modifications have been greatly facilitated by the discovery of the CRISPR/Cas9 system in bacteria and subsequent adaptations for higher organisms. The speakers in this session will focus on new methods being developed for gene editing using CRISPR/Cas9 and related CRISPR systems, including RNA editing, tissue-specific gene editing, therapeutic strategies, and applications to plant breeding and crop development.

Moderator
Sharyn Endow, Duke University
Presenters
Patrick Hsu, Salk Institute
Greg Gocal, Cibus

Exhibitor Presentation
Bruker Corporation

1:30 PM - 3:00 PM, ROOM 303

INVESTIGATING DYNAMIC BIOLOGICAL PROCESSES WITH HIGH-SPEED, HIGH-RESOLUTION CORRELATIVE AFM-LIGHT MICROSCOPY
The ability of atomic force microscopy (AFM) to obtain three-dimensional topography images of biological molecules and complexes with nanometer resolution and under near-physiological conditions remains unmatched by other imaging techniques. However, the typically longer image acquisition times required to obtain a single high-resolution image (~minutes) has limited the advancement of AFM for investigating dynamic biological processes. While recent years have shown significant progress in the development of high-speed AFM (HS-AFM), the ability to scan faster has typically been achieved at the cost of decreased scanner range and restricted sample size. As such, these HS-AFM systems have mainly been focused on studying single molecule dynamics and have been very limited in their ability to conduct live cell imaging.

The novel NanoWizard® ULTRA Speed A AFM not only enables high-speed studies of time-resolved dynamics associated with cellular processes, it's latest scanner technologies and compact design also allow full integration of AFM into advanced commercially available light microscopy techniques. Thus, fast AFM imaging of several frames per second can be seamlessly combined with methods such as epifluorescence, confocal, TIRF, STED microscopy, and many more.

Please join us for this informative seminar where we will present how the latest advances in the ULTRA Speed A AFM are being applied to study a wide-range of biological samples, from individual biomolecules to mammalian cells and tissues. We will also describe how this unique system is enabling new research opportunities with high-speed, highresolution correlative AFM-light microscopy.

Speaker
Andrea Slade, BioAFM Product Manager, JPK BioAFM Center, Bruker Nano Surfaces

Snack Break

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

Poster Presentations and Late Posters

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

Virtual Biophysics
Virtual and Augmented Reality Meets Biophysics

2:15 PM - 3:45 PM, ROOM 324/325/326

As virtual reality has become cheaper and more accessible, the research and educational applications of this technology have grown. Virtual, augmented, and mixed reality (VR, AR, and MR) technologies offer immersive experiences by exposing human senses to computer-generated sounds, images, and haptic stimulations. This session will showcase to researchers, educators, and students how these technologies are being applied in biophysics research and education and offer participants a chance to test out these new tools and experience the power and prospects of VR and AR in the classroom and the research lab.

Career Development Center Workshop
The Strategic Postdoc: How to Find & Leverage your Postdoc Experience

2:30 PM - 3:30 PM, EXHIBIT HALL A

Many PhDs just kind of fall in to a postdoc, rather than thinking about it from a strategic perspective. Your postdoc is never an end in itself; rather it's a means to another end whether that goal is a faculty position at a research university, a small college, or perhaps a job in industry or government. Learn how to find postdoc opportunities that will best prepare you for that next step, and how to use your postdoc experience to facilitate the transition to your next position.

Speed Networking

2:30 PM - 4:00 PM, MEZZANINE LEVEL

Career development and networking are important in science, but can be a big time commitment. In this session we offer the chance to speed network, an exciting way to connect with a large number of biophysicists (including Biophysical Society committee members) in a short AMount of time. Mid-career and more experienced scientists could learn how to get more involved in the Society or network for open positions in their labs. Early career scientists could discuss career goals and challenges, get advice on tenure or grant writing, or find out how to gain recognition for their work. Graduate students and postdocs could make contacts to find their next position. After introductions, each person will have short 3-5 minute meetings with consecutive new contacts. During this time you can exchange information and ask questions. When time is up, you select the next person to talk to. By the end of the event, each participant will have had meaningful interactions with over half a dozen colleagues and the opportunity to meet many more. It's that simple!
Space is limited for this event and pre-registration was recommended to ensure a spot.

Designing and Implementing Strategies to Prevent and Recover from Burnout

2:30 PM - 4:00 PM, ROOM 321/322/323

The demands of research can lead to academic burnout at any career stage, significantly harming both our personal and professional lives. Given the challenges facing scientists in the lab, office, and at home, feelings of dissatisfaction, anxiety, exhaustion, and unproductivity can be difficult to avoid. Exiting and recovering from the burnout cycle can be even more challenging. In this interactive workshop, we will discuss concrete strategies to recognize, prevent, and counteract burnout. The goals of these strategies are to manage stress, promote a sense of well-being, improve efficiency, and to help participants revive their genuine enthusiasm for science.

Panelists
Vasanthi Jayaraman, University of Texas Health Science Center
Kenton Swartz, NINDS, NIH
Eleonora Zakharian, University of Illinois

Exhibitor Presentation
Alvéole

2:30 PM - 4:00 PM, ROOM 301

BIOENGINEERING RELEVANT CELLULAR MICROENVIRONMENTS WITH PRIMO®
In vivo, the cellular microenvironment has a crucial impact on the regulation of cell behavior and functions, such as cellular differentiation, proliferation and migration. One of the challenges confronting cell biologists is to mimic this microenvironment in vitro in order to more efficiently study living cells and model diseases. To this end, we present the PRIMO device developed by ALVEOLE. This contactless and maskless UV projection system based on the LIMAP technology(1) allows to control the biochemical and mechanical properties of in vitro microenvironments. We will first show that PRIMO is a suitable tool to print biomolecules on substrates (including glass, plastic, soft/stiff substrates, textured surfaces, etc.) with an exquisite control over protein densities (micropatterning). Then, we will also present how the projected UV light can be used in order to structure photosensitive resists (such as SU8) and create molds onto which elastomeric solutions can be polymerized (microfabrication).

Finally, one of our users will share his research conducted with PRIMO. He used this technology in order to structure and functionalize hydrogels (microstructuration combined with micropatterning) paving the way for 3D cell culture onto controlled, reproducible soft substrates(2). Visit www.alveolelab.com for more information.

Speakers
Aurélien Pasturel, University of Bordeaux, CNRS, Alvéole
Pierre-Olivier Strale, Senior Scientist, Alvéole

Exhibitor Presentation
NanoSurface Biomedical

3:30 PM - 5:00 PM, ROOM 303

BIOMIMETIC CELL CULTURE PLATFORMS FOR ENHANCING CELL BIOLOGY STUDIES
Cells use structural and mechanical cues from the extracellular matrix (ECM) to regulate a broad spectrum of processes such as cell signaling, electrophysiology, differentiation, division, and even life and death. Over the past few decades, the literature has demonstrated that many cell types cultured in conventional flat, rigid, and static culture conditions lack both structural and functional phenotypes seen in the body, and that the lack of extracellular cues contributes significantly to the disconnect between in vitro experimental results and in vivo observation. We will demonstrate that ECM-inspired substrate nanotopography drastically improves the structural and functional development of a variety of cell types. Specifically, we show how NanoSurface Cultureware and the NanoSurface Cytostretcher can be utilized to study the effects of cell-nanotopography interactions on adhesion, signaling, polarity, migration, physiology, and differentiation across many cell types and model systems including cancer biology, human epithelia, and cardiovascular function. Further, we will describe how the differentiation of induced pluripotent stem cells can be accelerated and enhanced by providing a more biomimetic culture environment. We will also illustrate how the combination of nanotopography and mechanical stretch can enhance the in vitro phenotypes of cells in culture.

Speaker
Nicholas Geisse, Chief Science Officer, NanoSurface Biomedical

Membership Committee Meeting

3:30 PM - 5:30 PM, ROOM 333

Career Development Center Workshop
Developing Your 30-Second Value Statement (aka Your Elevator Pitch)

4:00 PM - 5:00 PM, EXHIBIT HALL A

I have a brand and you have a brand. A brand is simply a promise of value and every successful professional and company is successful in part because they know how to articulate their brand. The ability to communicate your promise of value is vitally important for not only crafting your own career path, but also for finding out about hidden opportunities and jobs. In this workshop, we learn the fundamentals of branding as it relates to career development and planning strategy. We will work together to develop your own 30-second brand statement which you can use in networking, and informational and job interviews. We will discuss the connection between brand, attitude and reputation, and why every interaction with someone affects how people perceive your brand. You will leave this presentation with the ability to elucidate your own brand to whomever you meet, giving you a critical competitive edge in your career and the job market.

Symposium
Chromatin Organization and Regulation: From Physical Principles to Biological Phenomena

4:00 PM - 6:00 PM, BALLROOM I

Chair
Karolin Luger, University of Colorado Boulder

845-SYMP **4:00 PM**
DNA SHAPE SHIFTING AS A GENE THERAPY TOOL. Jonathan M. Fogg, Qian Wang, Allison Judge, Erik Stricker, B. Montgomery Pettitt, **Lynn Zechiedrich**

846-SYMP **4:30 PM**
CHROMOSOME ORGANIZATION BY LOOP EXTRUSION AND PHASE SEPARATION. **Leonid Mirny**

847-SYMP **5:00 PM**
HOW TO READ AND WRITE MECHANICAL INFORMATION IN DNA MOLECULES. **Helmut Schiessel**

NO ABSTRACT **5:30 PM**
OFF TO THE RACES - QUANTITATING THE RECRUITMENT OF PROTEINS

TO SITES OF DNA DAMAGE. **Karolin Luger**

Symposium
Synthetic Biology

4:00 PM - 6:00 PM, BALLROOM II

Chair
Luis Serrano, Centre for Genomic Regulation, Spain

NO ABSTRACT 4:00 PM
SYNTHETIC BIOLOGY APPROACHES TO BIO-ORTHOGONAL CHEMISTRY. **Michelle Chang**

848-SYMP 4:30 PM
SYNTHETIC ELECTROPHYSIOLOGY. Harry McNamara, **Adam Cohen**

849-SYMP 5:00 PM
MECHANISMS, DIVERSITY AND OPTOGENETIC APPLICATIONS OF CHANNELRHODOPSINS FROM CRYPTOPHYTE ALGAE. **Elena G. Govorunova**, John L. Spudich

NO ABSTRACT 5:30 PM
ENGINEERING OF MYCOPLASMA PNEUMONIAE AS A THERAPEUTIC VEHICLE TO TREAT LUNG DISEASES. **Luis Serrano**

Platform
Ion Channels, Pharmacology and Disease

4:00 PM - 6:00 PM, BALLROOM III

Co-Chairs
Paola Vergani, University College London, United Kingdom
Nurunisa Akyuz, Harvard Medical School

850-PLAT 4:00 PM
TMC1 FORMS THE PORE OF THE MECHANOSENSITIVE TRANSDUCTION CHANNELS IN INNER EAR HAIR CELLS. **Nurunisa Akyuz**, David P. Corey

851-PLAT 4:15 PM
INHIBITION OF TMEM16A BY DOCOSAHEXAENOIC ACID PLAYS A CRUCIAL ROLE IN BLOOD VESSEL RELAXATION. **Kathryn E. Acheson**, Paolo Tammaro

852-PLAT 4:30 PM
FENESTRATIONS CONTROL THE RESTING STATE BLOCK OF A VOLTAGE GATED SODIUM CHANNEL. **Tamer M. Gamal El-Din**, Michael J. Lenaeus, Ning Zheng, William A. Catterall

853-PLAT 4:45 PM
DOES DISRUPTION OF THE E873-R933 SALT BRIDGE IN CFTR AND ALTERATION OF THE MEMBRANE BILAYER AROUND IT PLAY A BIOLOGICAL ROLE? Emily Langron, Valentina Corradi, Peter D. Tieleman, **Paola Vergani**

854-PLAT 5:00 PM
GENERATING POTENT AND SELECTIVE INHIBITORS OF KV1.3 ION CHANNEL BY FUSING KNOTTINS (VENOM DERIVED MINI PROTEINS) INTO PERIPHERAL CDR LOOPS OF ANTIBODIES. **Aneesh Karatt-Vellatt**, Damian C. Bell, Sachin B. Surade, Tim Luetkens, Ed W. Masters, Alice M. Luther, Naja Møller M. Sørensen, Neil J. Butt, John McCafferty

855-PLAT 5:15 PM
IS THE HYDROPHOBIC GASKET A SECONDARY SELECTIVITY FILTER IN THE HUMAN VOLTAGE GATED PROTON CHANNEL HH_V1? **Richard Banh**, Kethika Kulleperuma, Vladimir V. Cherny, Deri Morgan, Boris Musset, Sarah Thomas, Susan M.E. Smith, Régis Pomès, Thomas E. DeCoursey

856-PLAT 5:30 PM TRAVEL AWARDEE
INVESTIGATING FUNCTIONAL CONSEQUENCES OF NOVEL DISEASE-CAUSING MUTATIONS OF CLCN7 GENE. **Eleonora Di Zanni**, Alessandra Picollo

857-PLAT 5:45 PM
INHIBITION OF HCN CHANNELS BY BETA-BLOCKER CARVEDILOL. **Pingzheng Zhou**, Ying Cao

Platform
Optical Microscopy and Superresolution Imaging II

4:00 PM - 6:00 PM, BALLROOM IV

Co-Chairs
Janet Sheung, Vassar College
Paul Wiggins, University of Washington

858-PLAT 4:00 PM
SINGLE PARTICLE TRAJECTORIES REVEAL ACTIVE ENDOPLASMIC RETICULUM LUMINAL FLOW. **Pierre Parutto**, Joseph E. Chambers, Marcus Fantham, Laurence Young, Stefan Marciniak, Clemens F. Kaminski, David Ron, David Holcman, Edward Avezov

859-PLAT 4:15 PM
CHROMATIN NANOSCALE ORGANIZATION INVESTIGATED BY FLIM-FRET AND STED SUPERRESOLUTION MICROSCOPY. **Simone Pelicci**, Michele Oneto, Melody Di Bona, Isotta Cainero, Paola Barboro, Alberto Diaspro, Luca Lanzano'

860-PLAT 4:30 PM
SINGLE NITROGEN-VACANCY IMAGING IN NANODIAMONDS FOR MULTIMODAL SENSING. **Maabur Sow**, Horst Steuer, Barak Gilboa, Laia Gines, Soumen Mandal, Sanmi Adekanye, Jason M. Smith, Oliver A. Williams, Achillefs N. Kapanidis

861-PLAT 4:45 PM
ACTIVE FEEDBACK TRACKING OF SINGLE VIRUSES AND FLUOROPHORES IN SOLUTION. **Kevin D. Welsher**

862-PLAT 5:00 PM
SUPER-RESOLUTION MICROSCOPY AS A TOOL FOR COUNTING PROTEINS IN A SUB-CELLULAR ENVIRORMENT. **Francesca Cella Zanacchi**, Raffaella Magrassi, Carlo Manzo, Nathan Derr, Alberto Diaspro

863-PLAT 5:15 PM
MOLECULAR COUNTING WITH DNA ORIGAMI - VERIFICATION AND VALIDATION TOWARDS BIOLOGICAL APPLICATIONS. **Daniel F. Nino**, Daniel Djarkarsana, Anton Zilman, Joshua Milstein

864-PLAT 5:30 PM
STRUCTURAL CONTRIBUTIONS TO HYDRODYNAMIC SIZE OF QUANTUM DOTS FOR IN-VIVO SINGLE MOLECULE TRACKING. **Janet Y. Sheung**, Pinghua Ge, Sung Jun Lim, Sang Hak Lee, Andrew Smith, Paul R. Selvin

865-PLAT 5:45 PM
THE OBSERVATION PROTEIN POSITION AND ORIENTATION DYNAMICS USING AN UNBLEACHABLE PROBE. **Paul A. Wiggins**

Platform
Membrane Receptors and Signal Transduction

4:00 PM - 6:00 PM, ROOM 307/308

Co-Chairs
Jinan Wang, University of Kansas
Michael Brown, University of Arizona

866-PLAT 4:00 PM
ACTIVATION AND CROSS-INTERACTION OF RECEPTOR TYROSINE KINASES STUDIED BY SINGLE-PARTICLE TRACKING. **Marie-Lena I. E. Harwardt**, Sebastian Strauss, Ralf Jungmann, Marina S. Dietz, Mike Heilemann

867-PLAT 4:15 PM
A THERMODYNAMIC FRAMEWORK FOR UNDERSTANDING RTK INTERACTION NETWORKS. **Michael D. Paul**, Kalina Hristova

868-PLAT 4:30 PM
FUNCTIONAL AND STRUCTURAL ANALYSIS OF CELL-FREE SYNTHESIZED MEMBRANE PROTEINS. **Belay Gessesse**, Takuya Ueda, Yoshihiro Shimizu

869-PLAT 4:45 PM
SPONGE MODEL OF G-PROTEIN BINDING AND UNBINDING IN MEMBRANES. **Anna R. Eitel**, Steven D.E. Fried, Suchithranga M.D.C. Perera, Udeep Chawla, Nipuna Weerasinghe, Carolanne E. Norris, Andrey V. Struts, Michael F. Brown

870-PLAT 5:00 PM TRAVEL AWARDEE
MECHANISM OF SPECIFIC G PROTEIN COUPLING TO ADENOSINE RECEPTORS. **Jinan Wang**, Yinglong Miao

871-PLAT 5:15 PM
STUDYING STRUCTURAL PLASTICITY UNDERLYING GPCR FUNCTION. **Matthew T. Eddy**

872-PLAT 5:30 PM
A CONDITIONAL TRANSMEMBRANE PEPTIDE INHIBITS CELL MIGRATION BY ACTIVATION OF THE EPHA2 RECEPTOR TYROSINE KINASE. Daiane S. Alves, Justin M. Westerfield, Xiaojun Shi, Vanessa P. Nguyen, Katherine M. Stefanski, Adam W. Smith, **Francisco N. Barrera**

873-PLAT 5:45 PM
TOWARDS MOLECULAR SIMULATIONS OF JUXTAPOSED BIOMEMBRANES. **Elizabeth E. Jefferys**, Bart Bruininks, Paulo Cesar T. Souza, Siewert-Jan Marrink, Mark S. Sansom

Platform
Myosin and Skeletal/Smooth Muscle Mechanics, Structure, and Regulation

4:00 PM - 6:00 PM, ROOM 309/310

Co-Chairs
Wolfgang Linke, University of Muenster, Germany
Aikaterini Kontrogianni-Konstantopoulos, University of Maryland Baltimore

874-PLAT 4:00 PM
MACROMOLECULAR CROWDING AFFECTS THE RATE OF ADP RELEASE FROM ACTOMYOSIN. **Jinghua Ge**, Akhil Gargey, Yuri Nesmelov

875-PLAT 4:15 PM
THE MUSCLE MYOSIN ESSENTIAL LIGHT CHAIN IS NOT ESSENTIAL FOR MUSCLE FUNCTION. **Douglas M. Swank**, Bernadette M. Glasheen

876-PLAT 4:30 PM
THE SKELETAL MUSCLE SUPER RELAXED STATE (SRX) IS LOCALIZED TO THE C-ZONE. **Shane R. Nelson**, AMY Li, Guy Kennedy, Samantha Beck-Previs, David M. Warshaw

877-PLAT 4:45 PM
THE LONG GLU-RICH SEGMENTS OF TROPONIN T IN FLIGHT MUSCLES OF BIRDS AND INSECTS. **Tianxin Cao**, J.-P. Jin, Hanzhong Feng, Deena Damschroder, Robert Wessells

878-PLAT 5:00 PM
THIN FILAMENT REGULATION BLENDS THERMODYNAMIC AND MECHANICAL MECHANISMS. **Henry G. Zot**, P. Bryant Chase, Javier E. Hasbun, J. Renato Pinto

879-PLAT 5:15 PM
ELUCIDATING PRINCIPLES OF MOLECULAR ELASTICITY IN MUSCLE FILAMENT PROTEINS: FROM HIGH-RESOLUTION STRUCTURE TO *IN VIVO* PROOF. Philipp Hornburg, Spyros D. Chatziefthimiou, **Matthias Wilmanns**

880-PLAT 5:30 PM TRAVEL AWARDEE
NOVEL TALES ABOUT THE MYOSIN VI TAIL. **Natalia Fili**, Alexander Cook, Yukti Hari Gupta, Christopher P. Toseland

881-PLAT 5:45 PM
FUNCTIONAL IMPLICATIONS OF DCM END-TO-END BOND MUTATION IN A-TROPOMYOSIN. **Alice Ward Racca**, Nicholas LaFave, Stephanie Jones, Michael J. Rynkiewicz, William Lehman, Jeffrey R. Moore

Platform
Intrinsically Disordered Proteins (IDP) and Aggregates II

4:00 PM - 6:00 PM, ROOM 314/315

Co-Chairs
Franziska Zosel, Novo Nordisk, Denmark
Sarah Bondos, Texas A&M University

882-PLAT 4:00 PM
CHANGES TO THE INTRACELLULAR MILIEU CONTROL THE POPULATION AND RESIDUAL STRUCTURE OF UNFOLDED PROTEINS. Yuhang Wang, Caitlin Davis, Alex S. Holehouse, Martin Gruebele, **Shahar Sukenik**

883-PLAT 4:15 PM
EVOLUTION OF THE INTRINSICALLY DISORDERED ACTIVATION DOMAIN IN A HOX TRANSCRIPTION FACTOR. Ying Liu, Annie Huang, Rebecca Booth, Gabriela Mendes, Zabeena Merchant, Kathleen S. Matthews, **Sarah E. Bondos**

884-PLAT 4:30 PM
CONFORMATIONAL EFFECTS OF A DISEASE-ASSOCIATED HYDROPHOBIC-TO-HYDROPHOBIC SUBSTITUTION AND HISTIDINE PROTONATION STATE LOCATED AT THE MIDPOINT OF THE INTRINSICALLY DISORDERED REGION OF PROBDNF. **Ruchi Lohia**, Grace Brannigan

885-PLAT 4:45 PM
A PROLINE SWITCH EXPLAINS KINETIC HETEROGENEITY IN A COUPLED FOLDING AND BINDING REACTION. **Franziska Zosel**, Davide Mercadante, Daniel Nettels, Benjamin Schuler

886-PLAT 5:00 PM
SEQUENCE-BASED FINGERPRINTING OF INTRINSICALLY DISORDERED REGIONS. **Garrett M. Ginell**, Megan C. Cohan, Alex S. Holehouse

887-PLAT 5:15 PM
FUNCTIONAL ADAPTATION MUTATIONS ALTER PROPENSITY FOR ALPHA-HELICAL CONFORMATION IN THE INTRINSICALLY DISORDERED GLUCOCORTICOID RECEPTOR TAU1CORE ACTIVATION DOMAIN. **Lennart Nilsson**, Anthony Wright, Kyou-Hoon Han

888-PLAT 5:30 PM
THE DISORDERED PROTEIN BUGZ CONSERVES MITOTIC FUNCTION AND LIQUID-LIQUID PHASE SEPARATION ACROSS 1.6 BILLION YEARS OF EVOLUTION. **Alexander F. Chin**, Vincent J. Hilser, Yixian Zheng

889-PLAT 5:45 PM TRAVEL AWARDEE
PROBING SPECIFICITY IN DISORDERED PROTEIN INTERACTIONS WITH SMALL MOLECULES USING INTEGRATIVE METHODS. **Gabriella T. Heller**, Francesco A. Aprile, Massimiliano Bonomi, Carlo Camilloni, Alfonso De Simone, Michele Vendruscolo

Platform
Macromolecular Interactions and Effects on Membranes

4:00 PM - 6:00 PM, ROOM 316/317

Co-Chairs
Amanda Ward, University of Virginia
Syma Khalid, University of Southampton, United Kingdom

890-PLAT 4:00 PM
THE STRUCTURAL BASIS OF A MEMBRANE-BOUND ESCRT-III HELICAL ASSEMBLY. **Henry C. Nguyen**, Nathaniel Talledge, John McCullough, Wesley I. Sundquist, Adam Frost

891-PLAT 4:15 PM
CATCHING HIV IN THE ACT OF FUSION: INSIGHT FROM CRYO-ET INTERMEDIATES OF HIV MEMBRANE FUSION. **Amanda E. Ward**, Kelly A. Dryden, Lukas K. Tamm, Barbie K. Ganser-Pornillos

892-PLAT 4:30 PM
PROBING MEMBRANE FUSION INTERMEDIATES USING BILAYER COATED NANOPARTICLES. **Ana Villamil**, Peter Kasson

893-PLAT 4:45 PM
BACTERIAL OUTER MEMBRANE VESICLE INTERACTION WITH PLASMA MEMBRANES: INSIGHTS FROM MOLECULAR SIMULATIONS. Damien F. Jefferies, Anna L. Duncan, **Syma Khalid**

894-PLAT 5:00 PM
LIPID SPONGE-PHASE NANOPARTICLES AS ENZYME CARRIERS - STRUCTURE AND INTERMOLECULAR INTERACTION CONTROLLING THE ENZYME INCLUSION. Maria Valldeperas, Najet Mahmoudi, Susana C. M. Teixeira, Martynas Talaikis, Ieva Matulaitienė, Gediminas Niaura, Justas Barauskas, **Tommy Nylander**

895-PLAT 5:15 PM
PREPARING ENDOSOME-DERIVED SUPPORTED MEMBRANES TO STUDY EBOLA VIRUS GP-MEDIATED MEMBRANE BINDING AND FUSION. **Laura Odongo**

896-PLAT 5:30 PM
DETECTING AND CONTROLLING DYE AND ILLUMINATION EFFECTS IN SINGLE-VIRUS FUSION EXPERIMENTS. Robert J. Rawle, Steven G. Boxer, **Peter M. Kasson**

897-PLAT 5:45 PM
THE SARS-COV FUSION PEPTIDE FORMS AN EXTENDED BIPARTITE FUSION PLATFORM THAT PERTURBS MEMBRANE ORDER IN A CALCIUM-DEPENDENT MANNER. **Alex L. Lai**, Jean K. Miller, Susan Daniel, Gary R. Whittaker, Jack H. Freed

Exhibitor Presentation
Molecular Devices

4:30 PM - 6:00 PM, ROOM 301

SUPERCHARGE YOUR PATCH-CLAMP DATA ACQUISITION AND ANALYSIS WITH THE NEW AXON PCLAMP 11 SOFTWARE
The patch-clamp technique remains the best method for examining ion channel physiology and membrane biophysics. Axon Instruments and pCLAMP software continue to push the envelope with new innovations with best-in-class systems and software. In this user meeting we learn about new features of pCLAMP 11 software and methods to optimize your workflow and simplify experiments.

Speaker
Jeffrey Tang, Senior Global Axon Electrophysiological Application Scientist, Molecular Devices

Exhibitor Presentation
LUMICKS

5:30 PM - 7:00 PM, ROOM 303

A VERSATILE PLATFORM FOR HIGH-RESOLUTION SINGLE-MOLECULE RESEARCH: EXPANDING CAPABILITIES AND EXPLORING NEW POSSIBILITIES
Proteins interact with nucleic acids and the cytoskeleton to perform biological processes that are key to cell metabolism and life. The direct observation of such interactions in real time and at the singlemolecule enable scientists to make new discoveries and to test current biological models. Singlemolecule studies of cytoskeleton filaments and their interaction to associated proteins are often developed in surface-based assays where the glass surface is used as a substrate to rigidly anchor the biological molecules of interest. To capture the dynamics of the system and its interactions, the samples are typically labeled with fluorescent dyes and are imaged with fluorescence methods. However, despite the versatility of fluorescent methods, label-free imaging methods are desirable to better mimic the native biological conditions and to reduce photo-damage due to fluorescence excitation during long experiments.

Here, we present our recent developments to further enable discoveries in the field of biology and biophysics with a special focus in surface-based assays. We present a novel instrument arrangement that includes optical tweezers in combination with Interference Reflection Microscopy (IRM) and Total Internal Reflection Fluorescence (TIRF) Microscopy. IRM is a recently introduced imaging method that allows visualization of biological structures in 3D without the need for fluorescence labeling and with sensitivity exceeding that of Differential Interference Contrast (DIC) microscopy.

In addition, we show the latest applications of these technologies and how they enhance our understanding of several fields of biology, including molecular motors and cytoskeleton filaments, DNA/RNA-protein interactions, protein folding/unfolding, cell membranes, and genome structure and organization. These applications show that the technological advances in hybrid single-molecule methods for imaging and manipulation can be turned into easy-to-use and stable instruments with the ability to open up new venues in many research areas.

Speakers
Andrea Candelli, Application Scientist, LUMICKS
Sara Tafoya, Application Scientist, LUMICKS
Trey Simpson, Application Scientist, LUMICKS

Dinner Meet-Ups

6:00 PM - 6:30 PM, SOCIETY BOOTH/CHARLES STREET LOBBY

Interested in making new acquaintances and experiencing the cuisine of Baltimore? Meet at the Society Booth each evening, Sunday through Tuesday, at 6:00 PM where a BPS member will coordinate dinner at a local restaurant.

Awards and 2019 Biophysical Society Lecture

8:00 PM - 9:00 PM, BALLROOMS I-IV

Reception and Dance

9:30 PM - 12:00 AM, HILTON, KEY/BALLROOM

Reception and Quiet Room

9:30 PM - 12:00 AM, HILTON, PEALE A/C

MONDAY POSTER SESSIONS

1:45 PM–3:45 PM, EXHIBIT HALL C

Below is the list of poster presentations for Monday of abstracts submitted by October 1. ***The list of late abstracts scheduled for Monday is available in the Program Addendum, and those posters can be viewed on boards beginning with LB.***

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 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–B35	Protein Structure and Conformation II
B36–B60	Protein Stability, Folding, and Chaperones I
B61–B76	Protein Assemblies II
B77–B108	Intrinsically Disordered Proteins (IDP) and Aggregates I
B109–B134	Membrane Protein Dynamics I
B135–B146	Transcription
B147–B171	Protein-Nucleic Acid Interactions I
B172–B189	Membrane Dynamics I
B190–B211	Protein-Lipid Interactions: Channels
B212–B232	Membrane Structure II
B233–B239	Intracellular Transport
B240–B252	Cardiac Smooth and Skeletal Muscle Electrophysiology II
B253–B269	Membrane Receptors and Signal Transduction I
B270–B294	Calcium Signaling
B295–B310	Other Channels
B311–B342	Ion Channels, Pharmacology, and Disease
B343–B357	Cytoskeletal Assemblies & Dynamics
B358–B380	Microtubules, Structure, Dynamics, and Associated Proteins
B381–B391	Myosins and Smooth Muscle Mechanics, Structure, and Regulation
B392–B415	Cardiac Muscle Mechanics and Structure
B416–B443	Mitochondria in Cell Life and Death
B444–B453	Emerging Techniques and Synthetic Biology
B454–B461	Neuroscience: Experimental Approaches and Tools
B462–B475	Single-Molecule Spectroscopy II
B476–B502	Optical Microscopy and Superresolution Imaging II
B503–B512	EPR and NMR: Spectroscopy and Imaging
B513–B541	Computational Methods and Bioinformatics I
B542–B556	Micro- and Nanotechnology I
B557–B565	Biomaterials

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Protein Structure and Conformation II (Boards B1 - B35)

899-Pos Board B1
MOLECULAR BASIS OF THE MARBURG VIRUS PROTEIN VP24 INTERACTIONS WITH HUMAN KEAP1. **Nisha Bhattarai**, Prem P. Chapagain, Bernard Gerstman

900-Pos Board B2
SOLUTION NMR STRUCTURE OF THE GTPASE ACTIVATING (GAP) DOMAIN OF VOPE, A VIBRIO CHOLERAE T3SS EFFECTOR PROTEIN. **Kyle P. Smith**, Woonghee Lee, Marco Tonelli, Priscilla S-W Yeung

901-Pos Board B3
CHARACTERIZATION AND IRON BINDING DYNAMICS OF HAEMOPHILUS INFLUENZAE FERRIC BINDING PROTEIN. **Goksin Liu**, Ezgi Altun, S. Mert Unal, Canan Atilgan, Zehra Sayers

902-Pos Board B4
DESIGNING SUPERHYDROPHILIC, DISORDERED PEPTIDES TO IMPROVE THE STABILITY AND EFFICACY OF PROTEIN THERAPEUTICS. **Joshua Smith**, Patrick McMullen, Zhefan Yuan, Shaoyi Jiang, Jim Pfaendtner

903-Pos Board B5
SYSTEMATIC ANALYSIS OF INTERNAL HYDRATION IN A PROTEIN. **Anne M. Rice**, Jaime L. Schlessman, Bertrand Garcia-Moreno

904-Pos Board B6
MARKOV MODELS OF FUNCTIONAL DYNAMICS OF HISTONE LYSINE METHYLTRANSFERASES BY MILLISECOND-TIMESCALE MOLECULAR SIMULATION AND CHEMICAL PROBING. **Rafal P. Wiewiora**, Shi Chen, Minkui Luo, John D. Chodera

905-Pos Board B7
STRUCTURAL MODULATION OF RYR1 BY MGATP AND FREE MG^{2+} IN LIPID MEMBRANE USING CRYOEM . **Ashok R. Nayak**, Alex H. Will, Joshua Lobo, Pablo C. Hartmann, Montserrat Samso

906-Pos Board B8
CLASSIFYING OF ARRHYTHMOGENIC CARDIOMYOPATHY-LINKED DESMOPLAKIN VARIANTS THROUGH MOLECULAR MECHANISMS OF PATHOGENICITY. **Tyler L. Stevens**, Heather Manring, Taylor Albertelli, Ronald Ng, Nathan T. Wright, Stuart Campbell, Maegen Ackermann

907-Pos Board B9
CHARACTERIZATION OF PREDICTED SMALL PROTEINS. **Allison Whited**, Christina Cleveland, Jeffre Allen, Irwin Jungreis, John Rinn, Loren Hough

908-Pos Board B10 TRAVEL AWARDEE
SIMULATION GUIDED DESIGN OF SPECTROSCOPY EXPERIMENTS VIA MAXIMIZING KINETIC INFORMATION GAIN. **Shriyaa Mittal**, Diwakar Shukla

909-Pos Board B11
STRUCTURAL BASIS UNDERLYING AUTOINDUCER ACTIVATION OF THE *VIBRIO CHOLERAE* VQMA QUORUM-SENSING RECEPTOR. **Jon Paczkowski**

910-Pos Board B12
REINFORCEMENT LEARNING OF PROTEIN CONFORMATIONAL ENSEMBLE. **Jiangyan Feng**

911-Pos Board B13
BIOINFORMATICS OF NEW SELECTIVE INSECTICIDE TARGET IN INSECT SPECIES. **Hassan M. Younis**

912-Pos Board B14
DISASSEMBLING AND REASSEMBLING COMPLEX STRUCTURE OF GLUTAMATE DEHYDROGENASE 1 (DGH-1), MONITORED BY TRYPTOPHAN AND 1-ANILINONAPHTHALENE-8-SULFONATE (ANS) FLUORIMETRY. **Bogumil Zelent**, David F. Wilson, Franz M. Matschinsky

.913-Pos Board B15
IN-CELL FAST PHOTOCHEMICAL OXIDATION OF PROTEINS FOR PROTEOME WIDE STRUCTURAL BIOLOGY. **Emily E. Chea**, Lisa M. Jones

914-Pos Board B16
EXPLORE THE BINDING OF HEPATITIS B VIRUS CORE PROTEIN PEPTIDES WITH HLA-A2.1 BY MOLECULAR MODELING METHODS. Lianhua Piao, Zhou Chen, Shan Chang, Jian Li, **Ren Kong**

915-Pos Board B17
DIVULGING CHARACTERISTIC FEATURES OF THE NOVEL A-SYNUCLEIN OLIGOMERS AUGMENTING PARKINSON'S DISEASE. **Animesh Mondal**, Nakul Chandra Maiti

916-Pos Board B18
ATOMISTIC MECHANISMS UNDERLYING THE ACTIVATION OF G PROTEIN-COUPLED SWEET RECEPTOR HETERODIMER MEDIATED BY SUGAR ALCOHOL RECOGNITION. **Thanyada Rungrotmongkol**

917-Pos Board B19
INVESTIGATING THE RESPONSE OF TYPE IV PILINS AND TYPE IV PILUS FILAMENTS TO APPLIED FORCE USING ALL-ATOM STEERED MOLECULAR DYNAMICS SIMULATIONS. **Maria N. Fairfield**, Stephen J. Jones, Nicolas Biais, Joseph L. Baker

918-Pos Board B20
PROBING THE POLYMORPHIC TRANSITION OF TYPE IV PILUS FILAMENTS UNDER FORCE USING COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS. **Bryan A. Bogin**, Christopher A. Lovenduski, Nicolas Biais, Joseph L. Baker

919-Pos Board B21
MOLECULAR DYNAMICS INVESTIGATIONS OF ENZYME CONFORMATIONAL CHANGES. **Prabin Baral**, Nisha Bhattarai, Rudramani Pokhrel, Bernard Gerstman, Prem P. Chapagain

920-Pos Board B22
HIGH YIELD PRODUCTION OF FUNCTIONAL HIF PROLYL HYDROXYLASE DOMAIN PROTEINS FROM INCLUSION BODY EXPRESSION IN *E. COLI*. **Nakoa K. Webber**, Thomas J. Fasano, Jacob T. Zangaro, Pamela N. Gallo, Kayla A. Schardien, Michelle M. Currie, Nathaniel V. Nucci

921-Pos Board B23
STUDYING THE DYNAMIC MOTIONS OF WATER SURROUNDING THE ICE-BINDING FACE OF M1.1 ANTIFREEZE PROTEIN. **Joseph C. Iovine**, Pamela N. Gallo, Kayla A. Callaway, Peter L. Davies, Nathaniel V. Nucci

922-Pos Board B24
SINGLE-MOLECULE FORCE SPECTROSCOPY OF M-VALUE MUTANTS OF STAPHYLOCOCCAL NUCLEASE INDICATES COMPLEX PROTEIN FOLDING LANDSCAPE. **James Rives**, Joseph Rehfus, Vincent J. Hilser

923-Pos Board B25
COMPUTATIONAL AND SPECTROSCOPIC INVESTIGATION OF COMMUNICATION MECHANISMS USED BY ACYL CARRIER PROTEINS.
Terra Sztain-Pedone, Michael D. Burkart, James A. McCammon

924-Pos Board B26
DISSECTING THE ALLOSTERIC EFFECTS OF PVHL G123F MUTATION IN TYPE 2A PVHL DISEASE. **Hongsheng Qian**, Yu Zou, Qingwen Zhang

925-Pos Board B27
ION PAIRS BURIED IN HYDROPHOBIC ENVIRONMENTS WITHIN PROTEINS: ELECTROSTATIC CROSSTALK BETWEEN BURIED GROUPS. **Aaron Robinson**, Andrea Theodoru, Jamie L. Schlessman, Bertrand Garcia-Moreno

926-Pos Board B28
POLYMORPHISMS MODULATE SHEEP PRION PROTEIN SUSCEPTIBILITY TO MISFOLDING BY ALTERING THE RESIDUE NETWORK OF INTERACTIONS. **India Claflin**, Noah Yoshida, Patricia Soto

927-Pos Board B29
TOWARDS THE INHIBITION OF CALPAIN-DEPENDENT DESMOPLAKIN CLEAVAGE IN ARRHYTHMOGENIC CARDIOMYOPATHIES. **Taylor Albertelli**, Kendahl Ott, Heather R. Manring, Stuart G. Campbell, Maegen Borzok, Nathan T. Wright

928-Pos Board B30
CRYO-EM STRUCTURAL ANALYSIS OF NEURONAL NITRIC OXIDE SYNTHASE. **Thomas H. Pospiech**, Yoshihiro Morishima, Yoichi Osawa, Daniel R. Southworth

929-Pos Board B31
USING 4-CYANOPHENYLALANINE TO PROBE THE DEGREE OF WATER EXPOSURE IN A PEPTIDE HYDROGEL. **Benjamin F. Frost**, William E. Fox, Fiona Berry, Katherine Chung, Karin Akerfeldt

930-Pos Board B32
EVALUATION OF THE HIV GENOME TO PROMOTE GAG HEXAMERIZATION. **Noel Getachew**

931-Pos Board B33
OBSCURIN ACTS AS A SEMI-FLEXIBLE CHAIN IN SOLUTION. **Jake Whitley**, Aidan Ex-Willey, Daniel Marzolf, Oleksandr Kokhan, Maegen Ackermann, Anthony Tongen, Nathan T. Wright

932-Pos Board B34
LARGE-SCALE ALL-ATOM SIMULATIONS OF T4P FILAMENTS REVEAL CRITICAL INTERACTIONS FOR T4P STABILITY. Rebecca B. Goncalves, Nicolas Biais, **Joseph L. Baker**

933-Pos Board B35
EFFECTS OF LOCAL AND GLOBAL DYNAMICS ON THE SUPERTERTIARY ORGANIZATION OF POSTSYNAPTIC DENSITY PROTEIN 95. **George L. Hamilton**, Jakub Kubiak, Claus A.M. Seidel, Hugo Sanabria

Protein Stability, Folding, and Chaperones I (Boards B36 - B60)

934-Pos Board B36
UV PEROXIDATION REDUCES POLOXAMINE T1107 CAPABILITY TO DISAGGREGATE LYSOZYME. **Michelle X. Ling**, Colin A. Mcfaul, Raphael C. Lee

935-Pos Board B37
NEW APPROACH TO EVALUATING THE STABILITY OF ANTIBODIES USING CIRCULAR DICHROISM SPECTROSCOPY SCREENING. **Satoko Suzuki**, Yasuo Horiguchi, Leah Pandiscia, Koushi Nagamori, Hiroshi Nakayama, Kouhei Tsumoto

936-Pos Board B38
PROBING (UN)FOLDING TRANSITION PATHS OF FAST-FOLDING PROTEINS BY SINGLE-MOLECULE FLUORESCENCE: EXPLORING THE ROLE OF SECONDARY STRUCTURE, FOLD TOPOLOGY AND SEQUENCE. **Nivin Mothi**, Mourad Sadqi, Victor Munoz

937-Pos Board B39
MONITORING DYNAMICS OF PROTEIN NASCENT CHAIN ON THE RIBOSOME USING PET-FCS. **Marija Liutkute**, Ekaterina Samatova, Manisankar Maiti, Wolf H. Holtkamp, Jörg Enderlein, Marina V. Rodnina

938-Pos Board B40
ENHANCED PH DEPENDENT MODULATION OF ALPHA CRYSTALLIN CHAPERONE FUNCTION AND SUBUNIT EXCHANGE IN AN N-TERMINAL PHOSPHORYLATION MIMIC. Kashmeera Baboolall, Belelot Birhanu, Natalie Braun, Yusrah Kaudeer, **Patricia B. O'Hara**

939-Pos Board B41
H20Y MUTATION STABILIZES STRUCTURE OF THE PRIMARY DNA RECOGNITION DOMAIN OF THE SLEEPING BEAUTY TRANSPOSASE. **Chenbo Yan**, Gage O. Leighton, Janna Lustig, Zoltán Ivics, Irina V. Nesmelova

940-Pos Board B42
A STRUCTURAL, DYNAMIC, AND THERMODYNAMIC EXPLANATION OF THERMOSTABILITY IN A DE NOVO DESIGNED THREE-HELIX BUNDLE. Natali Gonzalez, Emily Hamlin, Parwana Khazi, Catrina Nguyen, Jennifer Young, **Michelle E. McCully**

941-Pos Board B43
LONG-RANGED PROTEIN-GLYCAN INTERACTIONS STABILIZE VON WILLEBRAND FACTOR A2 DOMAIN FROM MECHANICAL UNFOLDING. **Chuqiao Dong**, Jumin Lee, Seonghoon Kim, Whitney Lai, Edmund B. Webb, Alparslan Oztekin, Xiaohui Zhang, Wonpil Im

942-Pos Board B44
STUDYING THE FOLDING BEHAVIOR OF A 3D LATTICE PROTEIN UNDER OSCILLATORY CONDITIONS. **Qizhang Jia**, Xuanye Zhu, Austin Cheng, Cory J. Kim, Amy Y. Wang, Kateri H. DuBay

943-Pos Board B45
A COMPREHENSIVE INVESTIGATION OF THE STABILIZATION OF MONOMERIC HFGF1 BY HEPARIN HEXASACCHARIDE USING MICROSECOND-LEVEL MD SIMULATIONS AND ENHANCED SAMPLING TECHNIQUES. **Vivek Govind Kumar**, Shilpi Agrawal, T.K.S. Kumar, Mahmoud Moradi

944-Pos Board B46
IDENTIFYING INTERMEDIATE STATES IN PRION PROTEIN FOLDING PATHWAY: A POSSIBLE PRECURSOR TO THE MISFOLDED STATE ? **Balaka Mondal**

945-Pos Board B47
DISULFIDE BONDS MODULATE LYSOZYME FOLDING PATHWAYS. **Aswathy Muttathukattil Narayanan**

946-Pos Board B48
PROBING THE CHAPERONE ACTIVITY OF ERYTHROID SPECTRIN. **Dipayan Bose**, Abhijit Chakrabarti

947-Pos Board B49
MOLTENPROT: A HIGH-THROUGHPUT ANALYSIS PLATFORM TO ASSESS THERMODYNAMIC STABILITY OF MEMBRANE PROTEINS AND COMPLEXES. **Vadim Kotov**, Oliver Vesper, Maria Garcia Alai, Christian Loew, Thomas C. Marlovits

948-Pos Board B50
STRUCTURAL DYNAMICS OF C-MYB DNA-BINDING DOMAIN REVEALED BY DXT AND THERMAL ANALYSIS. **Satomi Inaba**, Yuhi Hosoe, Yuji C. Sasaki, Hiroshi Sekiguchi, Masayuki Oda

949-Pos Board B51
THE EARLIEST STAGES OF A PROTEIN'S LIFE INFLUENCES ITS LONG-TERM SOLUBILITY AND STRUCTURAL ACCURACY. **Matthew D. Dalphin**, Angela Varela, Andrew Stangl, Robert Kirchdoerfer, Rayna Addabbo, Yoo Jin Song, Yue Liu, Silvia Cavagnero

950-Pos Board B52
N-HXMS: A METHOD TO DIRECTLY MEASURE PROTEIN FOLDING AND STABILITY UNDER NATIVE CONDITIONS. **Nejc Nagelj**, Minjee Kim, Kaeli Mathias, Sheila Jaswal

951-Pos Board B53
INVESTIGATING THE EFFECTS OF MISSENSE MUTATIONS IN MSH2 GENE ASSOCIATED WITH LYNCH SYNDROME. **Bohua Wu**, Yunhui Peng, Julia A. Eggert, Emil Alexov

952-Pos Board B54
UNSUPERVISED LEARNING FOR DECOY SELECTION IN PROTEIN STRUCTURE PREDICTION. **Nasrin Akhter**, Gopinath Chennupati, Hristo Djidjev, Amarda Shehu

953-Pos Board B55
BIOPHYSICAL CHARACTERIZATION OF DIFFERENCES IN DOMAIN-DOMAIN INTERACTIONS BETWEEN THE APOLIPOPROTEIN E4 AND E3. **Subhrajyoti Dolai**, Kanchan Garai

954-Pos Board B56
NATIVE QUANTITATIVE DETERMINATION OF ANTIBODY-DRUG CONJUGATE AFFINITY AND STABILITY. **Colette Quinn**, Shawn Owen, Keith Arlotta

955-Pos Board B57 TRAVEL AWARDEE
USING COMPUTATIONAL MODELING TO UNDERSTAND THE BINDING MECHANISM OF DESIGNED CYCLIC B-HAIRPIN TO MDM2. **Yunhui Ge**, Vincent Voelz

956-Pos Board B58
SINGLE-MOLECULE FORCE SPECTROSCOPY SHOWS THAT THE ANTI-PRION COMPOUND PENTOSAN POLYSULFATE BINDS HETEROGENEOUSLY TO FOLDED AND UNFOLDED PRION PROTEIN. **Rafayel Petrosyan**, Patra Shubhadeep, Negar Rezajooei, Craig Garen, Michael T. Woodside

957-Pos Board B59
SITE-SPECIFIC CHARACTERIZATION OF INTERMEDIATES IN FOLDING-TETRAMERIZATION OF MELITTIN BY THE RAPID MIX/FREEZE METHOD AND MAGIC ANGLE SPINNING DYNAMIC NUCLEAR POLARIZATION (MAS-DNP) NMR AT LOW TEMPERATURE (25K). **Jaekyun Jeon**, Kent Thurber, Wai-Ming Yau, Robert Tycko

958-Pos Board B60
RADIOLIGAND THERMOSTABILITY ASSESSMENT OF AGONIST-BOUND HUMAN TYPE 2 CANNABINOID RECEPTOR. **Ryan L. Beckner**, Klaus Gawrisch, Alexei Yeliseev

Protein Assemblies II (Boards B61 - B76)

959-Pos Board B61
TOWARDS UNDERSTANDING AMYLOID FORMATION MECHANISM OF BETA2-MICROGLOBULIN INDUCED BY COPPER IONS. **Chungwen Liang**

960-Pos Board B62
STUDYING MULTI-PROTEIN INTERACTIONS BY FLUORESCENCE DETECTED SEDIMENTATION VELOCITY COMBINING HYDRODYNAMIC SEPARATION OF COMPLEXES WITH FLUORESCENCE QUENCHING ANALYSIS. **Huaying Zhao**, Siddhartha A. Datta, Sung Kim, Sumit K. Chaturvedi, Alan Rein, Peter Schuck

961-Pos Board B63
NON-CLASSICAL NUCLEATION OF TUMOR SUPPRESSOR P53 FIBRILS HOSTED BY MESOSCOPIC PROTEIN-RICH CLUSTERS. **Peter G. Vekilov**

962-Pos Board B64
CORRELATING AMINO ACID SEQUENCE AND SOLVATION TO DISORDERED PROTEIN COLLAPSE TRANSITIONS AND PHASE SEPARATION. **Erik W. Martin**, Alex S. Holehouse, Ivan Peran, Anne Bremer, Rohit V. Pappu, Tanja Mittag

963-Pos Board B65
MULTI-STEP 2D PROTEIN CRYSTALLIZATION VIA STRUCTURAL CHANGES WITHIN AN ORDERED LATTICE. **Jonathan Herrmann**, Colin J. Comerci, Fatemeh Jabbarpour, Lucy Shapiro, William E. Moerner, Soichi Wakatsuki

964-Pos Board B66
MODELING THE ASSEMBLY ORDER OF MULTIMERIC HETEROPROTEIN COMPLEXES. Lenna Peterson, Yoichiro Togawa, Juan Esquivel-Rodriguez, Genki Terashi, Charles Christoffer, Amitava Roy, Woong-Hee Shin, **Daisuke Kihara**

965-Pos Board B67
VARIABLE BINDING OF THIOFLAVIN T TO AMYLOID FIBRILS. **Hiroaki Komatsu**, Claire Meurice, Paul H. Axelsen

966-Pos Board B68
P-NITROPHENYLALANINE AS A NOVEL PROBE OF HYDROGEN BONDING IN PEPTIDE HYDROGELS AND PROTEINS. **Nicholas R. John**, Casey H. Londergan, Karin Akerfeldt, Eliana V. von Krusenstiern

967-Pos Board B69
IS THE SICKLE HEMOGLOBIN POLYMER STRUCTURE A FRUSTRATED SPIN-GLASS? Emily Harkness, Mark Davis, Marilyn F. Bishop, Kimberly C. Grasty, Patrick J. Loll, **Frank A. Ferrone**

968-Pos Board B70
THE ROLE OF CHARGE INTERACTIONS IN LIQUID-LIQUID PHASE TRANSITIONS. Iuliia A. Antifeeva, **Alexander V. Fonin**, Olesya G. Shpironok, Irina M. Kuznetsova, Konstantin K. Turoverov

969-Pos Board B71
MECHANISMS OF PROTEIN FIBRIL FORMATION IN AMYLOID BETA AND LYSOZYME PROTEINS. **Carlos M. Perez**, Ghanim Ullah, Tatiana Miti, Martin Muschol

970-Pos Board B72
THE EFFECT OF SOLUTION PH ON THE STRUCTURE AND STABILITY OF LYSOZYME AMYLOID FIBRILS. **Anna I. Sulatskaya**, Olga I. Povarova, Maksim I. Sulatsky, Irina M. Kuznetsova, Konstantin K. Turoverov

971-Pos Board B73
ON THE RELATIONSHIP BETWEEN AGGREGATION RATE AND MECHANICAL STABILITY IN PROTEIN AGGREGATION. **Maksim Kouza**, Andrzej Kolinski, Andrzej Kloczkowski, Irina Buhimschi

972-Pos Board B74
INTEGRATING REACTION-DIFFUSION DYNAMICS WITH A BIOPHYSICALLY DRIVEN DEFORMABLE MEMBRANE MODEL. **Yiben Fu**, Margaret Johnson

973-Pos Board B75
STUDY OF SELF-ASSEMBLY IN PROTEIN-PROTEIN INTERACTIONS IN ULTRAFAST ENDOCYTOSIS. **Yasaman Moghadamnia**

974-Pos Board B76
USER-FRIENDLY SOFTWARE FOR SIMULATING NON-EQUILIBRIUM SELF-ASSEMBLY USING REACTION-DIFFUSION. **Matthew J. Varga**, Margaret E. Johnson

Intrinsically Disordered Proteins (IDP) and Aggregates I (Boards B77 - B108)

975-Pos Board B77
THE INTRINSIC FOLDING MECHANISM AFFECTS THE COUPLED FOLDING-BINDING PROCESS OF UNFOLDED PROTEINS. Meng Gao, Zhengding Su, **Yongqi Huang**

976-Pos Board B78
RECOGNITION MECHANISM OF THE INTRINSICALLY DISORDERED DSRNA BINDING DOMAIN DCL1-A WITH ITS SUBSTRATE FROM MOLECULAR DYNAMICS SIMULATIONS. **Yuwen Chen**, Meng Gao, Yongqi Huang

977-Pos Board B79
MECHANISM OF COUPLED FOLDING OF DISORDERED COLICIN E3 RRNASE DOMAIN UPON BINDING WITH IM3. **Xingyu Chen**, Yongqi Huang, Zhengding Su, Meng Gao

978-Pos Board B80
THE RATIONAL DISCOVERY AND DESIGN OF DISORDERED PROTEIN LIGANDS. **David W. Baggett**, Abhinav Nath

979-Pos Board B81 TRAVEL AWARDEE
POLYMER THEORY FOR SEQUENCE-SPECIFIC PHASE SEPARATION BEHAVIORS OF CHARGED INTRINSICALLY DISORDERED PROTEINS. **Yi-Hsuan Lin**, Julie D. Forman-Kay, Hue Sun Chan

980-Pos Board B82
THE COUPLED FOLDING-BINDING MECHANISMS OF INTRINSICALLY DISORDERED PROTEINS WITH DIFFERENT FOLDED STRUCTURES. **Jing Yang**, Meng Gao, Zhengding Su, Yongqi Huang

981-Pos Board B83 TRAVEL AWARDEE
CHARACTERIZING TIME-OF-DAY CONFORMATIONAL CHANGES IN THE IDP FREQUENCY AT THE HEART OF THE CIRCADIAN CLOCK IN N. CRASSA USING THE CRAFTY PROTOCOL. **Jacqueline Pelham**, Alexander E. Mosier, Jennifer M. Hurley

982-Pos Board B84
STUDY OF POTENTIAL KINETIC ADVANTAGES OF INTRINSICALLY DISORDERED REGIONS FOR PROTEIN ASSOCIATION. **Mikita Misiura**, Anatoly B. Kolomeisky

983-Pos Board B85
BIOPHYSICAL CHARACTERIZATION OF THE TRANSLATIONAL ISOFORMS OF THE HUMAN GLUCOCORTICOID RECEPTOR. **Emily M. Grasso**, Ananya Majumdar, Dominique P. Frueh, Vincent J. Hilser

984-Pos Board B86
COARSE-GRAINED SIMULATIONS OF DISORDERED PROTEINS: EFFECT OF INTERACTION POTENTIALS AND CHARGE PATTERN PARAMETERS. **Suman Das**

985-Pos Board B87
MODELING THE EFFECTS OF LIGAND BINDING ON THE PHASE BEHAVIOR OF AGGREGATION-PRONE PROTEINS. **Kiersten M. Ruff**, Ammon E. Posey, Rohit V. Pappu

986-Pos Board B88
REDOX OF CYSTEINES AND PROTEIN FOLDING OF SNAP-25. **Aidan H. Mourik**, Matt Pettit, Robert E. Coffman, Graham M. Pingree, Chandler B. McSpadden, Dixon J. Woodbury

987-Pos Board B89
THEORETICAL SAXS SIGNATURES OF CONFORMATIONAL HETEROGENEITY AND HOMOGENEITY OF DISORDERED PROTEIN ENSEMBLES. Jianhui Song, **Hue Sun Chan**

988-Pos Board B90
INVESTIGATING THE ROLE OF CHARGE-ALTERING POST-TRANSLATIONAL MODIFICATIONS ON TAU PEPTIDE CONFORMATIONAL ENSEMBLES USING POLARIZABLE MOLECULAR DYNAMICS SIMULATIONS. **Darcy S. Davidson**, Justin A. Lemkul

989-Pos Board B91
PROTEIN UNFOLDED STATES ARE CHARACTERIZED BY THE DUALITY OF SEQUENCE-SPECIFIC CONFORMATIONAL PREFERENCES AND ENSEMBLE-AVERAGED FEATURES OF CANONICAL RANDOM COILS. **Alex S. Holehouse**, Ivan Peran, Natalie E. Stenzoski, Junjie Zou, Andrea Piserchio, Ranajeet Ghose, Isaac S. Carrico, Osman Bilsel, Daniel P. Raleigh, Rohit V. Pappu

990-Pos Board B92
A HIGH THROUGHPUT METHOD FOR EXPLORING THE SEQUENCE SPACE OF POLYPEPTIDES THAT EXHIBIT THERMORESPONSIVE PHASE BEHAVIOR. **Xiangze Zeng**, Martin J. Fossat, Nicholas Tang, Ashutosh Chilkoti, Rohit V. Pappu

991-Pos Board B93
COMPUTATIONAL SIMULATIONS OF THE N_{TAIL}-XD COMPLEX FROM THE NIPAH VIRUS FOR CONSTRUCTING EXPERIMENTALLY-VALIDATED STRUCTURAL ENSEMBLE. **ChuHui Fu**, Casey H. Londergan, Rosalind J. Xu

992-Pos Board B94
MEASURES ADAPTED FROM INFORMATION THEORY AND ENERGY LANDSCAPE THEORY FOR QUANTIFYING SEQUENCE-TO-CONFORMATION RELATIONSHIPS OF INTRINSICALLY DISORDERED REGIONS. **Megan Cohan**, Alex S. Holehouse, Rohit V. Pappu

993-Pos Board B95
CHARACTERISTICS OF THE BINDING INTERACTION BETWEEN PDX1 AND SPOP. **Grace A. Usher**, Roman Rohac, Amie K. Boal, Scott A. Showalter

994-Pos Board B96 TRAVEL AWARDEE
DYNAMIC INTERACTIONS BETWEEN AN INTRINSICALLY DISORDERED PROTEIN AND ITS BINDING PARTNERS PROBED BY MULTIPARAMETER SINGLE-MOLECULE FLUORESCENCE. **Taehyung Chris Lee**, Gregory-Neal Gomes, John Darvy M. Castroverde, Claudiu C. Gradinaru

995-Pos Board B97
THE IMPORTANCE OF SEQUENCE ORDER VERSUS COMPOSITION IN THE CRYOPROTECTIVE FUNCTION OF AN INTRINSICALLY DISORDERED PROTEIN. **Steffen P. Graether**, Sharall Palmer, Ray De Villa, Andrew Harris, Leonid S. Brown

996-Pos Board B98
A MEMBRANE-BOUND SELENOPROTEIN REGULATES ITS ACTIVITY BY AUTOPROTEOLYSIS. **Rujin Cheng**, Marina Grossi, Jun Liu, Peter R. Hoffmann, Sharon Rozovsky

997-Pos Board B99
LOCAL CHAIN DYNAMICS OF INTRINSICALLY DISORDERED SIC1 PROTEIN INFERRED FROM FLUORESCENCE ANISOTROPY DECAY MEASUREMENTS. **John Darvy M. Castroverde**, Gregory-Neal W. Gomes, Taehyung C. Lee, Julie Forman-Kay, Claudiu C. Gradinaru

998-Pos Board B100
EXPLORING THE STRUCTURAL PROPERTIES OF SYNAPTOTAGMIN'S INTRINSICALLY DISORDERED REGION. **Michael E. Fealey**, Anne Hinderliter, David D. Thomas

999-Pos Board B101
INTRINSICALLY DISORDERED HAX-1 REGULATES PHOSPHOLAMBAN IN MEMBRANES. **Erik K. Larsen**, Daniel Weber, Songlin Wang, Seth Robia, Evangelia Kranias, Gianluigi Veglia

1000-Pos Board B102
SOLVENT EFFECTS ON THE SELF-ASSEMBLY AND MECHANICAL PROPERTIES OF ELASTIN-LIKE PEPTIDES. **Ananya Srivastava**, Zhuyi Xue, Lisa D. Muiznieks, Fred W. Keeley, Regis Pomes

1001-Pos Board B103
EXPERIMENTAL AND COMPUTATIONAL CHARACTERIZATION OF THE CONFORMATIONAL ENSEMBLE AND INTERACTION MOTIFS OF CHIZ N-TERMINAL INTRINSICALLY DISORDERED REGION. **Alan Hicks**, Cristian Escobar, Timothy A. Cross, Huan-Xiang Zhou

1002-Pos Board B104
EXTRACTING SEQUENCE-DEPENDENT INTRA-PROTEIN INTERACTION PARAMETERS FROM PHOTO-INDUCED ELECTRON TRANSFER MEASUREMENTS OF IDPS. Felicia Gibson, Andrea Soranno, Wenwei Zheng, **Sara M. Vaiana**

1003-Pos Board B105
THE AMINO ACID SEQUENCE FEATURES OF THE FG NUCLEOPORINS AFFECT THE MOVEMENT OF CARGO COMPLEX INSIDE THE NPC. **Mohaddeseh Peyro**, Mohammad Mofrad

1004-Pos Board B106
SENSITIVITY-ENHANCED DNP NMR FOR *IN SITU* STRUCTURAL BIOLOGY. **Kendra K. Frederick**

1005-Pos Board B107
THE FUNCTIONAL SIGNIFICANCE OF INTRINSICALLY DISORDERED PROTEIN REGIONS ENCODED BY THE DIABETES GENE *CLEC16A*. **Morgan Gingerich**, Xueying Liu, Michael Vincent, Bioxian Chai, Tracy Vozheiko, Gemma Pearson, Daniel Klionsky, Santiago Schenll, Soleimanpour Scott

1006-Pos Board B108
MOLECULAR MECHANISMS OF THE INTERACTION BETWEEN THE RNA-BINDING PROTEIN NAB2 AND THE NUCLEAR BASKET PROTEIN MLP1 IN MRNA QUALITY CONTROL. **Mohammad Soheilypour**, Mohaddeseh Peyro, Hengameh Shams, Stephanie Rider, Ali R. Kaazempur-Mofrad, Mohammad Mofrad

Membrane Protein Dynamics I (Boards B109 - B134)

1007-Pos Board B109
SPATIAL CONFINEMENT EFFECTS ON LIPID KINASE AND PHOSPHATASE REACTIONS ON MEMBRANE SURFACES. **Albert A. Lee**

1008-Pos Board B110
DYNAMIN PH DOMAIN INTERACTIONS WITH LIPID MEMBRANE. **Joseph A. Marte**, Dalia Hassan, Frank X. Vazquez

1009-Pos Board B111
BINDING FROM BOTH SIDES: TOLR AND FULL-LENGTH OMPA BIND AND MAINTAIN THE LOCAL STRUCTURE OF THE *E. COLI* CELL WALL. **Alister T. Boags**

1010-Pos Board B112
THE OPEN STATE OF THE BAM COMPLEX IS STABILIZED BY ITS ACCESSORY PROTEINS. **Zijian Zhang**, David Ryoo, Karl Lundquist, James Gumbart

1011-Pos Board B113 TRAVEL AWARDEE
INVESTIGATING THE ACTIVATION MECHANISM ALTERATION OF RECEPTOR TYROSINE KINASE MUTANTS. **Soyeon Kim**, ZHENFANG DU, Christine Lovly, Adam W. Smith

1012-Pos Board B114
RETINAL FLIPPING DURING RHODOPSIN ACTIVATION REVEALED BY SOLID STATE ^{2}H NMR AND QM/MM SIMULATIONS. **Andrey V. Struts**, Mikhail N. Ryazantsev, Xiaolin Xu, Trivikram R. Molugu, Suchithranga M.D.C. Perera, Charitha Guruge, Samira Faylough, Carolina Nascimento, Nasri Nesnas, Michael F. Brown

1013-Pos Board B115
UBIQUITINATION OF MHC II CHANGES DYNAMICS OF ITS RECOGNITION STRUCTURE. **Haruo Kozono**, Takashi Kawamoto, Yuko Kozono, masahiro kuramochi, Yuji C. Sasaki

1014-Pos Board B116
EXPLORING THE INTERHELICAL LANDSCAPE OF THE B-2 ADRENERGIC RECEPTOR TO IDENTIFY DRUGGABLE INTERMEDIATE STATES USING ENHANCED-SAMPLING MOLECULAR DYNAMICS AND SITE IDENTIFICATION BY LIGAND COMPETITIVE SATURATION (SILCS). **Christoffer Lind**, Deepak Deshpande, Alexander D. MacKerell

1015-Pos Board B117
STUDY OF ULTRA-FAST RHODOPSIN ACTIVATION DYNAMICS WITH MOLECULAR DYNAMICS SIMULATIONS. **Letty Salas**, Derek Mendez, José Domingo Meza-Aguilar, Suchithranga M. D. C. Perera, Abhishek Singharoy, Andrey V. Struts, Nadia A. Zatsepin, Richard A. Kirian, Thomas D. Grant, Petra Fromme, Michael F. Brown, Alan Grossfield

1016-Pos Board B118 TRAVEL AWARDEE
MOLECULAR SIMULATIONS GIVE INSIGHTS INTO THE NDM-1/MEMBRANE INTERACTION THAT CAUSES RISE OF A SUPER-BACTERIUM. **Alessio Prunotto**, Guillermo Bahr, Lisandro González, Alejandro Vila, Matteo Dal Peraro

1017-Pos Board B119
RAF-1 CYSTEINE-RICH DOMAIN (CRD) PROMOTES ACTIVE ORIENTATION AND DIMERIZATION OF KRAS4B AT THE MEMBRANE. **Hyunbum Jang**, Ruth Nussinov

1018-Pos Board B120
DYNAMIC "MOLECULAR PORTRAITS" OF PROTEINS AND CELL MEMBRANES: A COMPUTATIONAL VIEW. **Roman G. Efremov**, Anton A. Polyansky, Anton Chugunov, Nikolay A. Krylov, Dmitry Nolde, Pavel E. Volynsky, Andrey Kuznetsov, Pascal Maurice

1019-Pos Board B121
STRUCTURAL INSIGHTS INTO THE SUBTYPE-SELECTIVE ANTAGONIST BINDING TO THE M2 MUSCARINIC RECEPTOR. **Sangbae Lee**, Suno Ryoji, Maeda Shoji, Takuya Kobayashi, Brian K. Kobilka, Nagarajan Vaidehi

1020-Pos Board B122
INTERPLAY BETWEEN THE CONFORMATIONAL DYNAMICS OF A BACTERIAL ABC-TRANSPORTER AND SURROUNDING MEMBRANE MECHANICAL PROPERTIES. **Alicia Damm**, Su-Jin Paik, Ajay Kumar Mahalka, John Manzi, Daniel Levy, Patricia M. Bassereau, Maxime Dahan

1021-Pos Board B123
INTRAMEMBRANE PROTEOLYSIS BY GAMMA-SECRETASE: EFFICIENCY AS A MATTER OF SUBSTRATE FLEXIBILITY. **Philipp A. Högel**, Dieter Langosch

1022-Pos Board B124
DRUG PERMEATION ACROSS THE BACTERIAL MEMBRANE: COMBINING THEORETICAL AND EXPERIMENTAL APPROACHES. **Paula Gameiro**, Carla F. Sousa, João TS Coimbra, Pedro A. Fernandes, Maria J. Ramos

1023-Pos Board B125 TRAVEL AWARDEE
DYNAMIC ACTIN MEDIATED NANOCLUSTERING OF CD44 REGULATES ITS MESO-SCALE ORGANIZATION AT THE PLASMA MEMBRANE. **Parijat Sil**, Sangeeta Nath, Nicolas Mateos, Takahiro Fujiwara, Maria F. Garcia-Parajo, Akihiro Kusumi, Satyajit Mayor

1024-Pos Board B126 TRAVEL AWARDEE
G-PROTEIN-COUPLED RECEPTOR ACTIVATION MEDIATED BY INTERNAL HYDRATION. **Steven D.E. Fried**, Anna R. Eitel, Nipuna Weerasinghe, Carolanne E. Norris, Johnathan D. Somers, Gabrielle I. Fitzwater, Michael C. Pitman, Andrey V. Struts, Suchithranga M.D.C. Perera, Michael F. Brown

1025-Pos Board B127
DYNAMICS AND ENERGETICS OF GATING MECHANISM IN MECHANOSENSITIVE CHANNEL OF LARGE CONDUCTANCE (MSCL). **Rajitha R. Tatikonda**, Juan M. Vanegas

1026-Pos Board B128
SELECTIVITY AND SUBSTRATE TRANSLOCATION MECHANISM IN EUKARYOTIC SWEET PROTEINS: BIOINFORMATICS AND MOLECULAR DYNAMICS STUDIES. **Ankita Gupta**, Ramasubbu Sankararamakrishnan

1027-Pos Board B129
TOPOGRAPHIC MODULATION OF ACETYLCHOLINE RECEPTORS DIFFUSION DYNAMICS ON LIVE CELL MEMBRANE. **Yusheng Shen**, Chengjie Luo, Penger Tong

1028-Pos Board B130
ELECTROMIGRATION OF CELL SURFACE MACROMOLECULES DURING GALVANOTAXIS. **Anyesha Sarkar**, Brian M. Kobylkevich, David M. Graham, Mark A. Messerli

1029-Pos Board B131
ANALYSIS OF ION CHANNEL DYNAMICS BY SINGLE MOLECULE TRACKING IN LIVE CELLS. **Yeonki Hong**, Jiseong Park, Daeha Seo

1030-Pos Board B132
GATING MECHANISM OF A POTASSIUM CHANNEL, EXPERIMENTAL AND THEORETICAL STUDIES. **Charline Fagnen**, Ludovic Bannwarth, Iman Oubella, Yasmina Mhoumadi, Aline De Araujo, Eric Forest, David Parahia, Catherine Vénien-Bryan

1031-Pos Board B133
DYNAMIC COUPLING OF THE AROMATIC ROTAMER CONFORMATION WITH THE BACTERIORHODOPSIN PHOTOCYCLE AS REVEALED BY THE CHEMICAL SHIFT ASSISTED QM/MM CALCULATIONS. Sijin Chen, Xiaoyan Ding, Chao Sun, Haolin Cui, Anthony Watts, Xiao He, **Xin Zhao**

1032-Pos Board B134
EXPLORING THE HYDROPHOBIC BARRIER OF HUMAN K2P CHANNEL TWIK1 WITH STEERED MD SIMULATIONS. **Bharat Poudel**, Rajitha R. Tatikonda, Juan M. Vanegas

Transcription (Boards B135 - B146)

1033-Pos Board B135
NUCLEAR MYOSIN VI STABILIZES RNA POLYMERASE II IN TRANSCRIPTION FACTORIES. Yukti Hari Gupta, Natalia Fili, Alia dos Santos, Teng-Leong Chew, Jesse Aaron, Lin Wang, **Christopher P. Toseland**

1034-Pos Board B136
NUCLEAR MYOSIN VI REGULATES ESTROGEN RECEPTOR DRIVEN GENE EXPRESSION. **Yukti Hari Gupta**, Natalia Fili, Alia dos Santos, Teng-Leong Chew, Jesse Aaron, Lin Wang, Christopher P. Toseland

1035-Pos Board B137
DETERMINING DYNAMICS OF RNA POLYMERASE ELONGATION AND PAUSING USING NANOPORE TWEEZERS. **Ian C. Nova**, Jonathan M. Craig, Andrew H. Laszlo, Abhishek Mazumder, Henry Brinkerhoff, Ian M. Derrington, Matthew T. Noakes, Jonathan W. Mount, Jesse Huang, Jasmine Bowman, Richard H. Ebright, Jens H. Gundlach

1036-Pos Board B138
RNA ISOFORM IDENTIFICATION VIA SEQUENTIAL HYBRIDIZATION AND STRAND DISPLACEMENT BASED AMPLICATION IN THE CAENORHABDITIS ELEGANS GERMLINE. **Gable M. Wadsworth**, Harold D. Kim

1037-Pos Board B139
G-QUADRUPLEX FORMING SEQUENCE MODULATED TRANSCRIPTION. **Chun-Ying Lee**, Christina McNerney, Kevin Ma, Sua Myong

1038-Pos Board B140
TRANSCRIPTION MACHINE STUDIED IN A NUTSHELL ON T7 RNA POLYMERASE MECHANOCHEMISTRY, FIDELITY CONTROL, AND BURSTING ACTIVITY. **Jin Yu**

1039-Pos Board B141
TFIIH GENERATES A SIX-BASE-PAIR OPEN COMPLEX DURING EUKARYOTIC TRANSCRIPTION INITIATION. **Eric A. Galburt**, Eric J. Tomko, James Fishburn, Steven Hahn

1040-Pos Board B142
NUCLEAR NDP52 - A PUTATIVE TRANSCRIPTION REGULATOR. **Alia dos Santos**, Lin Wang, Christopher P. Toseland

1041-Pos Board B143 TRAVEL AWARDEE
CHARACTERIZING TRANSIENT INTERMEDIATES IN PRODUCTIVE RNAP TRANSCRIPTION INITIATION. **Claire E. Evensen**, Kate Henderson, M. Thomas Record

1042-Pos Board B144
EFFECTS OF DISCRIMINATOR CHANGES ON OPEN COMPLEX FORMATION, STABILIZATION, AND TRANSCRIPTION INITIATION. **Hao-Che Wang**

1043-Pos Board B145 TRAVEL AWARDEE
REGULATION OF MYCOBACTERIAL RNA POLYMERASE PROMOTER ESCAPE KINETICS BY TRANSCRIPTION FACTORS CARD AND RBPA. **Drake Jensen**, Ana Ruiz Manzano, Christina L. Stallings, Eric A. Galburt

1044-Pos Board B146
TRANSCRIPTION FACTOR REGULATION OF RNA POLYMERASE'S TORQUE GENERATION CAPACITY. Jie Ma, **Chuang Tan**, Xiang Gao, Robert M. Fulbright, Jeffrey W. Roberts, Michelle D. Wang

Protein-Nucleic Acid Interactions I (Boards B147 - B171)

1045-Pos Board B147
PREDICTING DIFFUSION COEFFICIENTS OF DNA-PROTEIN COMPLEXES BY CONVEX HULL MODELLING. **Miles Lee**, Quan Wang

1046-Pos Board B148
LOOPS ENHANCE TRANSCRIPTIONAL ROADBLOCKS. **Wenxuan Xu**, Yan Yan, David D. Dunlap, Laura Finzi

1047-Pos Board B149
DNA BENDING/UNBENDING RATES REVEALED FOR NONSPECIFIC ARCHITECTURAL DNA-BINDING PROTEIN YNHP6A. **Viktoriya Zvoda**, Manas K. Sarangi, Molly Nelson Holte, Nicole A. Becker, Justin P. Peters, Louis J. Maher, III, Anjum Ansari

1048-Pos Board B150
DIRECT OBSERVATION OF DNA TARGET SEARCHING AND CLEAVAGE BY CRISPR-CAS12A. Yongmoon Jeon, You Hee Choi, Yunsu Jang, Jiyoung Gu, **Cherlhyun Jeong**, Sanghwa Lee, Sangsu Bae

1049-Pos Board B151
ELECTRIC-FIELD-DRIVEN TRANSLOCATION OF SSDNA THROUGH HYDROPHOBIC NANOPORES. **Taylor Haynes**, Iain P. S. Smith, Jayne Wallace, Jemma Trick, Mark S. Sansom, Syma Khalid

1050-Pos Board B152
TIN2 IS AN ARCHITECTURAL PROTEIN STABILIZING TRF1 AT TELOMERE. **Hai Pan**, Saroj Dangi, Parminder Kaur, Pengyu Hao, Keith Weninger, Robert Riehn, Patricia Opresko, Hong Wang

1051-Pos Board B153
SOLUTION DYNAMICS IN HISTONE-BASED ARCHAEAL CHROMATIN. **Samuel Bowerman**, Karolin Luger, Jeff Wereszczynski

1052-Pos Board B154
MUTATION OF THE DEAD-BOX ATPASE PRP5 IMPACTS DYNAMICS OF THE RECA-LIKE DOMAINS AND BRANCH SITE USAGE DURING PRE-MRNA SPLICING. David H. Beier, Tucker J. Carrocci, **Aaron A. Hoskins**

1053-Pos Board B155
BRIDGE HELIX OF CAS9 IMPACTS TARGET DNA CLEAVAGE. **Rakhi Rajan**

1054-Pos Board B156
MOLECULAR DYNAMICS SIMULATIONS OF RNA-RECOGNITION MOTIF COMPLEXED WITH CAC-CONTAINING RNA. **Shan Chang**, Hang Shi, Ren Kong

1055-Pos Board B157
INVESTIGATING THE EFFECT OF VARIOUS FMRP ISOFORMS ON MICRORNA BIOGENESIS. **Joshua A. Imperatore**, John Roth, Mihaela Rita Mihailescu

1056-Pos Board B158
MISMATCH RECOGNITION BY MSH2-MSH6: ROLE OF STRUCTURE AND DYNAMICS. **Zane Lombardo**, Yan Li, Meera Joshi, Manju M. Hingorani, Ishita Mukerji

1057-Pos Board B159
MOLECULAR SIMULATIONS DISCERN THE COOPERATIVE BINDING OF HUMAN BRAHMA-RELATED GENE 1 BROMODOMAIN AND AT-HOOK REGIONS IN DNA BINDING. **Stefania Evoli**, Jeffery M. Wereszczynski

1058-Pos Board B160
STUDYING NUCLEOSOME ASSEMBLY VIA FRET. **Caitlin Aguirre**, Loiselle Gonzalez Baez, Elizabeth Jamieson, Megan E. Nunez

1059-Pos Board B161
WILD-TYPE FUS RESCUES ALTERED RNA BINDING OF ALS-LINKED FUS MUTANT. **Kevin Rhine**, Jaya Sarkar, Amirhossein Ghanbari Niaki, Xinyi Cai, Gabby Vidaurre, Sua Myong

1060-Pos Board B162
CHARACTERIZING THE BINDING OF THE HIV-1 NC PROTEIN TO HAIRPINS FORMED BY CAG REPEATS. **Melanie Dillon**, Yustinah Ndambakuwa, Henrietta Ehirim, Catherine B. Volle

1061-Pos Board B163
DNA SEQUENCE AND HISTONE CORE COMPOSITION CONTROL THE UNWRAPPING OF DNA FROM NUCLEOSOME CORE PARTICLES. **Alex Mauney**, Joshua Tokuda, Yujie Chen, Lois Pollack

1062-Pos Board B164
OBSERVATION OF ALLOSTERIC SIGNALING THROUGH DNA WITH SINGLE-MOLECULE FRET AND CRYO-EM. **Gabriel Rosenblum**, Nadav Elad, Felix Wiggers, Hagen Hofmann

1063-Pos Board B165
STRUCTURAL AND FUNCTIONAL INSIGHTS INTO CRISPR/CAS9 CATALYTIC ACTIVATION AND SPECIFICITY ENHANCEMENT. **Zhicheng Zuo**, Jin Liu

1064-Pos Board B166
A VERSATILE METHOD TO QUANTIFY DNA-PROTEIN INTERACTIONS ON NEGATIVELY SUPERCOILED DNA. **Graeme A. King**, Federica Burla, Erwin J.G Peterman, Gijs J.L Wuite

1065-Pos Board B167
ATOMIC-LEVEL CHARACTERIZATION OF AN ALLOSTERIC GENE REGULATORY SYSTEM. **Michael V. LeVine**, Stefano Piana, Maxwell Tucker, Jesus Izaguirre, David E. Shaw

1066-Pos Board B168
REGULATION OF REP HELICASE UNWINDING BY AN AUTO-INHIBITORY SUBDOMAIN. **Monika A. Makurath**, Kevin D. Whitley, Binh Nguyen, Timothy M. Lohman, Yann R. Chemla

1067-Pos Board B169
SPECIFIC AT ONE SIDE WHILE UNSPECIFIC AT THE OTHER: THE INTERACTION OF A BLOOD PROTEIN WITH EXTRACELLULAR DNA. **Angelica Sandoval-Perez**, Camilo A. Aponte-Santamaria

1068-Pos Board B170
EXPANDING RNA-DNA HYBRID AFFINITY BY MULTIMERIZATION OF A CONSERVED FOLD. **Alex Stopar**, Rhonda Nicholson, Matteo Castronovo, Allen W. Nicholson

1069-Pos Board B171
ELUCIDATING THE MOLECULAR BINDING MECHANISM OF THE TATA-BINDING PROTEIN USING PIE-PIFE. **Evelyn Ploetz**, Anders Barth, Lena Voith von Voithenberg, Ganesh Agam, Don C. Lamb

Membrane Dynamics I (Boards B172 - B189)

1070-Pos Board B172 TRAVEL AWARDEE
ACTIVE TRANSPORT OF MEMBRANE COMPONENTS BY DYNAMIC MIN PROTEIN WAVES. **Yu-Ling Shih**, Ling-Ting Huang, Yu-Ming Tu, Bo-Fan Lee, Yu-Chiuan Bau, Chia Yee Hong, Hsiao-lin Lee, Yan-Ping Shih, Min-Feng Hsu, Jui-Szu Chen, Zheng-Xin Lu, Ling Chao

1071-Pos Board B173
DYNAMIC EFFECTS OF CALCIUM ON MEMBRANES CONTAINING PHOSPHATIDYLSERINE. **Mason L. Valentine**, Alfredo E. Cardenas, Ron Elber, Carlos R. Baiz

1072-Pos Board B174
OPTICAL DYES TO MONITOR TENSION AND GROWTH IN MODEL MEMBRANES. **Margrethe Boyd**

1073-Pos Board B175
SPATIAL RELATIONSHIP AND FUNCTIONAL RELEVANCE OF THREE LIPID DOMAIN POPULATIONS AT THE ERYTHROCYTE SURFACE. **Louise Conrard**, Amaury Stommen, Hélène Pollet, Donatienne Tyteca

1074-Pos Board B176
PROPERTIES OF NEUROTOXICANT ANTIDOTE TRANSPORT ACROSS THE BLOOD-BRAIN BARRIER. **Christian Jorgensen**, Martin B. Ulmschneider, Peter C. Searson

1075-Pos Board B177
SPECTROSCOPIC AND MICROSCOPIC APPROACH TO MONITOR THE CHANGES IN BILAYER RIGIDITY DURING CELL PENETRATING PEPTIDE INDUCED SELF-REPRODUCTION OF PHOSPHOLIPID VESICLES. **Pavel Banerjee**, Siddhartha Pal, Niloy Kundu, Dipankar Mondal, Nilmoni Sarkar

1076-Pos Board B178
EMERGENT SHAPE SENSING OF DYNAMIC MEMBRANES. **Brian A. Camley**

1077-Pos Board B179
TUNING OF MEMBRANE SPHINGOLIPID CONTENT INFLUENCES THE LINKS OF OUTER-LEAFLET MEMBRANE LIPID DYNAMICS TO CHOLESTEROL AND CYTOSKELETON. **Anjali Gupta**, Federico Torta, Markus Wenk, Thorsten Wohland

1078-Pos Board B180
CALCULATING ETHANOL PERMEABILITY OF MEMBRANES THROUGH MOLECULAR DYNAMIC SIMULATIONS. **Mahdi Ghorbani**, Eric Wang, Jeffery B. Klauda

1079-Pos Board B181 TRAVEL AWARDEE
EFFECT OF CHITOSAN ON MECHANICAL PROPERTIES OF LIPID BILAYERS USING MICROPIPETTE ASPIRATION. **Honey Priya James**, Sameer R. Jadhav

1080-Pos Board B182
DESTRUCTION OF NEMATODE OVA IN WASTEWATER USING ELECTROPORATION. **Michael Dryzer**, Caitlin Niven, Scott Wolter, Christopher Arena, Edgard Ngaboyamahina, Charles Parker, Brian Stoner

1081-Pos Board B183
LIPID NANOTUBES: A POSSIBLE ROUTE TO PROTOCELL FORMATION AND GROWTH. **Elif S. Koksal**, Susanne Liese, Ilayda Kantarci, Ragni Olsson, Andreas Carlson, Irep Gozen

1082-Pos Board B184
MALARIA PARASITES BREAK AND DEGRADE TWO MEMBRANES TO EGRESS FROM HUMAN ERYTHROCYTE. **Svetlana E. Glushakova**, Josh Beck, Matthias Garten, Brad Busse, Armiyaw S. Nasamu, Tatyana Tenkova-Heuser, John E. Heuser, Daniel E. Goldberg, Joshua Zimmerberg

1083-Pos Board B185
NOVEL METHOD OF ANALYZING LIPID BILAYER ELASTIC MODULI USING MEMBRANE FLUCTUATIONS. **Muhammed F. Erguder**, Markus Deserno

1084-Pos Board B186
A NEW COMPUTATIONAL METHOD FOR MEMBRANE COMPRESSIBILITY: BILAYER MECHANICAL THICKNESS REVISITED. **Milka Doktorova**, Michael V. LeVine, George Khelashvili, Harel Weinstein

1085-Pos Board B187
DIFFERENTIAL ACTIN BINDING AFFINITY LEADS TO PROTEIN SORTING IN A RECONSTITUTED ACTIVE COMPOSITE LAYER. **Abrar A. Bhat**, Amit Das, Kabir Husain, Madan Rao, Darius Koester, Satyajit Mayor

1086-Pos Board B188
PATHWAYS AND MOLECULAR MECHANISMS OF MICRODOMAIN-DEPENDENT MEMBRANE TRAFFICKING. Barbara Diaz-Rohrer, Joseph Lorent, Ivan Castello-Serrano, Kandice Levental, **Ilya Levental**

1087-Pos Board B189
HOPANOIDS, THE BIG 'SMALL THINGS' IN OLIGOMERIZATION OF PROTEORHODOPSIN. **Eric Sefah**, Blake Mertz

Protein-Lipid Interactions: Channels (Boards B190 - B211)

1088-Pos Board B190
STRUCTURE-BASED ESTIMATE OF CONNEXIN 26 CONDUCTANCE. **Nathan H. Zimmerberg**, Satyan Sharma, Manfred Lindau

1089-Pos Board B191
INTERFACIAL EFFECTS OF ION CHANNELS IN LIPID MEMBRANES: MEAN-FIELD COMPUTATION FROM 3D ATOMIC STRUCTURES VERSUS ANALYTICAL ESTIMATES. Marcel Aguilella-Arzo, Antonio Alcaraz, Maria Lidon Lopez-Peris, Maria Queralt-Martin, **Vicente M. Aguilella**

1090-Pos Board B192
PROBING THE MECHANOSENSING FEATURES OF MAMMALIAN PIEZO CHANNELS AND PLANT OSCA CHANNELS VIA MOLECULAR DYNAMICS SIMULATIONS. **Che Chun (Alex) Tsui**, Kei Saotome, Sebastian Jojoa Cruz, Andrew B. Ward, Mark S. P. Sansom

1091-Pos Board B193
DRUG REGULATION OF ION CHANNEL FUNCTION INVOLVES BOTH DIRECT AND BILAYER-MEDIATED MECHANISMS. **Radda Rusinova**, Olaf Andersen

1092-Pos Board B194
PREDICTING THE PROMISCUOUS EFFECT OF AMPHIPATHIC DRUGS ON GRAMICIDIN CHANNEL STABILITY WITH SIMULATIONS AND EXPERIMENTS. **Delin Sun Sun**

1093-Pos Board B195
PROTEIN-LIPID INTERFACES DRIVE DKTX-MEDIATED TRPV1 CHANNEL ACTIVATION. **Debayan Sarkar**, Yashaswi Singh, Jeet Kalia

1094-Pos Board B196
EFFECTS OF MEMBRANE PROTEIN NACHRS ON PHASE SEPARATED MODEL MEMBRANES. **Jigesh Patel**

1095-Pos Board B197
BOUNDARY LIPIDS OF THE NICOTINIC ACETYLCHOLINE RECEPTOR IN QUASI-NATIVE MEMBRANES. **Liam M. Sharp**, Reza Salari, Grace Brannigan

1096-Pos Board B198
EFFECT OF LATE ENDOSOMAL DOBMP LIPID AND TRADITIONAL MODEL LIPIDS OF ELECTROPHYSIOLOGY ON THE ANTHRAX TOXIN CHANNEL ACTIVITY. Nnanya Kalu, Yoav Atsmon-Raz, Sanaz Momben Abolfath, Laura Lucas, Clare Kenney, Stephen H Leppla, D. Peter Tieleman, **Ekaterina M. Nestorovich**

1097-Pos Board B199
NOISE PROPERTIES OF ION CHANNELS FORMED BY PESTIVIRUS VIROPORIN P7. **Antonio Alcaraz**, Vicente M. Aguilella, Eneko Largo, Jose L. Nieva

1098-Pos Board B200
REGULATION OF KCSA BY ANIONIC PHOSPHOLIPIDS. **Carmen Domene**, Victoria Oakes, Simone Furini

1099-Pos Board B201
ELUCIDATING CONFORMATIONAL CHANGES UNDERLYING THE CONVERSION OF TMEM16A MUTANTS FROM ANION CHANNELS TO SCRAMBLASES. **Archit K. Vasan**, Tao Jiang, H Criss Hartzell, Emad Tajkhorshid

1100-Pos Board B202
INDUCING CHEMICAL CONCENTRATION GRADIENTS TO INVESTIGATE GAS PERMEABILITY OF RH-PROTEIN CONTAINING MEMBRANES. **Eric Shinn**, Emad Tajkhorshid

1101-Pos Board B203
ION TRANSPORT THROUGH LARGE-DIAMETER DNA ORIGAMI NANOTUBE CHANNELS ACROSS SYNTHETIC MEMBRANES. **Naresh N. Dhanasekar**, Rebecca B. Schulman

1102-Pos Board B204
EFFECTS OF LIPID AND DETERGENT ENVIRONMENTS ON CYSTIC FIBROSIS TRANSMEMBRANE CONDUCTANCE REGULATOR (CFTR) FUNCTION AND STRUCTURE. **Kerry M. Strickland**, Brandon B. Stauffer, Yusuf M. Uddin, Barry R. Imhoff, Ingeborg Schmidt-Krey, Nael A. McCarty

1103-Pos Board B205
ALLOSTERIC MODULATION OF CA^{2+}-ACTIVATED CL^-CHANNLES TMEM16A BY PIP_2 AND CAMKII. **Woori Ko**, Seung-Ryoung Jung, Cheon-Gyu Park, Joo Hyun Nam, Bertil Hille, Byung C. Suh

1104-Pos Board B206 TRAVEL AWARDEE
PIP_2 POTENTIATES THE CA^{2+}-ACTIVATED CL^- CHANNEL TMEM16A IN *XENOPUS LAEVIS* OOCYTES. **Maiwase Tembo**, Rachel E. Bainbridge, Anne E. Carlson

1105-Pos Board B207
DETERMINING THE MECHANISM OF SMASE-MEDIATED INHIBITION OF CFTR CURRENT IN PRIMARY BRONCHIAL EPITHELIAL CELLS. **Kirsten A. Cottrill**, Brandon B. Stauffer, Nael A. McCarty

1106-Pos Board B208 TRAVEL AWARDEE
IMPLICATION OF CHOLESTEROL IN REGULATING THE MEMBRANE-INTERACTION MECHANISM OF *VIBRIO CHOLERAE* CYTOLYSIN, A BETA-BARREL PORE-FORMING TOXIN. **Reema Kathuria**, Kausik Chattopadhyay

1107-Pos Board B209
DIFFERENTIAL STATE-DEPENDENT CROSSLINKING OF AZI-CHOLESTEROL WITH HUMAN A1 GLYCINE RECEPTOR USING MASS SPECTROMETRY. **Nicholas A. Ferraro**, Michael Cascio

1108-Pos Board B210
HIGH CHOLESTEROL DIET UP-REGULATES ATRIAL AND NEURONAL GIRK CHANNEL ACTIVITY. Anna N. Bukiya, **Avia Rosenhouse-Dantsker**

1109-Pos Board B211
PHOSPHOLIPID SCRAMBLING ACTIVITY BY TMEM16E/ANO5: OPPOSITE EFFECTS OF MUTATIONS CAUSING BONE DYSPLASIA AND MUSCULAR DYSTROPHY. Eleonora Di Zanni, Antonella Gradogna, Cristiana Picco, Joachim Scholz-Starke, **Anna Boccaccio**

Membrane Structure II (Boards B212 - B232)

1110-Pos Board B212 TRAVEL AWARDEE
SINGLE-LIPID SORTING AND DYNAMICS AT MEMBRANE CURVATURE SITES: THE EFFECTS OF FLUORESCENCE LABELING, COMPOSITION, PHASE, AND TEMPERATURE. **Xinxin Woodward**, Christopher V. Kelly

1111-Pos Board B213
PREDICTING SPECTRAL PROPERTIES OF POLARITY SENSITIVE DYES WITH QM/MM SIMULATION. **Swapnil Baral**, Lars Gundlach, Bjorn Baumeier, Edward R. Lyman

1112-Pos Board B214
MODELING THE INTERPLAY BETWEEN CURVATURE-INDUCING PROTEINS AND MEMBRANE GEOMETRY IN ORGANELLE STRUCTURES: CATENOID-LIKE NECKS AND HELICOIDAL RAMPS. **Morgan Chabanon**, Padmini Rangamani

1113-Pos Board B215
MECHANISTIC STUDIES OF MEMBRANE REMODELING IN RECEPTOR MEDIATED ENDOCYTOSIS. **Samsuzzoha Mondal**, Sankalp Shukla, Tobias Baumgart

1114-Pos Board B216
DRIVING SPONTANEOUS MEMBRANE CURVATURE BY TUNING CARDIOLIPIN CONCENTRATION AND SPATIAL DISTRIBUTION IN MODEL MITOCHONDRIAL MEMBRANES. **Moeen Meigooni**, Emad Tajkhorshid

1115-Pos Board B217
LIPID PHASE ASYMMETRY IN MAMMALIAN BILAYER MEMBRANES. **Joseph H. Lorent**, Lakshmi Ganesan, Ilya Levental

1116-Pos Board B218
STRUCTURE OF GEL PHASE DPPC DETERMINED BY X-RAY DIFFRACTION. **John F. Nagle**, Pierre Cognet, Fernando G. Dupuy, Stephanie A. Tristram-Nagle

1117-Pos Board B219
THE INFLUENCE OF PERIODIC SIZE EFFECTS AND MEMBRANE UNDULATION ON PHASE SEPARATION IN A DPPC/DOPC/CHOL COARSE GRAIN MARTINI SYSTEM. **Timothy S. Carpenter**, Helgi I. Ingolfsson, Cesar Lopez, Chris Neale, Sandrasegaram Gnanakaran, Felice C. Lightstone

1118-Pos Board B220
RIPPLE AND GEL PHASES OF SATURATED PHOSPHOCHOLINE BILAYERS INVESTIGATED WITH SIMULATIONS. Pouyan Khakbaz, **Jeffery B. Klauda**

1119-Pos Board B221
VITAMIN E PROMOTES THE INVERSE HEXAGONAL PHASE PROVIDING INSIGHTS ON LIPID PACKING STRESSES: STUDIES BY SAXS AND ^{2}H NMR. **Andres T. Cavazos**, Paul E. Harper, Jacob J. Kinnun, Horia I. Petrache, Stephen R. Wassall

1120-Pos Board B222
PH-TUNABLE FLOATING LIPID BILAYERS. **Dennis J. Michalak**, Mathias Lösche, David Hoogerheide

1121-Pos Board B223
MODEL FOR STABILITY OF LIPID DROPLET CONNECTION TO THE MEMBRANE OF ENDOPLASMIC RETICULUM. **Gonen Golani**, Michael M. Kozlov

1122-Pos Board B224
DEWETTING-INDUCED FORMATION OF BACTERIAL MODEL MEMBRANES USING SUBMICRON SHELL DOUBLE EMULSIONS. **Sepehr Maktabi**, Noah Malmstadt, Jeffrey Schertzer, Paul Chiarot

1123-Pos Board B225 TRAVEL AWARDEE
NANOTUBES TRANSFORM INTO DOUBLE-MEMBRANE SHEETS AT THE INTERFACE BETWEEN TWO AQUEOUS POLYMER SOLUTIONS. **Ziliang Zhao**, Roland Knorr, Jaime Agudo-Canalejo, Tom Robinson, Reinhard Lipowsky, Rumiana Dimova

1124-Pos Board B226
HIGH YIELD ASSEMBLY OF GIANT UNILAMELLAR VESICLES USING CELLULOSE PAPER AND COTTON FABRIC. **Joseph Pazzi**

1125-Pos Board B227
REGULATION OF HORIZONTAL GENE TRANSFER VIA BACTERIAL EXTRACELLULAR VESICLES. **James Boedicker**, Frances Tran

1126-Pos Board B228
FATTY ACID COMPOSITIONS OF CERAMIDES AND SPHINGOMYELINS IN MAMMALIAN TISSUES AND CULTURED CELLS. **Felix M. Goni**, Marco M. Manni, Jesus Sot, Enara Arretxe, Ruben Gil-Redondo, Juan Falcon, David Balgoma, Cristina Alonso, Alicia Alonso

1127-Pos Board B229
IMAGING ORGANIZATION IN THE*ESCHERICHIA COLI*OUTER MEMBRANE. **Sandip Kumar**, Nicholas G. Housden, Patrick Inns, Colin Kleanthous

1128-Pos Board B230
BIOPHYSICAL CHARACTERIZATION OF THE PLASMA MEMBRANE IN LIVE *CRYPTOCOCCUS NEOFORMANS*. **Amid Vahedi**, Amir M. Farnoud

1129-Pos Board B231 TRAVEL AWARDEE
A NOVEL NITRONE-TROLOX CONJUGATE INHIBITS MEMBRANE LIPID OXIDATION THROUGH SYNERGISTIC ANTIOXIDANT EFFECTS. **Larissa Socrier**, Marie Rosselin, Ana Milena Gomez Giraldo, Benjamin Chantemargue, Florent Di Meo, Patrick Trouillas, Grégory Durand, Sandrine Morandat

1130-Pos Board B232
A ROLE FOR LIPID-LIPID INTERACTIONS IN VITAMIN E'S FUNCTION AS A MEMBRANE ANTIOXIDANT. **Samuel W. Canner**, Fangqiang Zhu, Scott E. Feller, Stephen R. Wassall

Intracellular Transport (Boards B233 - B239)

1131-Pos Board B233
ANOMALOUS DIFFUSION OF ENDOPLASMIC RETICULUM CONSTITUENTS. **Konstantin Speckner**, Lorenz Stadler, Matthias Weiss

1132-Pos Board B234
TRANSPORT MODES OF VIRAL NUCLEOPROTEINS IN LIVE CELLS. **George M. Holzwarth**, Lucas Tommervik, Arnav Bhandari, David Ornelles, Douglas Lyles

1133-Pos Board B235
THE ROLE OF GLYCOGEN SYNTHASE KINASE 3 (GSK3) IN REGULATING INTRACELLULAR TRANSPORT. **Ibtissem Nabti**, George T. Shubeita

1134-Pos Board B236
INVESTIGATING THE INTERPLAY BETWEEN PIKFYVE/PI(3,5)P2 AND CLC-7 IN LYSOSOMAL ACIDIFICATION AND TRAFFIC. **Xavier Leray**, Anowarul Amin, Mary Weston, Joseph A. Mindell

1135-Pos Board B237
THE ROLE OF THE CHLORIDE TRANSPORTER CLC-7 IN ACIDIFICATION IN MOUSE LIVER LYSOSOMES. **Anowarul Amin**, Joseph A. Mindell

1136-Pos Board B238
SNARE PRIMING INHIBITION VIA PHOSPHATIDIC ACID INDUCED SEC18 CONFORMATIONAL CHANGES AND COMPETITIVE SMALL MOLECULE BINDING TO SEC18. **Andres S. Arango**, Robert P. Sparks, Matthew L. Starr, Zhiyu Zhao, Muyun Lihan, Rutilio Fratti, Emad Tajkhorshid

1137-Pos Board B239
EVIDENCE FOR ATP INTERACTION WITH PHOSPHATIDYLCHOLINE BILAYERS. **Alvaro Garcia**, Ronald J. Clarke

Cardiac Smooth and Skeletal Muscle Electrophysiology II (Boards B240 - B252)

1138-Pos Board B240
COUPLING OF CALCIUM- AND MEMBRANE CLOCKS IGNITES DE NOVO SPONTANEOUS ACTION POTENTIAL IN DORMANT GUINEA PIG SINOATRIAL NODAL CELLS VIA CAMP-PKA SIGNALING. **Kenta Tsutsui**, Oliver Monfredi, Mary Kim, Ashley Wirth, Cristina Florio, Annie Yang, Dongmei Yang, Bruce Ziman, Victor A. Maltsev, Edward G. Lakatta

1139-Pos Board B241
ADENOSINE DECREASES SINOATRIAL NODE CELL FIRING RATE BY UNCOUPLING ITS MEMBRANE AND CALCIUM CLOCKS. **Ashley Wirth**

1140-Pos Board B242
MECHANISM FOR CAMP OVERSHOOT IN VENTRICULAR MYOCYTES FOLLOWING B1-ADRENERGIC STIMULATION. **Emily E. Meyer**, Timothy J. Lewis, Colleen E. Clancy

1141-Pos Board B243
RHYTHM AND RATE OF ACTION POTENTIAL FIRING OF SINGLE CARDIAC PACEMAKER CELLS EMERGE FROM CONCORDANT BEAT TO BEAT VARIABILITY OF COUPLED CALCIUM AND MEMBRANE POTENTIAL FUNCTIONS. **Dongmei Yang**, Alexey E. Lyashkov, Christopher H. Morrell, Ihor Zahanich, Yael Yaniv, Tatiana M. Vinogradova, Bruce D. Ziman, Edward G. Lakatta

1142-Pos Board B244
THE PERIODICITY OF A CA^{2+} CLOCK INTRINSIC TO INDIVIDUAL CARDIAC SINOATRIAL NODAL PACEMAKER CELLS UNIVERSALLY SCALES TO BODY MASS FROM MICE TO HUMANS. **Syevda Tagirova**, Kenta Tsutsui, Dongmei Yang, Bruce Ziman, Yael Yaniv, Edward G. Lakatta

1143-Pos Board B245
COMBINING SYSTEMS PHARMACOLOGY MODELING WITH MACHINE LEARNING TO IDENTIFY SUB-POPULATIONS AT RISK OF ARRHYTHMIA. **Meera Varshneya**, Xueyan Mei, Eric A. Sobie

1144-Pos Board B246
3-WEEK-OLD RABBIT CARDIOMYOCYTES (3WRBCM): A NOVEL CELLULAR MODEL FOR STUDYING CARDIAC EXCITATION. **Anatoli Y. Kabakov**, Karni Moshal, YiChun Lu, Karim Roder, Turan Nilufer, Weiyan Li, Kevin Murphy, Dmitry Terentyev, Gideon Koren

1145-Pos Board B247
A COMPARATIVE ANALYSIS OF PARAMETER ESTIMATION STRATEGIES FOR MATHEMATICAL MODELING OF ION CHANNEL GATING. **Chiara Campana**, Eric A. Sobie

1146-Pos Board B248
THE EFFECTS OF FREQUENCY OF VOLUNTARY EXERCISE ON CARDIAC FUNCTION IN DILATED CARDIOMYOPATHY MODEL MICE. **Masami Sugihara**, Ryo Kakigi, Takashi Murayama, Takashi Miida, Takashi Sakurai, Sachio Morimoto, Nagomi Kurebayashi

1147-Pos Board B249
HIGH RESOLUTION IMAGING AND HISTOPATHOLOGICAL CHARACTERIZATION OF MYOCARDIAL INFARCTION. Peter Lin, Jared Westreich, Mengyuan Li, Adam Gribble, Susan Newbigging, Alex Vitkin, **Mihaela Pop**

1148-Pos Board B250 TRAVEL AWARDEE
SINUS BRADYCARDIA DUE TO ELECTROLYTE CHANGES AS A POTENTIAL PATHOMECHANISM OF SUDDEN CARDIAC DEATH IN HEMODIALYSIS PATIENTS. **Axel Loewe**, Yannick Lutz, Alan Fabbri, Stefano Severi

1149-Pos Board B251
EFFECTS OF VARYING TRANSVERSE AND AXIAL TUBULES IN A THREE-DIMENSIONAL MODEL OF CALCIUM SIGNALING IN THE HUMAN ATRIAL MYOCYTE. **Xianwei Zhang**, Haibo Ni, Stefano Morotti, Daisuke Sato, Eleonora Grandi

1150-Pos Board B252 TRAVEL AWARDEE
DISRUPTION OF CAVEOLAR MICRODOMAINS CREATES "HOT SPOTS" FOR ATRIAL ECTOPY AND ARRYTHMOGENESIS IN HEART FAILURE MICE. **Di Lang**, Leonid Tyan, Aleah Warden, Zachary D. Piro, Rylie Lodin, Evi Lim, Ashley Irwin, Alexey V. Glukhov

Membrane Receptors and Signal Transduction I (Boards B253 - B269)

1151-Pos Board B253
MET RECEPTOR TYROSINE KINASE ACTIVATION STUDIED AT THE SINGLE-MOLECULE LEVEL. **Marina S. Dietz**, Marie-Lena I.E. Harwardt, Thorsten Wohland, Hartmut H. Niemann, Mike Heilemann

1152-Pos Board B254 TRAVEL AWARDEE
SPATIOTEMPORAL DYNAMICS OF RON AND EGFR CROSSTALK AT THE PLASMA MEMBRANE. **Justine Keth**, Carolina Franco Nitta, Elton D. Jhamba, Ellen W. Hatch, Mara P. Steinkamp, Bridget S. Wilson, Diane S. Lidke

1153-Pos Board B255
PROBING THE INTERACTION BETWEEN RECEPTOR TYROSINE KINASES AND TRANSMEMBRANE ADHESION PROTEINS. **Taylor P. Light**, Deborah Leckband, Kalina Hristova

1154-Pos Board B256
RESPONSE OF FGFR1 TO DIFFERENT LIGANDS. **Kelly Karl**

1155-Pos Board B257
MECHANISM OF EPHA2 DIMERIZATION IN RESPONSE TO MONOMERIC LIGANDS. **Elmer A. Zapata-Mercado**, Randall Rainwater, Elena B. Pasquale, Kalina Hristova

1156-Pos Board B258
INVESTIGATING THE ROLE OF THE TRANSMEMBRANE HELIX OF EPHA2 IN SIGNAL TRANSDUCTION ACROSS THE PLASMA MEMBRANE. **Daniel Wirth**, Kalina Hristova, Elena Pasquale

1157-Pos Board B259
THERMODYNAMICS AND KINETICS OF THE DIVALENT-MONOVALENT CATION COMPETITION FOR BINDING SITES AT THE μ-OPIOID RECEPTOR. **Xiaohu Hu**, Davide Provasi, Marta Filizola

1158-Pos Board B260
DETECTING INTRAMOLECULAR DYNAMICS OF $GPCR_s$ USING DIFFRACTED X-RAY BLINKING TECHNIQUE. **Kazuhiro Mio**, Masaki Ishihara, Shoko Fujimura, Masahiro Kuramochi, Yuji C. Sasaki

1159-Pos Board B261
INTER-DOMAIN INTERACTIONS AND ALLOSTERIC MODULATION OF METABOTROPIC GLUTAMATE RECEPTORS. Vanessa Gutzeit, Jordana Thibado, **Josh T. Levitz**

1160-Pos Board B262
CONFORMATIONAL FREE ENERGIES OF METABOTROPIC GLUTAMATE RECEPTOR LIGAND-BINDING DOMAINS. **Tyler J. Wied**

1161-Pos Board B263 TRAVEL AWARDEE
MECHANISMS OF G PROTEIN-SELECTIVITY IN MUSCARINIC ACETYLCHOLINE RECEPTOR FAMILY. **Luis Santiago**, Ravinder Abrol

1162-Pos Board B264
THE ROLE OF PROTEIN PHOSPHATASE 2A IN THE RE-SENSITIZATION OF MELANOPSIN DURING CONTINUED LIGHT STIMULATION. **Juan C. Valdez-Lopez**, Meheret Gebreeziabher, Jair Flores, Olanike Awotunde, Thomas Burnett, Adam Byerly, Phyllis R. Robinson

1163-Pos Board B265
MODULATION OF MU-OPIOID RECEPTOR SIGNALING BY CANNABINOID CB1 RECEPTOR THROUGH HETEROMERIZATION, A NOVEL ANALGESIC TARGET. **Guoqing Xiang**, Lia Baki, Takeharu Kawano, Diomedes Logothetis

1164-Pos Board B266
CANNABINOID RECEPTOR CB2 OLIGOMERIZATION IN A LIPID MATRIX. Alexei Yeliseev, Jonathan D. Nickels, Kirk G. Hines, Lioudmila Zoubak, Walter E. Teague, Jr., Diane L. Lynch, Dow P. Hurst, Kevin L. Weiss, John Katsaras, Patricia H. Reggio, **Klaus Gawrisch**

1165-Pos Board B267
THE INTERPLAY OF STRUCTURAL AND CELLULAR BIOPHYSICS CONTROLS THE CLUSTERING OF MULTIVALENT SIGNALING MOLECULES: THE NEPHRIN-NCK-NWASP SYSTEM. **Aniruddha Chattaraj**, Leslie M. Loew

1166-Pos Board B268
ALLOSTERISM IN OLIGOMERIC RECEPTOR MODELS: CYCLE BASES OF REDUCED GRAPH POWERS PROVIDE A THEORETICAL FRAMEWORK FOR CONFORMATIONAL COUPLING. **Greg Conradi Smith**

1167-Pos Board B269
QUANTIFICATION OF SURFACE RECEPTOR-ACTIN CORTEX INTERPLAY VIA TWO-COLOR HIGH RESOLUTION IMAGING. **Aparajita Dasgupta**, Deryl Tschoerner, Bruno Da Rocha-Azevedo, Khuloud Jaqaman

Calcium Signaling (Boards B270 - B294)

1168-Pos Board B270
THE ROLE OF PHOSPHOFRUCTOKINASE-M (PFKM) IN OSCILLATORY GLYCOLYSIS AND INSULIN SECRETION IN PANCREATIC BETA CELLS. **Vishal S. Parekh**, Jim Ren, Leslie S. Satin

1169-Pos Board B271
BIPHASIC CA^{2+} REGULATION OF SK CHANNELS IN VENTRICULAR CARDIOMYOCYTES MAXIMIZES THEIR CONDUCTANCE DURING A LATE PHASE OF THE ACTION POTENTIAL. **Peter Bronk**, Iuliia Polina, Radmila Terentyeva, Shanna Hamilton, Dmitry Terentyev

1170-Pos Board B272
COMPUTATIONAL MODELING OF PURINERGIC RECEPTOR ACTIVATION IN MICROGLIA. **Peter M. Kekenes-Huskey**, Byeongjae Chun, Darin Vaughan

1171-Pos Board B273 TRAVEL AWARDEE
THE ROLE OF DOPAMINE IN PANCREATIC A-CELLS CALCIUM HETEROGENEITY AND SYNCHRONIZATION MEASURED BY LIGHT-SHEET MICROSCOPY. **Zeno Lavagnino**, David W. Piston

1172-Pos Board B274
CARDIAC STORE OPERATED CALCIUM ENTRY (SOCE) IS COMPARTMENTALIZED AT INTERCALATED DISKS AND LINKED TO CATECHOLAMINERGIC POLYMORPHIC VENTRICULAR TACHYCARDIA (CPVT). **Ingrid M. Bonilla Mercado**, Andriy Belevych, Stephen Baine, Tom Bodnar, Bin Liu, Przemyslaw Radwanski, Rengansayee Veeraraghavan, Pompeo Volpe, Silvia Priori, Noah Weisleder, Sandor Gyorke

1173-Pos Board B275
DIURNAL PROPERTIES OF VOLTAGE-GATED CALCIUM CURRENTS IN SCN. Beth McNally, **Andrea Meredith**

1174-Pos Board B276
ROLE OF ORAI1 AND STORE OPERATED CALCIUM ENTRY (SOCE) IN LIVER: EFFECTS ON HORMONE-INDUCED CALCIUM SIGNALING AND GLUCOSE METABOLISM. **Gary S. Bird**, Diane D'Agostin, Pooja Desai, James W. Putney Jr.

1175-Pos Board B277
FUNCTIONAL CONNECTOME OF THE MECHANICALLY LOADED CARDIOMYOCYTE I: IDENTIFYING INVOLVED SUBSYSTEMS. **Zana A. Coulibaly**, Leighton Izu, Ye Chen-Izu, Zhong Jian, Rafael Shimkunas

1176-Pos Board B278
CRISPR/CAS9 ENGINEERED Q3925E-RYR2 MUTATION IN HUMAN INDUCED PLURIPOTENT STEM CELLS IMPAIRS CAFFEINE TRIGGERED CA^{2+} RELEASE. Xiaohua Zhang, Hua Wei, Naohiro Yamaguchi, **Martin Morad**

1177-Pos Board B279
MYOCARDIAL RAD DELETION MODULATES L-TYPE CALCIUM CHANNEL CURRENT. **Brooke Ahern**, Mihir Shah, Andrea Sebastian, Douglas A. Andres, Jonathan Satin

1178-Pos Board B280
MODELING THE IMPACT OF SPINE APPARATUS ON SIGNALING AND REGULATION IN REALISTIC DENDRITIC SPINE GEOMETRIES. Justin G. Laughlin, **Christopher T. Lee**, J. Andrew McCammon, Rommie E. Amaro, Michael Holst, Padmini Rangamani

1179-Pos Board B281
THE ROLE OF S-ACYLATION IN STORE OPERATED CALCIUM ENTRY. **Savannah J. West**, Qiaochu Wang, Michael X. Zhu, Askar M. Akimzhanov, Darren Boehning

1180-Pos Board B282
INHIBITION OF CA^{2+} INFLUX BY SARAF AND PANCREATITIS. Aran Son, Shmuel Muallem, **Malini Ahuja**

1181-Pos Board B283
CA^{2+} DIFFUSION IN THE LARGE PEPTIDERGIC NERVE TERMINALS OF THE POSTERIOR PITUITARY. **Shane M. McMahon**, Meyer B. Jackson

1182-Pos Board B284
MITOCHONDRIAL CALCIUM SIGNALING IN HEART. **Andrew P. Wescott**, Joseph P. Kao, W. Jonathan Lederer, Liron Boyman

1183-Pos Board B285
IDENTIFICATION AND CHARACTERIZATION OF AN NAADP RECEPTOR ESSENTIAL FOR NAADP-EVOKED CALCIUM RELEASE FROM ENDOLYSOSOMAL ORGANELLES. **Jiyuan Zhang**, Xin Guan, Jiusheng Yan

1184-Pos Board B286
NULL-SARCOLIPIN EQUINE MUSCLE SHOWS ENHANCED SERCA CALCIUM TRANSPORT WHICH MAY POTENTIATE THE PREVALENCE OF EXERTIONAL RHABDOMYOLYSIS. **Joseph M. Autry**, Bengt Svensson, Christine B. Karim, Sudeep Perumbakkam, Zhenhui Chen, Carrie J. Finno, David D. Thomas, Stephanie J. Valberg

1185-Pos Board B287
MIR-200C EXHIBITS AN AGE-DEPENDENT INCREASE IN THE RAT HEART AND MODULATES CARDIOMYOCYTE FUNCTION. **Cristina Florio**, Alessandra Magenta, Rostislav Byshkov, Kenta Tsutsui, Bruce Ziman, Edward G. Lakatta, Maurizio C. Capogrossi

1186-Pos Board B288
POTENTIAL NEUROPROTECTIVE DRUG EVP4593 REDUCES EXCESSIVE EXPRESSION OF HUNTINGTIN IN IPSC-BASED JUVENILE MODEL OF HUNTINGTON'S DISEASE. **Dmitry Grekhnyov**, Vladimir Vigont, Elena Kaznacheyeva

1187-Pos Board B289
A COMPUTATIONAL FRAMEWORK TO STUDY THE KINETICS AND EVOLUTION OF CA^{2+}-PERMEABLE B AMYLOID PORES ASSOCIATED WITH ALZHEIMER'S DISEASE. **Syed Islamuddin Shah**, Ian Parker, Angelo Demuro, Ghanim Ullah

1188-Pos Board B290
PROBING THE MECHANISMS BY WHICH SEPTINS REGULATE ORAI1 FUNCTION. Zachary Katz, **Chen Zhang**, Ariel Quintana, Bjorn Lillemeier, Patrick G. Hogan

1189-Pos Board B291
PADE APPROXIMATION OF SINGLE-CHANNEL CALCIUM NANODOMAINS IN THE PRESENCE OF COOPERATIVE CALCIUM BUFFERS. Yinbo Chen, **Victor Matveev**

1190-Pos Board B292
NEW RED FLUORESCENT CALCIUM INDICATORS FOR FUNCTIONAL ANALYSIS OF GPCRS AND CA^{2+} CHANNEL TARGETS. **Qin Zhao**, Haitao Guo, Peng Ruogu, Liu Jixiang, Jinfang Liao, Zhenjun Diwu

1191-Pos Board B293
THE ARRHYTHMOGENIC E105A CAM MUTATION DYSREGULATES NORMAL CARDIAC FUNCTION IN ZEBRAFISH BY ALTERING CAM-CA^{2+} AND CAM-RYR2 INTERACTIONS. **Michail Nomikos**, Sahar I. Da'as, Angelos Thanassoulas, Rola Salem, Brian L. Calver, Alaaeldin Saleh, Ali Al-Maraghi, Gheyath K. Nasrallah, Bared Safieh-Garabedian, Egon Toft, George Nounesis, F. Anthony Lai

1192-Pos Board B294
CALCIUM CHANNELS CONTRIBUTING TO ACTION POTENTIAL FIRING AND RHYTHMS IN THE CIRCADIAN CLOCK. **Amber E. Plante**, Andrea L. Meredith

Other Channels (Boards B295 - B310)

1193-Pos Board B295
FUNCTIONALLY IDENTIFYING MEMBERS OF THE MSCS SUPERFAMILY OF ION CHANNELS IN PARABURKHOLDERIA MEMBRANES. Hannah M. Dickinson, **Brittni L. Miller**, Hannah R. Malcolm

1194-Pos Board B296 TRAVEL AWARDEE
MOLECULAR DYNAMICS SIMULATIONS OF TMC1 HOMOLOGY MODELS. **Sanket Walujkar**, Lahiru N. Wimalasena, Jeffrey Lotthammer, Marcos Sotomayor

1195-Pos Board B297
FUNCTIONAL ANNOTATION OF ION CHANNEL STRUCTURES: PREDICTING PORE SOLVATION STATES BASED ON LOCAL RADIUS AND HYDROPHOBICITY. **Shanlin Rao**, Gianni Klesse, Phillip J. Stansfeld, Stephen J. Tucker, Mark S. P. Sansom

1196-Pos Board B298
HETEROTYPIC DOCKING COMPATIBILITY OF HUMAN CX37 WITH OTHER VASCULAR CONNEXINS. Nicholas K. Kim, Artur Santos-Miranda, Honghong Chen, Hiroshi Aoyama, **Donglin Bai**

1197-Pos Board B299
CHARGED RESIDUES AT THE PORE MOUTH AFFECT SINGLE-FILE WATER FLOW. **Andreas Horner**, Christof Hannesschläger, Florian Zocher, Pohl Peter

1198-Pos Board B300
PARTIAL CHARACTERIZATION OF THE INACTIVATION PROCESS OF THE HUMAN ERYTHROCYTE MECHANO-ACTIVATED K+ CHANNEL A (HEMKCA): EFFECT OF MEMBRANE POTENTIAL, CA^{2+} AND RB^{+}. Diana Isturiz, Alejandro Mata, **Jesus G. Romero**

1199-Pos Board B301
A SKELETAL MUSCLE CONDITIONAL KCNJ2 KNOCK-OUT MOUSE MODEL FOR PERIODIC PARALYSIS IN ANDERSEN-TAWIL SYNDROME. **Nathaniel Elia**, Ekaterina Mokhonova, Marbella Quinonez, Stephen Cannon

1200-Pos Board B302
CHARACTERIZATION OF GATING OF THE VOLTAGE-GATED PROTON CHANNEL (H_v1) DURING ACTIVATION USING NON-CANONICAL AMINO ACIDS. **Esteban Suarez Delgado**, Gisela E. Rangel-Yescas, Leon D. Islas

1201-Pos Board B303
GAP JUNCTION MEDIATED CELLULAR DELIVERY OF MIRNA MODULATES PACEMAKER ACTIVITY. **Virgis Valiunas**, Chris Clausen, Ira S. Cohen, Peter R. Brink

1202-Pos Board B304
CALCIUM-DEPENDENT REARRANGEMENTS OF THE N-TERMINAL DOMAIN IN CX26 HEMICHANNELS. **Juan M. Valdez Capuccino**, Luyu Liu, Andrew L. Harris, Jorge E. Contreras

1203-Pos Board B305
SYNTHESIS OF ROMK1/2 PROTEIN IN *E.COLI*. **Milena Krajewska**, Piotr Koprowski, Adam Szewczyk

1204-Pos Board B306
A METHOD TO QUANTIFY TRANSPORT NUMBERS OF CHARGED MOLECULES ACROSS BIOLOGICAL CHANNELS. **Jayesh Arun Bafna**, Mathias Winterhalter

1205-Pos Board B307 TRAVEL AWARDEE
HAEMATOLOGICAL CHARACTERISATION OF MICE WITH PIEZO1 GAIN-OF-FUNCTION MUTATION. **Elizabeth L. Evans**, jian shi, Melanie Bettale, Laeticia Lichtenstein, David J. Beech

1206-Pos Board B308
OPTICAL SENSING OF ION FLUX THROUGH BIOMIMETIC CARBON NANOTUBE CHANNELS. **Pengyu Zheng**, Aleksandr Noy, Meni Wanunu, Yun-Ciao Yao

1207-Pos Board B309
REGULATION OF PANNEXIN-1 CHANNEL GATING BY NITRIC OXIDE AND CAMP SIGNALING. **Pablo S. Gaete**, Mauricio A. Lillo, Nelson P. Barrera, Xavier F. Figueroa, Jorge E. Contreras

1208-Pos Board B310
THE ORIGIN OF THE VOLTAGE CLAMP FLUOROMETRY SIGNAL IN CI-HV1 PROTON CHANNEL. Zoltan Petho, Adrienn Bagosi, Zoltan Varga, Gyorgy Panyi, **Ferenc Papp**

Ion Channels, Pharmacology, and Disease (Boards B311 - B342)

1209-Pos Board B311
UNCOUPLING NMDA RECEPTOR MECHANISM OF KETAMINE BLOCK AND PROTON INHIBITION. **Jamie A. Abbott**

1210-Pos Board B312
A MUTANT SK CHANNEL RESCUEDLOCOMOTION DEFECTS IN*C. ELEGANS*ALS MODEL. Young Woo Nam, Saba Baskoylu, Hannah Vu, Rachel Lee, Pammie Wong, Anne Hart, **Miao Zhang**

1211-Pos Board B313
FUNCTIONAL CONSEQUENCES OF EPILEPSY-ASSOCIATED KCNQ2 VARIANTS DETERMINEND BY AUTOMATED ELECTROPHYSIOLOGY. **Carlos G. Vanoye**, Reshma R. Desai, Shannon L. Gallagher, Dina Sinkim, Linda C. Laux, John J. Millichap, Evangelos Kiskinis, Alfred L. George

1212-Pos Board B314
TUBULAR RENAL EPITHELIAL CELLS ARE ACTIVE MECHANOBIOLOGICAL WATER PUMPS. **Mohammad Ikbal Choudhury**, Yizeng Li, Panagiotis Mistriotis, Eryn Dixon, Debonil Maity, Rebecca Walker, Morgan Benson, Leigha Martin, Fatima Koroma, Feng Qian, Konstantinos Konstantopoulos, Owen Woodward, Sean Sun

1213-Pos Board B315
A NOVEL GAIN OF FUNCTION MUTATION OF PIEZO-1 IS INVESTIGATED IN RED BLOOD CELLS BY HIGH-THROUGHPUT PATCH CLAMP. **Andrea Bruggemann**, Giustina M. Rotordam, Nadine Becker, Niels Fertig, Paola Bianchi, Markus Rapedius, Lars Kaestner

1214-Pos Board B316
THE MOLECULAR MECHANISMS OF STATE DEPENDENT HERG BLOCKADE BY DOFETILIDE. **Kevin R. DeMarco**, John R. D. Dawson, Borislava Bekker, Igor V. Vorobyov, Vladimir Yarov-Yarovoy, Sergei Yu. Noskov, Colleen E. Clancy

1215-Pos Board B317
DYNAMIC REGULATION OF SODIUM HOMEOSTASIS IN ATRIAL MYOCYTES. **Libet Garber**, Humberto C. Joca, George S.B. Williams, Christopher W. Ward, W. J. Lederer, Maura Greiser

1216-Pos Board B318
A KINETIC MECHANISM UNDERLYING HERG FACILITATION BY A BLOCKER. **Kazuharu Furutani**, Steffen Docken, Igor V. Vorobyov, Colleen E. Clancy, Timothy J. Lewis, Jon T. Sack

1217-Pos Board B319
ALLOSTERIC MODULATION VIA TRANSMEMBRANE INTERFACES IN A PENTAMERIC LIGAND-GATED ION CHANNEL. **Rebecca J. Howard**, Yuxuan Zhuang, Shinjiro Nakamura, Marie Lycksell, Helen Kiik, Urška Rovšnik, Cathrine Bergh, Stephanie A. Heusser, Laura Orellana, Erik Lindahl

1218-Pos Board B320
REPURSPOSING THE KCA3.1 BLOCKER SENICAPOC AS A MICROGLIA-TARGETED THERAPEUTIC FOR ALZHEIMER'S DISEASE. **Heike Wulff**, Jacopo Di Lucente, Hai M. Nguyen, Vikrant Singh, Lee-Way Jin, Izumi Maezawa

1219-Pos Board B321
PRODUCTION OF NATIVE-LIKE REFOLDED $NA_V1.7$ VOLTAGE SENSING DOMAIN AS SHOWN BY TOXIN BINDING ACTIVITY. **Ryan V. Schroder**, Ping Wang, Sebastien F. Poget

1220-Pos Board B322
ALL OPTICAL INTERROGATION OF VOLTAGE GATED SODIUM CHANNELS USING NEXT GENERATION FAST VOLTAGE SENSITIVE DYES IN A SYSTEM SUITABLE FOR HIGH THROUGHPUT SCREENING. **Stephen S. Smith**, Andrew Blatz, Thomas Lila, James Limberis, Jay Trautman

1221-Pos Board B323
MECHANICAL STRETCH INCREASES KV1.5 POTASSIUM CHANNEL ACTIVITY THROUGH A SIGNALING CASCADE INVOLVING N-TERMINUS OF THE CHANNEL. **Alexandria O. Milton**

1222-Pos Board B324
MODELING TRAPPING BLOCK OF HERG FOR CIPA: DOES THE BASAL HERG MODE MATTER? Brandon Franks, Mark Nowak, Brian Panama, Randall Rasmusson, **Glenna Bett**

1223-Pos Board B325
SMOOTH MUSCLE KV11.1 CHANNEL EXPRESSION IS INCREASED IN PULMONARY HYPERTENSION. **Nataliia V. Shults**, Vladyslava Rybka, Yuichiro J. Suzuki, Tinatin I. Brelidze

1224-Pos Board B326
A *DE NOVO* MUTATION ASSOCIATED WITH EPILEPSY ENHANCES $K_V1.2$ VOLTAGE DEPENDENCE, SUPPRESSING NEURONAL EXCITABILITY. **Antonios Pantazis**, Maki Kaneko, Annie M. Westerlund, Lucie Delemotte, Sulagna Saitta, Riccardo Olcese

1225-Pos Board B327
ATOMISTIC COMPUTATIONAL MODELS TO PREDICT DRUG-MEDIATED CARDIOTOXICITY. **Khaled H. Barakat**

1226-Pos Board B328
VOLTAGE- AND STATE-DEPENDENT BLOCKADE OF HERG POTASSIUM CHANNELS BY FENTANYL. **Jared Tschirhart**, Wentao Li, Jun Guo, Shetuan Zhang

1227-Pos Board B329
PHOTODYNAMIC MODIFICATION OF NATIVE HCN CHANNELS IN THALAMOCORTICAL NEURONS. Fusheng Wei, Qiang Wang, Ankush Gupta, Qinglian Liu, **Lei Zhou**

1228-Pos Board B330
A NOVEL HIGH-THROUGHPUT SCREENING ASSAY FOR STATE-DEPENDENT AND SUBUNIT-DEPENDENT BK CHANNEL MODULATORS. **Frank T. Horrigan**, Lorie A. Gonzalez, Liang Sun, Michael Bloch, Shengwei Zou

1229-Pos Board B331
IDENTIFYING NOVEL KCNH CHANNEL LIGANDS WITH SURFACE PLASMON RESONANCE METHOD. Purushottam Tiwari, Aykut Uren, **Tinatin I. Brelidze**

1230-Pos Board B332
IPSC-DERIVED MOTOR NEURONS ON THE AUTOMATED PATCH CLAMP PLATFORMS QUBE AND QPATCH. **Kadla R. Rosholm**, Melanie Schupp

1231-Pos Board B333
INSIGHTS INTO SELECTIVITY FILTER GATING OF K2P CHANNELS FROM SINGLE-CHANNEL RECORDINGS. **Linus J. Conrad**, Stephen J. Tucker

1232-Pos Board B334
INITIAL CHARACTERIZATION OF THE INDOLE-3-CARBOXAMIDE BIC-154 AS A FAST ONSET AND REVERSIBLE ORAI CHANNEL BLOCKER. Tetyana Zhelay, **Kalina Szteyn**, Elisa Liardo, Jae Eun Cheong, Steffi Koerner, Anil Ekkati, Lijun Sun, J. Ashot Kozak

1233-Pos Board B335
HUMAN CFTR CHANNEL FUNCTION IS REGULATED BY CHOLESTEROL. **Guiying Cui**, Kirsten A. Cottrill, Kerry A. McGill, Barry Imhoff, Nael A. McCarty

1234-Pos Board B336
ACTIVATION OF POTASSIUM CHANNEL AS A NEW STRATEGY TO BOOST ANTITUMOUR IMMUNE RESPONSE. **Seow Theng Ong**, Aik Seng Ng, Xuan Rui Ng, Lindsay Kua, Fiona YX Lee, Siqi Tan, Heesung Shim, Praseetha Prasannan, Ramanuj DasGupta, Iain BH Tan, Heike Wulff, K George Chandy, Navin K. Verma

1235-Pos Board B337
NOVEL INHIBITORS OF THE CALCIUM-ACTIVATED K^+ CHANNEL $K_{CA}3.1$ TO TREAT NON-ALCOHOLIC FATTY LIVER DISEASE AND LIVER FIBROSIS. **Seow Theng Ong**, Gemma Thomas, Srinivasaraghavan Kannan, Zhisheng Her, Xuan Rui Ng, Xinying Chew, Hai M. Nguyen, Heike Wulff, Chandra Verma, Qingfeng Chen, Mahmood Ahmed, K George Chandy

1236-Pos Board B338
STRUCTURAL MODELING OF DRUG INTERACTIONS WITH HERG CHANNEL IN OPEN AND CLOSED STATES. **Aiyana M. Emigh**, Kevin R. DeMarco, Kazuharu Furutani, Jon T. Sack, Colleen E. Clancy, Igor V. Vorobyov, Vladimir Yarov-Yarovoy

1237-Pos Board B339
BENEFICIAL EFFECT OF MITOCHONDRIAL CALCIUM UNIPORTER OVEREXPRESSION IN A GUINEA PIG HEART FAILURE AND SUDDEN CARDIAC DEATH MODEL. **Ting Liu**, Brian O'Rourke

1238-Pos Board B340 TRAVEL AWARDEE
IRTUINS POSITIVELY REGULATE K_{ATP} CHANNELS, WHICH CONTRIBUTES TO THEIR CARDIOPROTECTIVE ROLE. **Erkan Tuncay**, Hua-Qian Yang, Ivan Gando, Belma Turan, Ravichandran Ramasamy, William A. Coetzee

1239-Pos Board B341 TRAVEL AWARDEE
PROBING KV1.3 INTERACTOME WITH PROXIMITY-DEPENDENT BIOTINYLATION. **Vanessa Checchetto**, Elena Prosdocimi, Roberta Peruzzo, JESUSA CAPERA ARAGONES, Luigi Leanza, Antonio Felipe, Ildikò Szabò

1240-Pos Board B342
INHIBITION OF CONNEXION HEMICHANNELS BY NEW AMINOGLYCOSIDES WITHOUT ANTIBIOTIC ACTIVITY. **Abbey Kjellgren**, Mariana C. Fiori, Madher N. AlFindee, Yagya P. Subedi, Srinivasan Krishnan, Cheng-Wei T. Chang, Guillermo A. Altenberg

Cytoskeletal Assemblies & Dynamics (Boards B343 - B357)

1241-Pos Board B343
STRUCTURAL MODEL FOR PREFERENTIAL MICROTUBULE MINUS END BINDING BY CAMSAP CKK DOMAINS. Joseph Atherton, Yanzhang Luo, Shengqi Xiang, Chao Yang, Annapurna Vemu, Marcel Stangier, Alexander Cook, Shana Wang, Kai Jiang, Michel Steinmetz, Antonina Roll-Mecak, Anna Akhmanova, Marc Baldus, **Carolyn A. Moores**

1242-Pos Board B344 TRAVEL AWARDEE
A DYNAMIC TIME STEP METHOD IN CYTOSKELETAL SIMULATIONS. **Joseph Tibbs**, A. Pasha Tabatabai, Daniel S. Seara, Ali Tabei, Michael P. Murrell

1243-Pos Board B345
RAPID TREADMILLING AND MYOSIN MOTORS SYNERGISTICALLY INDUCE FORMATION OF RING-LIKE ACTOMYOSIN ARCHITECTURES AND CORTEXES. **Qin Ni**, Arpita Upadhyaya, Garegin A. Papoian

1244-Pos Board B346
SIMULATING EMERGENT SPATIOTEMPORAL ACTOMYOSIN DYNAMICS TO UNDERSTAND SPATIAL REGULATION OF NON-MUSCLE MYOSIN II. **Callie J. Miller**, Paul LaFosse, Sreeja Asokan, Jason Haugh, James E. Bear, Timothy C. Elston

1245-Pos Board B347
THE PHYSICAL BASES OF FORMING A SMOOTH BOUNDARY BETWEEN AN EXPANDING ARP 2/3 ACTIN NETWORK AND A CONTRACTILE ACTOMYOSIN NETWORK. **Medha Sharma**, Tony Harris

1246-Pos Board B348
SEPTIN HIERARCHICAL ASSEMBLY REVEALED BY HIGH-SPEED ATOMIC FORCE MICROSCOPY(HS-AFM). **Fang Jiao**, Kevin Cannon, Amy Gladfelter, Simon Scheuring

1247-Pos Board B349
METAPHASE KINETOCHORE MOVEMENTS ARE REGULATED BY KINESIN-8 MOTORS AND MICROTUBULE DYNAMIC INSTABILITY. **Agneza Bosilj**, Anna Klemm, Iva Tolić, Nenad Pavin

1248-Pos Board B350
FORCE REGULATION OF CAPPING AND ARP2/3 NUCLEATION OF BRANCHED ACTIN NETWORKS. **Tai-De Li**, Peter Bieling, Dyche Mullins, Daniel Fletcher

1249-Pos Board B351
SPATIOTEMPORAL ORGANIZATION OF MICROTUBULES IN BRANCHED NETWORKS. **Akanksha Thawani**, Howard A. Stone, Joshua W. Shaevitz, Sabine Petry

1250-Pos Board B352 TRAVEL AWARDEE
PIVOTING OF MICROTUBULES DRIVEN BY MINUS END DIRECTED MOTORS LEADS TO THEIR ALIGNMENT TO FORM AN INTERPOLAR BUNDLE. **Ivana Ban**, Marcel Prelogovic, Lora Winters, Iva Tolič, Nenad Pavin

1251-Pos Board B353
NCKIPSD COORDINATES ARP2/3 AND FORMIN NUCLEATION OF ACTIN FILAMENTS IN THE CELL CORTEX. **LuYan Cao**, Amina Yonis, Malti Vaghela, Priyamvada Chugh, Pierre Bohec, Matt Smith, Genevieve Lavoie, Ewa K. Paluch, Philippe Roux, Antoine G. Jegou, Guillaume Charras, Guillaume Romet-Lemonne

1252-Pos Board B354
DYNAMIC HAND-IN-HAND INTERACTION BETWEEN ACTIN AND SPECTRIN DURING MAMMALIAN CELL MECHANOADAPTATION. **Andrea Ghisleni**, Camilla Galli, Qinseng Li, Pascale Monzo, Paolo Maiuri, Nils Gauthier

1253-Pos Board B355
COORDINATE ROLE OF VINCULIN AND METAVINCULIN IN ACTIN ORGANIZATION. **Sharon Campbell**, Muzaddid Sarker, Hyunna T. Lee, Laura Kim, Santiago Espinosa de los Reyes, Lin Mei, Andrey Krokhotin, Laura Constantini, Gregory M. Alushin, Nikolay V. Dokholyan, Jack D. Griffith

1254-Pos Board B356
STRUCTURE OF THE TPM3.1 N-TERMINUS: A NEW TARGET FOR ANTICANCER TREATMENT. **Anita Ghosh**, Miro Janco, Till Böcking, Peter W. Gunning, William Lehman, Michael J. Rynkiewicz

1255-Pos Board B357
QUANTIFYING DISSIPATION IN ACTOMYOSIN NETWORKS. **Carlos Floyd**, Christopher Jarzynski, Garegin A. Papoian

Microtubules, Structure, Dynamics, and Associated Proteins (Boards B358 - B380)

1256-Pos Board B358
EXPLORING THE UNFOLDASE MECHANISM OF MICROTUBULE SEVERING BY COARSE-GRAINED SIMULATIONS. **Rohith Anand Varikoti**, Jennifer L. Ross, Ruxandra I. Dima

1257-Pos Board B359
KATANIN SPIRAL AND RING STRUCTURES SHED LIGHT ON POWER STROKE FOR MICROTUBULE SEVERING. **Elena A. Zehr**, Agnieszka Szyk, Grzegorz Piszczek, Ewa Szczesna, Xiaobing Zuo, Antonina Roll-Mecak

1258-Pos Board B360
LENGTH-DEPENDENT PERSISTENCE LENGTH FOR MICROTUBULES SHORTER THAN 3 MICROMETERS. **Gretchen Niederriter**, Douglas S. Martin

1259-Pos Board B361
STRUCTURAL TRANSFORMATION OF MICROTUBULES IN THE PRESENCE OF CATIONIC POLYMERS. **Juncheol Lee**, Chaeyon Song, Jimin Lee, Herb P. Miller, Leslie Wilson, Cyrus R. Safinya, Myung Chul Choi

1260-Pos Board B362
CONDENSATION OF DIVALENT METAL IONS BY MAP-TAU REMODELS TAU-MICROTUBULE BUNDLE ARCHITECTURE. **Bretton Fletcher**, Chaeyeon Song, Phillip Kohl, Peter J. Chung, Herbert Miller, Youli Li, Myung Chul Choi, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

1261-Pos Board B363
HIGHER ORDER ASSEMBLY STRUCTURES OF HUMAN TAU AND MICROTUBULES REGULATED BY IONIC STRENGTH. **Hasaeam Cho**, Jimin Lee, Juncheol Lee, Herbert P. Miller, Keong Sik Jin, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya, Myung Chul Choi

1262-Pos Board B364
THE EFFECT OF SITE-SPECIFIC ACETYLATION BASED TAU MUTATIONS ON TAU-MICROTUBULE ASSOCIATIONS. **Christine Tchounwou**, Bretton Fletcher, Chaeyeon Song, Phillip A. Kohl, Peter J. Chung, Herb P. Miller, Youli Li, Myung-Chul Choi, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

1263-Pos Board B365
PROBING STRUCTURAL FEATURES OF TAU BINDING TO TUBULIN AND MICROTUBULES. **Ho Yee Joyce Fung**, Elizabeth Rhoades

1264-Pos Board B366
IMPACT OF AC ELECTRIC FIELDS ON MICROTUBULE DYNAMICS*IN VITRO*. **Joseph M. Cleary**

1265-Pos Board B367
MICROTUBULE NUCLEATION AND STABILIZATION BY DOUBLECORTIN. **Szymon W. Manka**, Carolyn A. Moores

1266-Pos Board B368
STRUCTURE AND FUNCTION OF SURFACE-BOUND TAU. **Zachary J. Donhauser**

1267-Pos Board B369
A FIRST-APPROXIMATION ESTIMATE OF FORCES REQUIRED FOR MICROTUBULE BREAKAGE. **Sharyn A. Endow**, Piotr E. Marszalek

1268-Pos Board B370
LONG-RANGE MECHANICAL COUPLING IN THE MICROTUBULE LATTICE. **Maxim Igaev**, Helmut Grubmueller

1269-Pos Board B371
MULTI-SCALE COMPUTATIONAL MODELING OF TUBULIN-TUBULIN INTERACTIONS IN MICROTUBULE SELF-ASSEMBLY FROM ATOMS TO CELLS. **Mahya Hemmat**, Brian T. Castle, David J. Odde

1270-Pos Board B372
TUBULIN POLYMERIZATION-PROMOTING PROTEIN FAMILY MEMBER 3 (TPPP3) FACILITATES MICROTUBULE BUNDLING AND NETWORK FORMATION VIA ITS WEAK INTERACTION WITH MICROTUBULES. Takayuki Torisawa, Shuji Ishihara, **Kazuhiro Oiwa**

1271-Pos Board B373
KINETOCHORE-MEDIATED MULTIVALENCY OF NDC80 COMPLEX CONTROLS MICROTUBULE END DYNAMICS AND FORCE-GENERATION. **Vladimir A. Volkov**, Pim J. Huis in 't Veld, Andrea Musacchio, Marileen Dogterom

1272-Pos Board B374
MECHANICAL STABILITY OF MICROTUBULE LATTICES - MOLECULAR DYNAMIC INDENTATION STUDIES. **Lukasz Szatkowski**, Merz Jr. R. Dale, Jennifer L. Ross, Ruxandra I. Dima

1273-Pos Board B375
MODULATION OF MICROTUBULE CURVATURE UNDER DIFFERENT CELLULAR CONDITIONS REVEALED BY IN-CELL CERYO-ELECTRON TOMOGRAPHY. **Julia Mahamid**, Saikat Chakraborty, Wolfgang Baumeister

1274-Pos Board B376
STRUCTURAL STUDIES OF CAP-GLY DOMAIN OF DYNACTIN ASSEMBLED WITH MICROTUBULES BY MAGIC ANGLE SPINNING NMR SPECTROSCOPY. **Changmiao Guo**, John C. Williams, Tatyana Polenova

1275-Pos Board B377 TRAVEL AWARDEE
TOWARDS AN UNDERSTANDING OF KIDNEY DISEASES ASSOCIATED WITH INHIBITION OF NOTCH SIGNALING PATHWAY BY TRANSMISSION ELECTRON MICROSCOPY. **Ishara Ratnayake**, Steve Smith, Indra Chandrasekar, Kameswaran Surendran, Phil Ahrenkiel

1276-Pos Board B378
TOPOLOGICAL PHONONS IN MICROTUBULES: THE LINK BETWEEN LOCAL STRUCTURE AND DYNAMICS OF MICROTUBULES. **Arooj Aslam**, Ssu-Ying Chen, Emil Prodan, Camelia Prodan

1277-Pos Board B379
RECONSTITUTION OF POM1 GRADIENT IN ELONGATED DROPLETS. **Renu Vishavkarma**

1278-Pos Board B380
COMPUTATIONAL STUDY OF ABL PATHWAY BASED AXONAL GUIDANCE. **Aravind Chandrasekaran**, Garegin A. Papoian, Edward Giniger

Myosins and Smooth Muscle Mechanics, Structure, and Regulation (Boards B381 - B391)

1279-Pos Board B381
ATOMICALLY DETAILED SIMULATION OF THE POWERSTROKE IN MYOSIN II BY MILESTONING. **Katelyn Poole**, Ron Elber

1280-Pos Board B382
OPTICAL CONTROL OF FAST AND PROCESSIVE ENGINEERED MYOSINS IN VITRO AND IN LIVING CELLS. **Paul V. Ruijgrok**, Rajarshi P. Ghosh, Muneaki Nakamura, Sasha Zemsky, Robert Chen, Vipul Vachharajani, Jan T. Liphardt, Zev Bryant

1281-Pos Board B383
TRACKING OF LABELED MOTOR DOMAINS OF SINGLE FULL-LENGTH MYOSIN X ON ACTIN BUNDLES. **Xianan Qin**, Harry Chun Man Cheng, Jing Li, Hanna Yoo, Xiaoyan Liu, Tianming Lin, H. Lee Sweeney, Hyokeun Park

1282-Pos Board B384
THE ROLE OF NON-MUSCLE MYOSIN 2A AND 2B IN THE REGULATION OF MESENCHYMAL CELL CONTACT GUIDANCE. **Alexander S. Zhovmer**, Erdem Tabdanov, Houxun Miao, Han Wen, Jinqiu Chen, Xiaoling Luo, Xuefei Ma, Paolo Provenzano, Robert Adelstein

1283-Pos Board B385
ELECTROSTATIC INTERACTIONS WITHIN LOOP 1 AND THE FORCE GENERATION REGION OF HUMAN CARDIAC MYOSIN AFFECT THE RATE OF ACTOMYOSIN DISSOCIATION AND ADP RELEASE. **Akhil Gargey**, Jinghua Ge, Alex Grdzelishvili, Yaroslav Tkachev, Yuri E. Nesmelov

1284-Pos Board B386
TARGETING MECHANORESPONSIVE PROTEINS IN PANCREATIC CANCER: 4-HYDROXYACETOPHENONE BLOCKS DISSEMINATION AND INVASION BY ACTIVATING MYH14. **Alexandra Surcel**, Eric S. Schiffhauer, Dustin G. Thomas, Qingfeng Zhu, Kathleen DiNapoli, Maik Herbig, Oliver Otto, Angela Jacobi, Martin Kräter, Katarzyna Plak, Jochen Guck, Elizabeth M. Jaffee, Pablo A. Iglesias, Robert A. Anders, Douglas N. Robinson

1285-Pos Board B387
STATE DEPENDENT DYNAMIC COUPLING IN MYO1B DURING THE FORCE SENSITIVE TRANSITION AND MGADP RELEASE. **Ahmet Mentes**, Henry Shuman, E. Michael Ostap

1286-Pos Board B388
THE S217A MUTANT SLOWS THE POWER STROKE AND PHOSPHATE RELEASE IN MYOSIN V. Laura K. Gunther, Wanjian Tang, **Christopher M. Yengo**

1287-Pos Board B389
DECIPHERING LOAD-INDUCED ANCHORING BY MYOSIN VI. **Rosemarie E. Gough**, Natalia Fili, Yukti Hari Gupta, Christopher P. Toseland

1288-Pos Board B390
KINETIC MODEL FOR MYOSIN GATING AND BACKWARD STEPPING MECHANISMS. **Mauro L. Mugnai**, Matthew A. Caporizzo, Yale E. Goldman, Dave Thirumalai

1289-Pos Board B391
AGING ALTERS FUNCTIONAL PROPERTIES OF CELL-MATRIX ADHESIONS IN VASCULAR SMOOTH MUSCLE CELLS. Harini Sreenivasappa, Briana Bywaters, Samuel Padgham, Song Yi Shin, Jerome P. Trzeciakowski, Christopher R. Woodman, **Andreea Trache**

Cardiac Muscle Mechanics and Structure (Boards B392 - B415)

1290-Pos Board B392
MYOSIN BINDING PROTEIN H-LIKE REGULATES MYOFILAMENT CONTENT IN ATRIAL AND A SUBSET OF VENTRICULAR CONDUCTION SYSTEM CARDIOMYOCYTES. **David Y. Barefield**, Sheema Rahmanseresht, Thomas O'Leary, Jordan J. Sell, Megan J. Puckelwartz, Lisa D. Wilsbacher, Michael J. Previs, Elizabeth M. McNally

1291-Pos Board B393
DATP REDUCES THE DEPRESSIVE EFFECT OF ACIDOSIS ON CARDIAC AND SLOW TWITCH SKELETAL MUSCLE. **Saffie Mohran**, Mike Woodward, Romi Castillo, Matthew Whithers, Valerie Daggett, Edward Debold, Michael Regnier

1292-Pos Board B394
THE MECHANISTIC ROLE OF TROPOMYOSIN OVERLAP DYSREGULATION IN EARLY CARDIOMYOPATHIC DISEASE PROGRESSION. **Melissa L. Lynn**, Teryn A. Holeman, Lauren Tal-Grinspan, Andrea Deranek, Jil C. Tardiff

1293-Pos Board B395
MYOSIN AND MYBP-C-MUTATIONS IN HYPERTROPHIC CARDIOMYOPATHY: VARIABLE EFFECTS ON CALCIUM SENSITIVITY AND CONTRACTILE IMBALANCE FROM CELL TO CELL. Mirza Makul, Ante Radocaj, Pia Ernstberger, Judith Montag, Kathrin Kowalski, Britta Keyser, Andreas Perrot, Cris G. dos Remedios, Bernhard Brenner, **Theresia Kraft**

1294-Pos Board B396
POWER-LOAD CHARACTERISTICS OF HUMAN-DERIVED ENGINEERED HEART TISSUE IN RESPONSE TO CARDIOMYOPATHY MUTATIONS AND MYOSIN-TARGETED DRUGS. **Lorenzo R. Sewanan**, Stuart G. Campbell

1295-Pos Board B397
MYOFILAMENT LENGTH DEPENDENT ACTIVATION IN PORCINE CARDIAC MUSCLE. **Weikang Ma**, Robert Anderson, Marcus Henze, Henry Gong, Fiona Wong, Carlos del Rio, Thomas Irving

1296-Pos Board B398
ANNULMENT OF CARDIAC MUSCLE LENGTH-DEPENDENT FORCE ACTIVATION IN TRANSGENIC MICE BEARING THE HCTNT-I79N MUTATION. **Maicon Landim Vieira**, Bjorn Knollmann, Hyun S. Hwang, J. Renato Pinto, P. Bryant Chase

1297-Pos Board B399
DEVELOPMENT OF AN ATOMISTIC STRUCTURE OF MYOSIN BOUND CARDIAC THIN FILAMENT AND FREE ENERGY DETERMINATION OF THE CLOSE TO OPEN TRANSITION. **Anthony Baldo**, Steven D. Schwartz

1298-Pos Board B400
THE OFF-TO-ON TRANSITION OF THICK FILAMENTS IN ISOLATED TRABECULAE FROM RAT HEART INDUCED BY COOLING. **Jesus Garcia Ovejero**, Luca Fusi, So-Jin Park-Holohan, Andrea Ghisleni, Theyencheri Narayanan, Malcolm Irving, Elisabetta Brunello

1299-Pos Board B401
ANTI-S2 PEPTIDES MODULATE MYOSIN COILED COIL STRUCTURE AND SHIFT FORCE-$_{p}$CA CURVES IN HUMAN CARDIAC MUSCLE. Bertrand C.W. Tanner, Kenneth S. Campbell, Motamed Qadan, Negar Aboonasrshiraz, Dua'a Quedan, Peter O. Awinda, Andrea Bernardino-Shaefer, **Douglas D. Root**

1300-Pos Board B402
IMPACT OF HUMAN BETA-CARDIAC MYOSIN MUTATION IMPLICATED IN BOTH HYPERTROPHIC AND DILATED CARDIOMYOPATHY. **Wanjian Tang**, Laura K. Gunther, Jonathan Cooper, Rohini Desetty, Christopher M. Yengo

1301-Pos Board B403
MOLECULAR DYNAMICS STUDIES OF SINGLE POINT MUTATIONS IN THE CARDIAC THIN FILAMENT. **Allison B. Smith**, Anthony Baldo, Natercia Braz, Steven D. Schwartz

1302-Pos Board B404
DESIGN OF BIOCOMPATIBLE LIQUID CRISTAL ELASTOMERS REPRODUCING THE MECHANICAL PROPERTIES OF HUMAN CARDIAC MUSCLE. Cecilia Ferrantini, J. Manu Pioner, Daniele Martella, Raffaele Coppini, Nicoletta Piroddi, Paolo Paoli, Martino Calamai, Francesco S. Pavone, Diederik Wiersma, Chiara Tesi, Elisabetta Cerbai[10], Corrado Poggesi[11], **Leonardo Sacconi**, Camilla Parmeggiani

1303-Pos Board B405
HUMAN BETA-CARDIAC MYOSIN CARDIOMYOPATHY MUTATIONS R712L AND E497D DISRUPT A KEY SALT-BRIDGE IN THE COUPLING DOMAIN. **Bipasha Barua**, Jennifer L. Atherton, Eva Forgacs, Donald A. Winkelmann

1304-Pos Board B406
ISOLATING THE PATHOLOGICAL CONTRIBUTION OF DETYROSINATED MICROTUBULES IN HUMAN MYOCARDIAL MECHANICS. **Matthew A. Caporizzo**, Christina Y. Chen, Kenneth Bedi, Kenneth B. Margulies, Benjamin L. Prosser

1305-Pos Board B407 TRAVEL AWARDEE
PREDICTING AND PREVENTING MYOCARDIAL REMODELING IN A MURINE MODEL OF DILATED CARDIOMYOPATHY. **Joseph D. Powers**, Galina Flint, Jil Tardiff, Michael Regnier, Farid Moussavi-Harami, Jennifer Davis

1306-Pos Board B408
MOLECULAR DYNAMICS STUDIES OF MYOSIN STRUCTURE WITH 2-DEOXY-ADP. **Matthew C. Childers**, Weikang Ma, Valerie Daggett, Mike Regnier

1307-Pos Board B409
COMPUTATIONAL AND EXPERIMENTAL INVESTIGATION OF CARDIAC TROPONIN T R173Q, R173W AND Δ160E MUTATION SPECIFIC CORRELATES TO DISEASE. **Andrea E. Deranek**, Anthony Baldo, Steven Schwartz, Jil C. Tardiff

1308-Pos Board B410
THE ROLE OF GSK3B MISLOCALIZATION IN ARRYTHMOGENIC CARDIOMYOPATHY. **Ronald Ng**, Stuart Campbell

1309-Pos Board B411
ISOMETRIC AND ISOTONIC TWITCH DYNAMICS IN OMECAMTIV MERCARBIL TREATED INTACT RAT CARDIAC TRABECULA. Brianna M. Schick, Alexandra R. Matus, **Charles S. Chung**

1310-Pos Board B412
MULTI-TIMEPOINT RNA-SEQUENCING REVEALS DIFFERENTIAL GENE EXPRESSION OF TRANSGENIC MOUSE MODELS OF HYPERTROPHIC AND DILATED CARDIOMYOPATHIES. **Shivani H. Desai**, Jil C. Tardiff, Melissa L. Lynn, Amanda M. Richards

1311-Pos Board B413
HUMAN CARDIAC MYOSIN-BINDING PROTEIN C N-TERMINAL DOMAINS COOPERATIVELY IMPACT ACTIN STRUCTURAL DYNAMICS. **Rhye-Samuel Kanassatega**, Thomas A. Bunch, Victoria C. Lepak, Brett A. Colson

1312-Pos Board B414
THE HCM-CAUSING Y235S CMYBPC MUTATION ACCELERATES CONTRACTILE FUNCTION BY ALTERING C1 DOMAIN STRUCTURE. **Chang Yoon Doh**, Jiayang Li, Ranganath Mamidi, Julian E. Stelzer

1313-Pos Board B415
MICROTUBULE ACETYLATION REGULATES CONTRACTILE KINETICS OF STRIATED MUSCLE. **Andrew K. Coleman**, Humberto C. Joca, George S.B. Williams, W. Jonathan Lederer, Chris W. Ward

Mitochondria in Cell Life and Death (Boards B416 - B443)

1314-Pos Board B416
MITOCHONDRIAL METABOLIC FUNCTION IS AFFECTED BY INNER MEMBRANE MORPHOLOGY. **Nasrin Afzal**, Carmen Mannella, William J. Lederer, Mohsin S. Jafri

1315-Pos Board B417
AN AUTOMATED METHOD FOR SEGMENTING HIGHLY CONVOLUTED MITOCHONDRIAL INNER MEMBRANES FROM ELECTRON MICROSCOPIC TOMOGRAMS. **Raquel Adams**, Zheng Liu, Carmen A. Mannella, W. Jonathan Lederer, M. Saleet Jafri

1316-Pos Board B418 TRAVEL AWARDEE
OPTOGENETIC REGULATION OF MITOCHONDRIAL FUNCTION AND SYNAPTIC PLASTICITY IN VIVO. **Kristian M. Zapata**, Illya Aronskyy, Stephen Madamba, Pablo M. Peixoto

1317-Pos Board B419
DRUG SCREENING AND DISCOVERY STRATEGIES AT NANOSCALE MORPHOLOGY USING STRUCTURED ILLUMINATION MICROSCOPY. **Xintian Shao**, Qixin Chen, Peixue Ling, Jiajie Diao

1318-Pos Board B420
QUANTITATIVE ANALYSIS OF INTERACTIVE BEHAVIOR OF MITOCHONDRIA AND LYSOSOMES USING STRUCTURED ILLUMINATION MICROSCOPY. **Qixen Chen**, Xintian Shao, Peixue Ling, Jiajie Diao

1319-Pos Board B421
MODELING THE INSERTION OF HEXOKINASE IN THE MITOCHONDRIAL OUTER MEMBRANE AND ITS COMPLEX FORMATION WITH VDAC. **Nandan Haloi**, Po-Chao Wen, Amadou KS Camara, Wai-Meng Kwok, Emad Tajkhorshid

1320-Pos Board B422
DEVELOPING SPECIFIC SMALL-PEPTIDE INHIBITORS OF MITOCHONDRIAL VDAC. Philip A. Gurnev, David P. Hoogerheide, Sergey M. Bezrukov, **Tatiana K. Rostovtseva**

1321-Pos Board B423
MITOCHONDRIAL GAIN-OF-FUNCTION BKCA CHANNEL ATTENUATES MITOCHONDRIAL DYSFUNCTION ASSOCIATED WITH HYPOXIC INJURY. Thomas Mancini, Jin O-uchi, Shanna Hamilton, Radmila Terentyeva, Gaurav Choudhary, Dmitry Terentyev, **Richard T. Clements**

1322-Pos Board B424
SINGLE CHANNEL RECORDINGS OF MITOBK$_{CA}$ CHANNEL FORMED BY BK-DEC SPLICE VARIANT. **Bogusz Kulawiak**, Shur Karolina Kucman, Justyna Jędraszko, Piotr Bednarczyk, Adam M. Szewczyk

1323-Pos Board B425
MITOCHONDRIAL POTASSIUM CHANNELS: REGULATION BY GASEOUS TRANSMITTER. **Adam Szewczyk**, Agnieszka Walewska, Daria Rotko, Bogusz Kulawiak, Piotr Koprowski

1324-Pos Board B426 TRAVEL AWARDEE
EFFECT OF STEROIDS ON MITOCHONDRIAL METABOLITE CHANNEL FUNCTION AND LIPID MEMBRANE PROPERTIES. **William M. Rosencrans**, Maria Queralt-Martin, Amandine Rovini, Phillip A. Gurnev, Sergey M. Bezrukov, Tatiana K. Rostovtseva

1325-Pos Board B427
MODULATION OF THE CHANNEL ACTIVITY OF THE C-SUBUNIT OF THE ATP SYNTHASE BY POLYPHOSPHATE AND POLYHYDROXYBUTYRATE. **Giuseppe F. Amodeo**, Magdalena Klim, Piotr Kurcok, Evgeny V. Pavlov

1326-Pos Board B428
CA^{2+}-DEPENDENT MITOCHONDRIAL PERMEABILITY TRANSITION PORE OPENING IN KIDNEY IS SUBSTRATE DEPENDENT. **Namrata Tomar**, Sunil M. Kandel, Nadezda Zheleznova, Said H. Audi, Allen W. Cowley Jr., Ranjan K. Dash

1327-Pos Board B429
REGULATION OF THE PROTON LEAK IN MITOCHONDRIA. **Elena E. Pohl**

1328-Pos Board B430
MITOCHONDRIAL MEMBRANE POTENTIAL OSCILLATIONS PERSIST DURING REPERFUSION AFTER ISCHEMIA IN MCU KNOCKOUT CARDIOMYOCYTES. **Deepthi Ashok**, Kyriakos Papanicolaou, Brian O'Rourke

1329-Pos Board B431 TRAVEL AWARDEE
THE MCU INHIBITOR DS16570511 HAS OFF-TARGET EFFECTS ON MITOCHONDRIAL MEMBRANE POTENTIAL. **Riley Payne**, Carmen Li, Emily Fernandez-Garcia, Horia Vais, Kevin Foskett

1330-Pos Board B432
CARDIAC MITOCHONDRIA ULTRASTRUCTURAL AND FUNCTIONAL CHANGES CAUSED BY MASSIVE CALCIUM LOADING OBSERVED USING CRYO-EM AND HIGH-RESOLUTION RESPIROMETRY. **Jasiel O. Strubbe**, Jason Schrad, Kristin N. Parent, James F. Conway, Jason N. Bazil

1331-Pos Board B433
CARDIAC CALCIUM SIGNALING AND MITOCHONDRIAL METABOLIC FUNCTION. **Nasrin Afzal**, Carmen A. Mannella, W. Jonathan Lederer, M.Saleet Jafri

1332-Pos Board B434
MITOCHONDRIAL CALCIUM DEREGULATION IN TAU K18-TREATED CORTICAL NEURONS AND ASTROCYTES. **Elena Britti**, Noemi Esteras Gallego, Joaquim Ros, Andrey Y. Abramov

1333-Pos Board B435
CALCIUM STIMULATION OF MITOCHONDRIAL RESPIRATION IS SUBSTRATE DEPENDENT AND TISSUE SPECIFIC. **Sunil M. Kandel**, Namrata Tomar, Nadezhda Zheleznova, Said H. Audi, Allen W. Cowley Jr., Ranjan K. Dash

1334-Pos Board B436
DIFFERENTIAL REGULATION OF SUBSTRATE DEPENDENT MITOCHONDRIAL RESPIRATION IN THE HEART AND KIDNEY. **Sunil M. Kandel**, Namrata Tomar, Nadezda Zheleznova, Said H. Audi, Allen W. Cowley Jr., Ranjan K. Dash

1335-Pos Board B437
CYCLOPHILIN D INHIBITION RESCUES HYPOXIA-INDUCED NEONATAL CARDIOMYOPATHY. Gisela Beutner, **George A. Porter, Jr**

1336-Pos Board B438
SYSTEMIC METABOLOMICS AND MITOCHONDRIAL ENERGETICS IN HIGH- COMPARED TO LOW-RUNNING CAPACITY RATS AS A FUNCTION OF AGE. **Miguel A. Aon**, Andrew Lachance, Sarah J. Mitchell, Kelsey Bullock, Sonia Cortassa, Steven J. Sollott

1337-Pos Board B439
THE COMPLEX CROSSTALK BETWEEN PARVALBUMIN AND MITOCHONDRIA REGULATION THROUGH CHANGES IN MITOCHONDRIAL DYNAMICS. **Lucia Lichvarova**, Thomas Henzi, Dzhamilja Safiulina, Allen Kaasik, Beat Schwaller

1338-Pos Board B440
THE EFFECTS OF ASTAXANTHIN ON AMYLOID BETA CHALLENGED HIPPOCAMPAL CELL GROWTH AND MITOCHONDRIAL FUNCTION DURING HYPOGLYCEMIA. **Marie L. Kelly-Worden**, Emma Cieslik, Julie A. Griffith

1339-Pos Board B441 TRAVEL AWARDEE
MITOCHONDRIAL MEMBRANE POTENTIAL HETEROGENEITY IN CANCER CELLS IS INDEPENDENT OF THE CELL CYCLE AND INFLUENCES RESPONSE TO HYPERPOLARIZING AGENTS. **Morgan E. Morris**, Diana Fang, Kareem A. Heslop, Charleston F. Christie, Akos A. Gerencser, Martin D. Brand, Eduardo N. Maldonado

1340-Pos Board B442
ST. JOHN'S WORTH EXTRACT INDUCES APOPTOSIS AND INHIBITS CANCER-RELATED INFLAMATION IN BASAL CELL CARCINOMA CELL LINES. Ebru Celik, **M.Salih Celik**, H. Mahir Kaplan, Ergin Singirik

1341-Pos Board B443 TRAVEL AWARDEE
LOSS OF MGR2P DESTABILIZES THE TIM23 CHANNEL AND REDUCES MITOCHONDRIAL EMISSION OF REACTIVE OXYGEN SPECIES. Oygul Mirzalieva, **Shinhye Jeon**, Kevin Damri, Ruth Hartke, Layla Drwesh, Keren Demishtein-Zohary, Abdussalam Azem, Cory D. Dunn, Pablo M. Peixoto

Emerging Techniques and Synthetic Biology (Boards B444 - B453)

1342-Pos Board B444
CHARACTERIZING DNA NANOTUBE NETWORKS ASSEMBLED VIA Y-JUNCTION DNA ORIGAMI SEEDS. **Michael S. Pacella**, Ruby Liu, Jasen Zhang, Tiffany Hou, Jonathan Gunn, Paul Vallejo, Pragya Singh, Marc Bordui, Altarash Barthakur, Rebecca Schulman

1343-Pos Board B445
COMBINATIONAL GENETICALLY ENCODED TOOLBOX FOR CELL-SURFACE MUCIN BIOPOLYMER ENGINEERING. **Hao Pan**, Matthew Paszek

1344-Pos Board B446
CREATION OF SCAFFOLD-FREE HUMAN-INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES (HIPSC-CMS) CELL SHEETS FOR DRUG SCREENING AND REGENERATIVE MEDICINE. **Xie He**, Ana Da Silva Costa, Francis L. Burton, Godfrey L. Smith

1345-Pos Board B447
INTEGRATION OF REACTION-DIFFUSION MASTER EQUATION AND BROWNIAN DYNAMICS METHODOLOGIES TO SIMULATE A MINIMAL CELL. **Tyler M. Earnest**, Michael J. Hallock, Zaida Luthey-Schulten

1346-Pos Board B448
OPTOGENETIC DELINEATION OF RECEPTOR TYROSINE KINASE SUBCIRCUITS IN PC12 CELL DIFFERENTIATION. John Khamo, Vishnu Krishnamurthy, Qixin Chen, Jiajie Diao, **Kai Zhang**

1347-Pos Board B449
THE PROPOSED MECHANISM BEHIND LYSE-IT(R): A RAPID SAMPLE PREPARATION TECHNIQUE. **Tonya M. Santaus**, Christopher D. Geddes

1348-Pos Board B450
SPY AND SNOOP SUPERGLUES ENHANCE ANCHORING AND TEAM-BUILDING IN BIOPHYSICS AND SYNBIO. **Mark Howarth**

1349-Pos Board B451
A SEMI-SYNTHETIC APPROACH TO ENGINEER LIGAND- AND VOLTAGE-GATED ION CHANNELS IN LIVE CELLS. Keith K. Khoo, Iacopo Galleano, **Stephan A. Pless**

1350-Pos Board B452
REMOVAL OF COLOUR FROM TEXTILE INDUSTRIAL EFFLUENT USING MODIFIED (EPOXIDIZED) AND UNMODIFIED RUBBER (HEVEA BRASILIENSIS) LATEX. **Sarah O. Oni**, A K. Akinlabi, A A. Adeagbo

1351-Pos Board B453
CONTROLLED STIRRING OF BIOLOGICAL AND BIO-MIMETIC MICRODOPLETS. **Pierre-Yves Gires**, Mithun Thampi, Matthias Weiss

Neuroscience: Experimental Approaches and Tools (Boards B454 - B461)

1352-Pos Board B454
MORPHOLOGY OF HUMAN CYSTATIN C OLIGOMERS - TOWARDS THE CONSTRUCTION OF HCC NANODETECTOR. **Maciej Kozak**, Zuzanna Pietralik, Augustyn Molinski, Aneta Szymanska, Veronica Lindström, Anders Grubb, Michał Taube, Kosma Szutkowski

1353-Pos Board B455
CONTROLLED PHOTOSENSITIZING ACTIVITY OF OLIGOMERIC *P*-PHENYLENE ETHYNYLENES ON AMYLOID-B FIBRILS. **Adeline M. Fanni**, Florencia A. Monge, Julia J. Hammond, Jennifer S. Martinez, David G. Whitten, Eva Y. Chi

1354-Pos Board B456
STUDY OF BIOPHYSICAL PARAMETERS IN RUBI-GABA UNCAGING USING NON-LINEAR PHOTOACTIVATION AND ELECTROPHYSIOLOGY IN CEREBELLAR GRANULE CELLS. **Marco Cozzolino**, Virginia Bazzurro, Elena Gatta, Paolo Bianchini, Alberto Diaspro, Mauro Robello

1355-Pos Board B457
ENGINEERING NOVEL GENETICALLY ENCODED VOLTAGE INDICATORS BASED ON INTRA-PROTEIN ELECTRON TRANSFER. **Martin J. Iwanicki**, Sohini Mukherjee, Christopher C. Moser, Brian Y. Chow, Bohdana M. Discher

1356-Pos Board B458 TRAVEL AWARDEE
PROBING THE BIOPHYSICAL MECHANISMS OF INFRARED NEURAL STIMULATION WITH NONLINEAR RAMAN IMAGING. **Wilson R. Adams**, Manqing Wang, Rekha Gautam, E. Duco Jansen, Anita Mahadevan-Jansen

1357-Pos Board B459
EFFECT OF AMYLOID FIBRIL OXIDATION ON ITS SEEDING POTENCY. **Daniel C. Okoye**, Adeline Fanni, David G. Whitten, Eva Y. Chi

1358-Pos Board B460
A NEURONAL DYNAMIC CLAMP SYSTEM FOR ACTION POTENTIAL RECORDING IN HUMAN INDUCED PLURIPOTENT STEM CELL DERIVED NEURONS. Mark Nowak, Brian Panama, Brandon Franks, Randall Rasmusson, **Glenna Bett**

1359-Pos Board B461
CHOLESTEROL FUNCTIONALIZATION OF GOLD NANOPARTICLES ENABLES NEURAL PHOTO-ACTIVATION. **Joao A. Carvalho-de-Souza**, Okhil K. Nag, Eunkeu oh, Alan J. Huston, Igor Vurgaftman, David Pepperberg, Francisco Bezanilla, James B. Delehanty

Single-Molecule Spectroscopy II (Boards B462 - B475)

1360-Pos Board B462
OPTICAL TWEEZERS WITH IRM, TIRF AND WIDEFIELD: STUDYING CYTOSKELETALPROCESSES WITH OR WITHOUT THE NEED FOR FLUORESCENCE LABELING. **Trey Simpson**, Sara Tafoya, Ernie Au, Ali Raja, Willem Peutz, Andrea Candelli, Gerrit Sitters

1361-Pos Board B463
A NOVEL CUVETTE-FCS SETUP FOR SINGLE MOLECULE MEASUREMENTS OF PROTEIN UNFOLDING AND EARLY STAGES OF PROTEIN AGGREGATION. **Kanchan Garai**, Bankanidhi Sahoo, Timir Sil

1362-Pos Board B464
IMMUNOASSAY DETECTION USING DIRECT SINGLE-MOLECULE COUNTING. **Patrick J. Macdonald**, Qiaoqiao Ruan, Sergey Y. Tetin

1363-Pos Board B465
MODEL FOR CONCERTED POWER STROKE GENERATION IN SINGLE MYOSIN V AND F_1-ATPASE IMAGING TRAJECTORIES. **Sandor Volkan-Kacso**, Rudolph Marcus

1364-Pos Board B466
INTERACTIONS BETWEEN A BIOFLAVONOID AND G-QUADRUPLEX DNA AT THE ENSEMBLE AND SINGLE-MOLECULE LEVEL. **Sneha Paul**, Anunay Samanta

1365-Pos Board B467
A SINGLE-MOLECULE INVESTIGATION ON INTERFACIAL BASE-STACKING INTERACTION USING A CENTRIFUGE FORCE MICROSCOPE. **Jibin Abraham Punnoose**

1366-Pos Board B468
QUANTITATIVE MEASUREMENTS OF SINGLE-MOLECULE FRET BETWEEN QUANTUM DOTS AND ORGANIC DYES. **Nooshin Shatery Nejad**, Candice M. Etson

1367-Pos Board B469
VERSATILE TOOLS TOWARDS REAL-TIME SINGLE-MOLECULE BIOLOGY. **Trey Simpson**, Sara Tafoya, Ernie Au, Ali Raja, Willem Peutz, Andrea Candelli

1368-Pos Board B470
A SINGLE BIOMOLECULE INTERFACE FOR ADVANCING THE SENSITIVITY, SELECTIVITY AND ACCURACY OF SINGLE-MOLECULE DETECTION. **Yi-Tao Long**, Yaqian Wang, Meng-Yin Li, Jie Yang

1369-Pos Board B471
A NOVEL APPROACH FOR SINGLE MOLECULE OBSERVATION OF DNA LOOPS FORMED BY TOXR-RNA POLYMERASE COMPLEX, LACI, AND DMPR. **Xuelin Jin**, Kyubong Jo

1370-Pos Board B472
DETAILED KINETICS OF RNA FOLDING PATHWAYS AND THERMODYNAMIC ORIGINS OF CROWDING BY SINGLE-MOLECULE FRET. **Hsuan-Lei Sung**, Abhigyan Sengupta, David J. Nesbitt

1371-Pos Board B473
FTSN BRIDGES THE FTSZ-TREADMILLING AND SEPTAL PEPTIDOGLYCAN SYNTHESIS. **Zhixin Lyu**, David Weiss, Jie Xiao

1372-Pos Board B474 TRAVEL AWARDEE
EXPLORING CONFORMATIONAL DYNAMICS IN EGFR USING SINGLE-MOLECULE SPECTROSCOPY. **Shwetha Srinivasan**, Raju Regmi, Steven Quinn, Wei He, Vandna Kukshal, John Monsey, Kermit L. Carraway III, Ron Bose, Matthew A. Coleman, Gabriela S. Schlau-Cohen

1373-Pos Board B475
SINGLE-MOLECULE ANALYSIS OF SPLICEOSOME ACTIVATION KINETICS REVEALS MULTIPLE INTERMEDIATE STATES. **Xingyang Fu**, Aaron A. Hoskins

Optical Microscopy and Superresolution Imaging II (Boards B476 - B502)

1374-Pos Board B476
SIMPLE AND FIDUCIAL-FREE DRIFT CORRECTION FOR SUPER-RESOLUTION IMAGING OF CELLULAR STRUCTURES. Michael J. Wester, **Sandeep Pallikkuth**, Hanieh Mazloom-Farsibaf, Mohamadreza Fazel, Keith A. Lidke

1375-Pos Board B477
MULTIMODAL LABEL FREE STOKES/MUELLER MATRIX AND NON LINEAR SCANNING MICROSCOPY. **Aymeric Le Gratiet**, Riccardo Marongiu, Paolo Bianchini, alberto diaspro

1376-Pos Board B478
CHALLENGES AND OPPORTUNITIES FOR CHARACTERIZING THE ASSEMBLY OF NUCLEAR ENVELOPE PROTEINS BY FLUORESCENCE FLUCTUATION SPECTROSCOPY. **Jared Hennen**, Kwang Ho Hur, John Kohler, GW Gant Luxton, Joachim D. Mueller

1377-Pos Board B479
QUANTITATIVE SUPER-RESOLUTION MICROSCOPY OF ENDOGENOUSLY TAGGED AUTOPHAGY PROTEINS IN MAMMALIAN CELLS. **Chiranjib Banerjee**

1378-Pos Board B480
QUANTIFYING INTRACELLULAR MASS GENERATION USING QUANTITATIVE PHASE MICROSCOPY. **Soorya Pradeep**, Thomas A. Zangle

1379-Pos Board B481
CHROMATIN ALTERATIONS IN A MODEL OF ONCOGENE ACTIVATION STUDIED BY ADVANCED FLUORESCENCE MICROSCOPY. **Luca Lanzano'**, Michele Oneto, Isotta Cainero, Simone Pelicci, Maria Sarmento, Lorenzo Scipioni, Mario Faretta, Laura Furia, Gaetano Ivan Dellino, Pier Giuseppe Pelicci, Paolo Bianchini, Alberto Diaspro

1380-Pos Board B482
DYNAMICS OF ACTIVATING AND INHIBITORY RECEPTORS IN MURINE NATURAL KILLER CELLS REVEALED BY 2D PAIR CORRELATION FUNCTION ANALYSIS. **Per Niklas Hedde**, Elina Staaf, Sunitha Bagawath Singh, Sofia Johansson, Enrico Gratton

1381-Pos Board B483
TYPE 3 SECRETION SYSTEM CHAPERONE-EFFECTOR DYNAMICS IN LIVE *YERSINIA ENTEROCOLITICA*. **Alecia M. Achimovich**, Alma Rivera, Julian Rocha, Andreas Gahlmann

1382-Pos Board B484 TRAVEL AWARDEE
LABEL FREE MICROSCOPY WITH PTYCHOGRAPHY. **Nicholas S. Anthony**, Paolo Bianchini, Alberto Diaspro

1383-Pos Board B485
UNDERSTANDING COMPLEX SINGLE MOLECULE EMISSION PATTERNS WITH DEEP LEARNING. **Peiyi Zhang**, Sheng Liu, Abhishek Chaurasia, Donghan Ma, Michael J. Mlodzianoski, Eugenio Culurciello, Fang Huang

1384-Pos Board B486
Z-SCANNING IN VOLUMETRIC 2-PHOTON OR LIGHT-SHEET MICROSCOPY WITH A FAST VOICE-COIL DRIVEN FOCUSING SYSTEM. **Gert Rapp**, Christian Schulze, Thomas Oertner, Florian Huhn

1385-Pos Board B487
POST-EXPANSION STORM ENABLES IMAGING BEYOND SUPER-RESOLUTION LIMITS. **Xiaoyu Shi**, Arthur Tran, Xiaomeng Wang, Ian Seiple, Bo Huang

1386-Pos Board B488
TWO-PHOTON IMAGING OF NADH IN SKH1 MICE REVEALS CHANGES IN KERATINOCYTE METABOLISM WITH CHRONIC UVA EXPOSURE. Dominick Myers, Katie D. Sotelo, Marifel Frances Gabriel, Kelsey A. Jackson, Brooke L. Yang, Ben G. Huerter, Dan L. Che, Molly Myers, Duyen Nguyen, Laura A. Hansen, **Michael G. Nichols**

1387-Pos Board B489
COMPUTATIONAL CORRECTION OF SPATIALLY-VARIANT OPTICAL ABERRATIONS IN 3D SINGLE-MOLECULE LOCALIZATION MICROSCOPY. **Ting Yan**, Charles Richardson, Mingxing Zhang, Andreas Gahlmann

1388-Pos Board B490 TRAVEL AWARDEE
AN ALTERNATIVE FRAMEWORK FOR FLUORESCENCE CORRELATION SPECTROSCOPY. **Sina Jazani**, Ioannis Sgouralis, Omer M. Shafraz, Sanjeevi Sivasankar, Steve Pressé

1389-Pos Board B491
AIRYSCAN CCA PROVIDES STRUCTURAL AND DYNAMICS FINGERPRINTING OF SUBCELLULAR COMPARTMENTS IN LIVING CELLS. **Lorenzo Scipioni**, Luca Lanzano', Alberto Diaspro, Enrico Gratton

1390-Pos Board B492
LOCALIZATION ERROR AND FITTING MODEL EVALUATION IN SINGLE PARTICLE TRACKING. **Francesco Reina**, James Ross, Mark Howarth, Christian Eggeling, B. Christoffer Lagerholm

1391-Pos Board B493
MULTIFOCUS STRUCTURE ILLUMINATION MICROSCOPY. **Juliana Hernandez**, Sara Abrahamsson

1392-Pos Board B494
LENS CHARACTERIZATION FOR MULTIFOCUS MICROSCOPY APPLICATIONS. **Brandon J. Lynch**

1393-Pos Board B495
STRUCTURED ILLUMINATION REVEALS REDUCED CHROMATIN COHESION IN CELLS WITH DNA DAMAGE. **Keith Bonin**, Amanda Smelser, Naike Salvador Moreno, George Holzwarth, Dave Segall, Pierre-Alexandre Vidi

1394-Pos Board B496
PHOTOSWITCHING ANISOTROPY FRET FOR MONITORING HOMO-OLIGOMERIZATION OF PROTEINS. Namrata Ojha, Kristin Rainey, **George H. Patterson**

1395-Pos Board B497
AUTOFLUORESCENCE SUPPRESSION BY OPTICALLY CONTROLLING DARK STATES OF PHOTOSWITCHABLE FLUORESCENT PROTEINS ON COMMERCIAL MICROSCOPES. **Yen-Cheng Chen**, Chetan Sood, Robert M. Dickson, Gregory B. Melikyan

1396-Pos Board B498
ULTRA-SENSITIVE DETECTION OF PERIPHERAL MEMBRANE PROTEIN BINDING TO THE PLASMA MEMBRANE OF LIVING CELLS. Isaac Angert, **John Kohler**, Siddarth Reddy Karuka, Morgan E. Meissner, Louis M. Mansky, Joachim D. Mueller

1397-Pos Board B499
ACTIVE PSF SHAPING AND ADAPTIVE OPTICS ENABLE VOLUMETRIC SINGLE MOLECULE SUPER-RESOLUTION MICROSCOPY THROUGH BRAIN SECTIONS. Michael Mlodzianoski, Paul Cheng-Hathaway, Sheng Liu, Shane Bemiller, Tyler McCray, David Miller, Bruce Lamb, Gary Landreth, **Fang Huang**

1398-Pos **Board B500**
3D MICROSCOPY-INDEPENDENT APPROACH FOR OBTAINING 3D SUPER-RESOLUTION INFORMATION IN ROTATIONALLY SYMMETRIC BIO-STRUCTURES. **Andrew Ruba**, Wangxi Luo, Joseph Kelich, Weidong Yang

1399-Pos **Board B501**
RESTRICTING DIFFUSIVE EXCHANGE *IN VITRO* DEMONSTRATES INOS MODULATES HYPOXIC GRADIENTS IN THE TUMOR MICROENVIRONMENT. **Caroline Gilmore**, Veena Somasundaram, David Scheiblin, William Heinz, Stephen Lockett, David Wink

1400-Pos **Board B502**
PROTEIN DIMERIZATION PROBED WITH SITE-SPECIFIC ATTACHED SINGLE NANOPARTICLES. **Joerg Wissler**, Sandra Bäcker, Alessandro Feis, Shirley Knauer, Sebastian Schlücker

EPR and NMR: Spectroscopy and Imaging (Boards B503 - B512)

1401-Pos **Board B503**
CONFIDENCE ANALYSIS OF DEER DATA AND ITS STRUCTURAL INTERPRETATION WITH ENSEMBLE-BIASED METADYNAMICS. **Eric J. Hustedt**, Fabrizio Marinelli, Richard A. Stein, José D. Faraldo-Gómez, Hassane Mchaourab

1402-Pos **Board B504** **TRAVEL AWARDEE**
ELECTRON PARAMAGNETIC RESONANCE ELUCIDATES THE STRUCTURAL MECHANISM BY WHICH SERCA IS ACTIVATED BY DWORF. **Mark D. Rustad**, Peter D. Martin, Daniel R. Stroik, Christine B. Karim

1403-Pos **Board B505**
SITE-DIRECTED SPIN LABELING EPR STUDIES ON THE CATALYTIC ASPARTATE LOOP OF EXOU UPON INTERACTION WITH UBIQUITIN AND MEMBRANES. **Samantha Kohn**, Jimmy B. Feix

1404-Pos **Board B506**
WATER PROTON FLOW-NMR—A NOVEL TOOL FOR REAL-TIME IN-LINE PROCESS MONITORING IN BIOMANUFACTURING. **Marc B. Taraban**, Katharine T. Briggs, Yihua Bruce Yu

1405-Pos **Board B507**
LOW-FIELD NMR IN NONDESTRUCTIVE QUANTITATIVE INSPECTION OF DRUG PRODUCTS. **Katharine T. Briggs**, Marc B. Taraban, Yihua B. Yu

1406-Pos **Board B508**
QUANTITATIVE BINDING OF DIVALENT METAL IONS TO DNA HAIRPIN LOOPS. **Harrison Russell**, William Gunderson, Julie Gunderson

1407-Pos **Board B509**
HIGHLY SENSITIVE RESONATORS FOR EPR SPECTROSCOPY OF SUBMICROLITER/SUBMICROMOLAR BIOMACROMOLECULAR SAMPLES. **Nandita Abhyankar**, Amit Agrawal, Robert McMichael, Szalai Veronika

1408-Pos **Board B510**
AORTIC ATHEROSCLEROSIS WITH CONSIDERATION OF THE ANISOTROPIC PROPERTIES OF LIPIDS IN MRI. **Erik N. Taylor**, Nasi Huang, Matthew Diamse, Farzad Mortazavi, Markus Bachschmid, James A. Hamilton

1409-Pos **Board B511**
ORTHOGONAL ^{19}F-LABELLING FOR SIMULTANEOUS RECEPTOR AND LIGAND TRACKING IN TITRATIONS. Jeff Simmons, Alexandre Murza, Éric Marsault, **Jan K. Rainey**

1410-Pos **Board B512**
ACCURATE MEASUREMENT AND PREDICTION OF $^{15}N^{H}$ AND $^{13}C^{A}$ CHEMICAL SHIFT TENSORS IN PROTEINS. **Matthew Fritz**, Caitlin M. Quinn, Mingzhang Wang, Guangjin Hou, Xingyu Lu, Leo Koharudin, Jochem Struppe, David A. Case, Angela M. Gronenborn

Computational Methods and Bioinformatics I (Boards B513 - B541)

1411-Pos **Board B513**
INTRODUCING A NOVEL MULTI-LEVEL METHOD FOR SIMULATING THE PH DEPENDENCE OF CHARGE STATE FLUCTUATIONS AND CONFORMATIONAL ENSEMBLES OF INTRINSICALLY DISORDERED PROTEINS. **Martin J. Fossat**, Ammon E. Posey, Rohit V. Pappu

1412-Pos **Board B514** **TRAVEL AWARDEE**
ION-HYDROXYL INTERACTIONS: FROM HIGH-LEVEL QUANTUM BENCHMARKS TO TRANSFERABLE POLARIZABLE FORCE FIELDS. **Vered Wineman-Fisher**, Yasmine Al-Hamdani, Iqbal Adduo, Alexandre Tkatchenko, Sameer Varma

1413-Pos **Board B515** **TRAVEL AWARDEE**
INCORPORATING PROTEINS INTO GEOMETRICALLY COMPLEX, CELL-SCALE MEMBRANE MODELS FOR MOLECULAR DYNAMICS SIMULATIONS. **Noah Trebesch**, Emad Tajkhorshid

1414-Pos **Board B516**
PYTHEAS: A SOFTWARE TO MAP RNA MODIFICATIONS VIA TANDEM MASS SPECTROMETRY. **Luigi D'Ascenzo**, Anna Popova, James R. Williamson

1415-Pos **Board B517**
MAINMAST-MELD-MDFF: *DENOVO*STRUCTURE-DETERMINATION WITH DATA-GUIDED MOLECULAR DYNAMICS. Alberto Perez, Mrinal Shekhar, Genki Terashi, Daisuke Kihara, Ken A. Dill, Emad Tajkhorshid, **Abhishek Singharoy**

1416-Pos **Board B518**
TRANSFER LEARNING FOR EFFICIENT SEGMENTATION OF SUBCELLULAR STRUCTURES IN 3-D ELECTRON MICROSCOPY. **Matthew D. Guay**, Zeyad A. Emam, Adam B. Anderson, Richard D. Leapman

1417-Pos **Board B519**
HIGH-THROUGHPUT REFINEMENT OF CRYOEM-BASED STRUCTURES. **Chaoyi Xu**, Alexander J. Bryer, Juan R. Perilla

1418-Pos **Board B520**
FROM FRET MEASUREMENTS TO DATABASE DEPOSITION OF INTEGRATIVE STRUCTURAL MODELS. **Christian A. Hanke**, Hayk Vardanyan, Mykola Dimura, Claus A.M. Seidel

1419-Pos **Board B521**
FISIK: FRAMEWORK FOR THE INFERENCE OF IN SITU INTERACTION KINETICS FROM SINGLE-MOLECULE IMAGING DATA. **Luciana R. de Oliveira**, Robel Yirdaw, Khuloud Jaqaman

1420-Pos **Board B522**
CAN HYDROGEN-DEUTERIUM EXCHANGE RATES AT SINGLE RESIDUE LEVEL BE OBTAINED FROM HDX-MS DATA? **Emanuele Paci**, Roman Tuma, Simon Skinner, Jeanine J. Houwing-Duistermaat

1421-Pos **Board B523**
CHARMM-GUI NMR STRUCTURE CALCULATOR: A WEB-BASED TOOL FOR CALCULATING BIOMOLECULAR NMR STRUCTURES. **Jumin Lee**, Yuanpeng J. Huang, Gaetano T. Montelione, Wonpil Im

1422-Pos **Board B524**
A NEW WEB SERVER FOR THE IDENTIFICATION OF NOVEL NUCLEIC ACID STRUCTURAL MOTIFS AND THEIR INTERACTIONS WITH PROTEINS. **Shuxiang Li**, Xiang-Jun Lu, Wilma K. Olson

1423-Pos **Board B525**
GDASH: A GENOMICS DASHBOARD INTEGRATING MODELING AND INFORMATICS. **Zilong Li**, Ran Sun, Thomas Connor Bishop

1424-Pos Board B526
ON THE USE OF SHORT RESEEDING TRAJECTORIES TO SAMPLE MARKOV STATE MODELS. **Hongbin Wan**, Vincent Voelz

1425-Pos Board B527
AUTOMATIC ASSIGNMENT OF BONDED FORCE FIELD PARAMETERS FOR SMALL MOLECULES USING MACHINE LEARNING. **Praveer Narwelkar**, Hui Sun Lee, Sihong Xie, Wonpil Im

1426-Pos Board B528
DEFINING CONFORMATIONAL STATES OF PROTEINS USING DIMENSIONALITY REDUCTION AND CLUSTERING ALGORITHMS. **Eugene Klyshko**, Sarah Rauscher

1427-Pos Board B529
AN EFFICIENT ALGORITHM TO CALCULATE THE COMMON SOLVENT ACCESSIBLE VOLUME. **In Jung Kim**

1428-Pos Board B530
CHARMM-GUI MULTICOMPONENT ASSEMBLER FOR MODELING AND SIMULATION OF COMPLEX HETEROGENEOUS BIOMOLECULAR SYSTEMS. **Nathan R. Kern**

1429-Pos Board B531
A STOCHASTIC SPATIAL SIMULATION METHOD FOR SELF-ASSEMBLY REACTIONS. **Marcus Thomas**, Russell S. Schwartz

1430-Pos Board B532
ELECTROSTATIC FORCE DRIVEN MOLECULAR DYNAMICS SIMULATIONS. Yunhui Peng, **Mahesh Koirala**, Emil Alexov

1431-Pos Board B533
A NEW OPEN SOURCE TOOLKIT FOR SEGMENTING 3D INTRACELLULAR STRUCTURES IN MICROSCOPY IMAGES. **Matheus Palhares Viana**, Susanne Rafelski

1432-Pos Board B534
A SYSTEMATIC APPROACH TO UNDERSTANDING MACROMOLECULAR CROWDING EFFECTS ON BIOMOLECULAR INTERACTIONS THROUGH COMPUTATIONAL "TOY" MODELS. **Rachel Kim**, Mala L. Radhakrishnan

1433-Pos Board B535
CALCULATION OF PROTEIN-PROTEIN BINDING FREE ENERGIES USING UMBRELLA SAMPLING WITH DUAL RESOLUTION WATER MODELS. **Jagdish Suresh Patel**, F. Marty Ytreberg

1434-Pos Board B536
CHARMM-GUI LIGAND BINDER FOR RELATIVE BINDING FREE ENERGY CALCULATIONS. **Seonghoon Kim**, Wonpil Im

1435-Pos Board B537
ONE NANOMETER PRECISION BY BAYESIAN GROUPING OF LOCALIZATIONS. **Mohamadreza Fazel**, Bernd Rieger, Ralf Jungmann, Keith A. Lidke

1436-Pos Board B538
IMPLICIT SOLVENT CALCULATIONS AT LARGE SCALE VIRUS-LEVEL POISSON-BOLTZMANN AND MULTISCALE SIMULATIONS FOR ELECTROSTATICS. Matias Martinez, Horacio Vargas-Guzman, **Christopher D. Cooper**

1437-Pos Board B539
UNSUPERVISED LEARNING OF CONFORMATIONAL STATES PRESENT IN MOLECULAR DYNAMICS SIMULATION DATA FOR SUMMARIZATION OF EQUILIBRIUM CONFORMATIONAL DYNAMICS. **Kazi Lutful Kabir**, Nasrin Akhter, Amarda Shehu

1438-Pos Board B540
GENETIC MUTATION CLASSIFICATION USING MACHINE LEARNING. Hammad Farooq, **Naeem Rehmat**, Sanjay Kumar, Hammad Naveed

1439-Pos Board B541
CHARACTERIZATION OF SPECTRAL FEATURE UPON CELLULAR MORPHODYNAMICS AND ITS APPLICATION. **Xiao Ma**, Ellen O'Shaughnessy, Klaus M. Hahn, Gaudenz Danuser

Micro- and Nanotechnology I (Boards B542 - B556)

1440-Pos Board B542
SOFT MATERIAL PROGRAMMING THROUGH THE SPATIOTEMPORAL RELEASE OF OLIGONUCLEOTIDES. **Moshe Rubanov**, Phillip Dorsey, Dominic Scalise, Wenlu Wang, Rebecca Schulman

1441-Pos Board B543 TRAVEL AWARDEE
DETECTION AND MAPPING OF DSDNA BREAKS USING GRAPHENE NANOPORE TRANSISTOR. **Nagendra Athreya**, Olgica Milenkovic, Jean-Pierre Leburton

1442-Pos Board B544
AUTOCHEMOPHORETIC DNA MOTORS GENERATE 100+ PICONEWTON FORCES. **Aaron Blanchard**, Khalid Salaita

1443-Pos Board B545
OPTICALLY ASSISTED LOCALIZATION OF SOLID-STATE NANOPORE DURING CONTROLLED BREAKDOWN FABRICATION. **Kamyar Akbari Roshan**, Weihua Guan

1444-Pos Board B546
NANOFLUIDIC CHIPS FOR DNA AND NANOPARTICLES DETECTION AND MANIPULATION. **Denise Pezzuoli**, Elena Angeli, Diego Repetto, Giuseppe Firpo, Patrizia Guida, Roberto Lo Savio, Luca Repetto, Ugo Valbusa

1445-Pos Board B547
BIOMIMETIC, VOLTAGE-SENSITIVE NANOPORES WITH LOCAL CONTROL OVER PORE POSITION, SIZE AND SURFACE CHEMISTRY. Cody Combs, Nick Teslich, Elif T. Acar, Francesco Fornasiero, Zuzanna S. Siwy, **Steven F. Buchsbaum**

1446-Pos Board B548
A ROBUST MECHANISM TO RENDER ARTIFICIAL NANOPORES POTASSIUM ION SELECTIVE. Elif T. Acar, Steven Buchsbaum, **Cody Combs**, Francesco Fornasiero, Zuzanna S. Siwy

1447-Pos Board B549
COMPARING UBIQUITIN AND INSULIN TRANSLOCATION DYNAMICS THROUGH A NANOPORE IN AN ELECTRICALLY BIASED SOLID-STATE MEMBRANE. **Craig C. Wells**, Dmitriy V. Melnikov, Maria E. Gracheva

1448-Pos Board B550
BROWNIAN DYNAMICS WITH SELF-CONSISTENT FORCE CALCULATIONS FOR A NEUTRAL NANOPARTICLE TRANSLOCATING THROUGH A NANOPORE. Zachery K. Hulings, Dmitriy V. Melnikov, **Maria E. Gracheva**

1449-Pos Board B551
VARIATIONS IN ELECTROOSMOTIC FLOW OUTSIDE GLASS NANOPORES WITH SPECIES OF MONOVALENT CATION. **Jeffrey Mc Hugh**, Kurt Andresen, Ulrich F. Keyser

1450-Pos Board B552
PHOTOTHERMALLY-ASSISTED LIPID BILAYER COATING ON A SIN NANOPORE FOR HIGH-THROUGHPUT PROTEIN CHANNEL FORMATION. **Hirohito Yamazaki**, Yinghua Qiu, Xinqi Kang, Meni Wanunu

1451-Pos Board B553
HIGHLY-STABLE BIO-INSPIRED PEPTIDE/MOS2 MEMBRANES FOR EFFICIENT WATER DESALINATION. **Bedanga Sapkota**, Laxmi Pandey, Abdelkrim Benabbas, Meni Wanunu

1452-Pos Board B554
ARRAY OF FREESTANDING PLANAR LIPID BILAYERS FOR PARALLEL OPTICAL AND ELECTRICAL RECORDINGS. **Gerhard Baaken**, Ekaterina Zaitseva, Soenke Petersen, Taras Sych, Kubick Stefan, Jan C. Behrends

1453-Pos Board B555
PH RESPONSIVE MORPHOLOGICAL CHANGE IN POLYMER NANOSTRUCTURES. **Ryan L. Hamblin**, Stacy M. Copp, Gabriel A. Montaño

1454-Pos Board B556
CHARACTERIZATION OF BIOCOMPATIBLE NANOPARTICLES FOR BIOPHYSICAL AND BIOMEDICAL APPLICATIONS. **Vincent J. Altimari**, Louis Remy, Stephen C. Hickey, Cara Mawson, Hannah M. Work, Charles D. Hughes, Nathaniel V. Nucci

Biomaterials (Boards B557 - B565)

1455-Pos Board B557
SOLVENT-FREE CRYOSTORAGE OF MICROORGANISMS USING ICE GROWTH INHIBITING POLYMERS. **Muhammad Hasan**, Alice Fayter, Matthew I. Gibson

1456-Pos Board B558
AN ALGORITHM TO CONSTRUCT BIOLOGICALLY RELEVANT CHONDROITIN SULFATE BIOPOLYMER MODELS AT ATOMIC RESOLUTION. Elizabeth K. Whitmore, Gabriel Vesenka, Hanna Sihler, **Olgun Guvench**

1457-Pos Board B559
LIGNIN-CELLULOSE BINDING AFFINITY DEPENDENCE ON CELLULOSE FACE AND LIGNIN COMPOSITION. **Josh V. Vermaas**, Gregg T. Beckham, Michael F. Crowley

1458-Pos Board B560
FLOW IMAGING MICROSCOPY OF A SELF-ASSEMBLING PROTEIN POLYMER MATERIAL. **Eva Rose M. Balog**

1459-Pos Board B561
INVESTIGATIONS INTO THE MECHANISM OF FIBRIL FORMATION IN A PEPTIDE HYDROGEL. **Gabriel A. Braun**, Sara S. Linse, Karin Akerfeldt Akerfeldt

1460-Pos Board B562
SELF-HEALING DNA-BASED REACTION-DIFFUSION PATTERNS. **Phillip J. Dorsey**, Rebecca Schulman

1461-Pos Board B563
CARBON NANOTUBE PORINS IN BLOCK COPOLYMERS AS FULLY SYNTHETIC MIMICS OF BIOLOGICAL MEMBRANES. **Aleksandr Noy**

1462-Pos Board B564
LOCATION-LOCATION-LOCATION: DESIGNING CATIONIC CHARGE PLACEMENT ON LIPID VESICLES DETERMINES THEIR INTERACTIONS WITH LIVING CELLS. **Aprameya Ganesh Prasad**, Dominick Salerno, Alaina K. Howe, Omkar Mandar Bhatavdekar, Stavroula Sofou

1463-Pos Board B565
EFFECTS OF AGING ON THE VISCOELASTIC PROPERTIES OF TISSUES AND CANCER CELL BEHAVIOR. **Seungman Park**, Jiaxiang Tao, Li Sun, Chen-Ming Fan, Yun Chen

Tuesday, March 5, 2019

Daily Program Summary

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

7:30 AM–5:00 PM	**Registration/Information**	**Charles Street Lobby**
8:00 AM–9:00 AM	**Biophysical Society Business Meeting**	**Room 324/325/326**
8:00 AM–4:00 PM	**Poster Viewing**	**Exhibit Hall**
8:15 AM–10:15 AM	**Symposium: Proteins: Dynamics and Allostery** **Chair:** *Rommie Amaro, University of California, San Diego* NMR WHY BOTHER. *Lewis Kay* COLD ADAPTATION IN AN ENZYME CAN BE DRIVEN BY DYNAMIC ALLOSTERY. *Vincent Hilser* CAVITIES IN CONTEXT: DISTINCT CONSEQUENCES OF PACKING DEFECTS IN A REPEAT PROTEIN FOLDING LANDSCAPE. *Catherine A. Royer* PROTEIN DYNAMICS IN CELLULAR ENVIRONMENTS. *Rommie E. Amaro*	**Ballroom I**
8:15 AM–10:15 AM	**Symposium: Function and Signaling at the Membrane** **Chair:** *Mark McLean, University of Illinois at Urbana-Champaign* MEMBRANE PERMEABILIZATION IN CELL DEATH SIGNALING. A SINGLE MOLECULE APPROACH. *Ana García-Sáez* MITOCHONDRIAL BEHAVIOR. *Jodi Nunnari* THE HEAT, STEROIDS AND PROTONS AS DRIVERS OF FLAGELLAR MOTILITY. *Polina V. Lishko* UNDERSTANDING THE ROLE OF ANIONIC LIPIDS IN THE INTERACTION OF KRAS4B WITH THE MEMBRANE SURFACE. *Mark A. McLean*	**Ballroom II**
8:15 AM–10:15 AM	**Platform:Functional Dynamics in Transcription and Translation**	**Ballroom III**
8:15 AM–10:15 AM	**Platform: Membrane Proteins II**	**Ballroom IV**
8:15 AM–10:15 AM	**Platform: Ion Channel Regulatory Mechanisms**	**Room 307/308**
8:15 AM–10:15 AM	**Platform: Molecular Dynamics II**	**Room 309/310**
8:15 AM–10:15 AM	**Platform: Biophysics and Neuroscience**	**Room 314/315**
9:00 AM–10:30 AM	**Subgroup Chairs Meeting**	**Room 331**
9:30 AM–10:30 AM	**Career Development Center Workshop:** **Looking Beyond Academia: Identifying Your Career Options using MyIDP, LinkedIn & More**	**Exhibit Hall A**
9:30 AM–11:00 AM	**Exhibitor Presentation: Sophion Bioscience A/S** **Electrophysiological Characterization Using Automated Patch Clamp (QPatch and Qube) of hiPSC-Derived Neurological Disease Models, New Automated Patch Clamp Ion Channel Assays for CiPA Cardiac Safety Testing (Dynamic hERG and LQT3 Late Nav1.5) and Nav1.7 Drug Discovery**	**Room 303**
10:00 AM–4:00 PM	**Exhibits**	**Exhibit Hall**
10:15 AM–11:00 AM	**Coffee Break**	**Exhibit Hall**
10:45 AM–12:45 PM	**Symposium: Awards** **Chair:** *Angela Gronenborn, University of Pittsburgh and BPS President* MODELING THE DYNAMICS OF CDC42 OSCILLATION IN FISSION YEAST. *Bin Xu* TECHNOLOGY DEVELOPMENT TOWARDS THE UNDERSTANDING OF G-PROTEIN COUPLED RECEPTOR STRUCTURE FUNCTION. *Raymond C. Stevens* FINDING ORDER IN DISORDER: FUNCTIONAL STUDIES OF DYSFUNCTIONAL PROTEINS. *Elizabeth Rhoades* MANY SINGLE MOLECULES. *Jeff Gelles* FUNCTIONAL PROTEIN FIBRILS AS ANTIBACTERIAL AGENTS AND TARGETS. *Meytal Landau* LAURDAN GP FOR THE QUANTITATION OF LIPID PHASES. *Enrico Gratton* SURFACE PROGRAMMING OF PROTEIN HYDRATION WATER DYNAMICS REVEALED BY OVERHAUSER DYNAMIC NUCLEAR POLARIZATION. *Song-I Han* EXPLORING THE RIBOSOME WITH FRIENDS: MYSTERIES OF THE MOTHER SHIP. *Harry Noller* A (SCIENTIFIC) LIFETIME AFFAIR WITH NUCLEIC ACIDS. *Juli Feigon*	**Ballroom I**

10:45 AM–12:45 PM	**Platform: Systems Biology and Genetic Regulatory Networks**	**Ballroom II**
10:45 AM–12:45 PM	**Platform: Microtubule-based Motors**	**Ballroom III**
10:45 AM–12:45 PM	**Platform: Protein Structure and Conformation III**	**Ballroom IV**
10:45 AM–12:45 PM	**Platform: Voltage-gated Na and Ca Channels**	**Room 307/308**
10:45 AM–12:45 PM	**Platform: Exocytosis & Endocytosis**	**Room 309/310**
10:45 AM–12:45 PM	**Platform: Biosensors**	**Room 314/315**
10:45 AM–12:45 PM	**Platform: Membrane Physical Chemistry II**	**Room 316/317**
11:30 AM–12:30 PM	**Career Development Center Workshop: The Industry Interview: What you need to do before, during, and after to get the job**	**Exhibit Hall A**
12:00 PM–1:30 PM	**Founding, Establishing, and Maintaining a Research Laboratory at Primarily Undergraduate Institutions**	**Room 318/319/320**
12:00 PM–1:30 PM	**Postdoc to Faculty Q&A: Transitions Forum and Luncheon**	**Room 331/332**
1:15 PM–2:45 PM	**Nurturing a More Inclusive STEM Enterpriseby Understanding our Biases**	**Room 324/325/326**
1:30 PM–3:00 PM	**The Nuts and Bolts of Preparing Your NIH Grant**	**Room 321/322/323**
1:30 PM–3:00 PM	**Industry Panel**	**Room 327/328/329**
1:45 PM–3:00 PM	**Snack Break**	**Exhibit Hall**
1:45 PM–3:45 PM	**Poster Presentations and Late Posters**	**Exhibit Hall**
2:30 PM–3:30 PM	**Career Development Center Workshop: Nailing the Job Talk, or Erudition Ain't Enough**	**Exhibit Hall A**
3:00 PM–5:00 PM	**Education Committee Meeting**	**Room 333**
4:00 PM–6:00 PM	**Symposium: Determining Molecular Networks** **Ballroom I** **Chair:** *Edward Marcotte, University of Texas at Austin* FINDING AND INTERPRETING GENETIC INTERACTIONS USING PERTURB-SEQ SINGLE CELL RNA-SEQ CRISPR SCREENS. *Jonathan Weissman* DECODING THE HUMAN GENOME WITH MACHINE LEARNING APPROACHES. *Olga Troyanskaya* THE PROTEOTYPE MODEL. *Rudolf Aebersold* A MASS SPECTROMETRY-BASED MAP OF CORE EUKARYOTIC PROTEIN COMPLEXES. *Edward Marcotte*	
4:00 PM–6:00 PM	**Symposium: Transporters and Channels** **Ballroom II** **Chair:** *Diana Bautista, University of California, Berkeley* CRYO-EM STRUCTURES AND MECHANISM OF HUMAN MULTIDRUG ABC TRANSPORTERS. *Kaspar Locher* MITOCHONDRIAL POTASSIUM CHANNELS AS DETERMINANTS OF CELL FATE. *Ildiko Szabo* STRUCTURAL INVESTIGATION OF VOLTAGE-GATED SODIUM CHANNELS. *Nieng Yan* SHINGOSINE-1-PHOSPATE RECEPTOR 3 (S1PR3) SIGNALING MEDIATES MECHANICAL PAIN. *Diana Bautista*	
4:00 PM–6:00 PM	**Platform: Protein-Nucleic Acid Interactions/Chromatin and the Nucleoid I**	**Ballroom III**
4:00 PM–6:00 PM	**Platform: Protein Structure, Prediction, Design, and Misfolding**	**Ballroom IV**
4:00 PM–6:00 PM	**Platform: Member Organized Session: Multiscale Modeling of Biophysical Systems**	**Room 307/308**
4:00 PM–6:00 PM	**Platform: Bacterial Mechanics, Cytoskeleton, and Motility**	**Room 309/310**
4:00 PM–6:00 PM	**Platform: Force Spectroscopy and Scanning Probe Microscopy**	**Room 314/315**
4:00 PM–6:00 PM	**Platform: Membrane Dynamics and Curvature**	**Room 316/317**
6:00 PM–6:30 PM	**Dinner Meet-Ups**	**Society Booth/Charles Street Lobby**
6:00 PM–10:00 PM	**Publications Committee Meeting**	**Hilton, Calloway**

7:30 PM–9:30 PM	**Workshop: The Role of Data Resources in Biophysics** **Room 307/308** **Chair:** *Helen Berman, Rutgers University* RCSB PROTEIN DATA BANK: SUSTAINING A LIVING DIGITAL DATA RESOURCE THAT ENABLES BREAKTHROUGHS IN SCIENTIFIC RESEARCH AND BIOMEDICAL EDUCATION. *Stephen K. Burley* REACTOME - PATHWAY CONTEXT AND VISUALISATION FOR OMICS DATA. *Henning Hermjakob* UNIPROT THE UNIVERSAL PROTEIN KNOWLEDGEBASE IN THE GIGAPROTEIN ERA. *Alex Bateman* NCBI DATABASES IN SUPPORT OF BIOPHYSICS RESEARCH. *David Landsman* ARCHIVING OF INTEGRATIVE/HYBRID STRUCTURAL MODELS. *Helen Berman*
7:30 PM–9:30 PM	**Workshop: Methods for Integrative Structure Modeling of Biomolecular Systems** **Room 309/310** **Chair:** *Jens Meiler, Vanderbilt University* HIGH-RESOLUTION, INTEGRATIVE MODELLING OF BIOMOLECULAR COMPLEXES. *Alexandre M.J.J. Bonvin* ROSETTA TOOLS FOR CRYOEM MODELING. *Frank DiMaio* PROTOTYPING MULTISCALE CELLULAR VISUALIZATION & MODELING TECHNIQUES FOR HYPOTHESIS GENERATION, COMMUNICATION & LEARNING. *Graham Johnson* MODELING PROTEIN MONOMERS AND COMPLEXES USING RESTRAINTS FROM CROSSLINKING MASS SPECTROMETRY. *Maya Topf* INTEGRATED STRUCTURAL BIOLOGY FOR ALPHA-HELICAL MEMBRANE PROTEIN STRUCTURE DETERMINATION. *Jens Meiler*
7:30 PM–9:30 PM	**Workshop: Squeezing the Most Out of Your Data - Bayesian Statistical Inference for Biophysics** **Room 314/315** **Chair:** *Michael Nilges, Pasteur Institute, France* BAYESIAN STRUCTURAL MODELING OF LARGE BIOMOLECULAR SYSTEMS. *Michael Habeck* SIMULTANEOUS DETERMINATION OF PROTEIN STRUCTURE AND DYNAMICS USING CRYO-ELECTRON MICROSCOPY. *Massimiliano Bonomi* MACHINE LEARNING METHODS TO PUSH ALL-ATOM MD BEYOND THE SECONDS TIMESCALE AND SIMULATE PROTEIN-PROTEIN ASSOCIATION AND DISSOCIATION. *Frank Noé* CLOSING THE LOOP IN AUTOMATED DESIGN AND MEASUREMENT: SCALABLE BAYESIAN INFERENCE FOR BIOPHYSICAL EXPERIMENTS. *John Chodera* BAYESIAN MODELLING IN INTEGRATIVE STRUCTURAL BIOLOGY. *Michael Nilges*
7:30 PM–9:30 PM	**Workshop: Methods for X-Ray Tomography and Electron Microscopy** **Room 316/317** **Chair:** *Carolyn Larabell, Lawrence Berkely National Laboratory* ELECTRON CRYOMICROSCOPY OF ROTARY ATPASES. *John Rubinstein* TOWARDS NEAR-ATOMIC RESOLUTION FOR IN SITU STRUCTURES BY CRYO-ELECTRON TOMOGRAPHY. *Peijun Zhang* BISPECTRAL INVARIANTS FOR IMAGE CLASSIFICATION AND ALIGNMENT IN CRYOEM. *Steven J. Ludtke* HYBRID MODELING APPROACHES TO STUDY STRUCTURES AND DYNAMICS OF BIOLOGICAL SYSTEMS. *Florence Tama* CT SCANS OF SINGLE CELLS WITH SOFT X-RAY TOMOGRAPHY. *Carolyn A. Larabell*
7:30 PM–9:30 PM	**Workshop: Single-Molecule Methods** **Room 318/319/320** **Chair:** *Bo Huang, University of California, San Francisco* MOLECULAR HIGHWAYS - TORSIONAL CONSEQUENCES OF DNA MOTOR PROTEINS. *Michelle Wang* FROM SINGLE MOLECULE FLUORESCENCE TO SUPERENZYME ENGINEERING AND BEYOND. *Taekjip Ha* PROVIDING 3D FOR SUPER-RESOLUTION MICROSCOPY AND SINGLE-PARTICLE TRACKING IN CELLS WITH SINGLE MOLECULES. *William Moerner* REVEALING THE INNER WORKING OF MOLECULAR MACHINERIES USING IN-VIVO SINGLE MOLECULE IMAGING. *Jie Xiao* MAPPING THE INNER WORLD OF CELLS. *Bo Huang*
8:00 PM–10:00 PM	**SOBLA (The Society for Latinoamerican Biophysicists) Meeting** **Room 327/328/329**

Tuesday, March 5

Registration/Information

7:30 AM - 5:00 PM, CHARLES STREET LOBBY

Biophysical Society Business Meeting

8:00 AM - 9:00 AM, ROOM 324/325/326

Poster Viewing

8:00 AM - 4:00 PM, EXHIBIT HALL

Symposium
Proteins: Dynamics and Allostery

8:15 AM - 10:15 AM, BALLROOM I

Chair
Rommie Amaro, University of California, San Diego

1464-SYMP 8:15 AM
NMR WHY BOTHER. **Lewis Kay**

1465-SYMP 8:45 AM
COLD ADAPTATION IN AN ENZYME CAN BE DRIVEN BY DYNAMIC ALLOSTERY. **Vincent Hilser**

1466-SYMP 9:15 AM
CAVITIES IN CONTEXT: DISTINCT CONSEQUENCES OF PACKING DEFECTS IN A REPEAT PROTEIN FOLDING LANDSCAPE. **Catherine A. Royer**

1467-SYMP 9:45 AM
PROTEIN DYNAMICS IN CELLULAR ENVIRONMENTS. **Rommie E. Amaro**

Symposium
Function and Signaling at the Membrane

8:15 AM - 10:15 AM, BALLROOM II

Chair
Mark McLean, University of Illinois at Urbana-Champaign

1468-SYMP 8:15 AM
MEMBRANE PERMEABILIZATION IN CELL DEATH SIGNALING. A SINGLE MOLECULE APPROACH. **Ana García-Sáez**

1469-SYMP 8:45 AM
MITOCHONDRIAL BEHAVIOR. **Jodi Nunnari**

1470-SYMP 9:15 AM
THE HEAT, STEROIDS AND PROTONS AS DRIVERS OF FLAGELLAR MOTILITY. **Polina V. Lishko**, Nadja Mannowetz, Nadine Mundt, Melissa Miller, Samuel Kenny, Ke Xu, Ida T. Bjoerkgren

1471-SYMP 9:45 AM
UNDERSTANDING THE ROLE OF ANIONIC LIPIDS IN THE INTERACTION OF KRAS4B WITH THE MEMBRANE SURFACE. **Mark A. McLean**, Michael C. Gregory, Tyler Camp, Stephen G. Sligar

Platform
Functional Dynamics in Transcription and Translation

8:15 AM - 10:15 AM, BALLROOM III

Co-Chairs
Zeliha Kilic, Arizona State University
Robert Shelansky, University of California, Santa Cruz

1472-PLAT 8:15 AM
MIMICKING COTRANSCRIPTIONAL RIBOSWITCH FOLDING VIA A SUPER-HELICASE UNWINDING ASSAY. Boyang Hua, **Christopher P. Jones**, P.J. Murray, Rebecca Rosenthal, Adrian Ferré-D'Amaré, Taekjip Ha

1473-PLAT 8:30 AM
TRANSCRIPTIONAL BURSTING, SPECIFICITY, AND THE DYNAMIC NUCLEOSOME. **Robert I. Shelansky**, Heta Patel, Tineke Lenstra, Sara Abrahamsson, Hinrich Boeger

1474-PLAT 8:45 AM
MONITORING STRUCTURAL TRANSITIONS IN RNA POLYMERASE USING SINGLE MOLECULE FRET. **Abhishek Mazumder**

1475-PLAT 9:00 AM
TRANSCRIPTIONAL ACTIVATION BY GLUCOCORTICOID RECEPTOR STUDIED BY 3D ORBITAL TRACKING FLUORESCENCE CROSS CORRELATION SPECTROSCOPY. **Julianna A. Goelzer**, Diana A. Stavreva, Gordon L. Hager, Matthew L. Ferguson

1476-PLAT 9:15 AM
PRE-MRNA SPLICING: THE GENE MATURATION SYMPHONY OF THE INTRON LARIAT SPLICEOSOME REVEALED BY MOLECULAR DYNAMICS SIMULATIONS. **Lorenzo Casalino**, Giulia Palermo, Angelo Spinello, Ursula Roethlisberger, Alessandra Magistrato

1477-PLAT 9:30 AM
BAYESIAN NONPARAMETRIC ANALYSIS OF TRANSCRIPTIONAL PROCESSES. **Zeliha Kilic**, Steve Pressé

1478-PLAT 9:45 AM
PROTEIN SYNTHESIS KINETICS IN LIVE CELLS APPROACHED BY SINGLE-MOLECULE TRACKING MICROSCOPY. **Ivan L. Volkov**, Martin Lindén, Ka-Weng Ieong, Mikhail Metelev, Kalle Kipper, Johan Elf, Magnus Johansson

1479-PLAT 10:00 AM
SINGLE MOLECULE IMAGING OF C9ORF72 RNA AND REPEAT ASSOCIATED NON-ATG TRANSLATION IN LIVE CELLS. **Malgorzata J. Latallo**, Shaopeng Wang, Nathan Livingston, Shuying Sun, Bin Wu

Platform
Membrane Proteins II

8:15 AM - 10:15 AM, BALLROOM IV

Co-Chairs
Parmryd Ingela, University of Gothernburg, Sweden
Maria Kurnikova, Carnegie Mellon University

1480-PLAT 8:15 AM
MOLECULAR MECHANISM OF TRPM2 GATING. **Tianmin Fu**

1481-PLAT 8:30 AM
SURFACE-BASED BIOCHEMICAL ACTIVITY ASSAYS COMPLEMENT ATOMIC FORCE MICROSCOPY OF THE *E. COLI* TRANSLOCASE. **Kanokporn Chattrakun**, Chunfeng Mao, Priya Bariya, Gavin King

1482-PLAT 8:45 AM
MECHANISM OF CHOLESTEROL SENSING IN THE NIEMANN PICK PROTEIN (NPC1) USING MOLECULAR DYNAMICS SIMULATIONS. Vikas Dubey, Behruz Bozorg, Daniel Wüstner, **Himanshu Khandelia**

1483-Plat 9:00 AM TRAVEL AWARDEE
CLC ANTIPORTER DIMERIZATION DYNAMICS REVEALED BY NOVEL DEVELOPMENTS IN HIGH-SPEED AFM. **George R. Heath**, Janice L. Robertson, Simon Scheuring

1484-Plat 9:15 AM
A MULTI-STATE COARSE-GRAINED SIMULATION MODEL CAPTURES CONFORMATIONAL CYCLING IN P-TYPE ATPASES. **Yong Wang**, Noureldin Saleh, Xiakun Chu, Kresten Lindorff-Larsen

1485-Plat 9:30 AM
FAST, ATOMIC-LEVEL AFM AND MAGNETIC TWEEZERS SIMULATIONS OF THE UNFOLDING OF MEMBRANE PROTEINS USING A NEW MEMBRANE BURIAL POTENTIAL WITH H-BONDING. **Zongan Wang**, John M. Jumper, Karl F. Freed, Tobin R. Sosnick

1486-Plat 9:45 AM
CONTROLLING THE FOLDING AND MISFOLDING OF POTASSIUM CHANNELS. **Kevin C. Song**, Younghoon Koh, Eduardo Perozo, Benoit Roux, Tobin R. Sosnick

1487-Plat 10:00 AM
CHIMERIC HCN CHANNELS FOR STUDYING CAMP-INDUCED CONFORMATIONAL CHANGES IN THE C-LINKER. **Bianca Introini**, Andrea Saponaro, Alessio Bonucci, Oliver Rauh, Francesca Cantini, Lucia Banci, Gerhard Thiel, Anna Moroni

Platform
Ion Channel Regulatory Mechanisms
8:15 AM - 10:15 AM, Room 307/308

Co-Chairs
Anna Moroni, University of Milan, Italy
Panpan Hou, Washington University in St. Louis

1488-Plat 8:15 AM
STRUCTURAL RESPONSE OF THE PIEZO CHANNEL UPON APPLICATION OF FORCE. **Yi-Chih Lin**, Yusong R. Guo, Atsushi Miyagi, Jesper Levring, Roderick MacKinnon, Simon Scheuring

1489-Plat 8:30 AM
CHARACTERIZATION OF TEMPERATURE-DEPENDENT GATING IN ARCHAEBACTERIAL CALCIUM ACTIVATED POTASSIUM CHANNEL. **Yihao Jiang**, Baron Chanda

1490-Plat 8:45 AM
A PHARMACOLOGICAL MASTERKEY MECHANISM TO UNLOCK THE SELECTIVITY FILTER GATE IN K^+ CHANNELS. **Marcus Schewe**, Han Sun, Alexandra Mackenzie, Ashley C. W. Pike, Friederike Schulz, Christina Constantin, Aytug K. Kiper, Linus J. Conrad, Wendy Gonzalez, Bert L. de Groot, Niels Decher, Bernd Fakler, Elisabeth P. Carpenter, Stephen J. Tucker, Thomas Baukrowitz

1491-Plat 9:00 AM
PH DEPENDENCE OF A MONOMERIC NON-CONDUCTING VOLTAGE-GATED PROTON CHANNEL (H_V1). **Emerson M. Carmona**, Osvaldo Alvarez, Alan Neely, Ramon Latorre, Carlos Gonzalez

1492-Plat 9:15 AM
STRUCTURES REVEAL OPENING OF THE STORE-OPERATED CALCIUM CHANNEL ORAI. **Xiaowei Hou**, Shana R. Burstein, Stephen B. Long

1493-Plat 9:30 AM
DEVELOPING SYNTHETIC PEPTIDES TO REGULATE NATIVE HCN CHANNELS. **Andrea Saponaro**, Francesca Cantini, Alessandro Porro, Annalisa Bucchi, Dario DiFrancesco, Vincenzo Maione, Michal Laskowski, Pietro Mesirca, Matteo Mangoni, Gerhard Thiel, Lucia Banci, Bina Santoro, Anna Moroni

1494-Plat 9:45 AM
MATRIX CA^{2+}MODULATES MITOCHONDRIAL UNIPORTER (MCU) ACTIVITY BY FLUX-THROUGH EFFECTS. **Horia Vais**, Riley Payne, Don-On Daniel Mak, Kevin J. Foskett

1495-Plat 10:00 AM
A NON-CANONICAL VSD-PORE COUPLING IN KCNQ CHANNELS. **Panpan Hou**, Jingyi Shi, Jianmin Cui

Platform
Molecular Dynamics II
8:15 AM - 10:15 AM, Room 309/310

Co-Chairs
Lucie Delemotte, KTH Royal Institute of Technology, Sweden
Joseph Rudzinski, Max Planck Institute, Germany

1496-Plat 8:15 AM
FINDING MULTIPLE REACTION PATHWAYS VIA GLOBAL OPTIMIZATION OF ACTION. **Juyong Lee**, In-Ho Lee, InSuk Joung, Jooyoung Lee, Bernard R. Brooks

1497-Plat 8:30 AM
ROBUST ESTIMATION OF FREE ENERGY LANDSCAPES FROM GAUSSIAN MIXTURE MODELS WITH CROSS-VALIDATION. **Lucie Delemotte**, Annie M. Westerlund, Christian Blau

1498-Plat 8:45 AM
IMPROVED PHYSICAL MODELS ENABLE THE INVESTIGATION OF MOLECULAR RECOGNITION IN INTRINSICALLY DISORDERED PROTEINS AT ATOMISTIC RSOLUTION. **Paul Robustelli**, Stefano Piana-Agostinetti, Alain Ibáñez de Opakua, Fabrizio Giordanetto, Cecily K. Campbell-Bezat, Stefan Becker, Albert C. Pan, Markus Zweckstetter, David E. Shaw

1499-Plat 9:00 AM
ACCURATE ESTIMATION OF PROTEIN-BINDING KINETICS USING MARKOV STATE MODELS. **Youngchan Kim**, Tiara A. Maula, Jeetain Mittal

1500-Plat 9:15 AM
BROWNIAN DYNAMICS STUDY OF CAMP DEGRADATION IN PHOSPHODIESTERASE AND ENZYME METABOLON IN THE TCA CYCLE. **Yu-ming Mindy Huang**, Gary Huber, James McCammon

1501-Plat 9:30 AM
CONFORMATIONALLY-DEPENDENT SURFACE HOPPING FOR REPRODUCING STRUCTURAL CROSS-CORRELATIONS WITH COARSE-GRAINED MODELS. Tristan Bereau, **Joseph F. Rudzinski**

1502-Plat 9:45 AM
MULTISCALE MODELING FOR PEPTIDE SELF-ASSEMBLY. Xiaochuan Zhao, Chenyi Liao, **Jianing Li**

1503-Plat 10:00 AM
BRIDGING THE SCALES: A MACHINE LEARNING DIRECTED MACRO TO MICRO SCALE SIMULATION TO MODEL RAS INITIATION OF CANCER. **Helgi I. Ingolfsson**, Dwight V. Nissley, Fred Streitz

Platform
Biophysics and Neuroscience
8:15 AM - 10:15 AM, Room 314/315

Co-Chairs
Padmini Rangamani, University of California, San Diego
Ann-Sofie Cans, Chalmers University of Technology, Sweden

1504-Plat 8:15 AM
DENDRITIC SPINE GEOMETRY AND ULTRASTRUCTURE DICTATE THE SPATIOTEMPORAL DYNAMICS OF SECOND MESSENGERS. **Padmini Rangamani**, Miriam Bell, Andrea Cugno, Donya Ohadi, Thomas M. Bartol, Ravi Iyengar, Terrence J. Sejnowski

1505-Plat 8:30 am
SUPER-RESOLUTION IMAGING OF THE BRAIN EXTRACELLULAR SPACE DEEP WITHIN INTACT LIVE TISSUE USING CARBON NANOTUBES. **Antoine G. Godin**, Noémie Danné, Juan A. Varela, Gao Zhenghong, Brahim Lounis, Laurent Groc, Laurent Cognet

1506-Plat 8:45 am
ULTRA-FAST GLUTAMATE BIOSENSOR RECORDINGS IN BRAIN SLICE DISPLAY COMPLEX SINGLE EXOCYTOSIS TRANSIENTS. **Ann-Sofie U. Cans**, Yuanmo Wang, Devesh Mishra, Jenny Bergman, Jacqueline Keighron, Karolina Skibicka

1507-Plat 9:00 am
PIEZO2 UNDERLIES SLOWLY-INACTIVATING MECHANO-CURRENT IN SENSORY NEURONS FROM TACTILE SPECIALIST BIRDS. **Slav N. Bagriantsev**, Eve R. Schneider, Evan O. Anderson

1508-Plat 9:15 am
DYNAMIC REGULATION OF AMPA RECEPTOR AND STARGAZIN CONCENTRATION IN THE SPINE IN THE TIME SCALE OF 0.1 S TO SEVERAL 100 S; UNRAVELING BY SINGLE-MOLECULE TRACKING. **Yuri L. Nemoto**, Kazuma Naito, Hiroko Hijikata, Taka A. Tsunoyama, Nao Hiramoto-Yamaki, Rinshi S. Kasai, Yuki M. Shirai, Manami S. Miyahara, Takahiro K. Fujiwara, Akihiro Kusumi

1509-Plat 9:30 am
SINGLE-MOLECULE MECHANICS OF THE MOLECULAR SPRING THAT UNDERLIES HEARING. **Tobias F. Bartsch**, Felicitas E. Hengel, Aaron Oswald, Gilman Dionne, Iris V. Chipendo, Simranjit Mangat, Muhammad El Shatanofy, Ulrich Mueller, Lawrence Shapiro, A. J. Hudspeth

1510-Plat 9:45 am TRAVEL AWARDEE
THE NEURONAL TAU PROTEIN BLOCKS *IN VITRO* FIBRILLATION OF THE AMYLOID-B (AB) PEPTIDE. **Cecilia Wallin**, Yoshitaka Hiruma, Sebastian Warmlander, Isabelle Huvent, Jüri Jarvet, Jan Pieter Abrahams, Astrid Gräslund, Guy Lippens, Jinghui Luo

1511-Plat 10:00 am
ACTIVATION OF SLACK POTASSIUM CHANNELS (KCNT1) TRIGGERS AN INCREASE IN MRNA TRANSLATION. **Taylor J. Malone**, Pawel Licznerski, Elizabeth A. Jonas, Leonard K. Kaczmarek

Subgroup Chairs Meeting

9:00 am - 10:30 am, Room 331

Career Development Center Workshop
Looking Beyond Academia: Identifying Your Career Options using MyIDP, LinkedIn & More

9:30 am - 10:30 am, Exhibit Hall A

Not sure where your professional future lies or how to approach the process in an organized and strategic manner? This presentation provides a framework and resources for moving forward with confidence towards the next step in your professional future. In addition, it will provide specific examples of how to build out your knowledge of a new potential career field and forge valuable connections that can facilitate a successful transition.

Exhibitor Presentation
Sophion Bioscience A/S

9:30 am - 11:00 am, Room 303

ELECTROPHYSIOLOGICAL CHARACTERIZATION USING AUTOMATED PATCH CLAMP (QPATCH AND QUBE) OF hiPSC-DERIVED NEUROLOGICAL DISEASE MODELS, NEW AUTOMATED PATCH CLAMP ION CHANNEL ASSAYS FOR CiPA CARDIAC SAFETY TESTING (DYNAMIC hERG and LQT3 LATE NAV1.5) AND NAV1.7 DRUG DISCOVERY
Successful ion channel drug discovery requires the integration of multiple technologies and workflows. Sophion Bioscience is a leader in automated patch clamp technology, providing medium to high throughput, automated patch clamp to the pharmaceutical industry and universities. The QPatch and Qube are fully automated patch clamp systems, executing simultaneous 8, 16, 48 or 384 parallel patch clamp recordings in conjunction with computer controlled liquid handling and on-board cell handling. Sophion partners with other biotech companies to create robust, ion channel and electrophysiological workflows for drug development for ion channel targets. During this workshop, three industry speakers will provide insight into the drug discovery process. Dr Kadla Roskva Rosholm will present how hiPSCderived neurological disease models have been characterized by use of high throughput electrophysiology at Sophion Bioscience. Next, Dr Marc Rogers from Metrion Biosciences will present their development of new automated patch clamp ion channel assays for CiPA cardiac safety testing: dynamic hERG and LQT3 late Nav1.5. Finally, Dr Brian Moyer will present on Amgen's Nav1.7 drug discovery program.

Speakers
Kadla Roskva Rosholm, Application Scientist, Sophion Bioscience A/S
Marc Rogers, Chief Scientific Officer, Metrion Biosciences
Brian Moyer, Scientific Director, Department of Neuroscience, Amgen

Exhibits

10:00 am - 4:00 pm, Exhibit Hall

Coffee Break

10:15 am - 11:00 am, Exhibit Hall

Symposium
Awards

10:45 am - 12:45 pm, Ballroom I

Chair
Angela Gronenborn, University of Pittsburgh and BPS President

No Abstract 10:45 am
MODELING THE DYNAMICS OF CDC42 OSCILLATION IN FISSION YEAST. **Bin Xu**

No Abstract 10:58 am
TECHNOLOGY DEVELOPMENT TOWARDS THE UNDERSTANDING OF G-PROTEIN COUPLED RECEPTOR STRUCTURE FUNCTION. **Raymond C. Stevens**

No Abstract 11:11 am
FINDING ORDER IN DISORDER: FUNCTIONAL STUDIES OF DYSFUNCTIONAL PROTEINS. **Elizabeth Rhoades**

No Abstract 11:24 am
MANY SINGLE MOLECULES. **Jeff Gelles**

No Abstract 11:37 am
FUNCTIONAL PROTEIN FIBRILS AS ANTIBACTERIAL AGENTS AND TARGETS. **Meytal Landau**

No Abstract 11:50 am
LAURDAN GP FOR THE QUANTITATION OF LIPID PHASES. **Enrico Gratton**

No Abstract 12:03 pm
SURFACE PROGRAMMING OF PROTEIN HYDRATION WATER DYNAMICS REVEALED BY OVERHAUSER DYNAMIC NUCLEAR POLARIZATION. **Song-I Han**

No Abstract **12:16 pm**
EXPLORING THE RIBOSOME WITH FRIENDS: MYSTERIES OF THE MOTHER SHIP. **Harry Noller**

No Abstract **12:29 pm**
A (SCIENTIFIC) LIFETIME AFFAIR WITH NUCLEIC ACIDS. **Juli Feigon**

Platform
Systems Biology and Genetic Regulatory Networks

10:45 am - 12:45 pm, Ballroom II

Co-Chairs
Amelia Palermo, The Scripps Research Institute
Samuel Schaffter, Johns Hopkins University

1512-Plat **10:45 am**
SYNTHETIC INTEGRATED *IN VITRO* TRANSCRIPTIONAL REGULATORY NETWORKS. **Samuel Schaffter**, Rebecca Schulman

1513-Plat **11:00 am**
A LIVING, SINGLE CELL VIEW OF MYC'S EFFECTS ON TRANSCRIPTION. **Simona Patange**, Michelle Girvan, David Levens, Daniel R. Larson

1514-Plat **11:15 am**
QUANTITATIVE ANALYSIS OF A TRANSIENT DYNAMICS OF A GENETIC REGULATORY NETWORK. **Julian Lee**, JeJun Lee

1515-Plat **11:30 am**
THE IMPACT OF ALLELIC IMBALANCE ON SIGNAL TRANSMISSION STRONGLY DEPENDS ON NETWORK MOTIF PROPERTIES. Shibin Mathew, Alexander Gimelbrant, **Suzanne Gaudet**

1516-Plat **11:45 am**
CAPTURING METABOLISM-DEPENDENT SOLVENT POLARITY FLUCTUATIONS IN A TRAFFICKING LYSOSOME. Filippo Begarani, Francesca D'Autilia, Giovanni Signore, Enrico Gratton, Fabio Beltram, **Francesco Cardarelli**

1517-Plat **12:00 pm**
LAT VESICLES WORK AS A SIGNAL TRANSDUCTION PLATFORM IN IMMUNE CELLS; UNRAVELING BY SINGLE-MOLECULE IMAGING. **Koichiro M. Hirosawa**, Nao Hiramoto-Yamaki, Kenta J. Yoshida, Shohei Nozaki, Taka A. Tsunoyama, Bo Tang, Kenichi G.N. Suzuki, Kazuhisa Nakayama, Takahiro K. Fujiwara, Akihiro Kusumi

1518-Plat **12:15 pm**
4D CHARACTERIZATION OF SPATIOFUNCTIONAL ENZYME DROPLETS IN LIVING CELLS. **Minjoung Kyoung**

1519-Plat **12:30 pm** **TRAVEL AWARDEE**
A NETWORK OF ENDOGENOUS METABOLITES MODULATES PROGRAMMED DEATH-LIGAND 1 (PD-L1) EXPRESSION IN MONOCYTIC LEUKEMIA. **Amelia Palermo**, Stephan Spangenberg, Carlos Guijas, Luke Lairson, Gary Siuzdak

Platform
Microtubule-based Motors

10:45 am - 12:45 pm, Ballroom III

Co-Chairs
Carolyn Moores, Birkbeck College, London, United Kingdom
Andrea Serra-Marques, University of California, San Francisco

1520-Plat **10:45 am**
CRYO-EM REVEALS THE CHEMO-MECHANICAL COUPLING OF THE ONCOGENIC KINESIN-3 KIF14. **Matthieu P.M.H. Benoit**, Ana B. Asenjo, Mohammadjavad Paydar, Benjamin H. Kwok, Hernando Sosa

1521-Plat **11:00 am**
HOW KINESIN-2 MOTORS WORK TOGETHER? **Punam Sonar**, Willi L. Stepp, Zeynep Ökten

1522-Plat 11:15 am
THE CRYO-EM STRUCTURE AND ACTIVITY OF KINESIN-5 FROM *PLASMODIUM FALCIPARUM:* MECHANISTIC LESSONS FROM A PARASITE KINESIN. **Alex D. Cook**, Anthony J. Roberts, Maya Topf, Carolyn A. Moores

1523-Plat **11:30 am**
TAU DIFFERENTIALLY REGULATES KINESIN-1, KINESIN-2, AND KINESIN-3. **Dominique V. Lessard**, Christopher L. Berger

1524-Plat **11:45 am**
INVESTIGATION OF COLLISIONS OF MICROTUBULES DRIVEN BY NANO-PATTERNED KINESINS. **Tamanna Ishrat Farhana**, Taikopaul Kaneko, Ryuji Yokokawa

1525-Plat **12:00 pm**
MECHANISMS OF ASTRAL MICROTUBULE REGULATION BY KINESIN MOTOR PROTEINS. **Toni Mchugh**, Agata A. Gluszek, Julie P.I. Welburn

1526-Plat **12:15 pm**
KINESINS 1 AND 3 COOPERATE ON THE SAME VESICLE TO TRANSPORT EXOCYTOTIC CARRIERS. **Andrea Serra-Marques**, Maud Martin, Eugene Katrukha, Ilya Grigoriev, Qingyang Liu, Lotte Pedersen, Lukas Kapitein, Anna Akhmanova

1527-Plat **12:30 pm**
DYNEIN'S DIRECTIONALITY IS CONTROLLED BY THE ANGLE AND LENGTH OF ITS STALK. **Sinan Can**, Samuel Lacey, Mert Gur, Andrew Carter, Ahmet Yildiz

Platform
Protein Structure and Conformation III

10:45 am - 12:45 pm, Ballroom IV

Co-Chairs
Justin MacCallum, University of Calgary, Canada
Lauren Porter, Howard Hughs Medical Institute

1528-Plat **10:45 am**
DETERMINING PROTEIN STRUCTURES BY ITERATING BETWEEN COMPUTATION AND EXPERIMENT. **Justin L. MacCallum**, Kari Gaalswyk

1529-Plat **11:00 am**
EXPOSING THE NUCLEATION SITE OF ALPHA HELIX FOLDING: A JOINT EXPERIMENTAL AND SIMULATION STUDY. **Arusha Acharyya**, Yunhui Ge, Haifan Wu, William DeGrado, Vincent Voelz, Feng Gai

1530-Plat **11:15 am**
MOLECULAR DYNAMICS SIMULATIONS OF THE CIRCADIAN CLOCK PROTEIN KAIC REVEAL STRUCTURAL INSIGHTS INTO THE NUCLEOTIDE RELEASE AND CIRCADIAN TIMING MECHANISMS. **Lu Hong**, Bodhi P. Vani, Erik H. Thiede, Michael J. Rust, Aaron R. Dinner

1531-Plat **11:30 am**
CHARACTERIZATION OF PROTEIN STRUCTURAL CHANGES USING A NOVEL NONLINEAR OPTICAL TECHNIQUE. **Bason Clancy**, Ben Moree, Joshua Salafsky

1532-Plat **11:45 am**
TOWARDS ATOMIC-RESOLUTION STRUCTURE DETERMINATION OF HIV-1 CAPSID ASSEMBLIES USING MAGIC ANGLE SPINNING NMR. **Manman Lu**, Mingzhang Wang, Jochem Struppe, Werner Maas, Angela Gronenborn, Tatyana Polenova

1533-Plat **12:00 pm**
KINDLIN DIMER STRENGTHENS FOCAL ADHESIONS UNDER FORCE BY RELIEVING AND MEDIATING INTRACELLULAR CROSSTALK AMONG INTEGRINS. Zeinab Jahed, Zainab Haydari, Akshay Rathish, **Mohammad R. K. Mofrad**

1534-Plat 12:15 pm
DYNAMIC INTERACTIONS BETWEEN A DISORDERED PROTEIN AND ITS TARGET AT THE SINGLE-MOLECULE LEVEL. **Spencer Smyth**, Gregory-Neal Gomes, Claudiu C. Gradinaru, Julie D. Forman-Kay

1535-Plat 12:30 pm
SURVEYING THE SEQUENCE SPACE LANDSCAPE OF FOLD-SWITCHING PROTEINS. **Lauren L. Porter**, Loren L. Looger

Platform
Voltage-gated Na and Ca Channels

10:45 am - 12:45 pm, Room 307/308

Co-Chairs
Hui Xu, Genentech
Manu Ben-Johny, Columbia University

1536-Plat 10:45 am
STRUCTURAL BASIS OF NAV1.7 INHIBITION BY THE TARANTULA TOXIN PROTOXIN-II. **Hui Xu**, Tianbo Li, Alexis Rohou, Christopher Arthur, Foteini Tzakoniati, Evera Wong, Alberto Estevez, Christine Kugel, Yvonne Franke, Jun Chen, Claudio Ciferri, David Hackos, Christopher Koth, Jian Payandeh

1537-Plat 11:00 am
FENESTRATION DIFFERENCES IN OPEN AND CLOSED GATE SODIUM CHANNELS: A MOLECULAR BASIS FOR STATE-DEPENDENT DRUG DESIGN. **Altin Sula**, Giulia Montini, Jennifer Booker, Bonnie A. Wallace

1538-Plat 11:15 am
SELECTIVE DE-ADHESION WITHIN INTERCALATED DISK NANODOMAINS PROMPTS PROARRHYTHMIC CONDUCTION SLOWING IN THE HEART. **Heather L. Struckman**, Louisa Mezache, Amara Greer-Short, Anna Phillips, Thomas J. Hund, Rengasayee Veeraraghavan

1539-Plat 11:30 am
BIOCHEMICAL AND FUNCTIONAL EVIDENCE FOR HOMODIMERIZATION OF VOLTAGE-GATED SODIUM CHANNELS (NAVS). **Guenther Schmalzing**, Silvia Detro-Dassen, Nikolay Bebrivenski, Annika Rühlmann, Angelika Lampert

1540-Plat 11:45 am
TIMOTHY SYNDROME-ASSOCIATED MUTATIONS AFFECT STATE-DEPENDENT CONTACTS IN L-TYPE CALCIUM CHANNEL. Vyacheslav S. Korkosh, Artem M. Kisilev, Eugeniy N. Mikhaylov, Anna A. Kostareva, **Boris S. Zhorov**

1541-Plat 12:00 pm
CHARACTERIZATION OF ARRHYTHMIA MUTATIONS IN CALMODULIN AND THEIR INTERACTIONS WITH THE VOLTAGE-GATED CALCIUM CHANNEL. **Kaiqian Wang**, Christian Holt, Jocelyn Lu, Malene Brohus, Kamilla T. Larsen, Michael T. Overgaard, Reinhard Wimmer, Filip Van Petegem

1542-Plat 12:15 pm
$CA_V1.3$ REJECTS SIGNALING FROM A SECOND CAM IN ELICITING CA^{2+}-DEPENDENT FEEDBACK REGULATION. **Nourdine Chakouri**, Johanna Diaz, Manu Ben-Johny

1543-Plat 12:30 pm
INACTIVATION REGULATES RGK-MEDIATED INHIBITION OF VOLTAGE-GATED CALCIUM CHANNELS. **Zafir Buraei**, Rose Levenson-Palmer, Scott Dobbins, Zuleen Chia Chang, Sukhjinder Kaur, Salma Allam, Bryan Cernuda, Gabrielle Suppa, Jian Yang

Platform
Exocytosis & Endocytosis

10:45 am - 12:45 pm, Room 309/310

Co-Chairs
Jonas Ries, EMBL, Germany
Zachary McDargh, Columbia University

1544-Plat 10:45 am
HIGH-THROUGHPUT SUPERRESOLUTION MICROSCOPY OF ENDOCYTOSIS - LINKING MOLECULAR ARCHITECTURE AND MECHANICS OF A PROTEIN MACHINERY. Markus Mund, Johannes van der Beek, Joran Deschamps, Philipp Hoess, Serge Dmitrieff, Francois Nedelec, Marko Kaksonen, **Jonas Ries**

1545-Plat 11:00 am
SELF-ORGANIZATION AND FORCE PRODUCTION BY THE BRANCHED ACTIN CYTOSKELETON DURING MAMMALIAN CLATHRIN-MEDIATED ENDOCYTOSIS. Matthew Akamatsu, Ritvik Vasan, David G. Drubin, Daniel Serwas, **Padmini Rangamani**

1546-Plat 11:15 am
ROLE OF MEMBRANE REMODELING PROTEINS IN ULTRAFAST ENDOCYTOSIS. **Sumana Raychaudhuri**, Eduardo Sandoval, Shigeki Watanabe

1547-Plat 11:30 am **TRAVEL AWARDEE**
INVESTIGATING MEMBRANE TENSION DYNAMICS IN THE NEURONAL PRESYNAPTIC TERMINAL. **Natasha Dudzinski**, David Zenisek, Erdem Karatekin

1548-Plat 11:45 am
OSMOTIC SQUEEZING AND MEMBRANE TENSION DRIVE VESICLE EVOLUTION DURING EXOCYTOSIS. **Rui Su**, Sathish Thiyagarajan, Wonchul Shin, Ling-Gang Wu, Ben O'Shaughnessy

1549-Plat 12:00 pm **TRAVEL AWARDEE**
TWO POPULATIONS OF INSULIN GRANULES WITH DISTINCT FUSION PROPERTIES ARE MAINTAINED BY ABC TRANSPORTERS ABCG1 AND ABCA1. **Noah A. Schenk**, Alex J.B. Kreutzberger, Megan T. Harris, Catherine A. Doyle, Patrick Seelheim, Binyong Liang, Volker Kiessling, Arun Anantharam, Lukas K. Tamm, J. David Castle

1550-Plat 12:15 pm
FUSION PORE REGULATION BY EPAC2/CAMP CONTROLS CARGO RELEASE DURING INSULIN EXOCYTOSIS. **Alenka Gucek**, Nikhil R. Gandasi, Muhmmad Omar-Hmeadi, Marit Bakke, Stein Doskeland, Anders Tengholm, Sebastian Barg

1551-Plat 12:30 pm
SNARE-MEDIATED MEMBRANE FUSION IS A TWO-STAGE PROCESS DRIVEN BY ENTROPIC FORCES. **Zachary A. McDargh**, Anirban Polley, Ben O'Shaughnessy

Platform
Biosensors

10:45 am - 12:45 pm, Room 314/315

Co-Chairs
Bohdana Discher, University of Pennsylvania
Sonja Schmid, Delft University of Technology, The Netherlands

1552-Plat 10:45 am
A MOLECULAR SENSOR REVEALS DIFFERENCES IN MACROMOLECULAR CROWDING BETWEEN THE CYTOPLASM AND NUCLEOPLASM. Chandrashekhar Murade, **George T. Shubeita**

1553-Plat 11:00 am
TAILORING BIOMOLECULAR INTERACTIONS OF HYBRID NANOSTRUCTURES FOR THEIR DIAGNOSTIC AND THERAPEUTIC APPLICATIONS IN NEURODEGENERATIVE DISEASES. **Anup Kumar Srivastava**, Mohammed Nadim Sardoiwala, Babita Kaundal, Subhasree Roy Choudhury, Surajit Karmakar

1554-Plat 11:15 am
DE NOVO DESIGN OF REDOX PROTEINS FOR FLUORESCENCE READ-OUT OF CELLULAR REDOX POTENTIALS. Sohini Mukherjee, Martin J. Iwanicki, Christopher C. Moser, **Bohdana M. Discher**

1555-Plat 11:30 am
WIRELESS NANOPORE ELECTRODE FOR ELECTRON TRANSFER IMAGING IN LIVE CELLS. **Yilun Ying**, Yongxu Hu, Rui Gao, Ling-Fei Cui, Yi-Tao Long

1556-Plat 11:45 am
SINGLE MOLECULE SNAPSHOTS OF RIBOSWITCH CONFORMATIONAL CHANGE AND RNA SWITCH BASED BIOSENSING ON A NANOPORE MAGLET DEVICE. Xinyue Zhang, Yingzhen Wang, Samuel Hawkins, Andrew Burcke, Shi-Jie Chen, **Li-Qun Gu**

1557-Plat 12:00 pm
SINGLE-MOLECULE PROTEIN FINGERPRINTING USING NANOPORES. **Sonja Schmid**, Laura Restrepo, Gang Huang, Chirlmin Joo, Giovanni Maglia, Cees Dekker

1558-Plat 12:15 pm
DIRECT SEQUENCING OF XENO-NUCLEIC ACIDS USING NANOPORE. **Shuanghong Yan**, Shuo Huang

1559-Plat 12:30 pm
HIGHLY SELECTIVE BIONANOSENSOR FOR QUICK DETECTION OF BACTERIAL PATHOGENS IN FOOD. **Negin Farzad**, Samuel Opper, Kevin Taisma, Ewa S. Kirkor, Ali Senejani, Saion K. Sinha

Platform
Membrane Physical Chemistry II

10:45 am - 12:45 pm, Room 316/317

Co-Chairs
Aurelia Honerkamp-Smith, Lehigh University
James Lee, Old Dominion University

1560-Plat 10:45 am
DISCRETE SUPPORTED BILAYER PATCHES TO INTERROGATE MEMBRANE PROTEIN ADVECTION, PHASE SEPARATION, AND BILAYER-SURFACE COUPLING. **Aurelia R. Honerkamp-Smith**, Larissa K. Socrier, Amanda Ratajczak, Xaymara Rivera

1561-Plat 11:00 am
ASYMMETRIC PROTEOLIPOSOMES - STRIKING A NEW PATH IN THE WORLD OF MODEL MEMBRANES. **Marie Markones**, Anika Fippel, Michael Kaiser, Carina Drechsler, Carola Hunte, Heiko H. Heerklotz

1562-Plat 11:15 am
A LIPID NANOTUBE-MEDIATED PATH TO PROTOCELL FORMATION AND GROWTH. Elif S. Koksal, Susanne Liese, Ilayda Kantarci, Ragni Olsson, Andreas Carlson, **Irep Gozen**

1563-Plat 11:30 am
PHOSPHOLIPID HEADGROUPS GOVERN EMERGENT BENDING ENERGY OF MEMBRANES WITH IMPLICATIONS FOR LIPID-PROTEIN INTERACTIONS. K.J. Mallikarjunaiah, Trivikram R. Molugu, Horia I. Petrache, **Michael F. Brown**

1564-Plat 11:45 am
BURIED WATER IN A LIPID MEMBRANE MEASURED WITH SITE-SPECIFIC IR SPECTROSCOPY OF TRANSMEMBRANE PEPTIDES. **Jennifer C. Flanagan**, Carlos R. Baiz

1565-Plat 12:00 pm
PHYSICAL CHEMISTRY OF LIVING SYSTEMS: ISOTHERMAL UTILIZATION OF LATENT HEAT BY ELECTROSTATICALLY LOCALIZED PROTONS AT LIQUID-MEMBRANE INTERFACE. **James W. Lee**

1566-Plat 12:15 pm
HOW OSMOLYTES MODULATE LIPID INTERACTIONS. Shahar Sukenik, Shaked Dunsky, Christoph Allolio, Avishai Barnoy, Ilan Shumilin, **Daniel Harries**

1567-Plat 12:30 pm
INVESTIGATING DRUG-MEMBRANE PERMEABILITY ACROSS CHEMICAL COMPOUND SPACE USING HIGH-THROUGHPUT COARSE-GRAINED SIMULATIONS. Roberto Menichetti, **Kiran H. Kanekal**, Tristan Bereau

Career Development Center Workshop
The Industry Interview: What you need to do before, during, and after to get the job

11:30 am - 12:30 pm, Exhibit Hall A

When does the interview begin? Much sooner than you think: it starts from the first point of contact you have with someone from the organization. And when does it end? Only when the offer is extended and accepted. Learn how to convert conversations and networking into interviews and interviews into job offers in this special presentation focusing on industry positions. Discover what you need to know and do throughout the interview process to demonstrate your value to the company and land the job. We will discuss common mistakes that job seekers make, and specific ways in which you can give yourself a competitive edge in the interview. Both academic and non-academic interviewing tactics will be addressed.

Founding, Establishing, and Maintaining a Research Laboratory at Primarily Undergraduate Institutions

12:00 pm - 1:30 pm, Room 318/319/320

This session, sponsored by the Education Committee, provides guidance on founding, establishing, and maintaining a research laboratory at Primarily Undergraduate Institutions. Panelists are faculty members at PUI's who have been successful in their positions.

Moderators
Paul Urayama, Miami University
Elizabeth Yates, United States Naval Academy

Presenters
Kurt Andresen, Gettysburg College
Kambiz Hamadani, California State University, San Marcos
Jamie Schlessman, United States Naval Academy

Postdoc to Faculty Q&A
Transitions Forum and Luncheon

12:00 pm - 1:30 pm, Room 331/332

This question-and-answer luncheon is designed for postdocs finishing and actively applying for academic faculty positions. Discussion will be led by a panel of new faculty in basic science and/or medical school departments and experienced 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
John Baensiger, University of Ottawa
Ivy Dick, University of Maryland
Robert Nakamoto, University of Virginia
Janice Robertson, Washington University St. Louis
Kandice Tanner, NIH
Ming-Feng Tsai, University of Colorado

Nurturing a More Inclusive STEM Enterprise by Understanding our Biases

1:15 PM - 2:45 PM, ROOM 324/325/326

We are all biased. Google's PeopleAnalytics suggests that we as people can only consciously process about one millionth of the information that we receive at any moment. Instead, we rely heavily on our unconscious reasoning abilities to make decisions. Even though we scientists are trained to be objective and evidence based, we, too, use cognitive shortcuts in our every day interactions. This means we rely on our expectation biases, e.g. what we think we think about categories of people, things, situations. This behavior leads to unconscious errors in decision making that leads to discrimination in science against people who do not meet the stereotypical description of what a scientist looks like. This session will approach the phenomenon of unconscious bias as a science problem by examining the data in this area and by discussing tools that we can all use to nurture a more inclusive scientific enterprise. Attendees are encouraged to learn about their own biases by completing the Project Implicit Gender-Science IAT, Race IAT and Sexuality IAT tests at https://implicit.harvard.edu/implicit/

Speaker
Karen Fleming, Johns Hopkins University

The Nuts and Bolts of Preparing Your NIH Grant

1:30 PM - 3:00 PM, ROOM 321/322/323

The National Institutes of Health is the world's largest funder of fundamental biomedical research. You have likely spent years training and are now ready to apply for a NIH grant. But where do you start? At this session, program directors and officers with expertise in biophysics will be providing details on the NIH grant-making process as it stands in 2019, with a particular emphasis on grant writing and submission for new and early career investigators.

Session Organizer
Peter Preusch, Biophysics Branch Chief in the Division of Biophysics, Biomedical Technology, and Computational Biosciences, NIH.

Industry Panel

1:30 PM - 3:00 PM, ROOM 327/328/329

Come join us for a Q&A discussion about science in industry. Hear from a panel of scientists about their career in industry. Learn about the different roles and positions and get perspective about how you can tailor your current research experience to align with industry needs.

Speakers
Sonia Gregory, GSK Vaccines – Chair
Wayne Harshbarger, GSK Vaccines
Joanna Swain, Cogen Therapeutics
Adam Zwolak, Janssen BioTherapeutics
Angela Ballesteros Morcillo, National Institute of Neurological Disorders and Stroke (NINDS-NIH)
Jeanne Small, Quantum Northwest, Inc.
Meagan Small, U.S. Army Research Laboratory

Snack Break

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

Poster Presentations and Late Posters

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

Career Development Center Workshop Nailing the Job Talk, or Erudition Ain't Enough

2:30 PM - 3:30 PM, EXHIBIT HALL A

Congratulations! You've made it to the finals and are suddenly facing the most important presentation of your life. Answers to your questions about how to structure your presentation, how much detail to include, what they are really looking for, etc.

Education Committee Meeting

3:00 PM - 5:00 PM, ROOM 333

Symposium Determining Molecular Networks

4:00 PM - 6:00 PM, BALLROOM I

Chair
Edward Marcotte, University of Texas at Austin

1568-SYMP **4:00 PM**
FINDING AND INTERPRETING GENETIC INTERACTIONS USING PERTURB-SEQ SINGLE CELL RNA-SEQ CRISPR SCREENS. **Jonathan Weissman**, Thomas Norman, Max Horlbeck, Luke Gilbert

NO ABSTRACT **4:30 PM**
DECODING THE HUMAN GENOME WITH MACHINE LEARNING APPROACHES. **Olga Troyanskaya**

1569-SYMP **5:00 PM**
THE PROTEOTYPE MODEL. **Rudolf Aebersold**

NO ABSTRACT **5:30 PM**
A MASS SPECTROMETRY-BASED MAP OF CORE EUKARYOTIC PROTEIN COMPLEXES. **Edward Marcotte**

Symposium Transporters and Channels

4:00 PM - 6:00 PM, BALLROOM II

Chair
Diana Bautista, University of California, Berkeley

1570-SYMP **4:00 PM**
CRYO-EM STRUCTURES AND MECHANISM OF HUMAN MULTIDRUG ABC TRANSPORTERS. **Kaspar Locher**

1571-SYMP **4:30 PM**
MITOCHONDRIAL POTASSIUM CHANNELS AS DETERMINANTS OF CELL FATE. **Ildiko Szabo**

NO ABSTRACT **5:00 PM**
STRUCTURAL INVESTIGATION OF VOLTAGE-GATED SODIUM CHANNELS. **Nieng Yan**

NO ABSTRACT **5:30 PM**
SHINGOSINE-1-PHOSPATE RECEPTOR 3 (S1PR3) SIGNALING MEDIATES MECHANICAL PAIN. **Diana Bautista**

Platform Protein-Nucleic Acid Interactions/Chromatin and the Nucleoid I

4:00 PM - 6:00 PM, BALLROOM III

Co-Chairs
Jonathan Craig, University of Washington
Suzette Pabit, Cornell University

1572-Plat 4:00 pm
DNA ORIGAMI-PROTEIN INTERACTIONS AND THE ROLE OF STERIC HINDRANCE. **Antonio Suma**, Alex Stopar, Abimbola Adedeji, Allen W. Nicholson, Matteo Castronovo, Vincenzo Carnevale

1573-Plat 4:15 pm
TAKING A CLOSER LOOK AT RECQ HELICASE WITH NANOPORE TWEEZERS. **Jonathan M. Craig**, K. Maria Mills, Andrew H. Laszlo, Keir C. Neuman, Jens H. Gundlach

1574-Plat 4:30 pm
MOLECULAR MECHANISM OF OFF-TARGET EFFECTS IN CRISPR-CAS9. **Giulia Palermo**, Clarisse Gravina Ricci, Janice S. Chen, Yinglong Miao, Martin Jinek, Jennifer A. Doudna, James A. McCammon

1575-Plat 4:45 pm TRAVEL AWARDEE
SUPERCOILING MAKES PROTEIN-MEDIATED LOOPING OF DNA TETHERS DETERMINISTIC. **Yan Yan**, Laura Finzi, David D. Dunlap

1576-Plat 5:00 pm
TIME-RESOLVED CONTRAST VARIATION SAXS FOR STUDYING RNA-PROTEIN INTERACTIONS. **Suzette A. Pabit**, Andrea M. Katz, George D. Calvey, Lois Pollack

1577-Plat 5:15 pm
DEFECTIVE RNA INTERACTION DRIVES ABERRANT PHASE SEPARATION OF ALS-LINKED MUTANT FUS. **Amirhossein Ghanbari Niaki**, Jaya Sarkar, Xinyi Cai, Sua Myong

1578-Plat 5:30 pm
ROLE OF MOLECULAR CROWDING IN COMPACTING *ESCHERICHIA COLI* NUCLEOID. **Da Yang**, Jaana Mannik, Scott T. Retterer, Jaan Mannik

1579-Plat 5:45 pm
IS THE BACTERIAL CYTOPLASM A POOR SOLVENT FOR THE CHROMOSOME? **Yingjie Xiang**, Ivan Surovtsev, Eric Dufresne, Christine Jacobs-Wagner

Platform
Protein Structure, Prediction, Design, and Misfolding

4:00 pm - 6:00 pm, Ballroom IV

Co-Chairs
Ernesto Fuentes, University of Iowa
Ishara Mills Henry, Framingham State University

1580-Plat 4:00 pm
A PHYSICAL MODELING APPROACH TO DETERMINE PROTEIN STRUCTURES FROM PARAMAGNETIC NMR MEASUREMENTS. **Kari Gaalswyk**, Justin L. MacCallum

1581-Plat 4:15 pm
BIOCHEMICAL AND STRUCTURAL CHARACTERIZATION OF DE NOVO DESIGNED PDZ DOMAINS. **Ernesto J. Fuentes**, Young Joo Sun, Matthew Sternke, Vaitea Opuu, Nicholas Panel, Douglas Barrick, Thomas Simonson

1582-Plat 4:30 pm
FOLDING PATHWAY OF A TWO-DOMAIN PROTEIN STUDIED WITH SINGLE MOLECULE THREE-COLOR FRET. **Ganesh N. Agam**, Anders Barth, Don C. Lamb

1583-Plat 4:45 pm
STABILITY AND MEMBRANE-BINDING OF SECA IN THE PRESENCE OF POTASSIUM GLUTAMATE, THE PRIMARY CYTOPLASMIC SALT OF *ESCHERICHIA COLI*. Guillaume Roussel, Eric Lindner, **Stephen H. White**

1584-Plat 5:00 pm
THERMODYNAMICS OF AMINOGLYCOSIDE-ENZYME COMPLEXES YIELDS CLUES ON DISTINGUISHING THERMOPHILIC VERSUS THERMOSTABLE VARIANTS OF THE AMINOGLYCOSIDE NUCLEOTIDYLTRANSFERASE 4' (ANT4). **Seda Kocaman**, Brinda Selvaraj, Matthew Cuneo, Engin H. Serpersu

1585-Plat 5:15 pm
DISULFIDE EXCHANGE AND SELF-CATALYZED AGGREGATION IN CATARACT-ASSOCIATED HUMAN GAMMA-D CRYSTALLIN. **Eugene Serebryany**, Shuhuai Yu, Sunia A. Trauger, Bogdan Budnik, Eugene I. Shakhnovich

1586-Plat 5:30 pm TRAVEL AWARDEE
HYPERSTABLE PROTEINS IN THE GUT MICROBIOTA: AN EXAMINATION OF THE BACTERIUM *BACTEROIDES FRAGILIS*. **Jane Thibeault**, Blanca Barquera, Wilfredo Colón

1587-Plat 5:45 pm
KINETIC STABILITY OF LONG-LIVED HUMAN Γ-D AND ΓS LENS CRYSTALLINS, DERIVED IN PART FROM THEIR DOMAIN INTERFACES, MAY PROTECT AGAINST CATARACT. **Ishara Mills Henry**, Melissa Kosinski-Collins, Shannon Thol, Eugene Serebryany, Jonathan A. King

Platform
Member Organized Session: Multiscale Modeling of Biophysical Systems

4:00 pm - 6:00 pm, Room 307/308

Co-Chairs
Judy Cannon, University of New Mexico
Denis Tsygankov, Georgia Institute of Technology

1588-Plat 4:00 pm
A MACRO-MICRO MODELING APPROACH TO DETERMINE IN-SITU HEART VALVE INTERSTITIAL CELL CONTRACTILE BEHAVIORS IN NATIVE AND SYNTHETIC ENVIRONMENTS. **Michael S. Sacks**

1589-Plat 4:15 pm
MULTISCALE MODELING OF THE DAMAGE BIOMECHANICS OF TRAUMATIC BRAIN INJURY. Amir H. Bakhtiarydavijani, Michael A. Murphy, Sungkwang Mun, Mike D. Jones, M. F. Horstemeyer, **Raj K. Prabhu**

1590-Plat 4:30 pm
MODELING T CELL MOTION IN TISSUES DURING IMMUNE RESPONSES. **Judy L. Cannon**, Melanie E. Moses, Janie R. Byrum, Paulus Mrass, G. Matthew Fricke, Humayra Tasnim

1591-Plat 4:45 pm TRAVEL AWARDEE
MULTISCALE MODELING OF DUCTAL CARCINOMA IN SITU. Joseph D. Butner, Vittorio Cristini, **Zhihui Wang**

1592-Plat 5:00 pm
MULTI-SCALE MODELS OF DEFORMATION OF BLOOD CLOTS. **Mark Alber**, Shixin Xu, Zhiliang Xu, Oleg Kim, Samuel Britton, Rustem Litvinov, John Weisel

1593-Plat 5:15 pm
MULTISCALE MODELING OF THE HUMAN BLOOD PROTEIN VON WILLEBRAND FACTOR. **Edmund B. Webb**, Chuqiao Dong, Sagar Kania, Michael Morabito, Yi Wang, Xuanhong Cheng, Xiaohui Zhang, Alp Oztekin

1594-Plat 5:30 pm
SOME PROSPECTS FOR ARTIFICIAL INTELLIGENCE (BOTH NUMERIC AND SYMBOLIC) IN MULTISCALE BIOPHYSICS. **Eric Mjolsness**, Oliver K. Ernst, Thomas M. Bartol, Terrence J. Sejnowski

1595-Plat 5:45 pm
MULTI-SCALE IMAGING TO ENABLE MULTI-SCALE MODELING FOR PREDICTING TUMOR GROWTH AND TREATMENT RESPONSE. Thomas Yankeelov, **David Hormuth**, Angela Jarrett, Ernesto Lima, Chengyue Wu, Ryan Woodall, Caleb Philips

Platform
Bacterial Mechanics, Cytoskeleton, and Motility

4:00 PM - 6:00 PM, ROOM 309/310

Co-Chairs
Ioanna Mela, University of Cambridge, United Kingdom
Benjamin Bratton, Princeton University

1596-PLAT 4:00 PM
WOLBACHIA PIPIENTIS COLONIZES *S CEREVISIAE* WITH HIGH YIELDS. EFFECTS ON THE HOST. **Natalia Chiquete Felix**, Cristina Uribe-Alvarez, Ulrik Pedroza-Dávila, Isareli Cruz-Cruz, Salvador Uribe-Carvajal

1597-PLAT 4:15 PM
TIME-LAPSE ATOMIC FORCE MICROSCOPY REVEALS NEW END TAKE OFF (NETO) DYNAMICS IN MYCOBACTERIA. **Melanie TM Hannebelle**, Joelle XY Ven, Haig A. Eskandarian, Chiara Toniolo, Adrian PD Nievergelt, John D. McKinney, Georg E. Fantner

1598-PLAT 4:30 PM
MOLECULAR MOTORS GOVERN LIQUID-LIKE ORDERING AND FUSION DYNAMICS OF BACTERIAL COLONIES. **Tom Cronenberg**, Anton Welker, Robert Zöllner, Claudia Meel, Katja Siewering, Niklas Bender, Marc Hennes, Enno R. Oldewurtel, Berenike Maier

1599-PLAT 4:45 PM
DNA ORIGAMI AS A TOOL IN THE TARGETED DESTRUCTION OF BACTERIA. **Ioanna Mela**, Masayuki Endo, Hiroshi Sugiyama, Robert M. Henderson, Clemens F. Kaminski

1600-PLAT 5:00 PM
3D FLUORESCENCE MICROSCOPY REVEALS GEOMETRIC LOCALIZATION OF BACTERIAL CELL SHAPE PROTEINS IN STRAIGHT, CURVED AND HELICAL RODS. **Benjamin P. Bratton**, Zemer Gitai, Joshua W. Shaevitz

1601-PLAT 5:15 PM
DYNAMICS OF BACTERIAL CELL WALL SYNTHESIS PROTEINS DURING CYTOKINESIS. **Xinxing Yang**, Jie Xiao

1602-PLAT 5:30 PM
SINGLE CELL AND SINGLE-MOLECULE ASSAYS REVEAL BACTERIA REGULATE THEIR RATE OF GROWTH BY ACTIVELY READING OUT THE LEVEL OF CELL WALL PRECURSORS. **Yingjie Sun**, Ethan Garner

1603-PLAT 5:45 PM
TRANSIENT MEMBRANE ATTACHMENTS OF FTSZ PRECEDE Z-RING FORMATION IN *ESCHERICHIA COLI*. **Bryant E. Walker**, Jaana Mannik, Jaan Mannik

Platform
Force Spectroscopy and Scanning Probe Microscopy

4:00 PM - 6:00 PM, ROOM 314/315

Co-Chairs
David Sivak, Simon Fraser University, Canada
Piotr Marszalek, Duke University

1604-PLAT 4:00 PM
USING EQUILIBRIUM BEHAVIOR TO REDUCE ENERGY DISSIPATION IN NON-EQUILIBRIUM BIOMOLECULAR PROCESSES. Sara Tafoya, Steven J. Large, Shixin Liu, Carlos Bustamante, **David A. Sivak**

1605-PLAT 4:15 PM
MEASURING THE AVERAGE SHAPE OF TRANSITION PATHS DURING THE FOLDING OF A SINGLE BIOLOGICAL MOLECULE. **Noel Q. Hoffer**, Krishna Neupane, Michael T. Woodside

1606-PLAT 4:30 PM
REGULATION OF SINGLE-STRANDED DNA WRAPPING BY *E. COLI* SSB MEASURED USING FORCE SPECTROSCOPY. M. Nabuan Naufer, **Michael Morse**, Ioulia Rouzina, Mark C. Williams

1607-PLAT 4:45 PM
SINGLE MOLECULE STUDY OF TENSION EFFECTS ON CRISPR/CAS9. **Suleyman Ucuncuoglu**, Kassidy N. Lundy, Ozgur Sahin

1608-PLAT 5:00 PM
INTRINSIC BENDING IN NUCLEIC ACIDS: A COMBINED ATOMIC-FORCE MICROSCOPY AND MOLECULAR DYNAMICS STUDY. **Alberto Marin-Gonzalez**, J G. Vilhena, Cesar L. Pastrana, Alejandro Martin-Gonzalez, Clara Aicart-Ramos, Ruben Perez, Fernando Moreno-Herrero

1609-PLAT 5:15 PM
ALL-ATOM STEERED MOLECULAR DYNAMICS SIMULATIONS OF LARGE PROTEINS IN A SMALL WATER BOX. David Wang, **Piotr E. Marszalek**

1610-PLAT 5:30 PM
SCANNING ION CONDUCTANCE MICROSCOPY AND ATOMIC FORCE MICROSCOPY FOR LIVE CELL IMAGING: A COMPARISON. Jan Seifert, Johannes Rheinlaender, **Tilman E. Schäffer**

1611-PLAT 5:45 PM
CORRELATIVE AFM-FLIM MEASUREMENTS IN LIVING CELLS, TISSUES AND IN SOLAR CELL MATERIALS. **Chetan Poudel**, Ioanna Mela, Miguel Anaya, Geraud Delport, Samuel D. Stranks, Clemens F. Kaminski

Platform
Membrane Dynamics and Curvature

4:00 PM - 6:00 PM, ROOM 316/317

Co-Chairs
Kandice Levental, UT Health Science Center at Houston
Peter Pohl, Johannes Kepler University, Austria

1612-PLAT 4:00 PM
TRANSMEMBRANE BETA-BARREL PROTEINS RIGIDIFY THE BACTERIAL OUTER MEMBRANE. **Henry J. Lessen**, Patrick Fleming, Karen G. Fleming, Alexander J. Sodt

1613-PLAT 4:15 PM
IN VIVO DYNAMICS AND PHASE STATE OF NATURAL LIPID DROPLETS. **Margarita Fomina**

1614-PLAT 4:30 PM
MEMBRANE CURVATURE GENERATION THROUGH ASYMMETRIC DESORPTION OF $PI(4,5)P_2$. **Sankalp Shukla**, Rui Jin, Tobias Baumgart

1615-PLAT 4:45 PM **TRAVEL AWARDEE**
MEASURING HINDERED DIFFUSION DYNAMICS IN LIVE CELL PLASMA MEMBRANES WITH CONFOCAL AND SUPER-RESOLUTION IMAGING. **Falk Schneider**, Erdinc Sezgin, Dominic Waithe, Marco Fritzsche, Christian Eggeling

1616-PLAT 5:00 PM
ORDERED LIPID DOMAINS ASSEMBLE VIA CONCERTED RECRUITMENT OF CONSTITUENTS FROM BOTH MEMBRANE LEAFLETS. Ali Saitov, Sergey A. Akimov, Timur R. Galimzyanov, Toma N. Glasnov, **Peter Pohl**

1617-PLAT 5:15 PM
ASYMMETRIC MEMBRANES AND THE STUDY OF LIPID MOVEMENT ACROSS SINGLE LIPID BILAYERS. **Ursula A. Perez-Salas**, Yangmingyue Liu, Michael Stanfield, Neti Bhatt, Arthur Ralko, Justin Lorieau, Wonhwa Cho, Lionel Porcar, Yuri Gerelli

1618-Plat 5:30 pm
CHOLESTEROL AFFECTS THE BENDING RIGIDITY OF DOPC MEMBRANES. **Rana Ashkar**, Milka Doktorova, Frederick A. Heberle, Haden Scott, Elizabeth Kelley, Michihiro Nagao, Rebecca Usery, Francisco N. Barrera, Gerald W. Feigenson, John Katsaras, George Khelashvili

1619-Plat 5:45 pm
BUDDING AND FISSION OF VESICLES BY CONTROL OF MEMBRANE SPONTANEOUS CURVATURE. **Jan Steinkühler**, Solveig Bartelt, Seraphine Wegner, Roland L. Knorr, Rumiana Dimova, Reinhard Lipowsky

Dinner Meet-Ups

6:00 pm - 6:30 pm, Society Booth/Charles Street Lobby

Interested in making new acquaintances and experiencing the cuisine of Baltimore? Meet at the Society Booth each evening, Sunday through Tuesday, at 6:00 pm where a BPS member will coordinate dinner at a local restaurant.

Publications Committee Meeting

6:00 pm - 10:00 pm, Hilton, Calloway

Workshop
The Role of Data Resources in Biophysics

7:30 pm - 9:30 pm, Room 307/308

Chair
Helen Berman, Rutgers University

1620-Wkshp 7:30 pm
RCSB PROTEIN DATA BANK: SUSTAINING A LIVING DIGITAL DATA RESOURCE THAT ENABLES BREAKTHROUGHS IN SCIENTIFIC RESEARCH AND BIOMEDICAL EDUCATION. **Stephen K. Burley**

1621-Wkshp 7:54 pm
REACTOME - PATHWAY CONTEXT AND VISUALISATION FOR OMICS DATA. **Henning Hermjakob**

No Abstract 8:18 pm
UNIPROT THE UNIVERSAL PROTEIN KNOWLEDGEBASE IN THE GIGAPROTEIN ERA. **Alex Bateman**

No Abstract 8:42 pm
NCBI DATABASES IN SUPPORT OF BIOPHYSICS RESEARCH. **David Landsman**

1622-Wkshp 9:06 pm
ARCHIVING OF INTEGRATIVE/HYBRID STRUCTURAL MODELS. **Helen Berman**, Brinda Vallat, John Westbrook, Benjamin Webb, Andrej Sali

Workshop
Methods for Integrative Structure Modeling of Biomolecular Systems

7:30 pm - 9:30 pm, Room 309/310

Chair
Jens Meiler, Vanderbilt University

1623-Wkshp 7:30 pm
HIGH-RESOLUTION, INTEGRATIVE MODELLING OF BIOMOLECULAR COMPLEXES. **Alexandre M.J.J. Bonvin**

1624-Wkshp 7:54 pm
ROSETTA TOOLS FOR CRYOEM MODELING. **Frank DiMaio**

1625-Wkshp 8:18 pm
PROTOTYPING MULTISCALE CELLULAR VISUALIZATION & MODELING TECHNIQUES FOR HYPOTHESIS GENERATION, COMMUNICATION & LEARNING. **Graham Johnson**

1626-Wkshp 8:42 pm
MODELING PROTEIN MONOMERS AND COMPLEXES USING RESTRAINTS FROM CROSSLINKING MASS SPECTROMETRY. **Maya Topf**

1627-Wkshp 9:06 pm
INTEGRATED STRUCTURAL BIOLOGY FOR ALPHA-HELICAL MEMBRANE PROTEIN STRUCTURE DETERMINATION. **Jens Meiler**

Workshop
Squeezing the Most Out of Your Data - Bayesian Statistical Inference for Biophysics

7:30 pm - 9:30 pm, Room 314/315

Chair
Michael Nilges, Pasteur Institute, France

1628-Wkshp 7:30 pm
BAYESIAN STRUCTURAL MODELING OF LARGE BIOMOLECULAR SYSTEMS. **Michael Habeck**

1629-Wkshp 7:54 pm
SIMULTANEOUS DETERMINATION OF PROTEIN STRUCTURE AND DYNAMICS USING CRYO-ELECTRON MICROSCOPY. **Massimiliano Bonomi**

1630-Wkshp 8:18 pm
MACHINE LEARNING METHODS TO PUSH ALL-ATOM MD BEYOND THE SECONDS TIMESCALE AND SIMULATE PROTEIN-PROTEIN ASSOCIATION AND DISSOCIATION. **Frank Noé**

No Abstract 8:42 pm
CLOSING THE LOOP IN AUTOMATED DESIGN AND MEASUREMENT: SCALABLE BAYESIAN INFERENCE FOR BIOPHYSICAL EXPERIMENTS. **John Chodera**

No Abstract 9:06 pm
BAYESIAN MODELLING IN INTEGRATIVE STRUCTURAL BIOLOGY. **Michael Nilges**

Workshop
Methods for X-Ray Tomography and Electron Microscopy

7:30 PM - 9:30 PM, ROOM 316/317

Chair
Carolyn Larabell, Lawrence Berkely National Laboratory

NO ABSTRACT **7:30 PM**
ELECTRON CRYOMICROSCOPY OF ROTARY ATPASES. **John Rubinstein**

1631-WKSHP **7:54 PM**
TOWARDS NEAR-ATOMIC RESOLUTION FOR IN SITU STRUCTURES BY CRYO-ELECTRON TOMOGRAPHY. **Peijun Zhang**

1632-WKSHP **8:18 PM**
BISPECTRAL INVARIANTS FOR IMAGE CLASSIFICATION AND ALIGNMENT IN CRYOEM. Philip R. Baldwin, **Steven J. Ludtke**

1633-WKSHP **8:42 PM**
HYBRID MODELING APPROACHES TO STUDY STRUCTURES AND DYNAMICS OF BIOLOGICAL SYSTEMS. **Florence Tama**

1634-WKSHP **9:06 PM**
CT SCANS OF SINGLE CELLS WITH SOFT X-RAY TOMOGRAPHY. **Carolyn A. Larabell**, Jian-Hua Chen, Venera Weinhardt, Axel Ekman, Gerry McDermott, Mark A. Le Gros

Workshop
Single-Molecule Methods

7:30 PM - 9:30 PM, ROOM 318/319/320

Chair
Bo Huang, University of California, San Francisco

1635-WKSHP **7:30 PM**
MOLECULAR HIGHWAYS - TORSIONAL CONSEQUENCES OF DNA MOTOR PROTEINS. **Michelle Wang**

NO ABSTRACT **7:54 PM**
FROM SINGLE MOLECULE FLUORESCENCE TO SUPERENZYME ENGINEERING AND BEYOND. **Taekjip Ha**

1636-WKSHP **8:18 PM**
PROVIDING 3D FOR SUPER-RESOLUTION MICROSCOPY AND SINGLE-PARTICLE TRACKING IN CELLS WITH SINGLE MOLECULES. **William Moerner**

NO ABSTRACT **8:42 PM**
REVEALING THE INNER WORKING OF MOLECULAR MACHINERIES USING IN-VIVO SINGLE MOLECULE IMAGING. **Jie Xiao**

1637-WKSHP **9:06 PM**
MAPPING THE INNER WORLD OF CELLS. **Bo Huang**

SOBLA (The Society for Latinoamerican Biophysicists) Meeting

8:00 PM - 10:00 PM, ROOM 327/328/329

TUESDAY POSTER SESSIONS

1:45 PM–3:45 PM, EXHIBIT HALL C

Below is the list of poster presentations for Tuesday of abstracts submitted by October 1. The list of late abstracts scheduled for Tuesday is available in the Program Addendum, and those posters can be viewed on boards beginning with LB.

Posters should be mounted beginning at 6:00 PM on Monday and MUST be removed by 4:00 PM on Tuesday evening. Posters will be on view until 10:00 PM on Monday, the night before presentation. Poster numbers 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 witll close completely at 4:30 PM to accommodate the tear down of exhibits. **ALL POSTERS MUST BE REMOVED BY 4:00 PM**. Posters remaining on boards after this 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–B16	Protein Structure and Conformation III
B17–B41	Protein Stability, Folding, and Chaperones II
B42–B72	Protein Dynamics and Allostery I
B73–B85	Membrane Protein Dynamics II
B86–B104	Intrinsically Disordered Proteins (IDP) and Aggregates II
B105–B129	RNA Structure and Dynamics
B130–B150	DNA Structure & Dynamics I
B151–B159	Ribosomes and Translation
B160–B177	Membrane Dynamics II
B178–B188	Membrane Fusion and Non-Bilayer Structures
B189–B221	General Protein-Lipid Interactions
B222–B244	Mechanosensation
B245–B267	Intracellular Calcium Channels and Calcium Sparks and Waves
B268–B276	Muscle Regulation
B277–B297	Voltage-gated Na Channels
B298–B322	Ligand-gated Channels II
B323–B347	Ion Channel Regulatory Mechanisms
B348–B373	Skeletal Muscle Mechanics, Structure, and Regulation
B374–B396	Kinesins, Dyneins, and Other Microtubule-based Motors
B397–B422	Cell Mechanics, Mechanosensing, and Motility II
B423–B434	Energy Transducing Membrane Protein Complexes
B435–B455	Systems Biology and Disease
B456–B458	Systems Neuroscience
B459–B473	Molecular and Cellular Neuroscience
B474–B490	Force Spectroscopy and Scanning Probe Microscopy
B491–B493	Diffraction and Scattering Techniques
B494–B524	Molecular Dynamics II
B525–B548	Optical Microscopy and Superresolution Imaging III
B549–B563	Biosensors II
B564–B578	Micro- and Nanotechnology II
B579–B592	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 III (Boards B1 - B16)

1638-Pos Board B1
CHARACTERIZATION OF THE NOVEL DNA BINDING ACTIVITY OF THE BRG1 AT-HOOK-BROMODOMAIN. **Julio C. Sanchez**, Liyang Zhang Zhang, Miles Pufall, Catherine Musselman

1639-Pos Board B2
EVALUATION OF THERMAL HYSTERESIS ACTIVITY OF ICE-BINDING PROTEIN USING MOLECULAR DYNAMICS SIMULATION. Hyun Jung Yoon, Hak Jun Kim, **Sangwook Wu**

1640-Pos Board B3
MOLECULAR BASIS OF CALMODULIN-DEPENDENT CALCINEURIN ACTIVATION. **Bin Sun**, Trevor P. Creamer, Jonathan P. Davis, Peter M. Kekenes-Huskey

1641-Pos Board B4
BIOPHYSICAL COMPARISON OF FULL LENGTH AND STABILIZED STEM FLU NANO-PARTICLE VACCINE CANDIDATES. **Gabriela C. Albright**

1642-Pos Board B5
STRUCTURAL AND FUNCTIONAL STUDIES OF ANTIVIRAL PROTEIN IFITM3. **Emma H. Garst**, Avital Percher, Hang Hoang, Howard Hang

1643-Pos Board B6 TRAVEL AWARDEE
RATIONAL TARGETING AND TESTING OF MYCOBACTERIAL L-ASPARAGINASE, ESSENTIAL FOR SURVIVAL OF MTB INSIDE HOSTS. **Arti Kataria**, Bishwajit Kundu

1644-Pos Board B7
REVEALING THE DISORDERED INTER-DOMAIN DYNAMICS OF PEPTIDYL-PROLYL CIS/TRANS ISOMERASE PIN1 BY SINGLE MOLECULE FRET MEASUREMENTS. **Sungho Kim**, Seung Won Lee, Hajin Kim

1645-Pos Board B8 TRAVEL AWARDEE
STRUCTURAL CHARACTERIZATION OF FOSM FROM *MYCOBACTERIUM ABSCESSUS*. **Madeline R. Shay**, Skye Travis, Matthew K. Thompson

1646-Pos Board B9
SELECTIVE ISOPEPTIDE MODIFICATION OF PROTEINS WITH A PILIN POLYMERASE SORTASE FROM CORYNEBACTERIUM DIPHTHERIAE. **Scott A. McConnell**

1647-Pos Board B10
AUTOMATED AND OPTIMALLY FRET-ASSISTED STRUCTURAL MODELING. **Mykola Dimura**, Thomas Ottavio Peulen, Hugo Sanabria, Dmitro Rodnin, Katherina Hemmen, Claus A. M. Seidel, Holger Gohlke

1648-Pos Board B11
EXPLORING THE ROLE OF A SINGLE MUTATION OF THE RRM CSTF-64 ON THE CLEAVAGE AND POLYADENYLATION PROCESS. **Elahe Masoumzadeh**

1649-Pos Board B12
OPTIMIZATION OF FORMULATION CONDITIONS FOR BROADLY NEUTRALIZING ANTIBODIES (BNAB): UTILIZING ISOTHERMAL CHEMICAL DENATURATION AS A HIGH-THROUGHPUT SCREENING METHOD. **Marianna L. Fleischman**, Rajoshi Chaudhuri, Ria T. Caringal, Lisa Kueltzo, K.C. Cheng, Frank Arnold

1650-Pos Board B13
EXPERIMENTAL STRATEGY FOR ENGINEERING PH SWITCH PROTEINS. Jaime L. Sorenson, **Jamie L. Schlessman**, Peregrine Bell-Upp, Aaron C. Robinson, Bertrand Garcia-Moreno E.

1651-Pos Board B14
SOLVING THE STRUCTURE OF INCLUSION MEMBRANE PROTEIN A IN *C. TRACHOMATIS*. **Katherine Ahn**, Tracy A. Caldwell, Linda Columbus

1652-Pos Board B15
MODELING CONFORMATIONAL CHANGES IN PROTEINS BASED ON SECOND HARMONIC GENERATION DATA. **Seth D. Axen**, Bason Clancy, Joshua Salafsky, Andrej Sali

1653-Pos Board B16
OPTIMAL DRIFT TIME FOR CROSSING FITNESS VALLEYS. **Mario E. Di Salvo**, Kimberly Reynolds, Milo M. Lin

Protein Stability, Folding, and Chaperones II (Boards B17 - B41)

1654-Pos Board B17
APPLICATION OF NUMERICAL SIMULATIONS TO EXTRACT PROTEIN FOLDING PARAMETERS FROM HYDROGEN EXCHANGE MASS SPECTROMETRY EXPERIMENTS UNDER NATIVE CONDITIONS. **Jasper Flint**, Nilesh K. Aghera, Raghavan Varadarajan, Sheila Jaswal

1655-Pos Board B18
THE TRANSIENT COLLAPSED ENSEMBLE: T_o OF THE FOLDING PATHWAY. **Elisha Haas**, Dan Amir, Gil Rahamim, Osman Bilsel

1656-Pos Board B19
ANOMALOUS PROPERTIES OF LYS RESIDUES BURIED IN HYDROPHOBIC ENVIRONMENTS IN PROTEINS. Aaron C. Robinson, Valeria Hernandez-Munoz, Patrick Keating, Bhavitha Kotha, Thomas Labarca, Ilana Olin, AsiaLuna Patlis, Vrshank Raviveeraraghavan, Lynn Stanwyck, **Bertrand Garcia-Moreno**

1657-Pos Board B20
MAPPING THE FREE ENERGY CHANGE OF UNFOLDING VERSUS TEMPERATURE FOR TWO HOMOLOGOUS CYTOCHROMES *C* ADAPTED TO DIFFERING ENVIRONMENTAL TEMPERATURES. **Emily Tabaie**, Miranda Wilson, Logan Tillery, Katherine E. Frato

1658-Pos Board B21
CHARACTERIZATION OF THE STRUCTURAL FORCES GOVERNING THE REVERSIBILITY OF THE UNFOLDING OF THE HUMAN ACIDIC FIBROBLAST GROWTH FACTOR. **Shilpi Agrawal**

1659-Pos Board B22
THE EFFECT OF INPUT SET TO CONSENSUS DERIVED PROTEINS AND THEIR RELATIONSHIP TO ANCESTRAL PROTEINS. **Charlotte Nixon**, Shion A. Lim, Michael Harms, Susan Marqusee

1660-Pos Board B23
CHRONIC ER STRESS LEADS TO HEPATIC DAMP PRODUCTION. **Alexander P. Andersohn**, M. Iveth Garcia, Abdikarim Abdullahi, Marc Jeschke, Darren Boehning

1661-Pos Board B24
ASSESSING FOLDX FOR PREDICTING PROTEIN-PROTEIN BINDING AFFINITY CHANGES DUE TO MULTIPLE MUTATIONS. **Jonathan Barnes**, F. Marty Ytreberg

1662-Pos Board B25
HIGH-PRESSURE STRUCTURAL STUDIES OF DIHYDROFOLATE REDUCTASE IN SOLUTION. **Susana C. M. Teixeira**, Ryan Penhallurick, James T. Hoopes, Russell J. Hemley, Toshiko Ichiye

1663-Pos Board B26
ROBUST FOLDING OF HIV-1 PROTEASE MONOMER VIA DIVERSE FOLDING PATHWAYS. Janghyun Yoo, John M. Louis, **Hoi Sung Chung**

1664-Pos Board B27
MEASURING THE UNFOLDING AND LIGAND-BINDING OF CUSF, A COPPER CHAPERONE. **Isabel Zecua**, Blake Gillespie

1665-Pos Board B28
PROTEIN STRUCTURAL FLUCTUATIONS AT CRITICALITY IN THE TEMPERATURE-PRESSURE-CROWDING FOLDING PHASE DIAGRAM PROTEIN STRUCTURAL FLUCTUATIONS AT CRITICALITY IN THE TEMPERATURE-PRESSURE-CROWDING FOLDING PHASE DIAGRAM. **Margaret S. Cheung**, Andrei G. Gasic, Caleb Daugherty

1666-Pos Board B29
INCREASE IN SOLUBILITY OF MONOCLONAL ANTIBODIES - FORMULATION PERSPECTIVE AND THE "MAGIC" OF ARGININE. **Slobodanka D. Manceva**, Amy L. Chamberlain, Rahul Ragunathan, Hsing-Ho (Vasha) Hsu, Elihu Ihms, Lisa Kueltzo, Kc Cheng, Frank Arnold

1667-Pos Board B30
EFFECTS OF HYDROSTATIC PRESSURE ON A PUTATIVE PIEZOPHILIC HOMOLOGUE OF STAPHYLOCOCCAL NUCLEASE BY FLUORESCENCE AND HIGH-PRESSURE NMR. **Kacey Kilpatrick**, Grayson Gerlich, Catherine A. Royer

1668-Pos Board B31
A MUTAGENESIS STUDY TO INVESTIGATE THE ROLE OF ALANINE TO SERINE MUTATIONS IN THE ADAPTATION OF A DIATOM CYTOCHROME C_6 TO COLD TEMPERATURES. **Miranda Wilson**, Jordyn Preusker, Inaara Bhola, Katherine Frato

1669-Pos Board B32
PREDICTING THE STABILITY OF MONOCLONAL ANTIBODIES AT HIGH CONCENTRATION FORMULATIONS. **Kylie M. Konrath**, Sean Nugent, Amy L. Chamberlain, Rahul Ragunathan, Vasha Hsu, Hairong Wang, Marianna L. Fleischman, Elihu Ihms, Rajoshi Chaudhuri, Slobodanka M. Mančeva, Lisa A. Kueltzo, KC Cheng, Frank Arnold

1670-Pos Board B33
A DECOY FOLDING NUCLEUS CAN MODULATE PROTEIN FOLDING KINETICS. **Anirban Das**, Anju Yadav, Mona Gupta, Purushotham R, Vishram L. Terse, Shachi Gosavi, Ranabir Das, Sri Rama Koti Ainavarapu, Sudipta Maiti

1671-Pos Board B34
INTERPLAY BETWEEN NATIVE STATE TOPOLOGY AND SEQUENCE IN TWO-STATE PROTEIN FOLDING. **Stefan Wallin**, Daniel Trotter

1672-Pos Board B35
STRUCTURAL CHARACTERIZATION OF A UBIQUITIN FOLDING INTERMEDIATE BY PRESSURE-JUMP NMR. **Joseph M. Courtney**, Cyril Charlier, Ad Bax

1673-Pos Board B36
INTERFACES OF THE TOPOISOMERASE V $(HHH)_2$ DOMAINS HAVE SURPRISING CONTRIBUTIONS TO THERMODYNAMIC STABILITY. **Mark Petersen**, Rebecca Fang, Ananya Majumdar, Doug Barrick

1674-Pos Board B37
UNRAVELLING THE ROLE OF S100A9 IN THE DEVELOPMENT OF NEURODEGENERATIVE DISEASE. **Philip T.F. Williamson**, Jack Horrocks, Luckshi Maheswaran, Maria Concistre, Ludmilla Morozova-Roche

1675-Pos Board B38
EFFECT OF HSP70 CHAPERONE ON CNG ION CHANNELS RELATED TO CHANNELOPATHIES. **Karina Juárez**, Angelica Lopez-Rodriguez, Ivan Meneses-Morales

1676-Pos Board B39
INNOVATION OF A NOVEL PULSE-CHASE IN CELL FOOTPRINTING METHOD FOR THE STUDY OF PROTEIN FOLDING PHENOMENA. **Danté T. Johnson**, Benjamin Punshon-Smith, Anne Gershenson, Lisa M. Jones

1677-Pos Board B40
MONITORING PROTEIN FOLDING ON AND OFF THE RIBOSOME USING X-RAY FOOTPRINTING MASS SPECTROMETRY. **Shawn M. Costello**, Natalie R. Dall, Avi J. Samelson, Sayan Gupta, Corie Y. Ralston, Susan Marqusee

1678-Pos Board B41
COCHAPERONES ENABLE HSP70 TO USE ATP ENERGY FOR NON-EQUILIBRIUM STABILIZATION OF NATIVE PROTEINS. **Huafeng Xu**

Protein Dynamics and Allostery I (Boards B42 - B72)

1679-Pos Board B42
DESCRIPTION OF STRUCTURAL CHANGES BY MOTION TREE. **Ryotaro Koike**, Kei Moritsugu, Motonori Ota

1680-Pos Board B43
SIMULATING THE FOLDING TRAJECTORIES OF LATTICE PROTEINS WITHIN AN OSCILLATORY ENVIRONMENT. **Xuanye Zhu**, Qizhang Jia, Kateri H. DuBay

1681-Pos Board B44 TRAVEL AWARDEE
UNFOLDING TRANSITIONS AND INTERDOMAIN COUPLING IN HUMAN DYSTROPHIN SPECTRIN REPEATS. Lisa Ito, **Madison Nohner**

1682-Pos Board B45
DRUG RESISTANCE INDUCED BY LOCAL AND ALLOSTERIC CONFORMATIONAL CHANGES IN ONCOGENIC TYROSINE KINASES. **Mitsugu Araki**, Yasushi Okuno

1683-Pos Board B46
HYDROGEN EXCHANGE REVEALS THE MECHANISM OF STABILIZATION OF P53 RESCUE MUTANTS N235K AND N239Y. **Melanie J. Cocco**, Jenaro Soto, Ali Alhoshani, Colleen Moody

1684-Pos Board B47
NOVEL REGULATORY MECHANISMS IDENTIFIED IN VIRAL DNA PACKAGING PROTEINS USING MOLECULAR DYNAMICS SIMULATIONS. **Joshua Pajak**, Gaurav Arya

1685-Pos Board B48
UNVEILING A NEW REGULATION MECHANISM OF SMALL GTPASES ON THE ACTIVITY OF PLEXIN-B1 MEMBRANE RECEPTOR. **Zhenlu Li**, Matthias Buck

1686-Pos Board B49
WHAT MODULATES THE USP7 FUNCTION...A DYNAMIC POCKET OR INTER-REGULATORY DOMAINS? **Mitul Srivastava**, Charu Suri, Shailendra Asthana

1687-Pos Board B50
ALLOSTERIC EFFECTS AND SIGNAL TRANSDUCTION IN THE PEPTIDE-MHC BINDING TO A HUMAN T CELL RECEPTOR. **Buyong Ma**, John P. Orban, Roy Mariuzza, Ruth Nussinov

1688-Pos Board B51
THE MECHANISM OF PI3KA ACTIVATION AT THE ATOMIC LEVEL. **Mingzhen Zhang**, Hyunbum Jang, Ruth Nussinov

1689-Pos Board B52
EXAMINATION OF ALLOSTERIC PATHWAYS IN MODEL PROTEINS USING INFORMATION-THEORETIC AND SIMULATION METHODS: REGULATORY MECHANISM OF THE KIX AND PDZ DOMAINS. **Cyprian Kleist**, Jacek Czub, Michal Olewniczak, Karol Jacek, Michał Jurkowski, Michał Badocha

1690-Pos Board B53
ESTIMATING THE HIGH DIMENSIONAL RUGGEDNESS OF PROTEIN FREE ENERGY LANDSCAPES FROM MOLECULAR DYNAMICS TRAJECTORIES. **Andreas Volkhardt**, Helmut Grubmueller

1691-Pos Board B54 TRAVEL AWARDEE
HIGH BANDWIDTH SENSING OF SINGLE PROTEIN DYNAMICS USING NANOPORES AND DNA ORIGAMI. **Sonja Schmid**, Pierre Stoemmer, Hendrik Dietz, Cees Dekker

1692-Pos Board B55
INFLUENZA VIRULENCE AND TRANSMISSIBILITY THROUGH THE COMPUTATIONAL MICROSCOPE. **Lorenzo Casalino**, Christian Seitz, Ian A. Wilson, Rommie E. Amaro

1693-Pos Board B56
ALLOSTERY MODULATES RESISTANCE DRIVER MUTATIONS IN TEM-1. **Tushar Modi**, Banu Ozkan

1694-Pos Board B57
PRESSURE-EFFECTS AND ADAPTATION MECHANISMS OF AMBIENT AND DEEP-SEA BACTERIAL ENZYMES. **Ryan Penhallurick**, J. Todd Hoopes, Toshiko Ichiye, Susana Teixeira

1695-Pos Board B58
MOLECULAR MECHANISMS OF TRANSITION FROM CATCH TO SLIP BONDS IN FIBRIN. **Rustem I. Litvinov**, Olga Kononova, Artem Zhmurov, Kenneth A. Marx, Valeri Barsegov, Dave Thirumalai, John W. Weisel

1696-Pos Board B59
MULTISCALE MODELING OF DYNAMIN PROTEIN ALLOSTERY. **Frank X. Vázquez**, Dalia M. Hassan, Joseph Marte

1697-Pos Board B60
CHARACTERISTIC DYNAMICSON THE EVOLUTION OF HIV-1 PROTEASEBY COMPARING CORRELATED DYNAMICS PROFILES. **Joseph Hess**

1698-Pos Board B61
INTEGRATIVE MODELING OF PROTEIN DYNAMICS FROM TIME-SERIES DATA OF SINGLE-MOLECULE EXPERIMENTS AND MOLECULAR DYNAMICS SIMULATIONS. **Yasuhiro Matsunaga**, Yuji Sugita

1699-Pos Board B62
CHARACTERIZING DYNAMICAL DIFFERENCES BETWEEN TEM-1 AND TEM-52 BETA-LACTAMASES. **Christopher Avery**, Jenny Farmer, Matthew C.S. Tsilimigras, Charles David, Dennis R. Livesay, Donald J. Jacobs

1700-Pos Board B63
COMPUTATIONAL STUDY ON THE REGULATION OF FAM20C BY FAM20A. **Hua Yu**, Man Xue, Lei Wang, Chen Song

1701-Pos Board B64
NORMAL MODE ANALYSIS OF ALLOSTERIC EFFECTS IN ACTOMYOSIN COMPLEX. **Zhixia Liu**

1702-Pos Board B65
SINGLE POINT MUTATIONS MODULATE DYNAMICAL ALLOSTERY IN IGG4 MONOCLONAL ANTIBODIES. **Lonnie Baker**, Shahid Uddin, Azhagiya Singam, Donald J. Jacobs, Jose Casas-Finet

1703-Pos Board B66
THE CONTRIBUTION OF A SOLVENT ON PROTEIN DYNAMICS. **Hyuntae Na**, Injung Kim, Anshuman Bose Majumdar

1704-Pos Board B67
HOMO AND HETERODIMERIC STRUCTURES OF CCR5 AND CXCR4: MOLECULAR DYNAMICS SIMULATION AS AN ALTERNATIVE TO X-RAY DIFFRACTION. **Daniele Di Marino**, Stefano Motta, Vittorio Limongelli

1705-Pos Board B68
DYNAMICS OF AMPA RECEPTORS FROM SIMULATIONS AND ELECTRON MICROSCOPY. **James M. Krieger**, Béatriz Herguedas, Bishal Singh, Jiyoung Lee, Burak Kaynak, Ingo Greger, Ivet Bahar

1706-Pos Board B69
STRUCTURAL AND FUNCTIONAL STUDIES OF THE EFFECTS OF PHOSPHORYLATION ON EPHRIN RECEPTOR TYROSINE KINASE, EPHA2, RECEPTOR INTRACELLULAR DOMAINS AND THE RELATIONSHIP WITH ITS SAM DOMAIN AS AN AUTOINHIBITOR. Fatima Razelle Javier, Xiaojun Shi, ZhenLu Li, Jeannine Mueller-Greven, Deanna Bowman, Belinda Willard, Bing-Cheng Wang, Adam W. Smith, **Matthias Buck**

1707-Pos Board B70
FLEXIBILITY OF FREE AND ACRB-BOUND ACRA IN THE ACRAB-TOLC MULTIDRUG EFFLUX PUMP OF *ESCHERICHIA COLI* DETERMINED USING 3D PMFS. **Anthony Hazel**, James C. Gumbart

1708-Pos Board B71
CONFORMATIONAL DYNAMICS OF T-CELL RECEPTOR CHASSIS FOR MECHANOSENSING. **Wonmuk Hwang**, Robert J. Mallis, Matthew J. Lang, Ellis L. Reinherz

1709-Pos Board B72 TRAVEL AWARDEE
DIFFERENTIAL DOMAIN INSERTION PERMISSIBILITY IS A MEASURE OF ENGINEERABLE ALLOSTERIC CAPACITY IN ION CHANNELS. **Willow Coyote-Maestas**, Yungui He, Chad Myers, Daniel Schmidt

Membrane Protein Dynamics II (Boards B73 - B85)

1710-Pos Board B73 TRAVEL AWARDEE
BAYESIAN ESTIMATION OF THE DIFFUSION CONSTANT FOR MEMBRANE PROTEIN DYNAMICS IN AN ARBITRARY LANDSCAPE OF OBSTRUCTING BOUNDARIES. **Hanieh Mazloom-Farsibaf**, Keith Lidke

1711-Pos Board B74
DETERMINING THE UNBINDING PATHWAY FOR A TSPO-PK11195 COMPLEX. **Thomas Dixon**, Alex Dickson

1712-Pos Board B75
PURIFICATION OF AN ENGINEERED MEMBRANE PROTEIN FHUA FOR SIZE-DEPENDENT SEPARATION. **Alina M. Thokkadam**, Prasangi Rajapaksha, Yu-Ming Tu, Manish Kumar, Yinan Wei

1713-Pos Board B76
EFFECTS OF MEMBRANE HETEROGENEITY AND AGGREGATION ON THE LATERAL MIGRATION AND COLOCALIZATION OF PROTEINS. **Asanga Bandara Ekanayaka Mudiyanselage**, George A. Pantelopulos, Tetsuro Nagai, John E. Straub

1714-Pos Board B77
SUBSTRATE-INDUCED CONFORMATIONAL DYNAMICS OF THE DOPAMINE TRANSPORTER. Anne Kathrine Nielsen, Ingvar R. Möller, Søren G.F. Rasmussen, Kasper D. Rand, **Claus J. Loland**

1715-Pos Board B78
THE PRESENCE OF A LIPOPOLYSACCHARIDE SUBSTRATE STIMULATES LATERAL GATING IN LPTD. **Karl Lundquist**

1716-Pos Board B79
HOW SHAPE, FLEXIBILITY, AND CROWDING AFFECT CURVATURE SENSING AND GENERATION BY GENERIC SCAFFOLDING PROTEINS. **Zack Jarin**, Patricia Bassereau, Gregory A. Voth

1717-Pos Board B80
MOLECULAR DETERMINANTS OF NEISSERIAL OPA PROTEIN INTERACTIONS WITH HUMAN CEACAMS. **Jennifer N. Martin**, Alison K. Criss, Linda Columbus

1718-Pos Board B81
MODULATION OF GLUTAMATE TRANSPORTER GLTPH BY ARACHIDONIC ACID HOMOLOGUES. **Xiaoyu Wang**, Gabriel G. Gregorio, Scott C. Blanchard, Olga Boudker

1719-Pos Board B82
UNDERSTANDING MEMBRANE TRANSPORT PROCESSES USING ENM AND MD SIMULATIONS. **Sayane Shome**, Edward W. Yu, Robert L. Jernigan

1720-Pos Board B83
MOLECULAR DYNAMICS STUDY OF THE GATING MECHANISM OF CFTR. **Zhi Wei Zeng**, Christopher Ing, Régis Pomès

1721-Pos Board B84
ELUCIDATING MECHANISMS OF SUBSTRATE TRANSPORT IN MEMBRANE TRANSPORTERS. **Diwakar Shukla**

1722-Pos Board B85
EFFECT OF CELL CORTEX BASED TRANSIENT CONFINEMENT ON EPIDERMAL GROWTH FACTOR RECEPTOR INTERACTIONS IN INTACT CELLS. **Michael Zucker**, Arnd Pralle

Intrinsically Disordered Proteins (IDP) and Aggregates II (Boards B86 - B104)

1723-Pos Board B86
DISEASE-LINKED MUTATIONS IN UBQLN2 PROLINE-RICH REGION PROMOTE PHASE SEPARATION AND LIQUID-TO-SOLID PHASE TRANSITIONS. **Carlos A. Castaneda**, Thuy P. Dao, Brian Martyniak, Yongna Lei, Ashley Canning, Erica Colicino, Michael S. Cosgrove, Heidi Hehnly

1724-Pos Board B87
TUNING AND EXPLORING THE REFORMATION PROCESS OF A CATIONIC TRIPEPTIDE HYDROGEL. **David M. DiGuiseppi**, Lavenia Thursch, Nicolas Alvarez, Reinhard Schweitzer-Stenner

1725-Pos Board B88
ALTERED NUCLEOLAR PHASE SEPARATION BY NPM1 IN ALS. **Michael R. White**, Diana M. Mitrea, Peipei Zhang, Christopher B. Stanley, Devon Cassidy, Amanda Nourse, Aaron H. Phillips, Michele Tolbert, J. Paul Taylor, Richard Kriwacki

1726-Pos Board B89
MOLECULAR INSIGHTS INTO THE ROLE OF RNA STRUCTURE IN THE PHASE SEPARATED NUCLEOLUS. **Michele Tolbert**, Paul C. Parish, Samuel W. Olson, Diana M. Mitrea, Kevin Weeks, Richard W. Kriwacki

1727-Pos Board B90 TRAVEL AWARDEE
INTERNAL STRUCTURE OF NETWORK FLUID CONDENSATES FORMED BY LIQUID-LIQUID PHASE SEPARATION OF A MULTIVALENT OLIGOMERIC PROTEIN AND A DISORDERED LINEAR PEPTIDE. **Jeong-Mo Choi**, Diana M. Mitrea, Christopher B. Stanley, Kiersten M. Ruff, Alex S. Holehouse, Richard W. Kriwacki, Rohit V. Pappu

1728-Pos Board B91
COMPUTATIONAL STUDIES OF THE PHASE TRANSITIONS AND NETWORK STRUCTURE OF DENSE LIQUIDS FORMED BY LINEAR MULTIVALENT PROTEINS. **Furqan Dar**, Jeong-Mo Choi, Rohit V. Pappu

1729-Pos Board B92
EXPERIMENTAL AND THEORETICAL METHODS FOR MAPPING COEXISTENCE CURVES OF PHASE-SEPARATING BIOLOGICAL MACROMOLECULES. **Ammon E. Posey**, Alex S. Holehouse, Kiersten M. Ruff, Rohit V. Pappu

1730-Pos Board B93
EXPLORING THE TUNABILITY OF THE AGGREGATION AND GELATION PROCESS OF THE TRIPEPTIDE GAG. Thursch Lavenia, Nicolas J. Alvarez, **David DiGuiseppi**, Reinhard Schweitzer-Stenner

1731-Pos Board B94 TRAVEL AWARDEE
MOLECULAR FACTORS UNDERLYING STRESS-TRIGGERED PHASE-SEPARATION OF PAB1. **Darren N. Kahan**, Ruofan Chen, Joshua Riback, Christopher Katanski, Allan Drummond, Tobin R. Sosnick

1732-Pos Board B95
EXPLORING THE INITIAL PHASE OF FMOCFF DIPEPTIDES GELATION IN MIXTURE OF WATER AND DIMETHYLSULPHOXIDE. **Nathan J. Hennessy**, Matthew Levine, David DiGuiseppi, Lihi Abramovich, Reinhard Schweitzer-Stenner

1733-Pos Board B96
EXPLORING THE UNEXPECTED PH TRIGGERED SELF-ASSEMBLY AND GELATION OF THE GHG TRIPEPTIDE IN WATER. **Morgan Hesser**, David DiGuiseppi, Lavenia Thursch, Nicolas Alvarez, Reinhard Schweitzer-Stenner

1734-Pos Board B97
A HIGH-THROUGHPUT APPROACH TO PHASE SEPARATION OF DISORDERED PROTEINS. **Gregory L. Dignon**, Wenwei Zheng, Youngchan Kim, Jeetain Mittal

1735-Pos Board B98
USING SITE-SPECIFIC VIBRATIONAL SPECTROSCOPY TO DETERMINE STRUCTURE OF MEMBRANE-BOUND N-TERMINALLY ACETYLATED ALPHA-SYNUCLEIN. **Samuel McCalpin**, Franklin Kostas, Casey H. Londergan

1736-Pos Board B99
INTRINSIC FLUORESCENCE-BASED FRET: A NOVEL APPROACH TO MONITOR EARLY STAGES OF AMYLOID AGGREGATION. **Nabin Kandel**, Suren A. Tatulian

1737-Pos Board B100 TRAVEL AWARDEE
DETERMINATION OF MICROSCOPIC PARAMETERS OF AMYLOID AGGREGATION BY MONITORING REAL-TIME GROWTH USING TIRF MICROSCOPY. **Subhas C. Bera**, Shamasree Ghosh, Timir B. Sil, Kanchan Garai

1738-Pos Board B101
THE NOREPINEPHRINE INHIBITS ALZHEIMER'S AMYLOID-B PEPTIDE AGGREGATION BY BINDING TO THE C-TERMINAL HYDROPHOBIC REGION. **Yu Zou**, Hongsheng Qian, Qingwen Zhang

1739-Pos Board B102
CYSTEINE-RICH GRANULIN-3 RAPIDLY PROMOTES AGGREGATION OF AMYLOID-BETA IN BOTH REDOX STATES. **Anukool A. Bhopatkar**, Gaurav Ghag, Lauren M. Wolf, Dexter N. Dean, Melissa A. Moss, Vijay Rangachari

1740-Pos Board B103
AMYLOID -BETA OLIGOMERIZATION IN THE PRESENCE OF ANIONIC PHOSPHOLIPIDS. **Jhinuk Saha**, Dexter N. Dean, Vijay Rangachari

1741-Pos Board B104
PROTEIN-DRUG INTERACTIONS IN THE MEMBRANE: THE SMALL MOLECULE ANLE138B AND ITS BINDING TO A-SYNUCLEIN OLIGOMERS. **Leif Antonschmidt**, Riza Dervisoglu, Sergey Ryazanov, Andrei Leonov, Melanie Wegstroth, Karin Giller, Stefan Becker, Roland Benz, Gregor Eichele, André Fischer, Armin Giese, Loren Andreas, Christian Griesinger

RNA Structure and Dynamics (Boards B105 - B129)

1742-Pos Board B105
THE ROLE OF MG^{+2} ION INTERACTIONS IN FOLDING OF THE TWISTER RIBOZYME AND PREQ1 RIBOSWITCH REVEALED THROUGH UMBRELLA SAMPLING COMBINED WITH OSCILLATING CHEMICAL POTENTIAL GRAND CANONICAL MONTE CARLO/MOLECULAR DYNAMICS SIMULATIONS. **Abhishek A. Kognole**, Alexander D. MacKerell

1743-Pos Board B106
STUDY OF ION EFFECTS IN GROUP II INTRONS. Ailun Wang, Mariana Levi, **Udayan Mohanty**, Paul C. Whitford

1744-Pos Board B107
FUNCTIONAL SOMATIC EXOSOMAL NONCODING NCRNA BY MODULAR BIOCOMBINATORICS AND ALGORITHMS: FROM GENETIC INTRONS TO CODES FOR EPIGENETIC FUNCTIONS. **Josef H. H. Wissler**

1745-Pos **Board B108**
PREFERENTIAL INTERACTIONS OF K^+/CL^- AND TMAO WITH A MODEL RNA OLIGOMER. **Jacob C. Miner**, Kyle Hackett

1746-Pos **Board B109** **TRAVEL AWARDEE**
DEVELOPING AN ACCURATE ALL-ATOM FIXED-CHARGE FORCE FIELD FOR RNA WITH IMPLICITLY POLARIZED CHARGES. **Chapin E. Cavender**, Louis G. Smith, Alan Grossfield, David H. Mathews

1747-Pos **Board B110**
RNA BASE PAIR FOLDING KINETICS FROM MD SIMULATIONS: FORCE FIELD DEPENDENCE. Fengfei Wang, **Xiaojun Xu**

1748-Pos **Board B111**
ONE-BEAD COARSE-GRAINED MODEL FOR RNA 3D STRUCTURE WITH NON-CANONICAL INTERACTIONS. **Mario Villada-Balbuena**, Mauricio D. Carbajal-Tinoco

1749-Pos **Board B112**
RNA STRUCTURE AND KINETICS INCLUDING PSEUDOKNOTS THROUGH COMPLETE LANDSCAPE ENUMERATION. **Ofer Kimchi**, Tristan Cragnolini, Rees Garmann, Vinothan N. Manoharan, Michael P. Brenner, Lucy J. Colwell

1750-Pos **Board B113**
SECONDARY STRUCTURE PREDICTIONS AND DETERMINATION OF FOLDING PATHWAYS FOR TPP RIBOSWITCH. **Subash Godar**, Junyan Ma, Hugo Sanabria, Joshua Alper

1751-Pos **Board B114**
TOWARDS OBTAINING A NANOSCALE STRUCTURE OF TERMINAL REGIONS OFJAPANESE ENCEPHALITIS VIRUS GENOME. Tyler Mrozowich, Vanessa Meier-Stephen, Justin Vigar, Astha, Janusz M. Bujnicki, Hans-Joachim Wieden, **Trushar R. Patel**

1752-Pos **Board B115**
SCREENING FOR SMALL MOLECULE BINDERS TO THE ZTP RIBOSWITCH, A BACTERIAL REGULATOR OF FOLATE METABOLISM. **Brandon N. Tran**, Christopher P. Jones, Colleen Connelly, John S. Schneekloth, Adrian R. Ferre-D'Amare

1753-Pos **Board B116**
PEPTIDE NUCLEIC ACID INTERACTIONS WITH C9ORF72 (G4C2)N REPEATS. **Madeline Tatosian**, Shivaji Thadke, Danith Ly, Mihaela-Rita Mihailescu

1754-Pos **Board B117**
THE IMPORTANCE OF WATER IN RNA FOLDING. **Clark Templeton**

1755-Pos **Board B118**
PRESSURE EFFECTS ON FOLDING OF AN RNA G-QUADRUPLEX STRUCTURE. **Balasubramanian Harish**, Jinqiu Wang, Eric Hayden, Catherine Royer

1756-Pos **Board B119**
SINGLE-MOLECULE INSIGHTS INTO THE TEMPERATURE DEPENDENT CONFORMATIONAL CHANGES OF A RNA THERMOMETER IN THE PRESENCE OF CROWDERS AND OSMOLYTES. **Loana Arns**

1757-Pos **Board B120**
SINGLE MOLECULE UNFOLDING OF RNA HAIRPINS. **Jasmine Li**, Sarah Plachinski, Micah J. McCauley, Mark C. Williams, Megan E. Nunez

1758-Pos **Board B121**
FOLLOWING FOLDING PATHWAYS OF COMMON RIBOSWITCH MOTIFS WITH TIME-RESOLVED SINGLE-MOLECULE FRET. **Alex Plumridge**, Lois Pollack

1759-Pos **Board B122**
MANIPULATION OF GQ-BASED RNA APTAMERS AT THE SINGLE MOLECULE LEVEL USING INTEGRATED FORCE-FLUORESCENCE SPECTROSCOPY. **Jaba Mitra**, Taekjip Ha

1760-Pos **Board B123**
SPECIFIC STRUCTURAL ELEMENTS OF THE T-BOX RIBOSWITCH DRIVE THE TWO-STEP BINDING OF THE TRNA LIGAND. **Jiacheng Zhang**, Bhaskar Chetnani, Eric Cormack, Dulce Alonso, Wei Liu, Alfonso Mondragon, Jingyi Fei

1761-Pos **Board B124**
SOLUTION STRUCTURE OF A C-JUN 5' UTR STEM-LOOP ASSOCIATED WITH CAP-DEPENDENT EIF3 SPECIALIZED TRANSLATION INITIATION. **Matthew Walker**

1762-Pos **Board B125**
SIGNAL ANALYSIS OF NANOPORE RNA SEQUENCING TO INTERROGATE POLY(A) TAILS AND POST-TRANSCRIPTIONAL MODIFICATIONS. **Roham Razaghi**, Timothy Gilpatrick, Norah Sadowski, Paul Tang, Rachael Workman, Jared Simpson, Winston Timp

1763-Pos **Board B126**
FUNCTION AND DYNAMICS OF THE LSM2-8 PROTEIN RING DURING SPLICEOSOME ACTIVATION. **Harpreet Kaur**, Margaret L. Rodgers, Aaron A. Hoskins

1764-Pos **Board B127**
SELECTIVE ISOTOPE LABELING TO FACILITATE STRUCTURAL AND DYNAMICS STUDIES OF RNAS BY NMR SPECTROSCOPY. **Lukasz T. Olenginski**, Owen Becette, Hyeyeon Nam, Kehinde M. Taiwo, Theodore K. Dayie

1765-Pos **Board B128**
INVESTIGATING THE STRUCTURE AND DYNAMICS OF RNAS THAT DISTINGUISH BETWEEN HUMAN AND CHIMPANZEE BY NMR USING SELECTIVE ISOTOPICALLY LABELED RNAS. **Kehinde M. Taiwo**, Hyeyeon Nam, OlenginskI Lukasz, Owen Becette, Kwaku Dayie

1766-Pos **Board B129**
CHARACTERIZATION OF STRUCTURAL ELEMENTS IN THE HCV GENOME USING ATOMIC FORCE MICROSCOPY. Jamie L. Gilmore, Hideki Aizaki, Takaji Wakita, **Kunio Takeyasu**

DNA Structure & Dynamics I (Boards B130 - B150)

1767-Pos **Board B130** **TRAVEL AWARDEE**
THE EFFECT OF INTRASTRAND BASE-STACKING INTERACTIONS ON THE ENERGETICS AND STRUCTURAL DYNAMICS OF DNA INTERNAL LOOPS. Michael P. Leveille, Roman S. Solecki, **Brian L. Cannon**

1768-Pos **Board B131**
THE EFFECT OF SMALL MOLECULES ON THE STABILITY OF G-QUADRUPLEXES. **Christopher G. Bentsen**, Massimiliano Lamberto, Davis Jose

1769-Pos **Board B132**
WHAT ARE THE DYNAMICS OF DNA NANOCAGES? FROM DESIGN TO APPLICATIONS IN DRUG DELIVERY. **Jonathon B. Ferrell**, Garrett J. Chan, Marlo L. Zorman, Jianing Li

1770-Pos **Board B133**
A SPECTROSCOPIC APPROACH TO UNDERSTAND THE STRUCTURAL INTRICACIES OF NON-CANONICAL NUCLEIC ACID CONFORMATIONS USING FLUORESCENT BASE ANALOGUES. Kirsten P. Lawson, Michal M. Kalisz, Christopher G. Bentsen, **Davis Jose**

1771-Pos **Board B134**
USE OF CYANO PROBES IN QM/MM SIMULATIONS TO STUDY THE EFFECT OF ION CONCENTRATION AND TEMPERATURE OF THE ENVIRONMENT ON A URACIL NUCLEOTIDE AND DNA. **Anmol Kumar**, Alexander D. MacKerell

1772-Pos **Board B135**
BACTERIAL NUCLEIC ACID QUADRUPLEX FORMATION. **Amelia Cecere**, Hikari Murayama, Sally Shepardson-Fungairino, Megan E. Nunez

1773-Pos Board B136
TAMRA-POLYPYRROLE FOR A/T SEQUENCE VISUALIZATION ON DNA MOLECULES. **Seonghyun Lee**, Kyubong Jo

1774-Pos Board B137
QUANTIFYING DNA ELASTICITY IN THE COURSE OF BINDING OF SMALL MOLECULE TO DNA. **Anurag Singh**, Amar Nath Gupta

1775-Pos Board B138
DNA AGGREGATION REGIME - HOW DIVALENT IONS AND POLYMERS CAN INDUCE CREATION OF DNA NANOPARTICLES. **Piotr Trochimczyk**, Robert Holyst

1776-Pos Board B139
INTERCALATION OF SMALL RHODIUM COMPLEXES INTO MATCHED AND MISMATCHED DNA. **Guðfríður Björg Möller**, Liam Price, Grace Ferris, Micah J. McCauley, Ioulia Rouzina, Megan Núñez, Mark C. Williams

1777-Pos Board B140
EFFECT OF TETRAMERIC BASE-PAIR CONTEXT ON THE SEQUENCE-DEPENDENT CONFIGURATIONS OF DNA MINICIRCLES. **Robert T. Young**, Benjamin Cohen, Luke Czapla, Pamela J. Perez, Wilma K. Olson

1778-Pos Board B141
BINDING OF LARGININAMIDE TO A DNA APTAMER: A VOLUMETRIC STUDY. **Lutan Liu**

1779-Pos Board B142 TRAVEL AWARDEE
WATSON-CRICK LIKE MISMATCHES IN REPLICATION FIDELITY. **Atul Kaushik Rangadurai**, Eric S. Szymanski, Honglue Shi, Hashim M. Al-Hashimi

1780-Pos Board B143
STRUCTURE AND DYNAMICS OF THE BCL-2 PROMOTER G-QUADRUPLEX USING THE DRUDE POLARIZABLE FORCE FIELD. **Brian D. Ratnasinghe**, Alexa M. Salsbury, Danielle L. Porier, Justin A. Lemkul

1781-Pos Board B144
VISUALIZING BASE OPENING IN NUCLEIC ACID DUPLEXES. **Honglue Shi**, Bei Liu, Atul Rangadurai, Mary Clay, Christoph Kreutz, Hashim Al-Hashimi

1782-Pos Board B145
THERMODYNAMIC VERIFICATION OF KISSING-LOOP INTERACTIONS. Carolyn E. Carr, **Luis A. Marky**

1783-Pos Board B146
SEQUENCE EFFECTS ON MG^{+2} ION MEDIATED DNA - DNA INTERACTIONS. **Amit Srivastava**, Raju Timsina, Sajeewa M. Dewage, Xiangyun Qiu, Serdal Kirmizialtin

1784-Pos Board B147
ADDITIVITY IN ION-MODULATED DNA-DNA INTERACTIONS. Wei Meng, Raju Timsina, Kurt Andresen, **Xiangyun Qiu**

1785-Pos Board B148 TRAVEL AWARDEE
POLARIZABLE MOLECULAR DYNAMICS SIMULATIONS OF *C-KIT* ONCOGENE PROMOTER G-QUADRUPLEXES OF DISTINCT CONFORMATIONS. **Alexa M. Salsbury**, Justin A. Lemkul

1786-Pos Board B149
DNA THERMAL STABILITY DEPENDS ON SOLUTION VISCOSITY. **Nancy C. Stellwagen**, Earle Stellwagen

1787-Pos Board B150
A NEW, RAPID, EFFICIENT AND NON-TOXIC METHOD FOR BACTERIAL DNA EXTRACTION. **Semire Uzun Gocmen**, Ahmet Aslan, Muhyittin Temiz

Ribosomes and Translation (Boards B151 - B159)

1788-Pos Board B151
THE GENETIC CODE IS READ BY AN IDIOSYNCRATIC AND HIGHLY-CONNECTED DECODING NETWORK. **Stephen D. Fried**, Thomas S. Elliott, Mirko Wagner, Thomas Carell, Jason W. Chin

1789-Pos Board B152
MEASURING THE MECHANICAL FORCES DURING RIBOSOME TRANSLOCATION VIA EF-G CROSSLINKING. **Miriam Gavriliuc**, Yuhong Wang

1790-Pos Board B153
A FORCE METHOD TO STUDY THE EF-G MECHANISM DURING THE RIBOSOME TRANSLOCATION AND FRAMESHIFTING. **Yuhong Wang**, HENG YIN, Shoujun Xu

1791-Pos Board B154
THERMODYNAMIC CONTROL OF RIBOSOMAL FRAMESHIFTING. **Lars V. Bock**, Neva Caliskan, Natalia Korniy, Frank Peske, Marina V. Rodnina, Helmut Grubmueller

1792-Pos Board B155
FORCE SPECTROSCOPY OF THE FRAMESHIFT SIGNAL FROM WEST NILE VIRUS REVEALS MULTIPLE FOLDING PATHWAYS AND STRUCTURAL HETEROGENEITY. **Matthew T. Halma**, Dustin B. Ritchie, Michael T. Woodside

1793-Pos Board B156
A HIGH-RESOLUTION *IN VITRO* SINGLE-MOLECULE ASSAY FOR EUKARYOTIC CAP-DEPENDENT INITIATION KINETICS. **Xiaohui Qu**, Hongyun Wang, Anthony Gaba, Lexi Sun

1794-Pos Board B157
CHARACTERIZATION OF ONC112 EFFECT ON RIBOSOMES AND ASSOCIATED PROTEINS IN LIVE *E. COLI* CELLS USING SUPERRESOLUTION MICROSCOPY. **Mainak Mustafi**, James C. Weisshaar

1795-Pos Board B158
TRANSCRIPTION AND TRANSLATION EFFECTS OF HERG CHANNEL GENE SYNONYMOUS VARIATION. **Jlajia Yang**, Marika Osterbur Badhey, Thomas V. McDonald, Alexander Bertqalovitz

1796-Pos Board B159
NASCENT PROTEINS INTERACT WITH KEY REGIONS OF THE OUTER SURFACE OF THE RIBOSOME. **Andrew M. Fuchs**, Valeria Guzman-Luna, Rayna M. Addabbo, Silvia Cavagnero

Membrane Dynamics II (Boards B160 - B177)

1797-Pos Board B160
COARSE-GRAINED SIMULATIONS OF THE PATHWAY TO MEMBRANE LYSIS. **Egor Antipov**, Sathish Thiyagarajan, Ben O'Shaughnessy

1798-Pos Board B161
EFFICIENT REPLACEMENT OF OUTER LEAFLET LIPIDS OF PLASMA MEMBRANE USING EXOGENOUS LIPIDS WITH MINIMAL CELL DAMAGE. Guangtao Li, Shinako Kakuda, **Pavana Suresh**, Erwin London

1799-Pos Board B162
MODELING RELAXATION TIMESCALES OF COUPLED MEMBRANE/PROTEIN SYSTEMS. **Kayla Sapp**, Alexander J. Sodt, Lutz Maibaum

1800-Pos Board B163
INTERPLAY OF CURVATURE, LIPID SEGREGATION AND STABILITY MODULATION IN COMPLEX LIPID BILAYERS. Kevin J. Boyd, Nathan N. Alder, **Eric R. May**

1801-Pos Board B164
ACTIVATING THE SURFACE: A STUDY ON LIPID CHIRALITY, AND ITS POTENTIAL FUNCTION FOR TRIGGERING INTERFACIAL INTERACTION. Viviana Cristiglio, Bernhard Frick, **Beate Klösgen**, Tilo Seydel, Chen Shen

1802-Pos Board B165
EFFECTS OF DC MAGNETIC FIELDS ON MAGNETOLIPOSOMES. **Raymundo Rodríguez López**, Jonathan S. de Lira Escobedo, Milton Muñoz Navia, Perla Xochil Viveros Méndez, Armando Encinas Oropesa, Elsie Araujo, Sonia Saucedo Anaya, Said Eduardo Aranda Espinoza

1803-Pos Board B166
LIPID- AND CHOLESTEROL-MEDIATED TIMESCALE-SPECIFIC MODULATION OF MEMBRANE PROTEIN DYNAMICS. Lukas Frey, Sebastian Hiller, Roland Riek, **Stefan Bibow**

1804-Pos Board B167
UNSUPERVISED MACHINE LEARNING TO DETECT FEATURES OF DOMAIN GROWTH AND LIPID SEGREGATION. Cesar A. López, Boian Alexandrov, **S Gnanakaran**

1805-Pos Board B168
SOFTENING OF DMPG LIPID MEMBRANES ALONG THE ANOMALOUS GEL-FLUID TRANSITION. **Elizabeth G. Kelley**, Paul D. Butler, Michihiro Nagao

1806-Pos Board B169
PINNING CHOLESTEROL CHEMICAL POTENTIAL IMPACTS THE MISCIBILITY TRANSITION IN ISOLATED PLASMA MEMBRANE VESICLES. **Anna Gaffney**, Thomas Shaw, Sarah L. Veatch

1807-Pos Board B170
MTHK CHANNEL ACTIVITY IN PLANAR TETRAETHER LIPID MEMBRANES. **Alexander P. Bonanno**, Alexandre G. Vouga, Brad S. Rothberg, Parkson L.-G. Chong

1808-Pos Board B171
HOW NANOSCALE PROTEIN INTERACTIONS DETERMINE THE MESOSCALE DYNAMIC ORGANISATION OF MEMBRANE PROTEINS. **Anna L. Duncan**, Maximilian A R Bandurka, Matthieu G. Chavent, Patrice Rassam, Wanling Song, Oliver Birkholz, Jean Helie, Tyler Reddy, Dmitry Beliaev, Ben Hambly, Jacob Piehler, Colin Kleanthous, Mark S. P. Sansom

1809-Pos Board B172
COARSE-GRAINED MOLECULAR DYNAMICS SIMULATION OF METHANE INTERACTING WITH INTRACYTOPLASMIC MEMBRANES. **Ravindra Gudneppanavar**, Kyle T. Whiddon, Alan Grossfield, Michael C. Konopka

1810-Pos Board B173
SOLID-STATE ^{2}H NMR INVESTIGATIONS OF VIRAL AM2 ION CHANNEL DRUGS. **Soohyun Lee**, Rami Musharrafieh, Xiaolin Xu, Trivikram R. Molugu, Andrey V. Struts, Wang Jun, Michael F. Brown

1811-Pos Board B174
MODELING AND SIMULATION OF OUTER MEMBRANES WITH LPS, ECAS, AND CPS. **Ya Gao**, Jumin Lee, Wonpil Im

1812-Pos Board B175
THE DURABILITY OF LIPID BILAYERS MODIFIED WITH A MINIMAL ACTIN CORTEX (MAC) FOR NANOPORE SENSING AND ION CHANNEL ELECTROPHYSIOLOGY. **Amanda J. Smith**, Theo Larsen, Samuel Virolainen, Lisa Burden, Daniel L. Burden

1813-Pos Board B176
TEMPOCHOLINE MEMBRANE PROBES MEASURE OXYGEN IN HYDROPHOBIC REGIONS: INSIGHT FROM MOLECULAR SIMULATIONS. **Gary Angles**

1814-Pos Board B177
MESOSCOPIC DYNAMICS IN PHOSPHOLIPID MEMBRANES UNDER OSMOTIC STRESS. **Trivikram R. Molugu**, Soohyun Lee, K. J. Mallikarjunaiah, Constantin Job, Michael F. Brown

Membrane Fusion and Non-Bilayer Structures (Boards B178 - B188)

1815-Pos Board B178
TWO-DIMENSIONAL MUTUAL DIFFUSION DYNAMICS IN HETEROGENEOUS LIPID DOMAINS. **Hyunwoo Jang**, Dae-Woong Jeong, Byung-Chang Oh, Suho Lee, Hasaeam Cho, Chi Won Ahn, Siyoung Choi, Changbong Hyeon, Hee-Seung Lee, Myung Chul Choi

1816-Pos Board B179
MECHANISMS OF ALCOHOL-ALTERED MEMBRANE FUSION. Devin M. Fuller, Miguel A. Ibarra, Robert E. Coffman, Austin L. Zimmerman, Andrew T. Barton, **Dixon J. Woodbury**

1817-Pos Board B180
ESTABLISHING FORCE SPECTRSCOPY WITH LIPID VESICLE PROBES TOWARDS THE INVESTIGATION OF MEMBRANE FUSION. **Ines Lüchtefeld**, Tomaso Zambelli, Janos Vörös

1818-Pos Board B181
MEASURING NEUTRALIZATION OF ENVELOPED VIRUSES USING MICROFLUIDICS. **Anjali Sengar**, Robert J. Rawle, Rebecca R. Pompano, Peter Kasson

1819-Pos Board B182
MORPHOLOGY OF LIPID AGGREGATES ON CLAY MINERALS AND CONNECTIONS TO MACROSCOPIC WETTABILITY. **Brenda L. Kessenich**, Nihit Pokhrel, Markus Flury, Lutz Maibaum, James J. De Yoreo

1820-Pos Board B183
MYOMAKER AND MYOMERGER WORK INDEPENDENTLY TO CONTROL DISTINCT STEPS OF MEMBRANE REMODELING DURING MYOBLAST FUSION. **Evgenia Leikina**, Dilani G. Gamage, Vikram Prasad, Leonid Chernomordik, Douglas P. Millay

1821-Pos Board B184
THE EFFECT OF IONS ON MEMBRANE ELASTICITY - IMPLICATIONS FOR VESICLE FUSION. **Christoph Allolio**, Daniel Harries

1822-Pos Board B185
SYNERGISTIC ROLES OF SYNAPTOTAGMIN AND COMPLEXIN IN CA^{2+}-REGULATED EXOCYTOSIS. **Shyam S. Krishnakumar**

1823-Pos Board B186
ATOMIC-RESOLUTION SIMULATIONS SHOW TWO SEQUENTIAL FUSION PEPTIDE MECHANISMS IN INFLUENZA MEMBRANE FUSION. **Anna Pabis**, Peter Kasson

1824-Pos Board B187
MOLECULAR DYNAMICS STUDIES OF RHAMNOLIPID SURFACTANTS. **Charles Luft**, Steven Schwartz

1825-Pos Board B188
MEMBRANE BINDING, BENDING AND REMODELING BY CALCIUM SENSOR PROTEINS. **Raya Sorkin**, Margherita Marchetti, Emma Logtenberg, Emma Kerklingh, Guy Brand, Rashmi Voleti, Josep Rizo, Wouter H. Roos, Alexander J. Groffen, Gijs J. L. Wuite

General Protein-Lipid Interactions (Boards B189 - B221)

1826-Pos Board B189
ACTIVE SITE MUTATION A126G ABROGATES $PI(4,5)P_2$-MEDIATED ALLOSTERIC ACTIVATION OF THE TUMOR SUPPRESSOR PTEN. Caroline Zedler, Sven-Andreas Freibert, Christian R. Halaszovich, Dominik Oliver, **Kirstin Hobiger**

1827-Pos Board B190
MOLECULAR MECHANISMS OF THE INTERACTION BETWEEN ARF1 AND ASAP1 PH DOMAIN AT THE MEMBRANE INTERFACE. **Olivier Soubias**, Frank Heinrich, Yue Zhang, Yifei Li, Jess Li, Vitalii I. Silin, Paul Randazzo, Mathias Losche, Robert A. Byrd

1828-Pos Board B191
EVIDENCE FOR AN INTERACTION BETWEEN INFLUENZA HEMAGGLUTININ AND PIP2. Nikki M. Curthoys, Michael J. Mlodzianoski, **Matthew T. Parent**, Michael B. Butler, Prakash Raut, Jaqulin N. Wallace, Jennifer Lilieholm, Kashif Mehmood, Melissa S. Maginnis, Hang Waters, Brad Busse, Joshua Zimmerberg, Samuel T. Hess

1829-Pos Board B192
AUTOINHIBITION MECHANISM FOR PHOSPHOINOSITIDE BINDING BY THE ENDOSOMAL TRAFFICKING PROTEIN TOM1. **Daniel G. Capelluto**, Wen Xiong, Evan Littleton, Liang Jiang, Anne M. Brown, Carla Finkielstein

1830-Pos Board B193
INVESTIGATING HOW MEMBRANE LOCALIZATION REGULATES PROTEIN ASSEMBLY DURING CLATHRIN-MEDIATED ENDOCYTOSIS. **Sewwandi S. Rathnayake**, Kalina Hristova, Margaret E. Johnson

1831-Pos Board B194
PHOSPHORYLATION OF THE NT17 DOMAIN OF HTT INFLUENCES ITS INTERACTION WITH MODEL LIPID MEMBRANES. **Sharon E. Groover**, Maryssa Beasley, Justin A. Legleiter

1832-Pos Board B195
REGULATION OF THE PALMITOYL ACYLTRANSFERASE DHHC5 BY PHOSPHORYLATION IN CARDIOMYOCYTES. **Autumn N. Marsden**, Jie J. Chen, C. Anthony Scott, Askar M. Akimzhanov, Darren Boehning

1833-Pos Board B196
THE PALMITOYL ACYLTRANSFERASE DHHC5 MEDIATES BETA-ADRENERGIC SIGNALING IN THE HEART BY TARGETING G ALPHA PROTEINS. **Jie Jessica Chen**, Autumn N. Marsden, Askar M. Akimzhanov, Darren Boehning

1834-Pos Board B197
OLIGOMERIZATION STATE OF SP-C INVOLVED IN MEMBRANE FRAGMENTATION AND INNATE DEFENSE. Alejandro Barriga, Jesus Perez-Gil, **Begoña Garcia-Alvarez**

1835-Pos Board B198 TRAVEL AWARDEE
HUMAN PICOBIRNAVIRUS CAPSIDS AS POTENTIAL NANOCARRIERS FOR DRUG DELIVERY WITHIN PULMONARY SURFACTANT CONTEXTS. **Cristina García Mouton**, Álvaro Ortega-Esteban, José R Castón, Antonio Cruz, Jesus Perez-Gil

1836-Pos Board B199
ACCELERATION OF DRUG RELEASE FROM LIPOSOMES BY THE MACROLITTINS, A SYNTHETICALLY EVOLVED FAMILY OF PORE-FORMING PEPTIDES. **Leisheng Sun**, William C. Wimley

1837-Pos Board B200
INTERACTION OF THERMORESPONSIVE LIPOSOME COMPONENTS WITH HUMAN SERUM ALBUMIN. **Johannes Schnur**, Daniel Eckhardt, Ulrich Massing, Heiko H. Heerklotz

1838-Pos Board B201
TWO NEW TYPES OF POLYMER NANODISCS FOR MEMBRANE PROTEIN STUDIES. **Mariana C. Fiori**, Yunjiang Jiang, Wan Zheng, Miguel Anzaldua, Mario J. Borgnia, Guillermo A. Altenberg, Hongjun Liang

1839-Pos Board B202
ADP-REGULATED MID51-PHOSPHOLIPID INTERACTIONS COUPLE CELLULAR BIOENERGETICS TO MITOCHONDRIAL MEMBRANE REMODELING. **Nikhil Bharambe**, Rajesh Ramachandran

1840-Pos Board B203
PROBING THE EFFECT OF CARDIOLIPIN ON THE REDOX-PARTNER RECOGNITION BETWEEN CYTOCHROME C_2 AND CYTOCHROME BC_1 COMPLEX. **Chun Kit Chan**, Abhishek Singharoy, Emad Tajkhorshid

1841-Pos Board B204
IS THE HUMAN DOMAIN SWAPPED DIMER OF CYTOCHROME *C* THE PEROXIDASE IN APOPTOSIS? **Harmen B. Steele**, JB ALexander Rosss, Bruce E. Bowler

1842-Pos Board B205
IMPACT OF LIPID-PROTEIN INTERACTIONS ON ALPHA-HELICAL MEMBRANE PROTEIN FOLD. **Nicole Swope**, Linda Columbus

1843-Pos Board B206
THE BINDING OF TIM PROTEINS TO PHOSPHATIDYLSERINE IS HIGHLY SENSITIVE TO THE MEMBRANE CONTEXT. **Daniel H. Kerr**, Zhiliang Gong, Tiffany Suwatthee, Gregory T. Tietjen, Erin J. Adams, Ka Yee C. Lee

1844-Pos Board B207
INVESTIGATING MEMBRANE CURVATURE DEPENDENCE OF SNF7 POLYMERIZATION USING HIGH-SPEED ATOMIC FORCE MICROSCOPY. **Nebojsa Jukic**, Aurelien Roux, Simon Scheuring

1845-Pos Board B208
MOLECULAR MECHANISM OF SELECTIVE CHOLESTEROL UPTAKE IN CLASS B SCAVENGER RECEPTOR LIMP-2. **Anna Liang**, Christopher E. Ing, Régis Pomès

1846-Pos Board B209
FREE ENERGY OF SPECIFIC CHOLESTEROL-GPCR INTERACTIONS. **Lewen Yang**, Edward R. Lyman

1847-Pos Board B210
MEMBRANE BINDING OF SYNAPTOTAGMIN-LIKE PROTEIN 4: INSIGHT FROM MOLECULAR DYNAMICS SIMULATIONS. **Mikias Negussie**, Sherleen Tran, Nara L. Chon, Julianna Oviedo, Aml Alnaas, Hai Lin, Jefferson Knight

1848-Pos Board B211
SUBSTRATE BINDING BY Γ-SECRETASE: CONFORMATIONAL DYNAMICS OF THE ENZYME ACTIVE SITE AND SUBSTRATE RECOGNITION WITH AN EXAMPLE OF THE AMYLOID PRECURSOR PROTEIN. **Lukasz Piotr Nierzwicki**, Michal Olewniczak, Pawel Chodnicki, Jacek Czub

1849-Pos Board B212
STRUCTURAL FACTORS CONTROLLING ORIENTATION OF KRAS G-DOMAIN MEMBRANE BINDING. **Anda Trifan**, Emad Tajkhorshid

1850-Pos Board B213 TRAVEL AWARDEE
AN INTERPLAY BETWEEN KMP-11 INDUCED PHASE ALTERATION OF MACROPHAGE MEMBRANE AND IMMUNE SUPPRESSION DEFINES THE MOLECULAR MECHANISM OF LEISHMANIASIS. **Achinta Sannigrahi**, Sanat Karmakar, Junaid Jawed, Subrata Majumdar, Krishnananda Chattopadhyay

1851-Pos Board B214
RECRUITMENT DYNAMICS OF ESCRT-III PROTEINS DURING HIV-1 GAG ASSEMBLY AND PLASMA MEMBRANE SCISSION. **Daniel S. Johnson**, Marina Bleck, Sanford M. Simon

1852-Pos Board B215 TRAVEL AWARDEE
PROTEIN PARTITIONING TO LIPID DOMAINS IN ALL-ATOM MD SIMULATION. **George A. Pantelopulos**, Asanga Bandara, John E. Straub

1853-Pos Board B216
ADVANCING MULTI-SCALE SIMULATION METHODS FOR BIOLOGICAL MEMBRANE SYSTEMS. **Astrid F. Brandner**, Stepan Timr, Simone Melchionna, Philippe Derreumaux, Marc Baaden, Fabio Sterpone

1854-Pos Board B217
MOLECULAR SIMULATION AND CONTINUUM MODELING OF N-BAR-INDUCED LIPID MEMBRANE DEFORMATIONS. **Andrew H. Beaven**, Alexander J. Sodt

1855-Pos Board B218
MOLECULAR AND CONTINUUM MODELING METHODS FOR UNDERSTANDING THE ROLE OF POLYPHOSPHOINOSITIDES IN INDUCING CELLULAR MORPHOLOGY CHANGES. **Ryan Bradley**, David Slochower, Ololade Fatunmbi, Sreeja Kutti Kandy, Robert Bucki, Paul A. Janmey, Ravi Radhakrishnan

1856-Pos Board B219
A PARTIALLY CLOSED STATE IN NHTMEM16 SCRAMBLASE IS ENABLED BY LIPID TAIL INSERTION INTO THE PROTEIN GROOVE. **George Khelashvili**, Maria Falzone, Xiaolu Cheng, Alessio Accardi, Harel Weinstein

1857-Pos Board B220
THE OUTER MEMBRANE PROTEINS OMPA, FHUA, OMPF, ESTA, BTUB AND OMPX HAVE UNIQUE LIPOPOLYSACCHARIDE FINGERPRINTS. **Jonathan Shearer**, Damien F. Jefferies, Syma Khalid

1858-Pos Board B221
A MOLECULAR MECHANISM FOR MEMBRANE GEOMETRY-SPECIFIC PROTEIN LOCALIZATION. **Gabriele Kockelkoren**

Mechanosensation (Boards B222 - B244)

1859-Pos Board B222
A SYSTEMATIC STUDY OF CELL MECHANICS AND FUNCTION MODULATED BY NANOTOPOGRAPHY. **Xiao Li**, Lasse Klausen, Wei Zhang, Bianxiao Cui

1860-Pos Board B223
CELL-CELL ADHESION AND MYOSIN ACTIVITY REGULATE CORTICAL ACTIN ASSEMBLY IN MAMMARY GLAND EPITHELIUM ON CONCAVED SURFACE. **Wei-Hung Jung**, Khalid Elawad, Sung Hoon Kang, Yun Chen

1861-Pos Board B224 TRAVEL AWARDEE
REGION-SPECIFIC STRETCH-INDUCED DISRUPTION OF CAVEOLAE DECREASES EXPRESSION OF MECHANOSENSITIVE CHLORIDE CHANNELS AND STIMULATES FIBROGENESIS PROMOTING ARRHYTHMOGENIC ATRIAL ECTOPY IN FAILING MICE. **Zachary D. Piro**, Rylie Lodin, Leonid Tyan, Evi Lim, Di Lang, Alexey V. Glukhov

1862-Pos Board B225
MICROTUBULE MECHANOTRANSDUCTION THROUGH NOX2-ROS INITIATES TRPV4 CALCIUM INFLUX AND PURINERGIC CALCIUM OSCILLATIONS THAT REGULATE OSTEOCYTE MECHANO-SENSING. **Katrina M. Williams**, Nicole Gould, Derek Jones, Ramzi Khairallah, Christopher W. Ward, Joseph P. Stains

1863-Pos Board B226
CLASSIFICATION OF DIFFERENT CANCER CELL TYPES BY SPECIES SPECIFICITY FOR CELL ELASTICITY. **Sangwoo Kwon**, Se Jik Han, Kyung Sook Kim

1864-Pos Board B227
THE SWELL1-LRRC8 COMPLEX REGULATES ENDOTHELIAL PI3K-AKT2-GRB2-ENOS SIGNALING AND VASCULAR FUNCTION. **Ahmad F. Alghanem**, Chau Ta, Oluwaseun Adeola, Susheel K. Gunasekar, Urooj Fatima, Elliot-Hudson Elliot-Hudson, Yanhui Zhang, Megan Riker, Robert F. Mullins, Litao Xie, Rajan Sah

1865-Pos Board B228
AGE-DEPENDENT PLASTICITY OF SOMATOSENSORY MECHANOSENSATION. **Niklas Michel**, Pratibha Narayanan, Manuela Schmidt

1866-Pos Board B229
A FIRST STEP TOWARD UNDERSTANDING OBSCURIN'S MOLECULAR MECHANISM. **Charles J. White**, Shaston Newman, Daniel Conway, Nathan T. Wright

1867-Pos Board B230
FORCE-INDUCED UNFOLDING OF A MECHANOSENSORY DOMAIN IN PLATELET GLYCOPROTEIN (GP)IB-IX UNDER SOLUTION AND ADHERENT CONDITIONS. **M. Edward Quach**, Dale Combs, Khalid Salaita, Renhao Li

1868-Pos Board B231
DESMIN IS CRITICAL TO THE NUCLEAR ARCHITECTURE OF CARDIOMYOCYTES. **Patrick Robison**, Julie Heffler, Rajan Jain, Benjamin Prosser

1869-Pos Board B232 TRAVEL AWARDEE
BILE CANALICULI CONTRACTILITY IS REGULATED BY CANALICULAR PRESSURE SENSING VIA PIEZO1. **Kapish Gupta**, Inn Chuan Ng, Boon C. Low, Hanry Yu

1870-Pos Board B233
MYOSIN-II MEDIATED TRACTION FORCES EVOKE LOCALIZED PIEZO1 CA^{2+} FLICKERS. Kyle L. Ellefsen, Alice Chang, Jamison L. Nourse, Jesse R. Holt, Janahan Arulmoli, Armen Mekhdjian, Hamid Aburwarda, Francesco Tombola, Lisa A. Flanagan, Alexander R. Dunn, Ian Parker, **Medha M. Pathak**

1871-Pos Board B234
CHOLESTEROL-DEPENDENT PIEZO1 CLUSTERS ARE ESSENTIAL FOR EFFICIENT CELLULAR MECHANOTRANSDUCTION. Pietro Ridone, Elvis Pandzic, Massimo Vassalli, Charles D. Cox, Alex M. Macmillan, Philip A. Gottlieb, **Boris Martinac**

1872-Pos Board B235 TRAVEL AWARDEE
FORCE-DEPENDENT CONFORMATIONAL CHANGES IN THE MECHANOSENSITIVE PIEZO1 CHANNEL. **Alper D. Ozkan**, Jerome J. Lacroix

1873-Pos Board B236
VOLTAGE DEPENDENCE AND MODULATION OF BACTERIAL CHANNEL MSCL. **Joseph S. Najem**, Ian Rowe, Andriy Anishkin, Joseph Maramba, Donald J. Leo, Sergei Sukharev

1874-Pos Board B237
DELETION OF *MSCL* IN VIBRIO CHOLERAE (C6706) INCREASES OSMOTIC VIABILITY THROUGH OVEREXPRESSION OF MSCS AND SUGGESTS A SPECIAL CROSSTALK MECHANISM IN MECHANOSENSITIVE CHANNEL REGULATION. **Madolyn Britt**

1875-Pos Board B238
MECHANICS, STRUCTURE, AND ENERGETICS OF MSCL THROUGH LOCAL STRESS CALCULATIONS AND STEERED MD SIMULATIONS. **Juan M. Vanegas**, Rajitha R. Tatikonda

1876-Pos Board B239
EVOLUTIONARY SPECIALIZATION OF *CORYNEBACTERIUM GLUTAMICUM* MSCCG, AN MSCS-LIKE MECHANOSENSITIVE CHANNEL, IN GLUTAMATE EXPORT. **Yoshitaka Nakayama**, Kosuke Komazawa, Navid Bavi, Ken-ichi Hashimoto, Hisashi Kawasaki, Boris Martinac

1877-Pos Board B240
PHYSIOLOGICAL ROLE OF BACTERIAL- LIKE MECHANOSENSITIVE CHANNELS IN PROTOZOAN PARASITES. Noopur Dave, Monica Hernandez, Tiffine Pham, Megna Tiwari, Heather Lynch, Joshua Fonbuena, Kristy Nguyen, **Veronica Jimenez**

1878-Pos Board B241
THE BACTERIAL MECANOSENSITIVE CHANNEL MSCL AS A NOVEL ANTIBIOTIC TARGET. **Irene Iscla**, Robin Wray, Paul Blount

1879-Pos Board B242
ELUCIDATING THE MOLECULAR BASIS OF PH-TRIGGERED ACTIVATION OF AN ENGINEERED MECHANOSENSITIVE CHANNEL. Kalyan Immadisetty, Reid Shelton, **Mahmoud Moradi**

1880-Pos Board B243
FORCE LOADING DURING MECHANOSENSING EMERGES FROM NON-MECHANOSENSITIVE ACTIVE DISPLACEMENTS. Lea Feld, Ariel Livne, Yuri Lubomirsky, Abhishek Mukherjee, Eran Bouchbinder, **Haguy Wolfenson**

1881-Pos Board B244
BENDING-INDUCED STRAIN DELAYS COLLAGEN DEGRADATION BY COLLAGENASE. **Karanvir Saini**, Manu Tewari, Jerome Irianto, Charlotte Pfeifer, Cory Alvey, Dennis E. Discher

Intracellular Calcium Channels and Calcium Sparks and Waves (Boards B245 - B267)

1882-Pos Board B245 TRAVEL AWARDEE
HIGH-THROUGHPUT SCREENING YIELDS ALLOSTERIC INHIBITORS OF LEAKY RYRS FOR THERAPEUTIC DEVELOPMENT. **Robyn T. Rebbeck**, Daniel P. Singh, Kenneth S. Ginsburg, Xiaoqiong Dong, David D. Thomas, Donald M. Bers, Bradley S. Launikonis, Razvan L. Cornea

1883-Pos Board B246
MACHINE LEARNING AND SUPER-RESOLUTION MICROSCOPY REVEAL DETAILED HIERARCHY OF RYANODINE RECEPTOR DISTRIBUTION IN CARDIAC PACEMAKER CELLS. Alexander V. Maltsev, **Pooja Ajay Warrier**, Oliver Monfredi, Magdalena Juhaszova, Edward G. Lakatta, Victor A. Maltsev, Michael D. Stern

1884-Pos Board B247
THE ROLE OF CYSTEINE 3602 IN RYR2 REGULATION BY CALMODULIN AND OXIDATIVE STRESS. **Roman Nikolaienko**, Elisa Bovo, Robyn T. Rebbeck, Donald M. Bers, Razvan L. Cornea, Aleksey V. Zima

1885-Pos Board B248
PACEMAKER ORGANIZATION AT THE NANOSCALE: IMAGING OF RYANODINE RECEPTORS AS CLUSTERS IN SINGLE SINOATRIAL NODAL CELLS. **Maura Greiser**, Humberto C. Joca, W. Jonathan Lederer

1886-Pos Board B249
ALCOHOL DECREASES THE ACTIVITY OF NATIVE RYANODINE RECEPTORS FROM RAT HEART. Yanping Ye, Logan Stewart, Kelsey North, Lie Wang, **Alex M. Dopico**

1887-Pos Board B250
IMPAIRED LIGAND REGULATION OF NATIVE RYR2 CHANNELS IN THE CATECHOLAMINERGIC POLYMORPHIC VENTRICULAR TACHYCARDIA MUTATION, RYR2-V2475F(+/-). **Abigail D. Wilson**, Elisa Venturi, Charalampos Sigalas, Yuanlong Song, Carmen R. Valdivia, Héctor H. Valdivia, Ming Lei, Rebecca M. Sitsapesan

1888-Pos Board B251
EFFECT OF RYR2 EXPRESSION LEVEL ON ACTIVATION AND TERMINATION OF SPONTANEOUS CA-INDUCED CA RELEASE. Roman Nikolaienko, Elisa Bovo, **Aleksey V. Zima**

1889-Pos Board B252 TRAVEL AWARDEE
STRUCTURAL DYNAMICS OF CALMODULIN IN REGULATION OF RYR CALCIUM RELEASE CHANNELS. **Megan R. McCarthy**, Robyn T. Rebbeck, Razvan L. Cornea, David D. Thomas

1890-Pos Board B253
DIFFERENT CONTEXT FOR SHEAR SIGNALING IN LEFT *VERSUS* RIGHT ATRIAL MYOCYTES: DIFFERENTIAL ROLES OF $P2Y_1$- AND $P2X_4$-PURINOCEPTORS. Joon-Chul Kim, Min-Jeong Son, Qui A. Le, Kyoung-Hee Kim, **Sun-Hee Woo**

1891-Pos Board B254
THE BINDING INTERACTIONS THAT MAINTAIN THE EC COUPLING JUNCTIONS IN SKELETAL MUSCLE. **Eduardo Rios**, Dirk Gillespie, Clara Franzini-Armstrong

1892-Pos Board B255
PHARMACOLOGICAL MODULATION OF MITOCHONDRIAL CA^{2+} UPTAKE REGULATES SARCOPLASMIC RETICULUM CA^{2+} RELEASE VIA OXIDATION OF RYANODINE RECEPTOR BY REACTIVE OXYGEN SPECIES. **Shanna Hamilton**, Radmila Terentyeva, Tae Yun Kim, Peter Bronk, Jin O-Uchi, Gyorgy Csordas, Bum Rak Choi, Dmitry Terentyev

1893-Pos Board B256
SMALL ANKYRIN 1 INTERACTS WITH PHOSPHOLAMBAN TO REGULATE MUSCLE SERCA1. **Amanda Labuza**, Patrick F. Desmond, Allison E. Mancini, Joaquin Muriel, Mark A. Rizzo, Robert J. Bloch

1894-Pos Board B257
TRPV4 CONTRIBUTES TO STRETCH-INDUCED HYPERCONTRACTILITY AND TIME-DEPENDENT DYSFUNCTION IN HEARTS OF AGED MICE. **Adam B. Veteto**, Michelle D. Lambert, Kerry S. McDonald, Tim L. Domeier

1895-Pos Board B258
IP_3R1-MEDIATED LOCAL CA^{2+} RELEASE EVENTS ARE ENHANCED IN THE GAIN-OF-FUNCTION D2594K MUTANT CHANNEL. Madeleine R. Mascitti, Karyn M. DiNovo, Michael Fill, S.R. Wayne Chen, Josefina Ramos-Franco, **Rafael Mejia-Alvarez**

1896-Pos Board B259
B-ADRENERGIC PATHWAY IS ENHANCED BY HORMONE-INDUCED MATURATION OF HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES (IPS-CM). **David Carreras**, Rebecca Martinez-Moreno, Elisabet Selga, Ramon Brugada, Fabiana S. Scornik, Guillermo J. Perez

1897-Pos Board B260
EARLY AFTERDEPOLARIZATIONS AND ALTERNANS ARE THE UNDERLYING MECHANISM TO CAUSE ARRHYTHMOGENIC DISORDER IN THE MUTANT CALSEQUESTRIN 2 (CASQ2). **Aman Ullah**, Roshan Paudel, W. Jonathan Lederer, M. Saleet Jafri

1898-Pos Board B261 TRAVEL AWARDEE
TRIGGERED CALCIUM EVENTS REVEAL ELECTROPHYSIOLOGICAL ALTERATIONS IN A COHORT OF PATIENTS SUSCEPTIBLE TO MALIGNANT HYPERTHERMIA. **Lourdes Figueroa**, Natalia Kraeva, Carlo Manno, Eshwar R. Tammineni, Sheila Riazi, Eduardo Rios

1899-Pos Board B262 TRAVEL AWARDEE
THE INTERPLAY BETWEEN NAADP AND PI(3,5)P2 IN THE ACTIVATION OF LYSOSOMAL TWO-PORE CHANNEL 2. **Qiaochu Wang**, Michael X. Zhu

1900-Pos Board B263
IOCBIO SPARKS DETECTION AND ANALYSIS SOFTWARE. Martin Laasmaa, Niina Karro, Rikke Birkedal, **Marko Vendelin**

1901-Pos Board B264
NON-RYR CALCIUM LEAK OF THE SARCOPLASMIC RETICULUM IS GOVERNED BY TRPC1 IN CARDIOMYOCYTES. **Azmi A. Ahmad**, Molly E. Streiff, Chris Hunter, Frank B. Sachse

1902-Pos Board B265
ACTIVATION OF ENDOGENOUS PP1 ENHANCES CALCIUM SPARK ACTIVITY IN WILD TYPE CARDIOMYOCYTES. **Radoslav Janicek**, Duilio Michele Potenza, Miguel Fernandez-Tenorio, Hector H. Valdivia, Ernst Niggli

1903-Pos Board B266
ABNORMAL GLUCOSE METABOLISM AND CALCIUM SIGNALING IN MALIGNANT HYPERTHERMIA (MHS) PATIENTS. **Eshwar R. Tammineni**, Carlos Ibarra, Lourdes Figueroa, Carlo Manno, Natalia Kraeva, Eduardo Rios, Sheila Riazi

1904-Pos Board B267
THE ANTI-CANCER DRUG VATALANIB (PTK787/ZK222584) SUPPRESSES NORMAL SPONTANEOUS FIRING OF RABBIT SINOATRIAL NODE CELLS (SANC). **Tatiana M. Vinogradova**, Kirill V. Tarasov, Yelena S. Tarasova, Edward G. Lakatta

Muscle Regulation (Boards B268 - B276)

1905-Pos Board B268
CYTOTOXICITY OF TRUNCATED SLOW SKELETAL MUSCLE TROPONIN T IN *TNNT1* MYOPATHIES. **Hanzhong Feng**, J.-P. Jin

1906-Pos Board B269
LOSS OF THE SLOW SKELETAL MUSCLE ISOFORM OF TROPONIN T IMPAIRS MOTOR COORDINATION IN MICE. **Kentaro Oki**, Han-Zhong Feng, J.-P. Jin

1907-Pos Board B270
MYOSIN BINDING PROTEIN-C SLOW IN HEALTH AND DISEASE. **Janelle Geist**, Janis Stavusis, Baiba Lace, Nathan T. Wright, Christopher W. Ward, Carsten Bonnemann, Aikaterini Kontrogianni-Konstantopou

1908-Pos Board B271
EXPRESSION OF MYOSIN STORAGE MYOPATHY MUTATIONS IN *DROSOPHILA* DISRUPTS SKELETAL AND CARDIAC MUSCLE STRUCTURE AND FUNCTION. **Meera C. Viswanathan**

1909-Pos Board B272
FLUORESCENTLY LABELLED MYOSIN REGULATORY LIGHT CHAINS AS BIOSENSORS FOR THICK FILAMENT ACTIVATION IN HEART MUSCLE. **Priyanka Parijat**, Malcolm Irving, Thomas Kampourakis

1910-Pos Board B273
STRAIN-DEPENDENCE OF THE ACTIN-MYOSIN WORKING STEP. **Josh E. Baker**, Travis J. Stewart, Christine R. Cremo

1911-Pos Board B274 TRAVEL AWARDEE
EFFECTS OF ACTIN-BINDING COMPOUNDS ON THE ATPASE ACTIVITY OF MYOSIN FROM SKELETAL AND CARDIAC MUSCLE. **Ananya Tripathi**, Lien A. Phung, Piyali Guhathakurta, David D. Thomas

1912-Pos Board B275 TRAVEL AWARDEE
THE ROLE OF UBIQUITIN-PROTEASOME SYSTEM (UPS)-ASSOCIATED GENES IN THE PRESERVATION OF CARDIAC AND MUSCLE FUNCTION IN DROSOPHILA MELANOGASTER. **Maria L. Khan**

1913-Pos Board B276
MODELING THE CYTOTOXIC SWELLING OF DYSTROPHIC MUSCLE FIBERS. **Catherine E. Morris**, Bela Joos

Voltage-gated Na Channels (Boards B277 - B297)

1914-Pos Board B277
FGF12A COUNTERACTS LONG QT SYNDROME-LINKED INACTIVATION DEFICIENCY. **Paweorn Angsutararux**

1915-Pos Board B278
AN ATTEMPTED MOLECULAR RESCUE OF AN ARRHYTHMOGENIC CARDIAC DISEASE MUTATION. **Sara Nathan**, Sophie Shoemaker, Federica Farinelli, Jesse Yoder, L.Mario Amzel, Gordon F. Tomaselli, Sandra B. Gabelli

1916-Pos Board B279
CONSTANT PH STUDY OF A SODIUM CHANNEL. **Ana Damjanovic**, Ada Y. Chen, Robert L. Rosenberg, Daniel Roe, Bernard R. Brooks

1917-Pos Board B280
PROTX-II INHIBITS NAV1.7 THROUGH AN ELECTROSTATIC GATING MODULATION MECHANISM. **Tianbo Li**

1918-Pos Board B281
DIFFERENCES BETWEEN TONIC AND USE-DEPENDENT BINDING SITES IN VOLTAGE-GATED SODIUM CHANNELS. Amanda Buyan, **Ben Corry**

1919-Pos Board B282
SODIUM CHANNELS IMPLEMENT A MOLECULAR LEAKY INTEGRATOR TO SENSE SPIKING FREQUENCY AND REGULATE NEURONAL FIRING. **Marco A. Navarro**, Jenna Lin, Autoosa Salari, Mirela MIlescu, Lorin S. Milescu

1920-Pos Board B283
MULTISCALE MOLECULAR DYNAMICS TO EXPLORE VOLTAGE-GATED SODIUM CHANNEL OLIGOMERISATION. **William Glass**, Philip C. Biggin

1921-Pos Board B284
ENUMERATING VIABLE N-STATE MARKOV MODELS OF SODIUM CHANNEL DYNAMICS. **Kathryn Mangold**, Jonathan Silva

1922-Pos Board B285
BIOPHYSICAL AND PHARMACOLOGICAL PROFILING OF MULTIPLE VOLTAGE-GATED SODIUM CHANNEL SUBTYPES ON QPATCH II. **Daniel R. Sauter**, Rasmus B. Jacobsen, Goeran Mattsson

1923-Pos Board B286
IN SEARCH OF A MOLECULAR MECHANISM FOR SLOW INACTIVATION IN VOLTAGE-GATED NA CHANNELS USING THE SCAM TECHNIQUE IN D2-S6 OF HNAV1.4. **John P. O'Reilly**, Kevin Bokum, Jonathan Beard, Penny Shockett

1924-Pos Board B287
INTERACTION OF $NA_V1.2$ IQ MOTIF WITH DISEASE-CAUSING MUTANTS OF CALMODULIN. **Ryan W. Mahling**, Adina M. Kilpatrick, Holly M. Isbell, Madeline A. Shea

1925-Pos Board B288
PRODUCTION AND APPLICATIONS OF NANOBODIES AGAINST VOLTAGE-GATED SODIUM CHANNEL, NAV1.4. **Lakshmi Srinivasan**

1926-Pos Board B289
USING SCAM TO INVESTIGATE RECONFIGURATION OF MOLECULAR DETERMINANTS IN D1-S6 DURING SLOW INACTIVATION OF HNAV1.4. **Jon M. Beard**, Penny Shockett, John P. O'Reilly

1927-Pos Board B290
THE INSECTICIDE FENVALERATE BINDS TO NAVMS SODIUM CHANNELS, MAKING THEM A SUITABLE TEMPLATE FOR MODELLING STRUCTURES OF HOUSEFLY-INSECTICIDE COMPLEXES. **Altin Sula**, Edina Molnar, Bonnie A. Wallace

1928-Pos Board B291
NA CHANNEL ACTIVATION AND INACTIVATION: ROLE OF DOMAIN 4. **Clay M. Armstrong**, Steve Hollingworth

1929-Pos Board B292
EXTRACELLULAR ACIDOSIS EXHIBITS DOMAIN-SPECIFIC EFFECTS ON NAV1.5. **Emily M. Wagner**, Brittany D. Brumback, Taylor L. Voelker, Wandi Zhu, Jonathan R. Silva

1930-Pos Board B293
BIOPHYSICAL AND MOLECULAR CHARACTERIZATION OF CALCIUM PERMEABLE HONEYBEE DSC1 ($AMCA_V4$) CHANNEL EXPRESSED IN MAMMALIAN CELLS. Olivier Thériault, Matthieu Rousset, Collet Claude, Thierry Cens, Pierre Charnet, **Mohamed Chahine**

1931-Pos Board B294
DOMAIN I COUNTERCHARGES LIMIT SLOW INACTIVATION IN HNAV1.4 SODIUM CHANNELS. **James R. Groome**, Andromeda Wheeler, Ryann Camp

1932-Pos Board B295 TRAVEL AWARDEE
CARDIAC SODIUM CURRENT IS SEVERELY IMPAIRED IN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES FROM BRUGADA SYNDROME PATIENTS. **Rebecca Martinez-Moreno**, Elisabet Selga, Georgia Sarquella-Brugada, Ramon Brugada, Guillermo Perez, Fabiana Scornik

1933-Pos Board B296
PREDICTING VARIANT PATHOGENICITY IN THE CARDIAC SODIUM CHANNEL USING PARALOGUE ANNOTATION. **Svetlana Tarnovskaya**, Vyacheslav Korkosh, Boris S. Zhorov, Dmitrij Frishman

1934-Pos Board B297
CHRONIC EXPOSURE TO TUMOR NECROSIS FACTOR IN VIVO INDUCES HYPERALGESIA, UPREGULATES SODIUM CHANNEL GENE EXPRESSION AND ALTERS THE CELLULAR ELECTROPHYSIOLOGY OF DORSAL ROOT GANGLION NEURONS. **Michael E. O'Leary**, Andrea Bottaro, Igor Kuzin, Cojen Ho, Brad Fischer

Ligand-gated Channels II (Boards B298 - B322)

1935-Pos Board B298 TRAVEL AWARDEE
LOOP G OF THE GABAAR ORTHOSTERIC BINDING SITE IS INVOLVED BOTH IN BINDING AND GATING PROCESSES. **Marek Brodzki**, Michal A. Michalowski, Jerzy W. Mozrzymas

1936-Pos Board B299
EFFECT OF HYPERGLYCEMIA IN THE ACTIVITY OF GLYCINE RECEPTORS IN INSULIN SECRETING CELLS. **Amanda Schukarucha Gomes**, Silvana Bordin, Fernando Abdulkader

1937-Pos Board B300
TARGETED STATE DEPENDENT CROSSLINKING MASS SPECTROMETRY (CXMS) OF THE HUMAN ALPHA 1 GLYCINE RECEPTOR (GLYR). **Kayce A. Tomcho**, Hannah E. Gering, Rathna J. Veeramachaneni, David J. Lapinsky, Michael Cascio

1938-Pos Board B301
AROMATIC RESIDUES IN THE GLYCINE RECEPTOR TRANSMEMBRANE FORM A NETWORK REQUIRED FOR FUNCTION. **Sarah C. Lummis**, Bijun Tang

1939-Pos Board B302
PHARMACOLOGICAL SELECTIVITY OF A STEROID BINDING SITE AT THE $BETA^{+}$-$ALPHA^{-}$ INTERFACE OF ALPHA1 BETA3 GABA-A RECEPTORS. **Selwyn S. Jayakar**, Xiaojuan Zhou, Bo Wu, Keith W. Miller, Karol S. Bruzik, Jonathan B. Cohen

1940-Pos Board B303
IDENTIFICATION OF A HIGH-AFFINITY NEUROSTEROID BINDING SITE IN HUMAN ALPHA1BETA3 $GABA_AR$ USING A PHOTOREACTIVE THDOC ANALOG. **David C. Chiara**, Bo Wu, Xiaojuan Zhou, Selwyn S. Jayakar, Katherine Titterton, Stuart A. Forman, Keith W. Miller, Karol S. Bruzik, Jonathan B. Cohen

1941-Pos Board B304 TRAVEL AWARDEE
A COMPARISON BETWEEN HOMOMERIC AND HETEROMERIC 5-HT3 RECEPTORS IN RESPONSE TO THE ANTIDEPRESSANT BUPROPION. **Antonia Stuebler**, Michaela Jansen

1942-Pos Board B305
IN-VIVO AND IN-VITRO STUDIES TO IDENTIFY THE INTERACTION SITE OF THE INTRACELLULAR DOMAIN OF SEROTONIN TYPE 3A ($5\text{-}HT_{3A}$-ICD) AND CHAPERON PROTEIN RIC-3. **Elham Pirayesh**, Antonia G. Stuebler, Michaela Jansen

1943-Pos Board B306
MICROSECOND-SCALE MOLECULAR DYNAMICS SIMULATIONS REVEAL DESENSITIZED BEHAVIOR OF 5HT3. **Nicholas B. Guros**, Arvind Balijepalli, Jeffery B. Klauda

1944-Pos Board B307
LONG DISTANCE NMR RESTRAINTS FOR THE FLEXIBLE Á7NACHR INTRACELLULAR DOMAIN. **Vasyl Bondarenko**, Marta Wells, Qiang Chen, Tommy Tillman, Yan Xu, Pei Tang

1945-Pos Board B308
FUNCTIONAL TOLERANCE OF HUMAN A7 NICOTINIC ACETYLCHOLINE RECEPTOR TO CYSTEINE LABELING. **Tommy S. Tillman**, Yan Xu, Pei Tang

1946-Pos Board B309
ROLE OF THE CYTOPLASMATIC M3-M4 LOOP FOR THE HOMOPENTAMERIC ASSEMBLY OF A CHIMERIC NICOTINIC ALPHA 7 RECEPTOR. **Jonas Deppe**, Lena Hauswirth, Heike Lauks, Achim Kless, Ralf Hausmann, Guenther Schmalzing

1947-Pos Board B310
PROBABILITY OF OPENING DURING RECOVERY FROM ACETYLCHOLINE RECEPTOR DESENSITIZATION. **Radhakrishnan Gnanasambandam**, Anthony Auerbach

1948-Pos Board B311 TRAVEL AWARDEE
STRUCTURE MEETS FUNCTION: AGONIST ACTIONS AT NEUROTRANSMITTER BINDING SITES. **Sushree Tripathy**, Wenjun Zheng, Anthony Auerbach

1949-Pos Board B312
A PHOTOACTIVATABLE NICOTINE FOR INTERROGATING NATIVE NACHRS AND CHOLINERGIC TRANSMISSION. **Sambashiva Banala**

1950-Pos Board B313
INTEGRATIVE STRUCTURE DETERMINATION OF A7NACHR INTRACELLULAR DOMAIN. **Marta M. Wells**, Vasyl Bondarenko, Tommy S. Tillman, Kevin Singewald, Matthew J. Lawless, Joel Caporoso, Nicole Brandon, Charles Chen, Monica N. Kinde, Sunil Saxena, Yan Xu, Erik Lindahl, Pei Tang

1951-Pos Board B314 TRAVEL AWARDEE
STRUCTURE-ACTIVITY RELATIONSHIP OF POTENT PHOTO-SWITCHABLE NEUROMUSCULAR INHIBITORS. **Clara Herrera-Arozamena**, Martin H. Estrada-Valencia, Carlos A. Villalba-Galea, Maria Isabel Rodriguez-Franco

1952-Pos Board B315
IDENTIFYING STEROID BINDING SITES IN A NICOTINIC ACETYLCHOLINE RECEPTOR (NACHR) WITH A PHOTOREACTIVE ANALOG OF ALPHAXALONE. **Zhiyi Yu**, Pavel Y. Savechenkov, Karol S. Bruzik, Jonathan B. Cohen

1953-Pos Board B316
PROBING THE BINDING SITE(S) OF BUPROPION IN GLIC BY SITE-DIRECTED MUTAGENESIS. **Akash Pandhare**, R. Bryan Sutton, Michaela Jansen

1954-Pos Board B317
ALLOSTERIC POTENTIATION OF A LIGAND-GATED ION CHANNEL IS MEDIATED BY ACCESS TO A DEEP MEMBRANE-FACING CAVITY. Stephanie Heusser, Marie Lycksell, Xueqing Wang, Sarah McComas, Rebecca J. Howard, **Erik Lindahl**

1955-Pos Board B318 TRAVEL AWARDEE
UNDERSTANDING THE CONFORMATIONAL DYNAMICS OF A PENTAMERIC LIGAND-GATED ION CHANNEL THROUGH MARKOV STATE MODELING. **Cathrine C. Bergh**, Laura Orellana, Rebecca J. Howard, Erik Lindahl

1956-Pos Board B319
PHARMACOLOGICAL CHARACTERIZATION OF THE ZINC-ACTIVATED CHANNEL: A CYS-LOOP RECEPTOR GATED BY ZN^{2+}, CU^{2+} AND PROTONS. **Nawid Madjroh**, Anders A. Jensen, Paul A. Davies

1957-Pos Board B320
STRUCTURAL STUDIES OF THE GATING MECHANISM IN A PENTAMERIC LIGAND-GATED ION CHANNEL CONTAINING TWO ADDITIONAL N-TERMINAL PERIPLASMIC DOMAINS. **Marc H. Delarue**, Haidai Hu, Rebecca J. Howard, Urska Rovsnik, Sirine Hlioui, Erik Lindahl

1958-Pos Board B321
ALLOSTERIC TRANSITIONS OF PENTAMERIC LIGAND-GATED ION CHANNELS STUDIED BY FLUORESCENCE QUENCHING TO EXPLORE PATHOLOGICAL MUTATIONS AND PHARMACOLOGICAL EFFECTORS. **Solene N. Lefebvre**, Anais Menny, Marc Gielen, Pierre-Jean Corringer

1959-Pos Board B322
ACTIVATION AND INACTIVATION GATING IN BESTROPHIN ION CHANNELS. George Vaisey, Alexandria N. Miller, **Stephen B. Long**

Ion Channel Regulatory Mechanisms (Boards B323 - B347)

1960-Pos Board B323
$G_{Q/11}$-COUPLED MUSCARINIC RECEPTOR ENHANCEMENT OF KCNQ2/3 "M-TYPE" K^+ CHANNELS AND ACTIVATION OF TRPC CATION CHANNELS IN MULTIMODAL CONTROL OF EXCITABILITY IN DENTATE GYRUS GRANULE NEURONS IN HIPPOCAMPUS. Chase M. Carver, Shayne D. Hastings, **Mark S. Shapiro**

1961-Pos Board B324
INVESTIGATING ION TRANSPORT MECHANISMS VIA STRAIN, CHARGE, AND BIAS IN FUNCTIONALIZED SUB-NANOSCALE PORES. **Subin Sahu**, Christoph Rohmann, Justin Elenewski, Michael Zwolak

1962-Pos Board B325
THE ROLE OF HCN DOMAIN IN CHANNEL GATING. **Anna Moroni**, Alessandro Porro, Andrea Saponaro, Matteo Pisoni, Federica Gasparri, Gerardo Abbandonato, Gerhard Thiel, Bina Santoro

1963-Pos Board B326
STIM1 INDUCES ORAI1 ACTIVATION VIA DIRECT BINDING TO ITS C-TERMINAL DOMAIN. **Zainab Haydari**

1964-Pos Board B327
IMPACT OF CODON USAGE AND PROLYL ISOMERIZATION ON K CHANNEL FUNCTION. **Gerhard Thiel**, Kerri Kukovetz, Anja Engel, Anna Moroni

1965-Pos Board B328
KCNQ1/KCNE1 MEMBRANE EXPRESSION IS REGULATED BY THE MEMBRANE PHOSPHOINOSITE PI4P: CONSEQUENCES FOR LONG QT1. Chen Braun, **Coeli Lopes**

1966-Pos Board B329
NEW G_i-PROTEIN BIASED μ-OPIOID RECEPTOR LIGANDS ACT AS PARTIAL AGONISTS ON ION CHANNEL EFFECTORS OF $G_{\beta\gamma}$ SIGNALING. **Yevgen Yudin**, Tibor Rohacs

1967-Pos Board B330
A PHOSPHOINOSITIDE BINDING MODULE CONTROLS TMEM16A DESENSITIZATION. **Son C. Le**, Zhiguang Jia, Jianhan Chen, Huanghe Yang

1968-Pos Board B331
STATE-DEPENDENCE OF ION AND ATP TRANSPORT IN VDAC1 PROTEIN INVESTIGATED WITH GCMC/BD SIMULATIONS. **Kazi S. Amin**, Tatiana K. Rostovtseva, Sergey M. Bezrukov, Sergei Y. Noskov, Van Ngo

1969-Pos Board B332
KCNE1 SUBUNIT PHOSPHORYLATION LEADS TO IKS INTERNALIZATION IN RESPONSE TO CHRONIC CALCIUM-DEPENDENT PKC ACTIVATION. **Elsa Ronzier**, Xiaorong Xu Parks, Coeli M Lopes

1970-Pos Board B333
SYSTEMATIC SCANNING MUTAGENESIS OF THE PORE HELICES IN THE TREK-2 K2P CHANNEL. **Manuel Arcangeletti**, Stephen J. Tucker

1971-Pos Board B334
A COMPUTATIONAL STUDY OF THE ESSENTIAL TRANSMEMBRANE PROTEIN NARK AS NITRATE/NITRITE EXCHANGER. **Nara L. Chon**, Hongjin Zheng, Hai Lin

1972-Pos Board B335
A NOVEL STOCHASTIC SELF-ASSEMBLY MODEL FOR ION CHANNEL TRAFFICKING AND CLUSTERING IN EXCITABLE CELLS. **Gonzalo Hernandez Hernandez**, Collin Matsumoto, Claudia M. Moreno, Sendoa Tajada, Rose E. Dixon, Manuel F. Navedo, Marc D. Binder, Colleen E. Clancy, L. Fernando Santana, Daisuke Sato

1973-Pos Board B336
IRBIT EXPANDS SIGNALING REPERTOIRE AT THE ER/PM JUNCTIONS. **Wooyoung Chung**, Seonghee Park, Shmuel Muallem

1974-Pos Board B337 TRAVEL AWARDEE
STRUCTURE FUNCTION STUDIES OF A PLANT NON SELECTIVE CATION CHANNEL INVOLVED IN DROUGH TOLERANCE. **Srinivasan Krishnan**, Koustav Maity, Aaron P. McGrath, Leon Kochian, Geoffrey Chang, Miguel Piñeros

1975-Pos Board B338
INTERACTION OF PEGS WITH THE ANTHRAX TOXIN CHANNEL AND THEIR ROLE IN ALTERING THE 1/F CURRENT NOISE. **Oluwasegun Akinniyi**, Goli Yamini, Ekaterina M. Nestorovich

1976-Pos Board B339
DISSECTING THE STRUCTURE AND FUNCTION OF BESTROPHIN CHANNELS. Alec Kittredge, Changyi Ji, Austin Hopiavuori, Nancy Ward, Shoudeng Chen, Yota Fukuda, Yu Zhang, **Tingting Yang**

1977-Pos Board B340
THERMODYNAMICS OF THE NMDA RECEPTOR AMINO-TERMINAL DOMAIN. **Remy A. Yovanno**, Albert Y. Lau

1978-Pos Board B341
SUPPRESSIVE EFFECTS OF BETA AMYLOID PEPTIDES (1-42) AND (25-35) ON KV1.1 CHANNEL ACTIVITY. **Joseph Farley**, Kristi DeBoeuf, Mohammad F. Islam, Nicholas Thelen

1979-Pos Board B342
PALMITOYLATION OF KIR6.2 AT POSITION C166 PROMOTES KATP CHANNEL OPENING. **Hua-Qian Yang**, JongIn Hwang, William A. Coetzee

1980-Pos Board B343
INTERACTIONS OF JUNCTOPHILINS AND STIM1 WITH ER CALCIUM-RELEASING CHANNELS. **Stefano Perni**, Kurt G. Beam

1981-Pos Board B344
MODULATION OF GIRK CHANNELS BY PROTEIN KINASE C. **Kirin Gada**, Yu Xu, Takeharu Kawano, Leigh D. Plant, Diomedes E. Logothetis

1982-Pos Board B345
MECHANISTIC INSIGHTS INTO VOLTAGE-INDUCED CLOSURE OF BACTERIAL BETA-BARREL CHANNELS. **Deborah Aurora Perini**, Antonio Alcaraz, Vicente M. Aguilella, Maria Queralt-Martin

1983-Pos Board B346
MECHANISTIC DIFFERENCES BETWEEN CA^{2+}SPARKS AND CA^{2}PUFFS REVEALED THROUGH SIMULATIONS OF HETEROGENEOUS POPULATIONS. **DeAnalisa C. Jones**, Eric A. Sobie

1984-Pos Board B347
HUMAN VOLTAGE-GATED PROTON CHANNELS IN CHORION-DERIVED MESENCHYMAL STEM CELLS. Beata Meszaros, Ferenc Papp, Gabor Tajti, **Gyorgy Panyi**

Skeletal Muscle Mechanics, Structure, and Regulation (Boards B348 - B373)

1985-Pos Board B348
A *DROSOPHILA* CARDIAC MYOSIN ISOFORM ENABLES JUMP MUSCLE CYCLICAL POWER PRODUCTION. **Kaylyn M. Bell**, Douglas M. Swank

1986-Pos Board B349
COOPERATIVITY IN THIN FILAMENT ACTIVATION DEPENDS ON THE FORCE OF THE MYOSIN MOTOR. Marco Caremani, Cristina Gallart, Irene Pertici, Gabriella Piazzesi, Vincenzo Lombardi, **Marco Linari**

1987-Pos Board B350
MUSCLE MEASUREMENTS SHOW WEAKLY BOUND CROSS-BRIDGES ACT AS A VISCOUS DRAG. Sam Walcott, **Katelyn Jarvis**

1988-Pos Board B351
DO CARDIAC MYOFIBRILS EXHIBIT RESIDUAL FORCE ENHANCEMENT PROPERTIES? **Seong-won Han**, Venus Joumaa, Walter Herzog

1989-Pos Board B352
SPECIFIC CLEAVAGE OF THE TITIN SPRINGS IN SITU UNCOVERS THE ROLE OF TITIN-BASED FORCE IN SARCOMERE STRUCTURE AND MUSCLE CONTRACTION. Yong Li, Andreas Unger, Marion von Frieling-Salewsky, Andres Rivas-Pardo, Jorge Alegre-Cebollada, Julio M. Fernandez, **Wolfgang A. Linke**

1990-Pos Board B353
SHORTENING DEACTIVATION CHARACTERISTICS OF *DROSOPHILA* AND *LETHOCERUS* MUSCLE TYPES. **Amy K. Loya**, Bernadette M. Glasheen, Douglas M. Swank

1991-Pos Board B354
RESTORING REAL-SPACE IMAGES OF THE STRUCTURE OF MUSCLE AND OTHER BIOLOGICAL SPECIMENS FROM CONVENTIONAL X-RAY DIFFRACTION PATTERNS. **Hiroyuki Iwamoto**

1992-Pos Board B355
HYDRODYNAMIC AND POLYELECTROLYTE PROPERTIES OF CYTOSKELETON FILAMENTS. **Ernesto Alva**

1993-Pos Board B356
DOWNSIZING THE GIANT TITIN REVEALS ITS DOMINANT ROLES IN SKELETAL MUSCLE PASSIVE STIFFNESS AND LONGITUDINAL HYPERTROPHY. Ambjorn Brynnel, Yaeren Hernandez, Balazs Kiss, Johan Lindqvist, Maya Adler, Justin Kolb, Robbert Van der Pijl, Jochen Gohlke, Joshua Strom, John E III Smith, **Henk L. Granzier**

1994-Pos Board B357
X-RAY DIFFRACTION RESOLVES HOW ACTIN-MYOSIN SPACING EXPLAINS THE DIFFERENCES OF TWO MUSCLES WITH IDENTICAL STEADY STATE PROPERTIES. **Travis Tune**, Thomas Irving, Simon Sponberg

1995-Pos Board B358
TIME-RESOLVED X-RAY DIFFRACTION AND MOLECULAR DYNAMICS STUDIES OF SKELETAL MUSCLE RELAXATION WITH 2 DEOXY-ATP. Weikang Ma, Matthew C. Childers, Jason D. Murray, Henry Gong, Valerie Daggett, **Thomas C. Irving**, Michael Regnier

1996-Pos Board B359
STRESS RELAXATION IN ACTIVE SARCOMERES AND A HYPOTHESIZED CALCIUM-DEPENDENT GLASS TRANSITION. **Khoi D. Nguyen**, Madhusudhan Venkadesan

1997-Pos Board B360
STRUCTURE OF THICK FILAMENTS FROM DROSOPHILA INDIRECT FLIGHT MUSCLE BY CRYO-EM. **Nadia Daneshparvar**, Dianne Taylor, Hamidreza Rahmani, Kenneth A. Taylor

1998-Pos Board B361 TRAVEL AWARDEE
TIME-RESOLVED X-RAY STUDIES OF SKELETAL MUSCLE FROM A DUCHENE MUSCULAR DYSTROPHY RAT MODEL. **Chen-Ching Yuan**, Joseph D. Powers, Jason Murray, Saffie Mohran, Weikang Ma, Shawn M. Luttrell, Thomas C. Irving, Michael Regnier, David L. Mack

1999-Pos Board B362
REGULATION OF MYOFILAMENT FORCE AND LOADED SHORTENING BY SKELETAL MYOSIN BINDING PROTEIN-C. **Joel C. Robinett**, Laurin M. Hanft, Janelle Geist, Aikaterini Kontrogianni-Konstantopoulos, Kerry S. McDonald

2000-Pos Board B363
ZEBRAFISH EMBRYOS ENABLE MULTI-SCALE HIGH-THROUGHPUT MUSCLE MECHANICS. **Andrew Mead**, Guy Kennedy, Samantha Previs, Bradley Palmer, Alicia Ebert, David Warshaw

2001-Pos Board B364
NOVEL MYBPC1 MUTATIONS IN MYOPATHY WITH TREMOR. **Aikaterini Kontrogianni-Konstantopou**, Janelle Geist, Janis Stavusis, Baiba Lace, Christopher W. Ward, Carsten Bonnemann

2002-Pos Board B365
NEW INSIGHTS INTO FORCE AFTER ACTIVE STRETCH IN DAMAGED SKINNED MUSCLE FIBRES. **Venus Joumaa**, Sadhiq Nazeer, Faruk Ortes, Walter Herzog

2003-Pos Board B366
INCREASED MICROTUBULE DENSITY AND LEVEL OF DETYROSINATION OCCUR COINCIDENT WITH SARCOMERE MALFORMATIONS IN DISEASED AND AGING SKELETAL MUSCLE. **Anicca Harriot**, Andrew Coleman, Shama R. Iyer, Camilo Venagas, Guoli Shi, Richard M. Lovering, Humberto C. Joca, Joseph P. Stains, Chris W. Ward

2004-Pos Board B367
IMPAIRED REDOX CAPACITY, MUSCLE INJURY, AND MICROTUBULE ALTERATIONS CONSPIRE TO IMPACT SKELETAL MUSCLE FUNCTION. **Camilo Vanegas**

2005-Pos Board B368
ALTERATION OF T-TUBULAR ARCHITECTURE AND CAPACITANCE CHANGES IN HUNTINGTON'S DISEASE. **Sabrina K. Metzger**, Shannon H. Romer, Mark M. Rich, Andrew A. Voss

2006-Pos Board B369
LATTICE ARRANGEMENT OF MYOSIN FILAMENTS CORRELATES WITH FIBER TYPE IN RAT SKELETAL MUSCLE. Weikang Ma, Kyoung Hwan Lee, Shixin Yang, Thomas Irving, **Roger Craig**

2007-Pos Board B370
BIOPHYSICAL EVIDENCE FOR THE SIMPLE HARMONIC MOTION OF TROPOMYOSIN IN THE REGULATION OF MUSCLE CONTRACTION. **James J. Earley**

2008-Pos Board B371
CRYOEM SINGLE PARTICLE RECONSTRUCTION OF DEPHOSPHORYLATED HMM FROM SMOOTH MUSCLE. **Alimohammad Hojjatian**

2009-Pos Board B372
DYSFERLIN MUTANTS: DEFECTS IN TRAFFICKING AND ASSOCIATION WITH PROTEINS OF THE TRANSVERSE TUBULE. **Daniel D. Garman**, Joaquin M. Muriel, Robert J. Bloch

2010-Pos Board B373 TRAVEL AWARDEE
MYOSIN ORIENTATION IN A MUSCLE FIBER USING BIFUNCTIONAL SPIN LABELS WITH 4 DEGREES ANGULAR RESOLUTION. **Yahor Savich**, D. Grant Lewis, Benjamin P. Binder, Peter D. Martin, David D. Thomas

Kinesins, Dyneins, and Other Microtubule-based Motors (Boards B374 - B396)

2011-Pos Board B374
THREE-DIMENSIONAL MODEL OF COOPERATIVE TRANSPORT OF PAIRS OF KINESIN-1 AND -2 MOTORS. **Wiphu Youyen**, Iman Mousavi, Keith Mickolajczyk, William Hancock, Erkan Tüzel

2012-Pos Board B375
KINESIN-3 KIF14 EXHIBITS BIMODAL MOTION, EITHER DIFFUSIVE OR SUPERPROCESSIVE. **Ilia Zhernov**, Radan Matura, Stefan Diez, Zdenek Lansky, Marcus Braun

2013-Pos Board B376 TRAVEL AWARDEE
DYNAMICAL EFFECTS OF KIF1A MUTATIONS IN NEURODEVELOPMENTAL DISORDERS. **Shashank Jariwala**, Breane G. Budaitis, Kristen J. Verhey, David Sept

2014-Pos Board B377
SPHERICAL DNA ORIGAMI AS A PROGRAMMABLE CARGO STRUCTURE FOR INVESTIGATING THE EMERGENT MOTILITY OF DYNEIN AND KINESIN ENSEMBLES. JJ Hu, Jessica Morgan, Yang Yang, Chenxiang Lin, **Nathan D. Derr**

2015-Pos Board B378
FLEXURAL RIGIDITY OF MICROTUBULES MEASURED WITH NANOMETER-LEVEL LOCALIZATION PRECISION. **Hang Zhou**, Naoto Isozaki, Taviare L. Hawkins, Jennifer L. Ross, Ryuji Yokokawa

2016-Pos Board B379
HIGHLY EFFICIENT PHOTOCONTROL OF MITOTIC KINESIN EG5 FUNCTION USING A NOVEL INHIBITOR COMPOSED OF PHOTOCHROMIC COMPOUND DIMER. **Kei Sadakane**, Islam MD Alrazi, Kenichi Taii, Tomisin Happy Ogunwa, Takayuki Miyanishi, Shinsaku Maruta

2017-Pos Board B380
CHOLESTEROL INFLUENCES THE EFFECT OF TAU ON MEMBRANE-COUPLED KINESIN-1. Qiaochu Li, Stephen J. King, Michael Vershinin, Ajay Gopinathan, **Jing Xu**

2018-Pos Board B381
ATOMISTIC DETAILS OF THE DYNEIN MOTOR MECHANISM REVEALED BY MOLECULAR DYNAMICS SIMULATIONS. **Jodi A. Hadden**, Yale E. Goldman

2019-Pos Board B382
UNVEILING MOLECULAR MECHANISMS OF KINESIN-5 FUNCTION USING MULTISCALE COMPUTATIONAL TECHNIQUES. **Aram Davtyan**, Qian Wang, Anatoly B. Kolomeisky

2020-Pos Board B383 TRAVEL AWARDEE
CARGO ADAPTORS REGULATE THE MECHANICAL PROPERTIES OF MAMMALIAN DYNEIN-DYNACTIN. **John Canty**

2021-Pos Board B384
UNRAVELLING THE ROLE OF ELECTROSTATICS IN REGULATING THE PROCESSIVITY OF CYTOPLASMIC DYNEIN AT SINGLE MOLECULE LEVEL. **Ashok Pabbathi**, Hailey Lovelace, Joshua Alper

2022-Pos Board B385
CONNECTION BETWEEN ELECTROSTATIC INTERACTIONS AND BINDING AFFINITY OF DYNEIN AND MICROTUBULES. **Hailey D. Lovelace**, Matheu Spencer, Jared Eller, Hugo Sanabria, Joshua Alper

2023-Pos Board B386
PHOTOCHROMIC INHIBITOR OF MITOTIC KINESIN EG5 COMPOSED OF SPIROPYRAN AND AZOBENZENE DERIVATIVES WHICH EXHIBITS MULTIPLE ISOMERIZATION STATES. **Islam MD Alraz**, Kei Sadakane, Shinsaku Maruta

2024-Pos Board B387
DDB SWITCHES BETWEEN PROCESSIVE AND DIFFUSIVE RUNS. **Qingzhou Feng**, William O. Hancock

2025-Pos Board B388
INSIGHTS INTO KINESIN-1 STEPPING DYNAMICS FROM BROWNIAN DYNAMICS SIMULATIONS AND HIGH-RESOLUTION TRACKING OF GOLD NANOPARTICLE-LABELED MOTORS. **Annan S. I Cook**, Keith J. Mickolajczyk, Janak Jethva, John Fricks, William O. Hancock

2026-Pos Board B389
ROLE OF LOOP 8 IN REGULATING THE FUNCTION OF *SACCHAROMYCES CEREVISIAE* KINESIN-5 CIN8. **Sudhir Kumar Singh**, Himanshu Pandey, Noa Yeshaya, Hadasa Malka, Leah Gheber

2027-Pos Board B390
HIGH-SPEED OBSERVATIONS OF THE UNBINDING/BINDING MOTIONS OF THE LEADING HEAD OF KINESIN-1 FROM/TO MICROTUBULE PROVIDE KINETIC EVIDENCE FOR THE FRONT-HEAD GATING MECHANISM. **Kohei Matsuzaki**, Yamato Niitani, Michio Tomishige

2028-Pos Board B391
MAP7 TARGETS INTRACELLULAR TRANSPORT TOWARDS THE MICROTUBULE PLUS END BY RECRUITING KINESIN-1 TO MICROTUBULES. Abdullah R. Chaudhary, Hailong Lu, Kathleen M. Trybus, **Adam G. Hendricks**

2029-Pos Board B392
STRUCTURAL ANALYSIS OF KINESIN-1 MOTOR DOMAIN IN COMPLEX WITH POLYMERIC MICROTUBULES BY MAGIC ANGLE SPINNING NMR. **Chunting Zhang**, Changmiao Guo, Mingyue Li, John C. Williams, Tatyana Polenova

2030-Pos Board B393
INVESTIGATION OF MULTIPLE-DYNEIN TRANSPORT OF MELANOSOMES BY NON-INVASIVE FORCE MEASUREMENT USING THE FLUCTUATION THEOREM. Shin Hasegawa, Takashi Sagawa, Kazuho Ikeda, Yasushi Okada, **Kumiko Hayashi**

2031-Pos Board B394 TRAVEL AWARDEE
THE REGULATORY ROLE OF LIS1 ON THE MECHANICS OF DYNEIN MOTILITY. **Emre Kusakci**, Zaw Htet, Samara Reck-Peterson, Ahmet Yildiz

2032-Pos Board B395
BINDING KINETICS BETWEEN MEMBRANE-BOUND KINESIN MOTORS AND MICROTUBULES. **Rui Jiang**, SooHyun Park, Steven Vandal, Erkan Tüzel, Sheereen Majd, William O. Hancock

2033-Pos Board B396
KATANIN CATALYZES MICROTUBULE DEPOLYMERIZATION INDEPENDENT OF TUBULIN CARBOXY-TERMINAL TAILS. **Liudmila Belonogov**, Megan Bailey, Madison Tyler, Arianna Kazemi, Jennifer L. Ross

Cell Mechanics, Mechanosensing, and Motility II (Boards B397 - B422)

2034-Pos Board B397
EFFECTS OF PTEN LOSS AND ACTIVATED KRAS OVEREXPRESSION ON VISCOELASTICITY OF BREAST EPITHELIAL CELLS. **Will Linthicum**, Minh-Tri Ho Thanh, Michele I. Vitolo, Qi Wen

2035-Pos Board B398
MECHANOBIOLOGY IN MUSCLE FIBERS OF DYSTROPHIC MICE. Roberto Mendoza-Padilla, Robert Bloch, Hugo Gonzales-Serratos, **Karla P. Garcia-Pelagio**

2036-Pos Board B399
LENGTH OF KASH DOMAINS AFFECT LINC COMPLEX FUNCTIONS. **Zeinab Jahed**, Hongyan Hao, Vyom Thakkar, Uyen T. Vu, Venecia A. Valdez, Akshay Rathish, Darya Fadavi, Daniel Starr, Mohammad R.K. Mofrad

2037-Pos Board B400
MUTUALLY INHIBITORY RAS-PI(3,4)P2 FEEDBACK LOOPS MEDIATE CELL MIGRATION. **Xiaoguang Li**, Devreotes Peter

2038-Pos Board B401
AN INTEGRATIVE COMPUTATIONAL MODEL OF CELL MIGRATION. Siarhei Hladyshau, Shlomi Cohen, Shuyi Nie, **Denis Tsygankov**

2039-Pos Board B402
MECHANOTRANSDUCTION IN BACTERIA: HOW *PSEUDOMONAS AERUGINOSA* ACTIVELY PROBES AND RESPONDS TO SUBSTRATE MECHANICS. **Matthias D. Koch**, Joshua W. Shaevitz, Zemer Gitai

2040-Pos Board B403
EGFR ACTIVATION ENABLES INCREASED INTEGRIN FORCES AND ORGANIZATION OF MATURE FOCAL ADHESIONS. **Tejeshwar C. Rao**, Victor Pui-Yan Ma, Tara M. Urner, Shreya Grandhi, Khalid Salaita, Alexa L. Mattheyses

2041-Pos Board B404
RULES OF CONTACT INHIBITION OF LOCOMOTION IN CELLS MIGRATING ON ECM MIMICKING FIBERS. **Jugroop Singh**, Puja Sharma, Amrinder Nain

2042-Pos Board B405
MECHANOCHEMICAL SIMULATIONS OF INTEGRATED MEMBRANE-CYTOSKELETAL SYSTEMS. **Haoran Ni**, Garegin A. Papoian

2043-Pos Board B406 TRAVEL AWARDEE
DETERMINATION OF FIBROBLAST POLARIZATION UNDER THE COMBINATION OF PHYSICAL, MOLECULAR, AND GENETIC CUES. **GeonHui Lee**, Dong-Hwee Kim

2044-Pos Board B407
CELL-CELL JUNCTION AND NUCLEAR LINC COMPLEX FORCES REGULATE EPITHELIAL ACINI HOMEOSTASIS. Vani Narayanan, **Daniel E. Conway**

2045-Pos Board B408
NCAM EXPRESSION REGULATES INTEGRIN AND ACTIN CYTOSKELETAL FUNCTION IN HUMAN NATURAL KILLER CELLS. Amera Dixon, Justin Gunesch, Jordan Orange, **Emily Mace**

2046-Pos Board B409 TRAVEL AWARDEE
THE FEEDBACK BETWEEN CELLULAR MECHANICS AND CHEMICAL SIGNALLING DURING CYTOSKELETAL REMODELLING. **Jared Collette**, William Holmes, Vijay Rajagopal

2047-Pos Board B410
INVADOPODIA DYNAMICS IS REGULATED BY ECM CROSS-LINKING. Kamyar Esmaeili Pourfarhangi, Aviv Bergman, **Bojana Gligorijevic**

2048-Pos Board B411
CONSTRICTED MIGRATION INCREASES DNA DAMAGE AND REPRESSES CELL CYCLE. **Charlotte R. Pfeifer**, Yuntao Xia, Yee Fang Hum, Kuangzheng Zhu, Dazhen Liu, Jerome Irianto, Ruben C. Boot, Victor M. Morales Garcia, Leeza M. Santiago Millan, Brandon Niese, Dan Deviri, Roger A. Greenberg, Dennis E. Discher

2049-Pos Board B412
SUBSTRATE VISCOSITY DICTATES CELLULAR RESPONSE. **Thomas J. Petet**, Halston Deal, Ariana DeCastro, Christina Tang, Seth Weinberg, Christopher Lemmon

2050-Pos Board B413
COMPUTER AIDED SMALL MOLECULE MODULATION OF PANCREATIC CANCER MECHANOBIOLOGY. **Kathleen T. DiNapoli**, Eric Schiffhauer, Alexandra Surcel, Dustin Thomas, Pablo Iglesias, Douglas Robinson

2051-Pos Board B414
LOSS OF CHROMOSOMES MONITORED IN LIVE CELLS. **Kuangzheng Zhu**, Yuntao Xia, Dennis Discher

2052-Pos Board B415
MOTOR CLUTCH MODELING OF SINGLE-MOLECULE FRET-BASED MOLECULAR TENSION SENSORS. **Sarah M. Anderson**, Steven Tan, Cayla Miller, Alice Chang, Alexander R. Dunn, David J. Odde

2053-Pos Board B416
MOLECULAR FORCE OF AIRWAY SMOOTH MUSCLE CELL DURING CONTRACTION. **Myung Hyun Jo**, Byoung Choul Kim, Steven S. An, Taekjip Ha

2054-Pos Board B417
RED BLOOD CELL MEMBRANE OXIDATION/AGING TOWARD CELL DEATH: PHOTOSENSITIZER STRESS OF CIS-PORPHYRIN. **Koji Kinoshita**, Gustavo Scanavachi, Tayana Tsubone, Vita Solovyeva, Jonathan Brewer, Rosangela Itri

2055-Pos Board B418
BIOPHYSICAL MODEL REVEALS THE ROLE OF CCM PROTEINS IN COLLECTIVE BEHAVIOR OF ENDOTHELIAL CELLS. **Anastasia Zhurikhina**, Olga Chernaya, Siarhei Hladyshau, William Pilcher, Katherine M. Young, Jillian Ortner, Vaishnavi Andra, Todd A. Sulchek, Denis Tsygankov

2056-Pos Board B419
NANONET INTER-FIBER SPACING CONTROLS PLASTICITY IN CELL MIGRATION. **Aniket Jana**, Intawat Nookeah, Jugroop Singh, Bahareh Behkam Behkam, Aime T. Franco, Amrinder S. Nain

2057-Pos Board B420
MECHANICAL CONTRACTION OF BLOOD CLOTS IMPAIRED DUE TO PLATELET DYSFUNCTION AND DISINTEGRATION. **Oleg V. Kim**, Rustem I. Litvinov, Mark S. Alber, John W. Weisel

2058-Pos Board B421
FORCES OF PHAGOCYTOSIS WITH TWO-CHANNEL LIVE CELL BESSEL LIGHT SHEET 3D IMAGING. **Evan F. Nelsen**, Chad Hobson, Joe Hsiao, Michael R. Falvo, E. T. O'Brien III, Klaus Hahn, Sergio Grinstein, Richard Superfine

2059-Pos Board B422
FIBRIN DENSITY AND TENSION REGULATES FIBRINOLYTIC SUSCEPTIBILITY. **Nathan E. Hudson**, Andrew T. Fuquay, Sean J. Cone

Energy Transducing Membrane Protein Complexes (Boards B423 - B434)

2060-Pos Board B423
LONG-RANGE REGULATION OF CYTOCHROME *C* BINDING TO BC_1 COMPLEX. **Spencer B. Grewe**, Oleksandr Kokhan

2061-Pos Board B424
ANIONIC LIPID-DEPENDENT GLIDING OF CYTOCHROME C ACROSS BIOENERGETIC MEMBRANES. **Aaron Chan**, Emad Tajkhorshid

2062-Pos Board B425
STRUCTURAL ANALYSIS OF *SACCHAROMYCES CEREVISIAE* RESPIRATORY SUPERCOMPLEX COMPOSED OF COMPLEXES III AND IV. **Eugenia Mileykovskaya**, Matthew Baker, Venkata Mallampalli, Guizhen Fan, Irina I. Serysheva, William Dowhan

2063-Pos Board B426
UNDERSTANDING THE MECHANISM OF PROTON-COUPLED ELECTRON TRANSFER IN THE BIOINSPIRED ARTIFICIAL PHOTOSYNTHETIC MIMIC, BENZIMIDAZOLE PHENOL PORPHYRIN. William Marshall, **Brian Mark**, Vidmantas Kalendra, Dalvin D. Mendez-Hernandez, Oleg G. Poluektov, Thomas A. Moore, Ana L. Moore, K. V. Lakshmi

2064-Pos Board B427
MIMICKING NATURAL PHOTOSYNTHESIS ULTRAFAST CHARGE TRANSFER IN PPCA-PHOTOSENSITIZER COMPLEXES. **Oleksandr Kokhan**, Daniel R. Marzolf, Natalie L. Simmons, Matthew O'Malley, Coleman Swaim

2065-Pos Board B428
THEORETICAL STUDY OF ELECTRON TRANSFER REACTIVITY FOR CRYPTOCHROME-DASH. **Ryuma Sato**, Makoto Taiji

2066-Pos Board B429
EFFECT OF MUTANTIONS AND LABELING ON STRUCTURAL STABILITY OF PPCA-RU(BPY)3 COMPLEXES. **Natalie L. Simmons**, Daniel R. Marzolf, Oleksandr Kokhan

2067-Pos Board B430
PERFORMANCE OF A BACTERIUM AS AN ENERGY CONVERSION DEVICE IN TERMS OF ENERGY-RETURN-ON-INVESTMENT DETERMINED FROM ATOMIC-DETAIL STRUCTURAL MODELS. **Melih Sener**, Andrew Hitchcock, Neil Hunter

2068-Pos Board B431
ENERGETIC MODELLING OF MITOCHONDRIAL REDOX REACTIONS. **Peter J. Gawthrop**, Edmund J. Crampin

2069-Pos Board B432
UNVEILING THE RATE-LIMITING STEP OF THE BC_1 COMPLEX REACTION MECHANISM. **Angela M. Barragan**, Alexander V. Soudackov, Zaida Luthey-Schulten, Klaus Schulten, Sharon Hammes-Schiffer, Ilia Solov'yov

2070-Pos Board B433 TRAVEL AWARDEE
ELUCIDATING THE ROLE OF ZINC-BACTERIOCHLOROPHYLL *A*' IN THE PRIMARY PHOTOCHEMISTRY OF *CHLOROACIDOBACTERIUM THERMOPHILUM* REACTION CENTERS. **Philip Charles**, Vidmantas Kalendra, Zhihui He, Vasily Khurshov, Art van der Est, John H. Golbeck, Donald A. Bryant, K. V. Lakshmi

2071-Pos Board B434
THE REVERSIBLE OPENING OF $_{SC}$MUC DEMONSTRATES A HIGH POTENTIAL AS A CELLULAR PROTECTION SYSTEM. **Lilia Morales-García**, Salvador Uribe-Carvajal, Natalia Chiquete-Felix, Emilio Espinoza -Simon

Systems Biology and Disease (Boards B435 - B455)

2072-Pos Board B435
MODELING OF PROTEIN COMPLEX ARCHITECTURES USING COMBINATORIAL GENETIC PERTURBATIONS. **Ignacia Echeverria**, Hannes Braberg, Peter Cimermancic, Riccardo Pellarin, Dina Schneidman, Anthony Shiver, Carol Gross, Nevan Krogan, Andrej Sali

2073-Pos Board B436
BONDGRAPHTOOLS: MODELLING NETWORK BIOENERGETICS. **Peter Cudmore**, Edmund J. Crampin

2074-Pos Board B437
A THERMODYNAMIC FRAMEWORK FOR MODELLING MEMBRANE TRANSPORTERS. **Michael Pan**, Peter J. Gawthrop, Kenneth Tran, Joseph Cursons, Edmund J. Crampin

2075-Pos Board B438
A COMPUTATIONAL FRAMEWORK FOR PREFERENTIAL SWITCHING OF COMPETING AB AGGREGATION PATHWAYS BASED ON GAME THEORY APPROACH. Pratip Rana, Jhinuk Saha, Edward Steen, Ashwin Vaidya, Vijay Rangachari, **Preetam Ghosh**

2076-Pos Board B439
DISCRETE AND CONTINUOUS MODELS OF PROBABILITY FLUX ON SWITCHING DYNAMICS: A CASE STUDY OF THE TOGGLE-SWITCH SYSTEM. **Anna Terebus**, Chun Liu, Jie Liang

2077-Pos Board B440
FUNCTIONAL INTERPRETATION OF SINGLE AMINO ACID SUBSTITUTIONS IN 1,330 DISEASE-ASSOCIATED GENES. **Sumaiya Iqbal**, Jakob Berg Jespersen, Eduardo Perez-Palma, Patrick May, Aarno Palotie, Jeffrey R. Cottrell, Florence F. Wagner, Mark J. Daly, Arthur J. Campbell, Dennis Lal

2078-Pos Board B441
THE STEADY STATE CONCENTRATION OF DIFFERENT BIOMARKERS OF OXIDATIVE STRESS REFLECT DIFFERENT TYPES OF OXIDATIVE STRESS-. **Dov A. Lichtenberg**, Ilya Pinchuk, Tilman Grune, Daniela Weber

2079-Pos Board B442 TRAVEL AWARDEE
METABOLIC-RESPONSE ASSESSMENT OF MURINE BREAST CANCER CELLS IN 2D AND 3D CULTURES USING TWO-PHOTON FLUORESCENCE LIFETIME IMAGING MICROSCOPY OF INTRINSIC NAD(P)H. **Anh Cong**, Rafaela Marocci Lima Pimenta, Venkatram Mereddy, Jon M. Holy, Ahmed A. Heikal

2080-Pos Board B443
CHARACTERIZATION OF THE METABOLIC STATE AND MOLECULAR CROWDING IN BREAST CANCER SPHEROIDS. **Giulia Tedeschi**, Lorenzo Scipioni, Andrew Trinh, Karina A. Lee, Leonel Malacrida, Michelle A. Digman, Enrico Gratton

2081-Pos Board B444
CAN VIRAL GEOMETRY DETERMINE B CELL SELECTION DURING AN IMMUNE RESPONSE? **Assaf Amitai**, Arup Chakraborty, Mehran Kardar

2082-Pos Board B445
HERITABILITY AND STOCHASTICITY IN PRIMARY ENDOTHELIAL CELL SIGNALING. Christina Kim, Gregory Seedorf, Steven Abman, **Douglas P. Shepherd**

2083-Pos Board B446
CELL FATE DECISION BY AN ADAPTABLE MOLECULAR TIMER OF P53. **Xiaopeng Zhang**

2084-Pos Board B447
PREDICTING CANDIDATE ONCO-GENESIS MUTATIONS AND COOPERATIVE UNITS FROM COMPUTED PROTEIN SURFACE POCKETS. **Xue Lei**, Wei Tian, Alan Perez-Rathke, Boshen Wang, Chia-Yi Chou, Jeffrey Tseng, Jie Liang

2085-Pos Board B448
THE ROLE OF MYOFIBROBLAST SENESCENCE IN ARRHYTHMOGENESIS OF THE AGED INFARCTED HEART. **Brett Baggett**, Kevin Murphy, Yueming Cao, Nilufer Turan, YiChun Lu, Lorraine Schofield, Tae Yun Kim, Dmitry Terentyev, Bum Rak Choi, John Sedivy, Gideon Koren

2086-Pos Board B449
DEVELOPMENT OF AN INTEGRATED HUMAN MODEL OF ELECTROPHYSIOLOGY AND ACTIN-MYOSIN BINDING TO DESCRIBE SARCOMERE FORCE GENERATION IN CARDIOMYOCYTES. **Ruth E. Abrams**, Hans-Christoph Schneider, Tatiana Radziun, Britta Goebel, Laurence Lucats, Karim Azer, Howard Surks, Eric Sobie, Spyros Stamatelos

2087-Pos Board B450
INVESTIGATING THE BENEFICIAL EFFECTS OF VOLUNTARY EXERCISE IN RATS WITH PULMONARY ARTERY HYPERTENSION. **Eleftheria Pervolaraki**, Ed White, Al Benson

2088-Pos Board B451
INTRICATE LINK BETWEEN AUTOPHAGY AND AMYLOID-B KINETICS: MODELING AND SIMULATIONS. Kyungreem Han, Soon Ho Kim, **MooYoung Choi**

2089-Pos Board B452 TRAVEL AWARDEE
EFFECTS OF IBUPROFEN ON MICE LIVER PROTEASOME. **Rasheed Sule**

2090-Pos Board B453
MODELING THE IMPACT OF POINT MUTATIONS ON THE REGULATORY POTENCY OF THE SMALL RNA SGRS. **Troy A. Brier**, David Bianchi, Anustup Poddar, Muhammad S. Azam, Carin K. Vanderpool, Taekjip Ha, Zaida Luthey-Schulten

2091-Pos Board B454
STRUCTURE-BASED METHOD FOR PREDICTING DELETERIOUS MISSENSE SNPS. **Boshen Wang**, Xue Lei, Wei Tian, Alan Perez-Rathke, Yanyuan Tseng, Jie Liang

2092-Pos Board B455
CYTOTOXICITY OF VARIOUS GOLD NANOPARTICLES - AN IN VITRO STUDY. **Marika Musielak**, Karolina Rucińska, Joanna Maksim, Agnieszka Bos-Liedke, Maciej Kozak

Systems Neuroscience (Boards B456 - B458)

2093-Pos Board B456
TRANSIENT INCREASES IN MOUSE BRAIN WATER ACTIVITY DEDUCED FROM HYDRATION/DEHYDRATION RATES EX VIVO. **Maria P. McGee**, Michael Morykwas, Louis Argenta

2094-Pos Board B457
MEASURING SIMULTANEOUSLY MUSCLE AND BRAIN CALCIUM ACTIVITY IN THE FRUIT FLY. **Amicia D. Elliott**, Adama Berndt, Feici Diao, Robert Scott, Hari Shroff, Benjamin White

2095-Pos Board B458 TRAVEL AWARDEE
VELOCITY AND POSITION EFFECTS IN EYE TRACKING. **Gabriella Wheeler**, Robert de Ruyter van Steveninck

Molecular and Cellular Neuroscience (Boards B459 - B473)

2096-Pos Board B459
MAKING SWAPS UNTIL ACTIVITY DROPS - LOCALIZING THE DIFFERENT SPECIFIC ACTIVITY OF PRESENILIN HOMOLOGUES TO PROTEIN DOMAINS. **Fabian C. Schmidt**, Harald Steiner, Dieter Langosch

2097-Pos Board B460
ACTIONS OF RAB27B-GTPASE ON CENTRAL EXCITATORY SYNAPTIC TRANSMISSION. **Erwin R. Arias-Hervert**

2098-Pos Board B461
CHANGES IN MULTIPLE MEMBRANE CURRENTS UNDERPIN ENHANCED SYMPATHETIC FIRING RATE IN THE STELLATE GANGLIA OF THE SPONTANEOUSLY HYPERTENSIVE RAT. **Harvey Davis**, David J. Paterson, Neil Herring

2099-Pos Board B462
CHANGES IN SECONDARY STRUCTURE OF HUMAN PRION PROTEIN PEPTIDE 30-90 UNDER THE INFLUENCE OF SELECTED DICATIONIC AND ANIONIC SURFACTANTS. **Julia Ludwiczak**, Maciej Kozak, Kosma Szutkowski, Igor Zhukov

2100-Pos Board B463
CONSTRUCTION OF AN OPENSPIM LIGHT-SHEET MICROSCOPE FOR THE STUDY OF NEURAL CREST MIGRATION IN *DANIO RERIO*. Manuel Rocha, Matt Reyer, Walter Alvarado, Hendrik Glauninger, Megan Hoinville, Kourtney Kroll, Margo MacDonald, Eric Rouviere, Diane Schnitkey, **Iva Veseli**, Steven Wasserman, Victoria Prince, Adam Hammond

2101-Pos Board B464
REVEALING ABNORMAL OLIGOMERIZATION OF PROTEINS IN SINGLE CELLS. **Annie Castonguay**, Louis-Etienne Lorenzo, Paul W. Wiseman, Alfredo Ribeiro-da-Silva, Yves De Koninck, Antoine G. Godin

2102-Pos Board B465 TRAVEL AWARDEE
A RECEPTOR-INDEPENDENT LIPID MEMBRANE-MEDIATED PATHWAY FOR SEROTONIN ACTION. **Simli Dey**, Barun Kumar Maity, Ankur Gupta, Anirban Das, Dayana Surendran, Gilbert Walker, Sudipta Maiti

2103-Pos Board B466
PHASE SEPARATION OF SYNAPTIC VESICLES AT THE NERVE TERMINAL. **Dragomir Milovanovic**, Pietro De Camilli

2104-Pos Board B467
LIPOSOME NANO-CAPSULE FOR TARGET BRAIN DELIVERY. **Tingting Zheng**, Yun Chen, Li Liu, Qian Liu

2105-Pos Board B468
SECONDARY ASSOCIATIVE MEMORY CELLS AND THEIR PLASTICITY IN THE PREFRONTAL CORTEX. **Jin-Hui Wang**, Jing Feng, Huajuan Xiao, Yang Xu

2106-Pos Board B469 TRAVEL AWARDEE
CALCIUM FREQUENCY SETS THE LOCATION OF CALMODULIN-DEPENDENT ENZYME ACTIVATION IN DENDRITIC SPINES. **Matthew C. Pharris**, Neal M. Patel, Lakmini J. Wilson, Christopher W. Rust, Tamara L. Kinzer-Ursem

2107-Pos Board B470
CHANGES IN LIPID MEMBRANE MAY TRIGGER AMYLOID TOXICITY IN ALZHEIMER'S DISEASE. Elizabeth Drolle, Stephen Turnbull, Nanqin Mei, Carina Filice, Brenda Y. Lee, Morgan Robinson, Evgeny Pavlov, Eric Finot, **Zoya Leonenko**

2108-Pos Board B471
STRUCTURE AND *IN SILICO* ELASTICITY OF A COMPLETE PROTOCADHERIN-15 DIMER. Deepanshu Choudhary, Yoshie Narui, Brandon L. Neel, Lahiru N. Wimalasena, Carissa F. Klanseck, Conghui Chen, Pedro De-la-Torre, Raul Araya-Secchi, Elakkiya Tamilselvan, **Marcos Sotomayor**

2109-Pos Board B472 TRAVEL AWARDEE
BINDING AND TRANSPORT OF AMYLOID-B BY P-GLYCOPROTEIN: A NOVEL THERAPEUTIC TARGET IN ALZHEIMER'S DISEASE. **Hope Holt**, Elizabeth Moore, Madeline Riese, Michelle Faucett, Francisco Gonzalez, Melissa Moss

2110-Pos Board B473
PHOTOLYSIS OF A CAGED, FAST-EQUILIBRATING GLUTAMATE RECEPTOR ANTAGONIST, MNI-CAGED-GAMMA-D-GLUTAMYL-GLYCINE, TO INVESTIGATE TRANSMITTER DYNAMICS AND RECEPTOR PROPERTIES AT GLUTAMATERGIC SYNAPSES. Francisco Palma-Cerda, George Papageorgiou, Boris Barbour, Celine Auger, **David Ogden**

Force Spectroscopy and Scanning Probe Microscopy (Boards B474 - B490)

2111-Pos Board B474
USE OF MODIFIED GRAPHITE FOR SINGLE-MOLECULE ATOMIC FORCE MICROSCOPY OF BIOMACROMOLECULES. Dmitry V. Klinov, **Anna D. Protopopova**, Dmitry S. Andrianov, Rustem I. Litvinov, John W. Weisel

2112-Pos Board B475 TRAVEL AWARDEE
CALIBRATION-INDEPENDENT ATOMIC FORCE MICROSCOPY. **Carmen Suay Corredera**, Carolina Pimenta-Lopes, Diana Velázquez-Carreras, David Sánchez-Ortiz, Jorge Alegre-Cebollada

2113-Pos Board B476 TRAVEL AWARDEE
HOOKING ON VIRAL GLYCOPROTEINS WITH SINGLE MOLECULE FORCE SPECTROSCOPY TO STUDY SINGLE AND MULTIPLE BOND FORMATIONS. **Daniel Lauster**, Valentin Reiter-Scherer, Luis Jose Cuellar Camacho, Sumati Bhatia, Jürgen P. Rabe, Rainer Haag, Andreas Herrmann

2114-Pos Board B477
MOLECULAR RESOLUTION OF GRAM POSITIVE BACTERIA CELL WALL USING AFM. **Laia Pasquina Lemonche**, Jonathan Burns, Robert Turner, Simon Foster, Jamie Hobbs

2115-Pos Board B478
CLUSTERING AND IDENTIFICATION OF FORCE SPECTRA FROM NATIVE MEMBRANES. **Nicola Galvanetto**, Nina Ilieva, Alessandro Laio, Vincent Torre

2116-Pos Board B479
UNFOLDING FOCAL ADHESION KINASE: GETTING CELLULAR INSIGHT THROUGH AFM AND MD. **Csaba Daday**, Magnus Bauer, Pilar Redondo, Hermann E. Gaub, Daniel Lietha, Frauke Gräter

2117-Pos Board B480
DYNAMIC FORCE-SPECTROSCOPY ON A BUDGET: NEW DESIGNS AND OPEN-SOURCE SOFTWARE FOR BUILDING AN ELECTROMAGNETIC TWEEZER. **Daniel T. Kovari**, Joseph Piccolo, David Dunlap, Laura Finzi

2118-Pos **Board B481** **TRAVEL AWARDEE**
BINDING OF HANTAVIRUS TO ITS HOST CELL - A SINGLE VIRUS FORCE SPECTROSCOPY STUDY. **Malte Hilsch**, Niklaas Nilson, Daniel Lauster, Andreas Herrmann

2119-Pos **Board B482**
INVESTIGATING CELL STIFFNESS IN WILD-TYPE*CANDIDA ALBICANS*AND ITS MORPHOLOGIES USING CONTACT ATOMIC FORCE MICROSCOPY. **Michelle K. Ash**, Jeff D. Stephens

2120-Pos **Board B483**
SECOND VIRIAL COEFFICIENT OF LIPID VESICLE REGULATED BY SURFACE CHARGE DENSITY AND ELECTRIC DOUBLE LAYER: OPTICAL CONFINEMENT STUDY. **Jaehee Lee**, Bopil Gim, Myung Chul Choi, Seongmin Park, Chang-Young Park, Sohee Kim, Hyunwoo Jang, Suho Lee, Ou-Yang H.Daniel, Joon Heon Kim, Changbong Hyeon, Suyong Kwon

2121-Pos **Board B484**
CHARACTERIZATION OF CELL MEMBRANE USING ATOMIC FORCE MICROSCOPY. Lin Liu, Yuhui Wei, Kaizhe Wang, Lihua Wang, Jun Hu, **Bin Li**

2122-Pos **Board B485**
DIRECTLY PROBING THE DISSOCIATION EFFECTS OF GRAPHENE OXIDE NANOSHEETS ON HIAPP FIBRILS. **Shujie Li**, Xiaofeng Hu, Xinju Yang

2123-Pos **Board B486** **TRAVEL AWARDEE**
UTILIZING ATOMIC FORCE MICROSCOPY TO EXPLORE THE BIOPHYSICAL CHEMISTRY OF THE BACTERIAL PREDATOR *BDELLOVIBRIO BACTERIOVORUS*. **Asriel Walker**, Cindy Peraza, Catherine B. Volle, Megan A. Ferguson, Eileen M. Spain, Megan E. Nunez

2124-Pos **Board B487**
EXPLORING THE SULFATASE 1 CATCH BOND FREE ENERGY LANDSCAPE USING JARZYNSKI'S EQUALITY. Volker Walhorn, Ann-Kristin Moeller, Christian Bartz, Thomas Dierks, **Dario Anselmetti**

2125-Pos **Board B488**
ADHESION FORCES IN BACTERIAL PREDATOR-PREY AND PREY-PREY SYSTEMS. **Dylan Fitzmaurice**, Puja Saha, Megan E. Nunez, Eileen M. Spain, Catherine M. Volle, Megan A. Ferguson

2126-Pos **Board B489**
HIGH-PERFORMANCE IMAGE-BASED MEASUREMENTS OF BIOLOGICAL FORCES AND INTERACTIONS IN A DUAL OPTICAL TRAP. Jessica L. Killian, James T. Inman, **Michelle D. Wang**

2127-Pos **Board B490**
DETERMINATION OF ELASTIC MODULUS OF WHITE BLOOD CELLS WITH VARYING TEMPERATURES USING OPTICAL TWEEZERS. **Jeff Miller**, Brooke Hester

Diffraction and Scattering Techniques (Boards B491 - B493)

2128-Pos **Board B491**
VIRUS DYNAMICS STUDIED BY TIME-RESOLVED SMALL ANGLE X-RAY SCATTERING. **Josue San Emeterio**, Lois Pollack

2129-Pos **Board B492**
MESOSCALE ARCHITECTURE OF BETA CELLS UPON GLUCOSE AND EX-4 STIMULATION. **Kate L. White**, Jitin Singla, John Francis, Jian-Hua Chen, Axel Ekman, Carolyn Larabell, Raymond C. Stevens

2130-Pos **Board B493**
THE NEUTRON SPIN ECHO SPECTROMETER @ SNS AND ITS BIOPHYSICS APPLICATIONS. **Laura R. Stingaciu**

Molecular Dynamics II (Boards B494 - B524)

2131-Pos **Board B494**
EXPLORING THE EFFECTS OF DIRECTED EVOLUTION ON THE DYNAMICS OF ARTIFICIAL RETRO ALDOLASES. **Joseph Schafer**, Ioanna Zoi, Steven D. Schwartz

2132-Pos **Board B495** **TRAVEL AWARDEE**
COMPUTATIONAL INSIGHTS ON SMALL MOLECULE BINDING TO THE HV1 PROTON CHANNEL. **Victoria T. Lim**, Nathan M. Lim, Andrew D. Gerogotelis, J. Alfredo Freites, Francesco Tombola, David L. Mobley, Douglas J. Tobias

2133-Pos **Board B496**
PROTON TRANSPORT IN E. COLI CLC TRANSPORT PROTEIN BY ADAPTIVE QM/MM CALCULATIONS. **Baris O. Aydintug**, Adam Duster, Christina Garza, Mikias Negussie, Hai Lin

2134-Pos **Board B497**
MOLECULAR DYNAMICS SIMULATION STUDIES OF THE INTERFERON-INDUCED TRANSMEMBRANE PROTEIN (IFITM3). **Hwayoung Lee**, Wonpil Im

2135-Pos **Board B498**
MOLECULAR DYNAMICS SIMULATIONS OF PHOSPHORYLATED INTRINSICALLY DISORDERED PROTEINS. **Liam I. Haas-Neill**, Sarah Rauscher

2136-Pos **Board B499**
EXAMINING THE REFOLDING OF PERTURBED PROTEIN STRUCTURE INTERMEDIATES USING VARIOUS MOLECULAR MECHANICS FORCE FIELDS. **David Wang**, Piotr E. Marszalek

2137-Pos **Board B500**
ION PERMEATION THROUGH ORAI PROTEINS. **Tugba N. Ozturk**, Guillaume Lamoureux

2138-Pos **Board B501**
MODULATING THE CHEMICAL TRANSPORT PROPERTIES OF THE CLC ANTIPORTER VIA ALTERNATIVE ANION FLUX AND MUTATION. **Zhi Wang**, Jessica M. J. Swanson, Gregory A. Voth

2139-Pos **Board B502**
COMPUTATIONAL INVESTIGATIONS OF A COMPLEX FORMATION BETWEEN NEUROGLOBIN AND CYTOCHROME C FERRIC HEME PROTEINS. **Purushottam Tiwari**, Prem Chapagain, Aykut Uren

2140-Pos **Board B503**
EXAMINING REACTION MECHANISMS OF CATECHOL O-METHYLTRANSFERASE. **Xi Chen**, Steven Schwartz

2141-Pos **Board B504**
STRUCTURAL INSIGHTS INTO THE ACTIVATION OF BLOOD COAGULATION FACTOR XI ZYMOGEN BY THROMBIN: A COMPUTATIONAL MOLECULAR DYNAMICS STUDY. **Divi Venkateswarlu**

2142-Pos **Board B505**
COMPARATIVE MOLECULAR DYNAMICS DYNAMICS OF THE BRAF ACTIVATION LOOP REVEALS A BIOPHYSICAL MECHANISM OF CANCER RECURRENCE UNDER DRUG INHIBITION. **Gregory A. Babbitt**, Andre Hudson, Lily Adams

2143-Pos **Board B506**
CAPTURING THE MECHANISM UNDERLYING TOP-BINDING TO THE LARP1 DM15 REGION. Kevin C. Cassidy, Roni M. Lahr, Jesse C. Kaminsky, Andrea J. Berman, **Jacob D. Durrant**

2144-Pos **Board B507**
NICOTINIC ACETYLCHOLINE RECEPTOR CLUSTERING IN DHA-ENRICHED DOMAINS. **Kristen N. Woods**, Liam M. Sharp, Grace Brannigan

2145-Pos **Board B508**
LB3B4 CONFORMATIONS OF THE *FLAVIVIRIDAE* NS3H PROTEIN. **Russell B. Davidson**, Martin McCullagh

2146-Pos Board B509
THEORETICAL MODELING OF THE RNA-ENHANCED NTPASE ACTIVITY OF DENGUE AND ZIKA NS3 HELICASES. **Russell B. Davidson**, Martin McCullagh

2147-Pos Board B510
CONFORMATIONAL FLUCTUATIONS AND CHANGES OF SR-CA^{2+}-ATPASE ON THE E1/E2 TRANSITION. **Chigusa Kobayashi**, Yasuhiro Matsunaga, Jaewoon Jung, Yuji Sugita

2148-Pos Board B511
UTILIZING UMBRELLA SAMPLING AND BROWNIAN DYNAMICS TO STUDY THE FUNCTIONAL AND DYNAMIC CHARACTERISTICS OF CARDIAC TROPONIN C. **Jacob D. Bowman**, Steffen Lindert

2149-Pos Board B512
VIRTUAL SCREENING FINDS TROPONIN CALCIUM SENSITIZERS AND UMBRELLA SAMPLING SIMULATIONS ELUCIDATE DIFFERENCES IN TROPONIN C ISOFORM AND MUTANT HYDROPHOBIC PATCH EXPOSURE. Jacob Bowman, Melanie Aprahamian, Svetlana Tikunova, Jonathan P. Davis, **Steffen Lindert**

2150-Pos Board B513
HOW LIGAND BINDING ALTERS THE DYNAMICS OF TOLL-LIKE RECEPTOR 4 (TLR4) AND ITS CO-RECEPTOR MYELOID DIFFERENTIATION FACTOR 2 (MD-2): A MOLECULAR DYNAMICS SIMULATION. **Alireza Tafazzol**, Yong Duan

2151-Pos Board B514
ACTIVATION OF THE VOLTAGE GATED PROTON CHANNEL HV1: A CONSTANT PH MOLECULAR DYNAMICS STUDY. **Jack A. Henderson**, Jana Shen

2152-Pos Board B515
EARLY TRANSLOCATION OF ANTHRAX LETHAL FACTOR: KINETICS FROM MOLECULAR DYNAMICS SIMULATIONS AND MILESTONING THEORY. **Piao Ma**, Alfredo E. Cardenas, Mangesh Chaudhari, Ron Elber, Susan L. Rempe

2153-Pos Board B516
CENP-A HIJACKS THE HISTONE CHAPERONE NETWORK IN CANCER--COMPUTATIONAL INSIGHTS. **Mary Pitman**, Yamini Dalal, Garegin A. Papoian

2154-Pos Board B517
PROTEIN KINASE FREE ENERGY LANDSCAPES: THE ROLE OF THE ACTIVATION LOOP. **Shima Arasteh**, Peng He, Allan Haldane, Ronald M. Levy

2155-Pos Board B518 TRAVEL AWARDEE
EXPLORATIONS OF DRUG TRANSPORT BY P-GLYCOPROTEIN USING MOLECULAR DYNAMICS ENABLED BY HIGH RESOLUTION CRYSTAL STRUCTURES. **Lauren E. Ammerman**, Pia D. Vogel, John G. Wise

2156-Pos Board B519
PEPTIDE BINDING INTERACTION BETWEEN ARKA AND ABP1SH3 USING MARKOV STATE MODELS. **Henry Huang**, Gabriella Gerlach

2157-Pos Board B520
EFFECT OF CAPSID TAIL ON SEMI-FLEXIBLE POLYMER PACKING INTO A CAPSID IN A CROWDED ENVIRONMENT. **Nada Ahmed Alnaamani**

2158-Pos Board B521 TRAVEL AWARDEE
STRUCTURE AND DYNAMICS OF ALZHEIMER'S ASSOCIATED AMYLOID-BETA PEPTIDE. **Thomas Löhr**, Kai Kohlhoff, Gabriella Heller, Michele Vendruscolo

2159-Pos Board B522
INSIGHT INTO AMYLOID INTERACTIONS: MOLECULAR DYNAMICS SIMULATIONS OF MODEL PEPTIDE FRAGMENTS. **Nicholas A. Cramer**, Grant Kawecki, David R. Bevan, Anne M. Brown

2160-Pos Board B523 TRAVEL AWARDEE
MOLECULAR DYNAMICS INVESTIGATION OF THE PHYSICAL BINDING OF THE NNK DIAZONIUM ION TO EXON 5 OF TP53. **David M. Wahl**, Christos Deligkaris

2161-Pos Board B524
MOLECULAR DYNAMICS SIMULATIONS USING ACCURATE CHARGE-CHARGE INTERACTIONS PREDICT UNEXPECTED PHASE BEHAVIORS OF DNA CONTROLLED BY EPIGENETIC MODIFICATIONS. Sunjoo You, **Jejoong Yoo**

Optical Microscopy and Superresolution Imaging III (Boards B525 - B548)

2162-Pos Board B525
UNDERSTANDING CARDIAC TUBE FORMATION IN DEVELOPING DROSOPHILA EMBRYOS USING LIGHT SHEET MICROSCOPY AND CARDIAC DRUG SCREENING. **Christopher Mj McFaul**, Rodrigo Fernandez-Gonzalez, Christopher M. Yip

2163-Pos Board B526
PAIR CORRELATION ANALYSIS OF LOCALIZATION MICROSCOPY DATA WHEN SAMPLING DENSITY IS NOT UNIFORM. **Thomas R. Shaw**, Sarah A. Shelby, Sarah L. Veatch

2164-Pos Board B527
ACHIEVING AXIAL SUPER-RESOLUTION WITH THE TWO-PHOTON DUAL-COLOR Z-SCAN METHOD. **Siddarth Reddy Karuka**, Isaac Angert, John Kohler, G. W. Gant Luxton, Louis M. Mansky, Joachim D. Mueller

2165-Pos Board B528 TRAVEL AWARDEE
DEVELOPMENT AND OPTIMIZATION OF THE Y-FAST:FLUOROGEN SYSTEM FOR SUPER-RESOLUTION IMAGING. **Elizabeth M. Smith**, Arnaud Gautier, Elias M. Puchner

2166-Pos Board B529
A NOVEL VIEWPOINT TO ANALYZE STRUCTURED ILLUMINATION MICROSCOPY (SIM) DATA. **Isotta Cainero**, Simone Pelicci, Melody Di Bona, Alberto Diaspro, Luca Lanzano'

2167-Pos Board B530
SINGLE-CELL CORRELATIONS OF INTRON, MRNA, AND PROTEIN CONTENT IN HUMAN IMMUNE-IMMUNE CELLS. **Daniel Kalb**, Samantha Adikari, Pulak Nath, Elizabeth Hong-Geller, James Werner

2168-Pos Board B531
OPTIMIZATION OF SINGLE MOLECULE PALM IMAGING CONDITIONS USING MEOS2. **Ragnar Stefánsson**

2169-Pos Board B532
IMAGING CANCER CELLS AND THEIR INTERACTIONS WITHIN 3D MICROENVIRONMENT - A QUANTITATIVE STUDY USING CRYO SOFT X-RAY TOMOGRAPHY. **Jian-Hua Chen**, Axel Ekman, Venera Weinhardt, Gerry McDermott, Mark A. Le Gros, Carolyn A. Larabell

2170-Pos Board B533
SPATIAL CUMULANT ANALYSIS TO STUDY D2-LIKE DOPAMINE RECEPTOR DYNAMICS ON PLASMA MEMBRANE. **Daniel J. Foust**, Alessandro Ustione, David W. Piston

2171-Pos Board B534
LIVE CELL SUPER-RESOLUTION IMAGING WITH RED-SHIFTED STATES OF CONVENTIONAL BODIPY FLUOROPHORES. **Santosh Adhikari**, Joe Moscatelli, Elias Puchner

2172-Pos Board B535
OPTIMIZING ASTIGMATISM FOR 3D STOCHASTIC OPTICAL RECONSTRUCTION MICROSCOPY. **Alondra Escobar**, Christopher M. Yip

2173-Pos Board B536
DISTRIBUTION OF CHOLESTEROL AND HER2 IN PATIENT BREAST CANCER CELLS USING QUANTITATIVE SINGLE MOLECULE LOCALIZATION MICROSCOPY. **Matthew S. Brehove**, Steven J. Tobin, Devin L. Wakefield, Veronica Jones, Xueli Liu, Daniel Schmolze, Tijana Jovanović-Talisman

2174-Pos Board B537
3D ORBITAL TRACKING UNDER STED MICROSCOPY. **Alexander Vallmitjana Lees**, Enrico Gratton

2175-Pos Board B538
AN INEXPENSIVE MODULE FOR HIGH-CONTENT ISPIM. **Aaron Au**, Christopher M. Yip

2176-Pos Board B539
INVESTIGATING THE IMPACT OF PHENOTYPIC HETEROGENEITY ON ANTIBIOTIC RESPONSE VIA 1D MICROFLUIDIC CONFINEMENT OF SINGLE BACTERIA. **Shahla H. Nemati**, Andreas E. Vasdekis

2177-Pos Board B540
TAKING A CLOSER LOOK AT BACTERIAL:FUNGAL INTERACTIONS IN SOIL USING QUANTITATIVE MICROSCOPY. **Demosthenes P. Morales**, James H. Werner

2178-Pos Board B541
HYPERSPECTRAL IMAGING IN SCATTERING MEDIA USING TWO FILTERS. **Alexander Dvornikov**, Enrico Gratton

2179-Pos Board B542
A NEW FASTER FLIMBOX WITH HIGHER HARMONIC CONTENT AND MULTI DETECTOR INPUT. **Enrico Gratton**, Alessandro Rossetta, Hongtao Chen

2180-Pos Board B543
3D SUPER RESOLUTION IMAGING REVEALS THAT PLASMA MEMBRANE TOPOLOGY CAN BE MISINTERPRETED AS LATERAL HETEROGENEITY IN CELLS IMAGED UNDER TOTAL INTERNAL REFLECTION. **Ryan A. Bogucki**, Thomas Shaw, Sarah L. Veatch

2181-Pos Board B544
ADAPTIVE OPTICS IN STRONGLY SCATTERING SAMPLES. **Simon W. Leemans**, Enrico Gratton

2182-Pos Board B545
COPY NUMBER AND FUNCTION OF INDIVIDUAL DISORDERED PROTEINS IN THE NUCLEAR PORE COMPLEX REVEALED BY COMBINING AUXIN-INDUCIBLE DEGRON STRATEGY AND HIGH-SPEED SINGLE -MOLECULE MICROSCOPY. **Yichen Li**, Vasilisa Aksenova, Jingjie Yu, Ping Ma, Alexei Arnaoutov, Mary Dasso, Weidong Yang

2183-Pos Board B546
SIMULTANEOUS 25 PLANE 3D LIVE IMAGING SYSTEM FOR NEURAL CIRCUITS. **Eduardo Hirata Miyasaki**, Gustav Pettersson, Demis D. John, Brian Thibeault, Khant Zaw, Brandon J. Lynch, Juliana Hernandez, Sara Abrahamson

2184-Pos Board B547
SUPER-RESOLUTION GEOMETRIC BARCODING FOR MULTIPLEXED MIRNA PROFILING. Weidong Xu, Peng Yin, **Mingjie Dai**

2185-Pos Board B548
THE PHASOR FLIM ANALYSIS MONITORS METABOLIC CHANGES AT THE LEADING EDGE IN RESPONSE TO RAC PHOTO-ACTIVATION AND MITOCHONDRIAL TRANSPORT IN MDA MB231 CELLS. **Michelle A. Digman**, Austin Lefebvre, Freddie Adame, Emma Fong

Biosensors II (Boards B549 - B563)

2186-Pos Board B549
CELLULAR MICRORNA DETECTION USING DNA NANOSWITCHES. **Arun Richard Chandrasekaran**

2187-Pos Board B550
CONVERTING FRET SIGNAL INTO FORCE INFORMATION USING SHORT LOOPED DNA AS FORCE TRANSDUCER. **Golam Mustafa**, Cho-Ying Chuang, William A. Roy, Mohamed M. Farhath, Nilisha Pokhrel, Yue Ma, Kazuo Nagasawa, Edwin Antony, Matthew J. Comstock, Soumitra Basu, Hamza Balci

2188-Pos Board B551
MOLECULAR DYNAMICS SIMULATIONS OF APTAMER-BASED BIOSENSORS. Iman Jeddi, **Leonor Saiz**

2189-Pos Board B552
COMPUTATIONALLY GUIDED RATIONAL DESIGN OF LOO-GFP BIOSENSORS AND BIOSENSOR MATERIALS. Shounak Banerjee, Thomas B. Jordan, Keith Fraser, Justin Reimertz, Emily E. Crone, Adrianne L. Bunn, Joshua Mincer, Rebecca M. Booth, Donna E. Crone, Sarah E. Bondos, **Christopher Bystroff**

2190-Pos Board B553
RECEPTOR-MEDIATED REGULATION OF GLUCOKINASE BY S-NITROSYLATION IN HYPOTHALAMIC NEURONS. **Jennifer McFarland**, Mark A. Rizzo

2191-Pos Board B554
INTERFACING PHOTOSYSTEM I REACTION CENTERS WITH A POROUS ANTIMONY-DOPED TIN OXIDE ELECTRODE TO PERFORM LIGHT DRIVEN REDOX CHEMISTRY. **Akanksha Singh**, Sarthak Mandal, Anne-Marie Carey, Minghui Liu, Shaojiang Chen, Dong-Kyun Seo, Hao Yan, Neal Woodbury

2192-Pos Board B555
HIGHLY SENSITIVE DETECTION OF VIRAL NUCLEOPROTEIN USING VHH ANTIBODY AND SURFACE PLASMON RESONANCE. **Hiroto Yanagawa**, Kazuaki Nishio, Noriko Shimba, Emina Ikeuchi, Tatsurou Kawamura, Kouhei Tsumoto, Masahiko Shioi

2193-Pos Board B556 TRAVEL AWARDEE
VALUATING PHOTOOXIDATION OF PHOSPHOLIPID MEMBRANES BY A NOVEL SWITCHABLE PHOTOSENSTIZER. **Jonathan P. Hulse**, Florencia Monge, Crystal M. Vander Zanden, Eva Y. Chi, David G. Whitten

2194-Pos Board B557
LARGE-AREA, REPRODUCIBLE AG-FILM-FUNCTIONALIZED MIXED POLYSTYRENE SPHERES ON SILICON FOR SURFACE-ENHANCED RAMAN SPECTROSCOPY. **Xiaofeng Hu**

2195-Pos Board B558
NAVIGATIONAL BIOELECTRICITY: SEARCH FOR THE ELUSIVE SENSOR OF ELECTRIC FIELDS IN CHONDROCYTES. **Joshua Bush**, Michael W. Stacey

2196-Pos Board B559
GOLD NANORIBBONS AS SUPPORT MATERIAL FOR NANOSENSORS. **Joanna P. Patalas**, Marika Musielak, Augustyn Moliński, Zuzanna Pietralik, Agnieszka Boś-Liedke, Maciej Kozak

2197-Pos Board B560
GRAPHENE DEFLECTOMETRY FOR SINGLE BIOMOLECULES. **Maicol A. Ochoa**, Michael Zwolak

2198-Pos Board B561
IN-SITU AND QUICK DETECTION OF RNA VIRUS BY NANOBIOSENSOR. **May Thuzar Maung**, Samuel Opper, Kevin Taisma, Ewa S. Kirkor, Ali Senejani, Saion K. Sinha

2199-Pos Board B562
NANOPORE-NANOELECTRODE FOR POTENTIAL SENSING OF SINGLE NANOPARTICLE COLLISION EVENTS. **Popular Pandey**, jin He

2200-Pos Board B563
SURFACE MODIFICATION OF FLUORESCENT NANODIAMOND FOR BIOMEDICAL APPLICATIONS AS FLUORESCENT PROBE. **Haksung Jung**, Kyung-Jin Cho, Yeonee Seol, Yasuharu Takagi, Andrew Dittmore, Roche Paul, Keir C. Neuman

Micro- and Nanotechnology II (Boards B564 - B578)

2201-Pos Board B564
EVALUATION AND OPTIMIZATION OF NOVEL FORMULATIONS FOR DELIVERY OF HYDROPHILIC BIOLOGICAL DRUGS USING BIOCOMPATIBLE SURFACTANTS. **Hannah M. Work**, Joseph C. Iovine, Nakoa K. Webber, Taylor V. Douglas, Samuel L. Ricci, Ryan P. Calhoun, Gabriela V. Baker, Elizabeth A. Richards, Daniel D. Yang, Benjamin R. Carone, Nathaniel V. Nucci

2202-Pos Board B565
KINETIC MODELING OF NANOPARTICLE-CELL ASSOCIATION. **Matthew Faria**, Ka Noi, Stuart Johnston, Yi Ju, Mattias Björnmalm, Frank Caruso, Edmund J. Crampin

2203-Pos Board B566
FRAMEWORK FOR NUCLEIC ACID CELLULAR DELIVERY USING CARBON NANOTUBES WITHOUT CHEMICAL FUNCTIONALIZATION. **Arupananda Sengupta**, Michael Blades, Daniel J. Hayes, Slava V. Rotkin

2204-Pos Board B567
COMPARATIVE PHYSICOCHEMICAL CHARACTERIZATION BETWEEN BRAND AND GENERIC INTRAVENOUS SODIUM FERRIC GLUCONATE COMPLEX IN SUCROSE INJECTION. **Joel Brandis**, Marc Taraban, Kyle Kihn, Heather Neu, Peter Langguth, Alex Confer, David Goldberg, James Polli, Sarah Michel

2205-Pos Board B568
QUANTIFYING ASSOCIATIONS BETWEEN AN ENDOGENOUS PROTEIN MODEL AND MPEG-PCL MICELLAR NANOCARRIERS. **Donald P. Mallory**, Abegel Freeman, Adam W. Smith, Coleen Pugh

2206-Pos Board B569 TRAVEL AWARDEE
INDEX-MATCHED MICROFLUIDIC CELL ARRAY FOR HIGH THROUGHPUT SINGLE CELL OPTICAL ANALYSIS. **Justin J. Griffin**, Edward R. Polanco, Thomas A. Zangle

2207-Pos Board B570
MULTIPLEX IN SITU TAGGING TECHNOLOGY FOR HIGHLY MULTIPLEXED SINGLE-CELL ANALYSIS. **Jun Wang**

2208-Pos Board B571
DESIGN OF ISLET-ON-A-CHIP DEVICES TO DYNAMICALLY MEASURE GLUCOSE-STIMULATED METABOLISM AND INSULIN SECRETION IN INDIVIDUAL PANCREATIC ISLETS. Romario Regeenes, Afifa Saleem, Huntley Chang, Hima Gohil, Michael B. Wheeler, **Jonathan V. Rocheleau**

2209-Pos Board B572
LIGHT-RESPONSIVE POLYMER PARTICLES AS FORCE CLAMPS FOR THE MECHANICAL UNFOLDING OF TARGET MOLECULES. **Hanquan Su**, Zheng Liu, Yang Liu, Victor Pui-Yan Ma, Jing Zhao, Aaron Blanchard, Kornelia Galior, Brian Dyer, Khalid Salaita

2210-Pos Board B573
METAL OXIDE COATING OF SILVER NANOPARTICLES TO IMPROVE THEIR PHYSICOCHEMICAL AND OPTICAL PROPERTIES. **Soha Salah AbdelHamied Mohamed**, Heba M. Fahmy, Engy Maged Mohamed Shams-Eldin, Ayaat Mahmoud MoslehSelim

2211-Pos Board B574
MAKING THE RAINBOW: A COST-EFFECTIVE, REPRODUCIBLE, AND SCALABLE METHOD FOR QUANTUM DOT FABRICATION. **Taylor V. Douglas**, Aubrie A. Weyhmiller, Kayla A. Callaway, Nathaniel V. Nucci

2212-Pos Board B575
SAXS AND SPECTROSCOPIC STUDIES OF SYNTHESIS PROCEDURES OF NANORODS. **Karolina Rucinska**, Joanna Maksim, Kosma Szutkowski, Augustyn Molinski, Zuzanna Pietralik, Maciej Kozak

2213-Pos Board B576
MORPHOLOGY OF GOLD NANORODS OBTAINED IN THE PRESENCE OF OLIGOMERIC SURFACTANTS. **Joanna Maksim**, Karolina Rucinska, Augustyn Molinski, Zuzanna Pietralik, Maciej Kozak

2214-Pos Board B577
SIMULATION OF THE MOTION OF ARBITRARILY SHAPED PROTEIN MOLECULES IN NANOPORES USING CLUSTERS OF RIGID SPHERICAL PARTICLES. **Shuran Xu**, Marco Lattuada, Michael Mayer

2215-Pos Board B578 TRAVEL AWARDEE
THE ADSORPTION KINETICS OF BIOMOLECULES ON TO PEGYLATED GOLD NANOPARTICLES. **Yasiru R. Perera**, Alex Hughes, Nicholas C. Fitzkee

Biophysics Education (Boards B579 - B592)

2216-Pos Board B579
ESTABLISHING THE FRAMEWORK FOR A SUSTAINABLE SERVICE-LEARNING COURSE FOR ENGINEERING STUDENTS. **Patrick Link**

2217-Pos Board B580 TRAVEL AWARDEE
ANALYSIS OF THE ACOUSTIC PROPAGATION PARAMETERS OF THE NATURAL SOUNDS OF DELPHINAPTERUS LEUCAS AND ODORRANA TORMOTA FUNDAMENTAL IN THE STARTLE OF THE FEMALE ANOPHELES GAMBIAE. **Philip A. Mang'are**, Ndiritu Francis Gichuki, Samwel Rotich, Jacgueline K. Makatiani

2218-Pos Board B581
HANDS-ON MIXED REALITY SCIENCE LABS FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY INSTRUCTION. **Kambiz M. Hamadani**, Yuanyuan Jiang, Xin Ye, Ali Ahmadinia

2219-Pos Board B582
INTRODUCTION OF A CIGARETTE SMOKING CESSATION STRATEGY: 'SEMIRE UZUN GOCMEN MODEL' IN SMOKING QUITTING. **Semire Uzun Gocmen**

2220-Pos Board B583
CELLULAR BIOPHYSICS AND MODELING: A REQUIRED COURSE IN THE NEUROSCIENCE PROGRAM AT WILLIAM AND MARY. **Greg Conradi Smith**

2221-Pos Board B584
THE PROPORTIONAL HAZARD MODEL IN RANDOMIZED STUDIES - STATISTICAL INSIGHTS INTO THE WOMEN'S HEALTH INITIATIVE STUDIES (2002-2017) USING REGRESSION ANALYSIS OF MORTALITY. **Timothy Bilash**

2222-Pos Board B585
DEVELOPING ORAL PRESENTATION SKILLS IN UNDERGRADUATE RESEARCHERS. **Julie Gunderson**, William Gunderson

2223-Pos Board B586
CALL FOR AN EDUCATIONAL PARADIGM SHIFT. **Allen T. Ansevin**

2224-Pos Board B587
TEACHING BIOPHYSICS IN AN UNDERGRADUATE CURRICULUM. **Christopher E. Bassey**

2225-Pos **Board B588**
INTEGRATING FUNDAMENTAL BIOPHYSICS RESEARCH IN EMPHASIS COURSES FOR ENGINEERING AND AGRICULTURAL SCIENCES STUDENTS. Katherine Vega, Samuel Ochoa, Jorge A. Herrera, Luis F. Patino, Jorge A. Gomez, **Jairo C. Quijano**

2226-Pos **Board B589**
ADAPTING A COURSE-BASED UNDERGRADUATE RESEARCH EXPERIENCE INTO INDEPENDENT STUDENT RESEARCH PROJECTS AT A SMALL LIBERAL ARTS COLLEGE. **Andrea A. Carter**, Paul A. Craig

2227-Pos **Board B590**
BIOPHYSICS FOR ALL: TOOLS TO INTRODUCE BASIC ELECTROPHYSIOLOGY AND OPTICS TO UNDERGRADUATES. **Elizabeth EL Lee**

2228-Pos **Board B591**
PREDICTING AND TESTING ENZYME FUNCTION IN THE UNDERGRADUATE LAB USING COMPUTATIONAL AND WET LAB TOOLS. **Julia R. Koeppe**, Webe C. Kadima, Rebecca Roberts, Matthew Gehm, Paul A. Craig

2229-Pos **Board B592**
COMPUTATIONAL MODELING: EXPLORING HOW MINI RESERACH PROJECTS AND CLASSROOM ACTIVITIES IMPACT STUDENT LEARNING. **Shelby N. Kranc**, Donald E. Elmore, Martin Berryman, Mala L. Radhakrishnan

Wednesday, March 6, 2019

Daily Program Summary

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

8:00 AM-11:00 AM	**New Council Meeting**	**Room 331**
8:00 AM-3:00 PM	**Poster Viewing**	**Exhibit Hall**
8:15 AM-10:15 AM	**Symposium: Mapping the Cell** **Chair:** *Raymond Stevens, University of Southern California* CREATING AN IMAGE-BASED STEM CELL STATE SPACE. *Rick Horwitz* LINKING SYSTEMS WITH STRUCTURE: DERIVING MECHANISMS FROM LARGE-SCALE DATA SETS. *Nevan Krogan* SIMULTANEOUS CROSS-EVALUATION OF HETEROGENEOUS E. COLI DATASETS VIA MECHANISTIC SIMULATION. *Markus Covert* TOWARDS A MODEL OF THE HUMAN PANCREATIC BETA CELL. *Raymond C. Stevens*	**Ballroom I**
8:15 AM-10:15 AM	**Symposium: RNA** **Chair:** *Joseph D. Puglisi, Stanford University* CO-TRANSLATIONAL PROTEIN FOLDING AND INSERTION INTO THE MEMBRANE. *Marina Rodnina* HIGH-RESOLUTION 3D STRUCTURE DETERMINATION OF LARGE AND DYNAMIC MACROMOLECULAR COMPLEXES. *Holger Stark* UNTANGLING MESSENGER RNA STRUCTURE WITH DEAD-BOX RNA HELICASES. *Elizabeth Tran* DYNAMICS OF EUKARYOTIC TRANSLATION INITIATION. *Joseph D. Puglisi*	**Ballroom II**
8:15 AM-10:15 AM	**Platform: TRP Channels**	**Ballroom III**
8:15 AM-10:15 AM	**Platform: Intrinsically Disordered Proteins (IDP) and Aggregates III**	**Ballroom IV**
8:15 AM-10:15 AM	**Platform: General Protein-Lipid Interactions**	**Room 307/308**
8:15 AM-10:15 AM	**Platform: Actin Structure, Dynamics & Associated Proteins**	**Room 309/310**
8:15 AM-10:15 AM	**Platform: Protein Assemblies/Enzyme Function, Cofactors & Post-translational Modifications II**	**Room 314/315**
8:15 AM-10:15 AM	**Platform: Mechanosensation**	**Room 316/317**
10:30 AM-12:30 PM	**Poster Presentations and Late Posters**	**Exhibit Hall**
1:00 PM-3:00 PM	**Symposium: Membrane Organization and Sculpting by Proteins** **Chair:** *Jenny Hinshaw, NIH* REVERSE TOPOLOGY MEMBRANE SCISSION BY THE ESCRTS. *James H. Hurley* MEMBRANE CURVATURE AND THE ABC TRANSPORTER BmrA: A YIN & YANG STORY. *Patricia M. Bassereau* STRUCTURAL DYNAMICS OF POTASSIUM CHANNEL MONOMER IN A MEMBRANE ENVIRONMENT AND TETRAMERIC ASSEMBLY. *Benoit Roux* CAPTURING SEQUENTIAL STEPS OF DYNAMIN-MEDIATED FISSION BY CRYO-EM. *Jenny E. Hinshaw*	**Ballroom I**
1:00 PM-3:00 PM	**Symposium: Molecular and Transcriptional Regulation of Cardiac E-C Coupling** **Chair:** *Shi-Qiang Wang, Peking University, China* ACUTE LOSS OF CMYBP-C INDUCES AUTO-OSCILLATORY CONTRACTIONS IN PERMEABILIZED CARDIOMYOCYTES: IMPLICATIONS FOR REVERSE E-C COUPLING? *Samantha P. Harris* CBIN1: FROM T-TUBULE FOLDS TO DYAD ORGANIZATION, TO MICROPARTICLES AND CLINICAL USE. *Robin Shaw* REGULATION OF THE RYR2 CALCIUM RELEASE CHANNEL BY SPEG. *Xander H.T. Wehrens* CONJUNCT UPREGULATION OF JUNCTOPHILIN-2 AND CAVEOLIN-3 TRANSCRIPTION ENHANCED EXCITATION-CONTRACTION COUPLING EFFICIENCY IN HIBERNATING GROUND SQUIRRELS. *Shi-Qiang Wang*	**Ballroom II**
1:00 PM-3:00 PM	**New and Notable** **Co-Chairs:** *Susan Marqusee, University of California, Berkeley* *Andrej Sali, University of California, San Francisco* ADDING DIMENSIONS TO QUANTITATIVE INTRAVITAL IMAGING. *Scott Fraser* CRYO-EM STRUCTURE OF MICROBIAL NANOWIRES REVEALS STACKED HEMES THAT TRANSPORT ELECTRONS OVER MICRONS. *Edward Egelman* MOLECULAR MODELS OF BACTERIAL CELL ENVELOPES COME OF AGE: BOTH MEMBRANES AND THE CELL WALL ARE SIMULATED TO REVEAL NEW INSIGHTS. *Syma Khalid* MICROED: CONCEPTION, PRACTICE AND FUTURE OPPORTUNITIES. *Tamir Gonen*	**Ballroom III**

1:00 PM-3:00 PM	Platform: Protein Dynamics and Allostery II	Ballroom IV
1:00 PM-3:00 PM	Platform: Engineering and Detecting Cellular (dys) Function	Room 307/308
1:00 PM-3:00 PM	Platform: Cardiac Muscle Mechanics, Structure, and Regulation II	Room 309/310
1:00 PM-3:00 PM	Platform: Protein-Nucleic Acid Interactions/Chromatin and the Nucleoid II	Room 314/315
1:00 PM-3:00 PM	Platform: Member Organized Session: Integrative Structural Modeling Using Information from Spectroscopic Labels	Room 316/317

Wednesday, March 6

New Council Meeting

8:00 AM - 11:00 AM, ROOM 331

Poster Viewing

8:00 AM - 3:00 PM, EXHIBIT HALL

Symposium
Mapping the Cell

8:15 AM - 10:15 AM, BALLROOM I

Chair
Raymond Stevens, University of Southern California

NO ABSTRACT 8:15 AM
CREATING AN IMAGE-BASED STEM CELL STATE SPACE. **Rick Horwitz**

NO ABSTRACT 8:45 AM
LINKING SYSTEMS WITH STRUCTURE: DERIVING MECHANISMS FROM LARGE-SCALE DATA SETS. **Nevan Krogan**

2230-SYMP 9:15 AM
SIMULTANEOUS CROSS-EVALUATION OF HETEROGENEOUS E. COLI DATASETS VIA MECHANISTIC SIMULATION. **Markus Covert**

2231-SYMP 9:45 AM
TOWARDS A MODEL OF THE HUMAN PANCREATIC BETA CELL. **Raymond C. Stevens**

Symposium
RNA

8:15 AM - 10:15 AM, BALLROOM II

Chair
Joseph D. Puglisi, Stanford University

NO ABSTRACT 8:15 AM
CO-TRANSLATIONAL PROTEIN FOLDING AND INSERTION INTO THE MEMBRANE. **Marina Rodnina**

NO ABSTRACT 8:45 AM
HIGH-RESOLUTION 3D STRUCTURE DETERMINATION OF LARGE AND DYNAMIC MACROMOLECULAR COMPLEXES. **Holger Stark**

2232-SYMP 9:15 AM
UNTANGLING MESSENGER RNA STRUCTURE WITH DEAD-BOX RNA HELICASES. **Elizabeth Tran**

NO ABSTRACT 9:45 AM
DYNAMICS OF EUKARYOTIC TRANSLATION INITIATION. **Joseph D. Puglisi**

Platform
TRP Channels

8:15 AM - 10:15 AM, BALLROOM III

Co-Chairs
Sebastian Brauchi, Universidad Austral de Chile
Eleonora Zakharian, University of Illinois College of Medicine

2233-PLAT 8:15 AM
STRUCTURAL AND FUNCTIONAL ANALYSES OF TRPC3 REVEAL ALLOSTERIC GATING MODULATION BY THE CYTOPLASMIC DOMAIN. Francisco J. Sierra Valdez, Caleigh M. Azumaya, Luis O. Romero, Terunaga Nakagawa, **Julio F. Cordero-Morales**

2234-PLAT 8:30 AM
STRUCTURAL INSIGHTS INTO LIGAND MODULATION OF THE TRPV2 CHANNEL. **Ruth Pumroy**, Amrita Samanta, Yuhang Liu, Franklin Pozo, Taylor Hughes, George R. Dubyak, Seungil Han, David T. Lodowski, Vera Moiseenkova-Bell

2235-PLAT 8:45 AM
MULTIMERIZATION OF HUMAN TRPA1 ION CHANNEL CYTOPLASMIC DOMAINS. **Gilbert Q. Martinez**, Sharona E. Gordon

2236-PLAT 9:00 AM
APPROACHING TO THE MOLECULAR MECHANISM OF THE FAST INACTIVATION OF CALCIUM SELECTIVE TRP CHANNELS. **Lisandra Flores Aldama**, Kattina Zavala, Daniel Bustos, Wendy Gonzalez, Juan Opazo, Sebastian E. Brauchi

2237-PLAT 9:15 AM
ANTAGONIST-INDUCED CLOCKWISE ROTATION IN THE TRPV1. **Shoko Fujimura**, Kazuhiro Mio, Masahiro Kuramochi, Hiroshi Sekiguchi, Muneyo Mio, Tai Kubo, Yuji C. Sasaki

2238-PLAT 9:30 AM
THE CONFORMATIONAL WAVE IN CAPSAICIN ACTIVATION OF TRANSIENT RECEPTOR POTENTIAL VANILLOID 1 ION CHANNEL. **Fan Yang**, Xian Xiao, Bo Hyun Lee, Simon Vu, Wei Yang, Vladimir Yarov-Yarovoy, Jie Zheng

2239-PLAT 9:45 AM
GAIN-OF-FUNCTION MUTATIONSIN TRPM4 ACTIVATION GATE CAUSE SKIN DISEASE PSEK. Huijun Wang, Zhe Xu, Bo Hyun Lee, **Simon Vu**, Linghan Hu, Mingyang Lee, Dingfang Bu, Xu Cao, Samuel Hwang, Yong Yang, Jie Zheng, Zhimiao Lin

2240-PLAT 10:00 AM
TRPM8 REGULATES SEXUAL REWARD AND SATIETY. Yelena Nersesyan, Ekaterina Gribkova, Padmamalini Baskaran, Daniel Llano, Baskaran Thyagarajan, **Eleonora Zakharian**

Platform
Intrinsically Disordered Proteins (IDP) and Aggregates III

8:15 AM - 10:15 AM, BALLROOM IV

Co-Chairs
Keren Lasker, Stanford University
Alessandro Borgia, University of Zurich, Switzerland

2241-PLAT 8:15 AM
TARDIGRADE INTRINSICALLY DISORDERED PROTEINS PROTECT ENZYMES FROM DESICCATION-INDUCED INACTIVATION. **Samantha Piszkiewicz**, Kathryn H. Gunn, Shannon L. Speer, Owen Warmuth, Aakash Mehta, Francis J. Lauzier, Kenny H. Nguyen, Elizabeth Kuhlman, Saskia B. Neher, Gary J. Pielak

2242-PLAT 8:30 AM
A NOVEL MOLECULAR LEGO APPROACH TO MEASURE THE MARGINAL FOLDING COOPERATIVITY OF INTRINSICALLY DISORDERED PROTEINS. Suhani Nagpal, **Thinh Luong**, Mourad Sadqi, Victor Muñoz

2243-PLAT 8:45 AM TRAVEL AWARDEE
HIGHLY DISORDERED 10:1 COMPLEX OF TWO ANTI-APOPTOTIC, CHROMATIN-REMODELLING INTRINSICALLY DISORDERED PROTEINS. **Alessandro Borgia**, Madeleine B. Borgia, Alain Scaiola, Robert Best, Benjamin Schuler

2244-PLAT 9:00 AM
A BACTERIAL BIOMOLECULAR CONDENSATE SEQUESTERS A SIGNALING PATHWAY THAT DRIVES SPATIAL REGULATION OF GENE EXPRESSION AND ASYMMETRIC CELL DIVISION. **Keren Lasker**, Alex von Diezmann, W.E. Moerner, Lucy Shapiro

2245-PLAT 9:15 AM
SEQUENCE DETERMINANTS OF PROTEIN PHASE SEPARATION OF THE INTRINSICALLY DISORDERED RGG DOMAIN FROM LAF-1. **Benjamin S. Schuster**, Gregory Dignon, Craig Jahnke, Matthew C. Good, Daniel A. Hammer, Jeetain Mittal

2246-PLAT 9:30 AM
THE INS AND OUTS OF PHASE SEPARATION IN NUCLEOLAR BIOLOGY. **Richard Kriwacki**, Diana Mitrea, Mylene Ferrolino, Eric Gibbs, Aaron H. Phillips, Michele Tolbert, Christopher B. Stanley, Amanda Nourse, Paulo L. Onuchic, Priya R. Banerjee, Ashok A. Deniz

2247-PLAT 9:45 AM
SEQUENCE DETERMINATION OF LIQUID-LIQUID PHASE-SEPARATED ASSEMBLIES OF ENGINEERED DISORDERED PROTEINS IN LIVING CELLS. **Ming-Tzo (Steven) Wei**, Clifford P. Brangwynne

2248-PLAT 10:00 AM
UNCOVERING THE ROLE OF SURFACE RESIDUES AND BUFFER COMPOSITION IN LIQUID-LIQUID PHASE SEPARATION OF EYE LENS CRYSTALLINS FROM AN ANTARCTIC TOOTHFISH. **Jan C. Bierma**, Kyle Roskamp, Aaron Ledray, Andor J. Kiss, C.-H. Christina Cheng, Rachel W. Martin

Platform
General Protein-Lipid Interactions

8:15 AM - 10:15 AM, ROOM 307/308

Co-Chairs
Milica Utjesanovic, University of Missouri, Columbia
Rajesh Ramachandran, Case Western Reserve University

2249-PLAT 8:15 AM
UNDERSTANDING THE ORGANIZATION AND DYNAMICS OF KRAS4B ON A COMPLEX 8-LIPID RECONSTITUTED MODEL MEMBRANE USING MICROSCOPY AND SPECTROSCOPY METHODS. **Rebika Shrestha**, Thomas Turbyville

2250-PLAT 8:30 AM
STRUCTURAL AND MECHANISTIC BASES OF DRP1-CARDIOLIPIN INTERACTIONS IN MITOCHONDRIAL FISSION. Bin Lu, Mukesh Mahajan, Abhishek Mandal, Nikhil Bharambe, Rihua Wang, Patrick van der Wel, Matthias Buck, Xin Qi, **Rajesh Ramachandran**

2251-PLAT 8:45 AM
MULTIPLE STOCHASTIC PATHWAYS IN FORCED PEPTIDE-LIPID MEMBRANE DETACHMENT. **Milica Utjesanovic**, Tina R. Matin, Krishna P. Sigdel, Gavin M. King, Ioan Kosztin

2252-PLAT 9:00 AM
THE SMALL HEAT SHOCK PROTEINS, HSPB1 AND HSPB6, HAVE THE ABILITY TO GET INSERTED INTO LIPID MEMBRANES. **Antonio De Maio**, David M. Cauvi, Ricardo F. Capone, Nelson Arispe, Wilbert Boelens

2253-PLAT 9:15 AM
MOLECULAR SIMULATIONS REVEAL THE DYNAMICS OF THE BAND 3 ANION TRANSPORTER IN A MODEL NATIVE RED BLOOD CELL MEMBRANE. **Dario De Vecchis**, Reinhart A. Reithmeier, Antreas Kalli

2254-PLAT 9:30 AM
HUNTINGTIN AGGREGATION IS MODIFIED IN THE PRESENCE OF A VARIETY OF LIPID MEMBRANES. **Maryssa A. Beasley**, Sharon E. Groover, Justin A. Legleiter

2255-PLAT 9:45 AM
CHARACTERIZATION OF PHOSPHATIDYLINOSITOL PHOSPHATE BINDING IN LIPID BILAYERS BY SOLID-STATE NMR SPECTROSCOPY. Jacqueline R. Perodeau, Ashley D. Bernstein, Stefany M. Lazieh, Robert D. Palmere, **Andrew J. Nieuwkoop**

2256-PLAT 10:00 AM
SPATIAL ORGANIZATION OF THE BLOOD STAGE PARASITOPHOROUS VACUOLE OF THE MALARIA PARASITE *PLASMODIUM FALCIPARUM*. **Matthias Garten**, Josh R. Beck, Robyn Roth, Christopher KE Bleck, John E. Heuser, Tatyana Tenkova-Heuser, Svetlana Glushakova, Joshua Zimmerberg, Daniel E. Goldberg

Platform
Actin Structure, Dynamics & Associated Proteins

8:15 AM - 10:15 AM, ROOM 309/310

Co-Chairs
David Sept, University of Michigan
Danielle Holz, Lehigh University

2257-PLAT 8:15 AM
MOLECULAR DYNAMICS SIMULATIONS OF G- AND F-ACTIN EXPLAIN ASPECTS OF ACTIN POLYMERIZATION. **Lauren Jepsen**, David Sept

2258-PLAT 8:30 AM
INVESTIGATIONS INTO THE STRUCTURE AND INTERMOLECULAR INTERFACE OF HUMAN COFILIN-2 ASSEMBLED ON ACTIN FILAMENTS BY MAGIC ANGLE SPINNING NMR. **Jodi Kraus**, Jenna Yehl, Elena Kudryashova, Emil Reisler, Dmitri Kudryashov, Tatyana Polenova

2259-PLAT 8:45 AM
MECHANISMS FOR DENDRITIC ACTIN NETWORK FORMATION, DISTRIBUTED TURNOVER, AND STRUCTURAL REMODELING. **Danielle Holz**, Aaron Hall, Dimitrios Vavylonis

2260-PLAT 9:00 AM
DIFFERENT FACES (PHASES) OF ACTIN DEPOLYMERIZING FACTORS FROM *ENTAMOEBA HISTOLYTICA*.. **Pragyan Parimita Rath**, Nitesh Kumar, Samudrala Gourinath

2261-PLAT 9:15 AM
RECONSTITUTION OF DYNAMIC ACTIN CABLES WITH TUNABLE LENGTHS. **Luther W. Pollard**, Salvatore L. Alioto, Mikeal V. Garabedian, Bruce L. Goode

2262-PLAT 9:30 AM
STRUCTURAL, KINETIC, AND THERMODYNAMIC RESPONSE OF WATER TO MECHANICAL UNFOLDING OF SPECTRIN REPEATS. Sarah J. Moe, Torvin Rajala, **Alessandro Cembran**

2263-PLAT 9:45 AM
ACETYLATION OF ACTIN K328 CONTRIBUTES TO A LOSS IN TROPOMYOSIN-MEDIATED INHIBITION OF MYOSIN BINDING. **William M. Schmidt**, D. Brian Foster, Anthony Cammarato

2264-PLAT 10:00 AM
LEIOMODIN AND TROPOMYOSIN, BINDING AT THE POINTED END OF THE THIN FILAMENTS. **Dmitri Tolkatchev**, Garry E. Smith, John R. Cort, Gregory L. Helms, Alla S. Kostyukova

Platform
Protein Assemblies/Enzyme Function, Cofactors & Post-translational Modifications II

8:15 AM - 10:15 AM, ROOM 314/315

Co-Chairs
Erik Martin, St. Jude Children's Research Hospital
Alvin Yu, University of Chicago

2265-PLAT 8:15 AM
HYDROXYLATION OF TYPE I COLLAGEN: EFFECTS ON FIBRILLAR STRUCTURE AND MECHANICS. **Alekhya A. Kandoor**, Michele Kirchner, Vered Wineman-Fisher, Yujia Xu, Sameer Varma

2266-PLAT 8:30 AM
SUPERRESOLUTION IMAGING OF AMYLOID STRUCTURES OVER EXTENDED TIMES USING TRANSIENT BINDING OF SINGLE THIOFLAVIN T MOLECULES. Kevin Spehar, Tianben Ding, Yuanzi Sun, Niraja Kedia, Jin Lu, George R. Nahass, Matthew D. Lew, **Jan Bieschke**

2267-PLAT 8:45 AM
IN VITRO STUDY OF THE EFFECT OF INSULIN ON AMYLOID B-PROTEIN ASSEMBLY AND TOXICITY. **Kaho Long**, Thomas L. Williams, Brigita Urbanc

2268-PLAT 9:00 AM TRAVEL AWARDEE
MULTIMERIC PROTEINS REVERSIBLY FORM CONDENSATES UPON OSMOTIC COMPRESSION. **Ameya P. Jalihal**

2269-PLAT 9:15 AM
PHOTONIC PLATFORM FOR DETAILED PHYSICAL CHARACTERIZATION OF LIQUID PROTEIN DROPLETS. **Gheorghe Cojoc**, Timon Beck, Saeed Ahmed, Titus Franzmann, Paul Müller, Mirjam Schürmann, Raimund Schlüßler, Kyoohyun Kim, Elisabeth Fischer-Friedrich, Simon Alberti, Jochen Guck

2270-PLAT 9:30 AM TRAVEL AWARDEE
DISSECTION OF PROTEIN FUNCTION WITHIN A BACTERIAL BIOMOLECULAR CONDENSATE BY *IN VITRO* RECONSTITUTION. **Saumya Saurabh**, Lucy Shapiro

2271-PLAT 9:45 AM
EFFECT OF RESULTANT DIPOLE MOMENT ON MECHANICAL STABILITY OF PROTEIN-PEPTIDE COMPLEXES. Maksim Kouza, Anirban Banerji, Andrzej Kolinski, Irina Buhimschi, **Andrzej Kloczkowski**

2272-PLAT 10:00 AM
COARSE-GRAINED AND ATOMISTIC SIMULATIONS OF THE MATURE HIV CAPSID AND RELATED RESTRICTION FACTORS. **Alvin Yu**, Barbie K. Ganser-Pornillos, Owen Pornillos, Gregory A. Voth

Platform
Mechanosensation

8:15 AM - 10:15 AM, ROOM 316/317

Co-Chairs
Jeffrey Holt, Harvard Medical School
Amanda Buyan, Australian National University, Australia

2273-PLAT 8:15 AM TRAVEL AWARDEE
HIGH-RESOLUTION STRUCTURES OF MSCS IN A LIPID BILAYER: REINTERPRETING "FORCE FROM LIPIDS" ACTIVATION IN MECHANOSENSITIVE CHANNELS. **Bharat Reddy**, Allen Lu, Navid Bavi, Allen Hsu, Mario Borgnia, Eduardo Perozo

2274-PLAT 8:30 AM
STRUCTURES AND SIMULATIONS OF MEMBRANE ADJACENT FRAGMENTS OF PROTOCADHERIN-15. Pedro De-la-Torre, **Yoshie Narui**, Deepanshu Choudhary, Raul Araya-Secchi, Marcos Sotomayor

2275-PLAT 8:45 AM
UNDERSTANDING PIEZO1'S RELATIONSHIP WITH LIPIDS. **Amanda Buyan**, Charles D. Cox, Jonathan Barnoud, Boris Martinac, Siewert-Jan Marrink, Ben Corry

2276-PLAT 9:00 AM
DIETARY FATTY ACIDS FINE-TUNE PIEZO1 ACTIVITY. **Luis O. Romero**, Alejandro Mata-Daboin, Andrew Massey, Francisco J. Sierra Valdez, Chauhan C. Subhash, Julio F. Cordero-Morales, Valeria Vasquez

2277-PLAT 9:15 AM
ENANTIOMERIC AB PEPTIDES INHIBIT THE FLUID SHEAR STRESS RESPONSE OF PIEZO1. **Philip A. Gottlieb**, Mohammed M. Maneshi, Frederick Sachs, Susan Z. Hua

2278-PLAT 9:30 AM
PIEZO1 MEDIATED CA^{2+} SIGNALING CAUSES NUCLEAR SHRINKAGE UNDER FLUID SHEAR STRESS. Deekshitha Jetta, Philip A. Gottlieb, Frederick Sachs, **Susan Z. Hua**

2279-PLAT 9:45 AM
STRUCTURAL RELATIONSHIP BETWEEN THE PUTATIVE HAIR CELL MECHANOTRANSDUCTION CHANNEL TMC1 AND TMEM16 PROTEINS. **Angela Ballesteros Morcillo**, Maria Cristina Fenollar-Ferrer, Kenton J. Swartz

2280-PLAT 10:00 AM
CYSTEINE SUBSTITUTION REVEALS THE PORE-FORMING REGION OF TMC1 IN HAIR CELL SENSORY TRANSDUCTION CHANNELS. Bifeng Pan, Nurunisa Akyuz, Xiao-Ping Liu, Yukako Asai, Carl Nist-Lund, Kiyoto Kurima, Bruce Derfler, Bence György, Walrati Limapichat, Sanket Walujkar, Lahiru Wimalasena, Marcos Sotomayor, David Corey, **Jeffrey R. Holt**

Poster Presentations and Late Posters

10:30 AM - 12:30 PM, EXHIBIT HALL

Symposium
Membrane Organization and Sculpting by Proteins

1:00 PM - 3:00 PM, BALLROOM I

Chair
Jenny Hinshaw, NIH

2281-SYMP 1:00 PM
REVERSE TOPOLOGY MEMBRANE SCISSION BY THE ESCRTS.
James H. Hurley

2282-SYMP 1:30 PM
MEMBRANE CURVATURE AND THE ABC TRANSPORTER BMRA: A YIN & YANG STORY. **Patricia M. Bassereau**, Ajay K. Mahalka, Su-Jin Paik, Giovanni Manzi, Andrew Callan-Jones, Daniel Levy

2283-SYMP 2:00 PM
STRUCTURAL DYNAMICS OF POTASSIUM CHANNEL MONOMER IN A MEMBRANE ENVIRONMENT AND TETRAMERIC ASSEMBLY. **Benoit Roux**, Kevin Song, Young Hoon Koh, Eduardo Perozo, Tobin R. Sosnick

2284-SYMP 2:30 PM
CAPTURING SEQUENTIAL STEPS OF DYNAMIN-MEDIATED FISSION BY CRYO-EM. **Jenny E. Hinshaw**, Leopold Kong, Kem A. Sochacki, Huaibin Wang, Bertram J. Canagarajah, Andrew D. Kehr, William J. Rice, Marie-Paule Strub, Justin W. Taraska

Symposium
Molecular and Transcriptional Regulation of Cardiac E-C Coupling

1:00 PM - 3:00 PM, BALLROOM II

Chair
Shi-Qiang Wang, Peking University, China

2285-SYMP 1:00 PM
ACUTE LOSS OF CMYBP-C INDUCES AUTO-OSCILLATORY CONTRACTIONS IN PERMEABILIZED CARDIOMYOCYTES: IMPLICATIONS FOR REVERSE E-C COUPLING? **Samantha P. Harris**

2286-SYMP 1:30 PM
CBIN1: FROM T-TUBULE FOLDS TO DYAD ORGANIZATION, TO MICROPARTICLES AND CLINICAL USE. **Robin Shaw**

2287-Symp 2:00 PM
REGULATION OF THE RYR2 CALCIUM RELEASE CHANNEL BY SPEG. **Xander H.T. Wehrens**

2288-Symp 2:30 PM
CONJUNCT UPREGULATION OF JUNCTOPHILIN-2 AND CAVEOLIN-3 TRANSCRIPTION ENHANCED EXCITATION-CONTRACTION COUPLING EFFICIENCY IN HIBERNATING GROUND SQUIRRELS. Rong-Chang Li, Lei Yang, Yi-Chen Li, Bin Xiang, Li-Peng Wang, Xiao-Ting Wang, Jing-Hui Liang, **Shi-Qiang Wang**

Symposium
New and Notable

1:00 PM - 3:00 PM, Ballroom III

Co-Chairs
Susan Marqusee, University of California, Berkeley
Andrej Sali, University of California, San Francisco

NO ABSTRACT 1:00 PM
ADDING DIMENSIONS TO QUANTITATIVE INTRAVITAL IMAGING. **Scott Fraser**

NO ABSTRACT 1:30 PM
CRYO-EM STRUCTURE OF MICROBIAL NANOWIRES REVEALS STACKED HEMES THAT TRANSPORT ELECTRONS OVER MICRONS. **Edward Egelman**

NO ABSTRACTS 2:00 PM
MOLECULAR MODELS OF BACTERIAL CELL ENVELOPES COME OF AGE: BOTH MEMBRANES AND THE CELL WALL ARE SIMULATED TO REVEAL NEW INSIGHTS. **Syma Khalid**

NO ABSTRACT 2:30 PM
MICROED: CONCEPTION, PRACTICE AND FUTURE OPPORTUNITIES. **Tamir Gonen**

Platform
Protein Dynamics and Allostery II

1:00 PM - 3:00 PM, Ballroom IV

Co-Chairs
Christos Kougentakis, Johns Hopkins University
Liskin Swint-Kruse, University of Kansas Medical Center

2289-Plat 1:00 PM
PH-DRIVEN CONFORMATIONAL REORGANIZATION OF PROTEINS: NMR SPECTROSCOPY STUDY WITH BURIED LYS RESIDUES. **Christos M. Kougentakis**, Ananya Majumdar, Jamie L. Schlessman, Bertrand Garcia-Moreno

2290-Plat 1:15 PM TRAVEL AWARDEE
RHODOPSIN HYDRATION DYNAMICS STUDIED BY SOLID-STATE DEUTERIUM NMR SPECTROSCOPY. **Nipuna Weerasinghe**, Suchitranga M.D.C. Perera, Trivikram R. Molugu, Andres M. Salinas, Michael F. Brown

2291-Plat 1:30 PM
USING HISTONE H1 DERIVED PEPTIDES TO INVESTIGATE BINDING AFFINITY AND INTER-DOMAIN DYNAMICS IN HUMAN PIN1. Dinusha Jinasena, Jerrano Bowleg, Robert Simmons, Yue Zhang, Steven R. Gwaltney, **Nicholas C. Fitzkee**

2292-Plat 1:45 PM
THERMODYNAMIC COUPLING - FREE ENERGY CALCULATIONS OF CORRELATED AMINO ACID MUTATIONS. **Martin Werner**, Bert L. de Groot

2293-Plat 2:00 PM
TOWARDS COMPREHENSIVE CONTROL AND DESIGN OF TARGETED SIGNALLING IN ALLOSTERIC REGULATION OF PROTEIN ACTIVITY. Enrico Guarnera, Wei-Ven Tee, Zhen Wah Tan, **Igor N. Berezovsky**

2294-Plat 2:15 PM
INTEGRATION OF AN ELECTROSTATIC NETWORK AND DISORDER-TO-ORDER TRANSITIONS IN PROTEIN ALLOSTERY. **Riya Samanta**, Jingheng Wang, Dorothy Beckett, Silvina Matysiak

2295-Plat 2:30 PM
GRAPH SPECTRAL PROPERTIES OF THE SIDECHAIN NETWORKS OF PROTEIN STRUCTURES: IMPLICATIONS TO ALLOSTERY AND STRUCTURE COMPARISON. **Saraswathi Vishveshwara**, Anasuya Dighe, Vasundhara Gadiyaram

2296-Plat 2:45 PM
ALLOSTERY IS HIGHLY TUNABLE BY AMINO ACID SUBSTITUTIONS AT LONG-RANGE RHEOSTAT POSITIONS. **Liskin Swint-Kruse**, Aron W. Fenton

Platform
Engineering and Detecting Cellular (dys) Faction

1:00 PM - 3:00 PM, Room 307/308

Co-Chairs
Paolo Arosio, ETH Zurich, Switzerland
Abhigyan Sengupta, University of California, Merced

2297-Plat 1:00 PM
HYDROGEL ENGINEERING WITH WIDEFIELD PATTERNED ILLUMINATION. **Aurelien Pasturel**, Pierre-Olivier Strale, Vincent Studer

2298-Plat 1:15 PM TRAVEL AWARDEE
UNDERSTANDING THE BIOPHYSICS OF PROTEIN-SURFACE INTERACTIONS. **Gabriel Ortega**, Martin Kurnik, Philippe Dauphin Ducharme, Hui Li, Netzahualcoyotl Arroyo-Curras, Bishal Gautam, Kevin Plaxco

2299-Plat 1:30 PM
TIE UP CYTOSKELETON TO INHIBIT OVARIAN CANCER METASTASIS. **Ye Zhang**

2300-Plat 1:45 PM TRAVEL AWARDEE
IMPROVEMENT OF MATURATION STATE OF HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED 3D CARDIAC MICROTISSUES BY DEFINED CHEMICAL FACTORS. **Chen Yu Huang**, Rebeca Joca, Chin Siang Ong, Ijala Wilson, Roald Teuben, Gordon F. Tomaselli, Daniel H. Reich

2301-Plat 2:00 PM
PROTEIN DETECTION IN BLOOD WITH SINGLE-MOLECULE IMAGING. **Shih-Chin Wang**, Chih-Ping Mao, Yu-Pin Su, TC Wu, Chien-Fu Hung, Jie Xiao

2302-Plat 2:15 PM
RECOMBINANT PROTEIN BASED CA^{+2}ION SENSOR DESIGNING; AN *IN-VITRO*TEST OF FOLDING COUPLED TO BINDING HYPOTHESIS. **Abhigyan Sengupta**, Mourad Sadqi, Victor Muñoz

2303-Plat 2:30 PM
PH SENSITIVE PEPTIDE FUNCTIONALIZED HIGH STABILITY POLYMERIC NANOPARTICLES FOR MITOCHONDRIA TARGETED CANCER DRUG DELIVERY. **Palanikumar Loganathan**, Mona Kalmouni, Sumaya Al Hosani, Mazin M. Magzoub

2304-Plat 2:45 PM
PROTEIN PHASE TRANSITION: FROM BIOLOGY TOWARDS NEW PROTEIN MATERIALS. Miriam Linsenmeier, Andreas Küffner, Lenka Faltova, Maria Hondele, Karsten Weis, **Paolo Arosio**

Platform
Cardiac Muscle Mechanics, Structure, and Regulation II

1:00 PM - 3:00 PM, ROOM 309/310

Co-Chairs
Matthew Caporizzo, University of Pennsylvania
Osha Roopnarine, University of Minnesota Medical School

2305-PLAT 1:00 PM
STRETCH-INDUCED ACTIVATION OF THE MYOSIN MOTORS ON THE THICK FILAMENT IN RAT CARDIAC TRABECULAE. So-Jin Park-Holohan, Elisabetta Brunello, Thomas Kampourakis, Martin Rees, Malcolm Irving, **Luca Fusi**

2306-PLAT 1:15 PM
CARDIOMYOPATHY MUTATION AT END-END OVERLAP OF ALPHA - TROPOMYOSIN INFLUENCES COOPERATIVE ACTIVATION AND CALCIUM SENSITIVITY. **SaiLavanyaa Sundar**, Michael J. Rynkiewicz, William Lehman, Jeffrey R. Moore

2307-PLAT 1:30 PM
ENHANCED CROSSBRIDGE BINDING WITH 2-DEOXY-ATP RESULTS FROM INCREASED ELECTROSTATIC INTERACTIONS BETWEEN MYOSIN AND ACTIN IN CARDIAC MUSCLE. **Chen-Ching Yuan**, Joseph D. Powers, Kimberly J. McCabe, Jason D. Murray, Morhan Saffie, Castillo Romi, Zuzek Carla, Weikang Ma, Andrew D. McCulloch, Thomas C. Irving, Michael Regnier

2308-PLAT 1:45 PM
BASIC AMINO ACIDS WITHIN THE C-TERMINAL 16 RESIDUES OF TROPONIN T MODULATE CALCIUM SENSITIVITY AND THE DISTRIBUTION OF ACTIN STATES. **Dylan Johnson**, Li Zhu, Joseph M. Chalovich

2309-PLAT 2:00 PM
ON THE FUNCTIONAL ASSESSMENT OF HYPERTROPHIC CARDIOMYOPATHY-CAUSING MUTATIONS IN HUMAN B-CARDIAC MYOSIN AND THE ROLE OF MYOSIN BINDING PROTEIN-C. **Darshan V. Trivedi**, Saswata S. Sarkar, Arjun S. Adhikari, Makenna M. Morck, Kristina B. Kooiker, Daniel Bernstein, Kathleen M. Ruppel, James A. Spudich

2310-PLAT 2:15 PM
DEVELOPMENT OF AN IMAGING PIPELINE TO MODEL AND PREDICT THE INTEGRATED LOCALIZATION OF ORGANELLES IN HIPSC-DERIVED CARDIOMYOCYTES. **Melissa Hendershott**, Susanne Rafelski

2311-PLAT 2:30 PM
DEFINING A UNIFYING MECHANISM FOR SELECT CARDIOMYOPATHY-LINKED VARIANTS OF DESMOPLAKIN. **Heather R. Manring**, Ronald Ng, Taylor Albertelli, Trevor Dew, Tyler L. Stevens, Ahmet Kilic, Paul M. L. Janssen, Nathan T. Wright, Stuart Campbell, Maegen A. Ackermann

2312-PLAT 2:45 PM
DETERMINING THE IN VIVO ROLE OF MICROTUBULE DETYROSINATION IN HEALTHY AND DISEASED MYOCARDIUM. **Christina Yingxian Chen**, Matthew A. Caporizzo, Kenneth Bedi, Michael P. Morley, Kenneth B. Margulies, Benjamin L. Prosser

Platform
Protein-Nucleic Acid Interactions/Chromatin and the Nucleoid II

1:00 PM - 3:00 PM, ROOM 314/315

Co-Chairs
Roberto Galletto, Washington University School of Medicine
Kelsey Bettridge, Johns Hopkins School of Medicine

2313-PLAT 1:00 PM
SHELTERIN COMPONENTS MODULATE THE PHASE-SEPARATION PROPENSITY OF TELOMERES. Andrea Soranno, Jeremias Incicco, Paolo De Bona, Eric Tomko, Eric Galburt, **Roberto Galletto**

2314-PLAT 1:15 PM
RNA BINDING MODE REGULATES PKR ACTIVATION. Stephen J. Hesler, Bushra Husain, Matthew Angeliadis, **James L. Cole**

2315-PLAT 1:30 PM
A SINGLE-MOLECULE INTERACTION SPECTRUM FOR NON-COVALENT INTERACTION INSIDE MEMBRANE PROTEIN CHANNEL. **Meng-Yin Li**, Yi-Lun Ying, Wei Tong, Yong-Jing Wan, Yi-Tao Long

2316-PLAT 1:45 PM
DISORDERED RNA CHAPERONES ENHANCE NUCLEIC ACID FOLDING VIA LOCAL CHARGE SCREENING. **Erik D. Holmstrom**, Zhaowei Liu, Daniel Nettels, Robert B. Best, Benjamin Schuler

2317-PLAT 2:00 PM
EUKARYOTIC TRANSCRIPTION FACTORS CAN TRACK AND CONTROL THEIR TARGET GENES USING DNA ANTENNAS. **Victor Munoz**

2318-PLAT 2:15 PM
MULTIPLE INTERACTION MODES OF THE NUCLEOSOMAL HISTONE H3 N-TERMINAL TAIL REVEALED BY HIGH PRECISION SINGLE-MOLECULE FRET. **Kathrin Lehmann**, Suren Felekyan, Ralf Kühnemuth, Mykola Dimura, Katalin Tóth, Claus A. M. Seidel

2319-PLAT 2:30 PM
YEAST PIONEERING TRANSCRIPTION FACTORS RELY ON SLOWED DISSOCIATION KINETICS TO EFFICIENTLY TARGET NUCLEOSOMAL SITES. **Benjamin T. Donovan**, Hengye Chen, Caroline Jipa, Chao Yan, Lu Bai, Michael G. Poirier

2320-PLAT 2:45 PM
ROLE OF RNA-BINDING ACTIVITY OF HU IN CHROMOSOMAL ORGANIZATION. **Kelsey E. Bettridge**, Xiaoli Weng, Subhash Verma, Sankar Adhya, Jie Xiao

Platform
Member Organized Session: Integrative Structural Modeling Using Information from Spectroscopic Labels

1:00 PM - 3:00 PM, ROOM 316/317

Co-Chairs
Hugo Sanabria, Clemson University
Claus Seidel, Heinrich Heine University, Germany

2321-PLAT 1:00 PM
SINGLE MOLECULE FRET - A MULTI-ENVIRONMENT RULER FOR DETERMINING STRUCTURE AND DYNAMICS. **Bjorn Hellenkamp**

2322-PLAT 1:15 PM
PROBING STRUCTURAL STATES IN FAST EXCHANGING PROTEINS BY FRET AND COMPUTATIONAL METHODS. **Hugo Sanabria**

2323-Plat 1:30 PM
INTEGRATIVE DYNAMIC STRUCTURAL BIOLOGY WITH FLUORESCENCE SPECTROSCOPY. **Claus A.M. Seidel**, Mykola Dimura, Hugo Sanabria, Katherina Hemmen, Thomas-Otavio Peulen, Dmitro Rodnin, Holger Gohlke

2324-Plat 1:45 PM
PROTEINS' DYNAMICS, HYDRATION AND CONFORMATIONAL CHANGES STUDIED BY EPR. **Enrica Bordignon**

2325-Plat 2:00 PM
AN INTEGRATED SPIN-LABELING/COMPUTATIONAL-MODELING APPROACH FOR MAPPING GLOBAL STRUCTURES OF NUCLEIC ACIDS. **Peter Z. Qin**

2326-Plat 2:15 PM
DYNAMIC ENZYME: AN NMR STUDY OF USP7. **Irina Bezsonova**, Gabrielle Valles, Dmitry M. Korzhnev

2327-Plat 2:30 PM
SPECIFIC 13CH3 LABELING AND NMR REVEAL THE ROLE OF STRUCTURAL DYNAMICS TO ENZYMATIC FUNCTION. **Mioara Larion**, Alexandar Hansen, Lei Bruschweiler-Li, Vitali Tugarinov, Rafael Brüschweiler, Brian Miller

2328-Plat 2:45 PM
DECOMPOSING NMR ENSEMBLE WITH THE ASSISTANCE OF SINGLE MOLECULE FRET. **Chun Tang**

WEDNESDAY POSTER SESSIONS

10:30 AM–12:30 PM, HALL C

Below is the list of poster presentations for Wednesday of abstracts submitted by October 1. The list of late abstracts scheduled for Wednesday is available in the Program Addendum, and those posters can be viewed on boards beginning with LB.

Posters should be mounted beginning 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 - B35	Protein Structure and Conformation IV
B36 - B67	Protein-Small Molecule Interactions
B68 - B102	Protein Dynamics and Allostery II
B103 - B133	Intrinsically Disordered Proteins (IDP) and Aggregates III
B134 - B142	Membrane Protein Folding
B143 - B156	DNA Structure and Dynamics II
B157 - B181	Protein-Nucleic Acid Interactions II
B182 - B207	Membrane Physical Chemistry II
B208 - B229	Membrane Active Peptides and Toxins II
B230 - B251	Protein-Lipid Interactions: Structures
B252 - B266	Excitation-Contraction Coupling II
B267 - B294	Exocytosis and Endocytosis II
B295 - B315	Membrane Receptors and Signal Transduction II
B316 - B343	TRP Channels
B344 - B368	Voltage-gated K Channels II
B369 - B376	Bacterial Mechanics, Cytoskeleton, and Motility
B377 - B403	Cell Mechanics, Mechanosensing, and Motility III
B404 - B410	Actin Structure, Dynamics, and Associated Proteins
B411 - B438	Membrane Pumps, Transporters, and Exchangers II
B439 - B442	Computational Neuroscience
B443 - B467	Computational Methods and Bioinformatics II
B468 - B494	Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence
B495 - B512	Molecular Dynamics III
B513 - B535	Electron Microscopy
B536 - B539	Biosurfaces
B540 - B554	Bioengineering

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 - B35)

2329-Pos Board B1
NEURONAL CALCIUM SENSOR DREAM INTERACTIONS WITH INSULINOTROPIC AGENT REPAGLINIDE. **Maria D. Santiago**, Maria Daniel Santiago, Jaroslava Miksovska

2330-Pos Board B2
THE EFFECTS OF COMMON DISEASE-CAUSING VARIATIONS ON THE STRUCTURE AND STABILITY OF TREM2: AN *IN SILICO* EXAMINATION. **Hunter B. Dean**, Erik D. Roberson, Yuhua Song

2331-Pos Board B3
MUTATION OF RESIDUES IN CD LOOP AND DISTAL POCKET IMPACT PROTEIN STABILITY OF HUMAN NEUROGLOBIN. **Ruipeng Lei**, David Butcher, Sophie Bernad, Valerie Derrien, Jaroslava Miksovska

2332-Pos Board B4
UNDERSTANDING PROTEIN HD EXCHANGE DATA USING MOLECULAR DYNAMICS SIMULATIONS. **Dipak B. Sanap**, V. V. Hemanth Giri Rao, Juan R. Perilla, Shachi Gosavi

2333-Pos Board B5
THE MICROPHTHALMIA-ASSOCIATED TRANSCRIPTION FACTOR ASSOCIATES WITH MULTIPLE DOMAINS OF CBP/P300, INCLUDING THE E1A BINDING FACE OF TAZ2. Kathleen Vergunst, Alexandra Brown, Makenzie Branch, **David N. Langelaan**

2334-Pos Board B6
EVOLUTION OF STABILITY/FLEXIBILITY RELATIONSHIPS IN BETA-LACTAMASE. **John Patterson**, Matthew C. B. Tsilimigras, Dennis R. Livesay, Donald J. Jacobs

2335-Pos Board B7
DYNAMICS OF THE PROTEIN INTERFACES OF THE EBOLA VIRUS VP40 STRUCTURAL MATRIX FILAMENT. **Elumalai Pavadai**, Nisha Bhattarai, Prem P. Chapagain, Bernard S. Gerstman

2336-Pos Board B8 TRAVEL AWARDEE
LINKING THE SEQUENCE, ANTI-TUMOR FUNCTION, AND SHARED STRUCTURAL FEATURES OF CLASS IB HYDROPHOBINS. **Calem Kenward**, David N. Langelaan

2337-Pos Board B9
MEASURING IONIC STRENGTH CHANGES USING FLUORESCENCE LIFETIME AND TIME-RESOLVED ANISOTROPY. Robert Miller, Cody Aplin, Anh Cong, Christin Libal, Rowan Simonet, Emma Kauffman, Margaret Gurumani, Ryan Leighton, Alexander Naughton, Jessica Marshik, Arnold J. Boersma, Ahmed A. Heikal, **Erin D. Sheets**

2338-Pos Board B10
ADVANCES IN THE STRUCTURAL AND BIOCHEMICAL DETERMINATION OF SEVERAL DYNAMIN-LIKE GTPASES. **Andrew D. Kehr**, Shuxia Meng, Matthew F. Martin, David Chan, Jenny E. Hinshaw

2339-Pos Board B11
EVOLUTION OF TRANSIENT HELICITY AND DISORDER IN LATE EMBRYOGENESIS ABUNDANT PROTEIN COR15A. **Oluwakemi Sowemimo**, Wade Borcherds, Patrick Knox-Brown, Tobias Rindfleisch, Anja Thalhammer, Gary Daughdrill

2340-Pos Board B12 TRAVEL AWARDEE
MOLECULAR DYNAMICS STUDIES OF DYNAMIN OLIGOMERS IN SOLUTION. **Dalia Hassan**, Frank X. Vazquez

2341-Pos Board B13
THE DEVELOPMENT OF INTRINSICALLY FLUORESCENT UNNATURAL AMINO ACIDS FOR IN VIVO INCORPORATION INTO PROTEINS. **Chloe M. Jones**, Itthipol Sungwienwong, E. James Petersson

2342-Pos Board B14
APPLYING HYDROGEN EXCHANGE MASS SPECTROMETRY COUPLED WITH NUMERICAL SIMULATIONS TO INVESTIGATE TOXIC MISFOLDING OF ß2-MICROGLOBULIN. **Angelika Hirsch**, John Strahan, Amy Wagaman, Sheila Jaswal

2343-Pos Board B15
STUDYING MUTATIONS IN *GEOBACILLUS KAUSTOPHILUS* TILS TO PROBE CHANGES IN STRUCTURE AND MOBILITY USING MOLECULAR DYNAMIC (MD) SIMULATIONS. **Ferdiemar C. Guinto**, Rebecca W. Alexander

2344-Pos Board B16 TRAVEL AWARDEE
DIFFERENTIATING STRUCTURAL CHANGES OF GLYCOPROTEINS IN SOLUTION USING SMALL ANGLE SCATTERING ANALYSIS. **Taylor N. Segally**, Luis A. Palacio, Jason Kim, Christopher B. Stanley, Soenke Seifert, Horia I. Petrache

2345-Pos Board B17
STRUCTURAL INVESTIGATIONS INTO THE SERUM ENDONUCLEASE DNASE1L3, AS IT RELATES TO SYSTEMIC LUPUS ERYTHEMATOUS. **Jon J. McCord**, Faraz Harsini, Peter Keyel, Roger B. Sutton

2346-Pos Board B18
INTERACTION OF THE CURLI ACCESSORY PROTEINS CSGE AND CSGF WITH THE HUMAN ISLET AMYLOID POLYPEPTIDE. Osmar Meza-Barajas, Isamar Aranda, Ashwag Binmahfooz, **Sajith A. Jayasinghe**

2347-Pos Board B19
COMPARATIVE INVESTIGATION OF NATIVE-STATE DYNAMICS IN TRYPSIN FUNCTIONAL VARIANTS BY HYDROGEN EXCHANGE MASS SPECTROMETRY. **Kimberly Burnett**, Maxum Paul, Katie Ventre, Abel Samanez, Sheila Jaswal

2348-Pos Board B20 TRAVEL AWARDEE
STRUCTURE AND FUNCTION OF HUMAN VITRONECTIN, A KEY MEDIATOR OF HOST-PATHOGEN INTERACTIONS. **Kyungsoo Shin**, L. Miya Fujimoto, Luz M. Meneghini, Chandan Singh, Yong Yao, Ye Tian, Francesca M. Marassi

2349-Pos Board B21
SINGLE MOLECULE IMAGING OF DNA STRUCTURE: CLIC MICROSCOPY POWERS MECHANISTIC INSIGHTS FOR DRUG DEVELOPMENT. **Francis Stabile**, Cynthia Shaheen, Shane Scott, Daniel Berard, David Levens, Craig Benham, Sabrina Leslie

2350-Pos Board B22
TEMPERATURE DEPENDENCE OF THE PROTEIN-CHROMOPHORE HYDROGEN BOND DYNAMICS IN THE FAR-RED FLUORESCENT PROTEINS MNEPTUNE1, MNEPTUNE2.5 AND MCARDINAL2. **Chandra Dhakal**, Prem Chapagain, Xuewen Wang

2351-Pos Board B23
INVESTIGATING RECOMBINANT ACINIFORM SILK NANOPARTICLES AS POTENTIAL DRUG CARRIERS AND AS INTERMEDIATES IN SILK FIBRILLOGENESIS. **Stefan A. Warkentin**, Jan K. Rainey

2352-Pos Board B24
77SE-NMR PROBES THE PROTEIN ENVIRONMENT OF SELENOMETHIONINE. **Shiping Xu**, Maggie Chen, Mike Boeri, Sharon Rozovsky

2353-Pos Board B25
INVESTIGATE THE EXISTENCE OF DOMAIN SWAPPED DIMER IN ILPB FAMILY. **Nona Ehyaei**, Zahra Assar-Nossoni, James H. Geiger, Babak Borhan

2354-Pos Board B26
EXPLORING THE EFFECT OF PREORGANIZATION ON BINDING AFFINITY IN CYCLIZED PEPTIDOMIMETICS. **Allison Terry**, Vincent Voelz

2355-Pos Board B27
EXPRESSION AND PURIFICATION OF COMPLEMENT PROTEINS FOR PROTEIN INTERACTION STUDIES. **Matthew Gehm**, Veronica Singh, Julia R. Koeppe

2356-Pos Board B28
PH-DEPENDENT PROPERTIES OF IONIZABLE RESIDUES IN THE HYDROPHOBIC INTERIOR OF A PROTEIN. **Ankita Sarkar**, Adrian E. Roitberg

2357-Pos Board B29
THIOAMIDE EFFECTS ON PROTEIN STRUCTURE. **Kristen E. Fiore**, D. Miklos Szantai-Kis, E. James Petersson

2358-Pos Board B30
EXPLORING THE SPACE OF ANTIMICROBIAL PEPTIDES GUIDED BY A DEEP LEARNING MODEL. **Manpriya Dua**, Amarda Shehu

2359-Pos Board B31
SIMULATING THE FOLDING STATES OF LATTICE PROTEINS WITHIN AN OSCILLATORY ENVIRONMENT. **Austin H. Cheng**, Cory J. Kim, Amy Y. Wang, Xuanye Zhu, Qizhang Jia, Kateri H. DuBay

2360-Pos Board B32
STUDYING COMPLEX BIOMOLECULAR DYNAMICS BY SINGLE-MOLECULE THREE-COLOR FRET. **Anders Barth**, Claus A. M. Seidel, Don C. Lamb

2361-Pos Board B33
STRUCTURAL STUDIES OF THE F_C REGION OF MURINE IMMUNOGLOBULIN G ANTIBODIES USING SINGLE MOLECULE FRET. **Cathrine A. Southern**, Jenna Henning, Kirsten Kochan

2362-Pos Board B34
BINDING FREE ENERGY ANALYSIS OF PROGRAMMED CELL DEATH PROTEIN PD1 TO ITS LIGAND PD-L1. Peter C. Pan, **Alireza Tafazzol**, Xianwei Zhang, Yong Duan

2363-Pos Board B35
DETERMINING NATIVE-STATE DYNAMICS OF MITONEET USING HYDROGEN EXCHANGE MASS SPECTROMETRY. **Namita Khajanchi**, Rebeca Mena, Mary Konkle, Sheila Jaswal

Protein-Small Molecule Interactions (Boards B36 - B67)

2364-Pos Board B36
THE EFFECTS OF LIGAND STRUCTURE ON PROTEIN-MULTIMODAL LIGAND INTERACTIONS. **Camille Bilodeau**, Edmond Y. Lau, Steve Cramer, Shekhar Garde

2365-Pos Board B37
PEPTIDE ASSISTED SUPRAMOLECULAR POLYMERIZATION OF THE ANIONIC PORPHYRIN MESO-TETRA(4-SULFONATOPHENYL)PORPHINE. **Eric Kohn**, David Shirly, Christopher H. Fry, Gregory A. Caputo

2366-Pos Board B38
OPTIMIZATION OF THE SITE-IDENTIFICATION BY LIGAND COMPETITIVE SATURATION (SILCS) AS AN ACCURATE AND RELIABLE TECHNIQUE IN LEAD OPTIMIZATION. **Vincent D. Ustach**, Sirish Kauhik Lakkaraju, Sunhwan Jo, Wenbo Yu, Fang-Yu Lin, Wenjuan Jiang, Alexander D. MacKerell

2367-Pos Board B39
THE WEAK ENZYMATIC ACTIVITY OF TRUNCATED LECITHIN RETINOL ACYLTRANSFERASE (LRAT) MUTANTS CANNOT BE EXPLAINED BY THEIR AFFINITY FOR ALL-TRANS RETINOL. **Sarah Roy**, Ana Coutinho, Line Cantin, Marie-Eve Gauthier, Manuel Prieto, Stephane M. Gagne, Christian Salesse

2368-Pos Board B40
INTEGRATION OF TEXT MINING AND BINARY QSAR MODELS FOR NOVEL ANTI-HYPERTENSIVE ANTAGONIST SCAFFOLDS. **Serdar Durdagi**, Ismail Erol, Berna Dogan, Taha Berkay Sen

2369-Pos Board B41
THE TWO FACES OF BITTER SUGARS: INSIGHTS FROM MULTISCALE SIMULATIONS. Fabrizio Fierro, Alejandro Giorgetti, Paolo Carloni, Wolfgang Meyerhof, **Mercedes Alfonso Prieto**

2370-Pos Board B42
STRUCTURAL BASES FOR CHEMICAL AND MECHANICAL GATING IN THE PIEZO1 CHANNEL. Wesley M. Botello-Smith, Han Zhang, Alper D. Ozkan, Wenjuan Jiang, Christine N. Pham, Yun Luo, **Jerome J. Lacroix**

2371-Pos Board B43
MOLECULAR INSIGHT INTO THE AGONIST PROPERTIES OF THE MULTIMODAL ANTIDEPRESSANT VORTIOXETINE IN HUMAN 5-HT3A RECEPTORS. **Lucy Kate Ladefoged**, Lachlan Munro, Anders S. Kristensen, Birgit Schiøtt

2372-Pos Board B44
ENERGETICS OF NUCLEOTIDES TRANSLOCATION THROUGH HIV-1 CA HEXAMER. **Chaoyi Xu**, Robert A. Dick, Marc C. Johnson, Volker M. Vogt, Juan R. Perilla

2373-Pos Board B45
STRUCTURE DYNAMICS GUIDES THE ENHANCEMENT OF LIGAND AFFINITY FOR MDMX. **Zhengding Su**, Yongqi Huang, Xiyao Cheng

2374-Pos Board B46
CHARACTERIZING THE DIRECT INFLUENCE OF A SMALL MOLECULE ON A RAS-RELATED PROTEIN INTERACTION. Djamali Muhoza, Alix Montoya-Beltrand, Emilio Duverna, **Paul D. Adams**

2375-Pos Board B47
INHIBITION OF ZINC-MEDIATED AMYLOID BETA AGGREGATION AND CYTOTOXICITY BY ALPHA HELIX MIMETICS. **Maria C. Vogel**, Sunil Kumar, Debabrata Maity, Mazin M. Magzoub, Andrew D. Hamilton

2376-Pos Board B48
MODIFYING ZINC FINGERS: TARGETING THE INFLAMMATORY ZINC FINGER PROTEIN, TRISTETRAPROLIN, WITH EXOGENOUS GOLD COMPLEXES AND DETERMINING A ROLE FOR H_2S IN MODIFYING TRISETRAPOLIN ENDOGENOUSLY. **Kiwon Ok**, Wenjing Li, Geoffrey D. Shimberg, Sharon Batelu, Mike Lange, Ivana Ivanovic-Burmazovic, Dr. Timothy Stemmler, Maureen A. Kane, Milos R. Filipovic, Sarah L. Michel

2377-Pos Board B49
BREADTH OF HUMAN MONOCLONAL ANTIBODIES ISOLATED FROM RTS,S/AS01 VACCINEES BINDING TO *PLASMODIUM FALCIPARUM* CIRCUMSPOROZOITE PROTEIN ANTIGENS. **S. Moses Dennison**, Milite Abraha, Richard H.C. Huntwork, Kan Li, Dustin L. Mauldin, S. Munir Alam, Georgia D. Tomaras

2378-Pos Board B50
SYSTEMATIC BIOPHYSICAL INSIGHTS INTO THE INTERACTION OF ANTI MERS-COV DRUG RIBAVIRIN WITH MAJOR TRANSPORT PROTEIN IN HUMAN SERUM: IN-VITRO STUDIES AND IMPLICATIONS IN DIABETES AND UREMIA. **Fahad Almutairi**, Mohammad Rehan Ajmal

2379-Pos Board B51
PERTURBING LIPOPOLYSACCHARIDE BIOSYNTHESIS THROUGH INHIBITION OF HEPTOSYLTRANSFERASE I. **Jozafina Milicaj**

2380-Pos Board B52 TRAVEL AWARDEE
CONTROL OF PROTEIN SELF-ASSEMBLY WITH WATER-SOLUBLE PORPHYRINS. **Tyler J. Brittain**, Samuel D. Fontaine, Coleman Swaim, Daniel R. Marzolf, Oleksandr Kokhan

2381-Pos Board B53
BIOPHYSICAL CHARACTERIZATION OF BINDING INTERACTIONS OF PPAR WITH THC. **Iulia Bodnariuc**, Margaret Renaud-Young, Justin L. MacCallum

2382-Pos Board B54
IDENTIFICATION OF NOVEL CYCLIN A2 BINDING SITE AND NANOMOLAR INHIBITORS. **Stephanie Kim**, Michele Alves, Patrick Gygli, Jose Otero, Steffen Lindert

2383-Pos Board B55
EXPLORING THE TOXICITY OF SMALL MOLECULE METABOLITE 3-HYDROXY-3-METHYLGLUTARYL-COENZYME A (HMG-COA) IN THE PATHOGENIC BACTERIUM ENTEROCOCCUS FAECALIS. **Gillian M. Barth**

2384-Pos Board B56
MAPPING THE BINDING TRAJECTORY OF A SUICIDE INHIBITOR IN HUMAN INDOLEAMINE 2,3 DIOXYGENASE 1. **Khoa N. Pham**, Syun-Ru Yeh

2385-Pos Board B57
STRUCTURE-GUIDED DEVELOPMENT OF DUAL INHIBITORS OF EGFR AND JNK TO TREAT GBM AND NSCLC. **Haikui Yang**, Ying Jiang, Ruohong Yan, Tingting Zhang, Jiajie Zhang

2386-Pos Board B58 TRAVEL AWARDEE
TIGHT BINDING OF NATURAL POLYPHENOLS TO THE INTRINSICALLY DISORDERED MAMMALIAN HIGH MOBILITY GROUP PROTEIN AT-HOOK 2. **Linjia Su**, Jeremy Chambers, Fenfei Leng

2387-Pos Board B59
IMPROVED MODELING OF HALOGENATED LIGAND-PROTEIN INTERACTIONS USING THE DRUDE POLARIZABLE FORCE FIELD AND ADDITIVE CHARMM36/CHARMM GENERAL FORCE FIELD (CGENFF). **Fang-Yu Lin**

2388-Pos Board B60
MOLECULAR RECOGNITION OF NAPHTHOQUINONE-CONTAINING COMPOUNDS AGAINST HUMAN DNA TOPOISOMERASE II ATPASE DOMAIN: A MOLECULAR MODELING STUDY. **Panupong Mahalapbutr**

2389-Pos Board B61
DEVELOPMENT OF SMALL MOLECULE INHIBITORS TARGETING CLOSTRIDIUM DIFFICILE BINARY TOXIN USING THE SITE-IDENTIFICATION BY LIGAND COMPETITIVE SATURATION (SILCS) METHOD. **Wenbo Yu**, Edvin Pozharskiy, Kristen Varney, David J. Weber, Alexander D. MacKerell

2390-Pos Board B62
DIFFUSION-INFLUENCED REVERSIBLE LIGAND BINDING TO TWO INEQUIVALENT SITES. **Irina V. Gopich**, Attila Szabo

2391-Pos Board B63
EDEMA FACTOR OF *BACILLUS ANTHRACIS* INTERACTING WITH ITS INHIBITORS. **Irène Pitard**, Catherine Simenel, Damien Monet, Christophe Thomas, Peggy Suzanne, Arnaud Blondel, Jacques Bellalou, Patrick Dallemagne, Inaki Guijarro, Daniel Ladant, Pierre Goossens, Therese E. Malliavin

2392-Pos Board B64
STUDY ON THE MECHANISM OF ANTI C-MET ACTIVITY OF BOC-PROTECTED AMINO GROUPS OF BITHIAZOLOPHANES BY USING SILCS. **Tatsuya Takimoto**, Ozge Yoluk, Sunhwan Jo, Alexander D. MacKerell, Jr., Hideaki Sasaki

2393-Pos Board B65 TRAVEL AWARDEE
UNVEILING THE ROLE OF SURFACTANTS ON AMYLOID-LIKE PROTEIN SELF-ASSEMBLING. **Gustavo Scanavachi**, Yanis Ricardo Espinosa, Juan Ruso, Rosangela Itri

2394-Pos Board B66
NUCLEAR MAGNETIC RESONANCE AT THE INTERFACE: IDENTIFYING PREFERRED BINDING REGIONS IN MULTIMODAL CATION EXCHANGE CHROMATOGRAPHY USING FUNCTIONALIZED NANOPARTICLES. **Ronak B. Gudhka**, Camille L. Bilodeau, Scott A. McCallum, Mark A. Mccoy, David J. Roush, Steven M. Cramer

2395-Pos Board B67
HOW DOES GLYCOSYLATION AFFECT DRUG BINDING ON INFLUENZA? THE ROLES OF ELECTROSTATICS AND STERICS EXAMINED THROUGH BROWNIAN DYNAMICS SIMULATIONS. **Christian Seitz**, Lorenzo Casalino, Gary Huber, Robert Konecny, Yu-Ming Huang, Rommie Amaro, J. Andrew McCammon

Protein Dynamics and Allostery II (Boards B68 - B102)

2396-Pos Board B68
MECHANISM OF HSP104 FUNCTION POTENTIATION STUDIED BY HYDROGEN-DEUTERIUM EXCHANGE DETECTED BY MASS SPECTROMETRY (HX-MS). **Xiang Ye**, Jiabei Lin, Leland C. Mayne, James Shorter, S. Walter Englander

2397-Pos Board B69
BINDING INTERFACE OF GAPDH TO THE AU RICH ELEMENTS FROM TNF-ALPHA MRNA REVEALED BY HYDROGEN DEUTERIUM EXCHANGE COUPLED WITH MASS SPECTROMETRY. **Daniel J. Deredge**, Michael White, Anh Tran, Patrick Wintrode, Elsa Garcin

2398-Pos Board B70
EFFECT OF PLASMIN CLEAVAGE ON THE DYNAMICS OF THE PROTEASE DOMAIN OF THE UROKINASE-TYPE PLASMINOGEN ACTIVATOR (UPA). **Constanza Torres-Paris**, Yueyi Chen, Elizabeth A. Komives

2399-Pos Board B71
KINETIC AND STRUCTURAL COMPARISON OF HINT ENZYMES: THE ROLE OF DISTANT DYNAMICS ON CATALYSIS. **Alex Strom**

2400-Pos Board B72 TRAVEL AWARDEE
CHARACTERIZING HP1-DRIVEN CHROMATIN COMPACTION USING NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY. **Bryce E. Ackermann**, Galia T. Debelouchina

2401-Pos Board B73
DYNAMICS MEDIATE SUBSTRATE RECOGNITION AND REMOTE COMMUNICATION IN A PEPTIDE-BOND FORMING NRPS CYCLIZATION DOMAIN. Subrata H. Mishra, **Aswani K. Kancherla**, Santrupti Nerli, Nikolaos Sgourakis, Daniel Dowling, Dominique P. Frueh

2402-Pos Board B74
MOLECULAR RESPONSES OF MUTAGENESIS IN NONRIBOSOMAL PEPTIDE SYNTHETASE CYCLIZATION DOMAINS. **Kenneth Marincin**, Aswani Kancherla, Subrata H. Mishra, Daniel Dowling, Dominique P. Frueh

2403-Pos Board B75
AN ALLOSTERIC SIGNALING GOVERNS THE CRISPR-CAS9 FUNCTION. **Giulia Palermo**, Clarisse Gravina Ricci, Ivan Rivalta, Victor S. Batista, James A. McCammon

2404-Pos Board B76
POSITIVE AND NEGATIVE SUBSTRATE INTERFERENCE SUPPORTED BY COINCIDING ENZYME RESIDUES. **Magnus Wolf-Watz**, Per Rogne, Elisabet Sauer-Eriksson, Uwe Sauer, Christian Hedberg

2405-Pos Board B77
THE PLACEMENT OF VIBRATIONAL PROBE LABELED SUBSTRATES TO THE PHOSPHOPANTETHEINE ARM OF THE E.COLI ACYL CARRIER PROTEIN FOR SITE SPECIFIC VIBRATIONAL SPECTROSCOPY. **Joie Ling**, Eliana V. von Krusenstiern, Bashkim Kokona, Louise Charkoudian, Casey H. Londergan

2406-Pos Board B78
HIGH-SPEED ATOMIC FORCE MICROSCOPY SHOWS CONFORMATIONAL DYNAMICS OF CA^{2+}/CALMODULIN-DEPENDENT PROTEIN KINASE II. **Mikihiro Shibata**, Hideji Murakoshi

2407-Pos Board B79
PROCESSIVE CHITINASE IS BURNT-BRIDGE BROWNIAN MOTOR OPERATED BY FAST CATALYSIS AFTER PEELING RAIL FROM CRYSTALLINE CHITIN. Akihiko Nakamura, Kei-ichi Okazaki, Tadaomi Furuta, Minoru Sakurai, **Ryota Iino**

2408-Pos Board B80
OBSERVING HISTONE H2A.Z EXCHANGE AT THE SINGLE-MOLECULE LEVEL. **Matthew F. Poyton**, Ashlee Feng, Anand Ranjan, Qin Lei, Sheng Liu, Carl Wu, Taekjip Ha

2409-Pos Board B81
BASIS OF SPECIFICITY IN ETS-1 DNA BINDING DOMAIN TO VARIABLE DNA SEQUENCES. **Kenneth Huang**, Suela Xhani, Amanda V. Albrecht, Gregory M. K. Poon

2410-Pos Board B82
ANOMALOUS NON-GAUSSIAN VISCOELASTIC AND AGE-DEPENDENT DYNAMICS OF HISTONE-LIKE H-NS PROTEINS IN LIVE ESCHERICHIA COLI. Asmaa Sadoon, **Yong Wang**

2411-Pos Board B83
INVESTIGATION OF CONFORMATIONAL DYNAMICS INVOLVED IN GENOME EDITING EVENTS BY CRISPR-CPF1. **Chun Chan**, Xiaolin Cheng

2412-Pos Board B84 TRAVEL AWARDEE
DETERMINING THE INTERNAL ALLOSTERIC ARCHITECTURE OF DHFR WITH TOTAL SATURATION MUTAGENESIS. **James W. McCormick**, Samuel Thompson, Kimberly A. Reynolds

2413-Pos Board B85
UTILIZING EMPIRICAL DATA AND STRUCTURAL DYNAMICS PREDICTION TO OPTIMIZE RATIONAL DESIGN OF THERAPEUTIC PHOSPHOLAMBAN MUTATIONS TO TUNE SERCA FUNCTION. **Kim N. Ha**, Hannah M. Johnson, Ariana Schneiderhan, Daniel Weber, Joseph Roith, Gianluigi Veglia

2414-Pos Board B86
SUBSTRATE DRIVEN ALLOSTERY IN A MITOCHONDRIAL CYTOCHROME P450 ENZYME. **Amit Kumar**, D. Estrada Fernando

2415-Pos Board B87 TRAVEL AWARDEE
SALT BRIDGES IN UBIQUITIN DETERMINE THE PROTEIN CONFORMATIONAL FLEXIBILITY. **Shrabasti Bhattacharya**, Nidhi Acharya, Sri Rama Koti Ainavarapu

2416-Pos Board B88
A-CATENIN STRUCTURE AND NANOSCALE DYNAMICS IN SOLUTION AND IN COMPLEX WITH F-ACTIN. Iain Nicholl, David Callaway, **Zimei Bu**

2417-Pos Board B89
DEUTERATION AND INHIBITOR BINDING DEPENDENCE OF PROTEIN COLLECTIVE VIBRATIONS. **Yanting Deng**, Jeffrey Mckinney, Andrea Markelz

2418-Pos Board B90
DYNAMIC AND STRUCTURAL ALLOSTERIC EVENTS BETWEEN THE D/E LINKER AND N-DOMAIN OF CARDIAC TROPONIN C REVEAL A NOVEL MECHANISM FOR CARDIAC MUSCLE REGULATION. **Mayra A. Marques**, Guilherme A. P. de Oliveira, Adolfo H. Moraes, Maicom Landim-Vieira, Karissa D. Jones, Elio A. Cino, P. Bryant Chase, Jerson L. Silva, José R. Pinto

2419-Pos Board B91
DYNAMICAL COMPARISON BETWEEN MYOGLOBIN AND HEMOGLOBIN REVEALS THE EFFECT OF THE QUATERNARY STRUCTURE OF HEMOGLOBIN ON ITS SUBUNITS' DYNAMICS. Rotem Aharoni, **Dror Tobi**

2420-Pos Board B92
MICRO-SECOND X-RAY SINGLE MOLECULE DYNAMICS OF ALLOSTERIC TWISTING MOTIONS IN HEMOGLOBIN. **Yuji C. Sasaki**, Masahiro Kuramochi, Yuu Okamura, Hiroshi Sekiguchi, Naoki Yamamoto, Naoya Shibayama

2421-Pos Board B93
DIFFRACTED X-RAY BLINKING FROM NANOCRYSTAL ON PROTEIN USED AS INTERNAL MOTION PROBE. **Hiroshi Sekiguchi**, Masahiro Kuramochi, Yuji C. Sasaki

2422-Pos Board B94
THE EFFECT OF CRYSTAL CONTACT FORCES ON THE PROTEIN GLOBAL MOTIONS. **Jeffrey A. McKinney**, Yanting Deng, Deepu George, Andrea Markelz

2423-Pos Board B95
A LIGAND-BINDING SITE IN THE GLUA3 AMPA RECEPTOR N-TERMINAL DOMAIN OBSERVED IN DRUGGABILITY SIMULATIONS AND X-RAY CRYSTALLOGRAPHY. **Ji Young Lee**, James Krieger, Beatriz Herguedas, Javier García-Nafría, Anindita Dutta, Saher A. Shaikh, Ingo H. Greger, Ivet Bahar

2424-Pos Board B96 TRAVEL AWARDEE
MOLECULAR ANALYSIS OF DENGUE NS3 HELICASE FUNCTION. **Kelly E. Du Pont**, Russell B. Davidson, Brian J. Geiss, Martin McCullagh

2425-Pos Board B97
INVESTIGATING THE ROLE OF THE AUXILIARY NUCLEOTIDE BINDING SITES IN THE RECBCD DNA HELICASE. **Sivasubramanyan Mangapuram Venkata**, Rani Zananiri, Vera Gaydar, Oded Kleifeld, Ariel Kaplan, Arnon Henn

2426-Pos Board B98
ALLOSTERY & DYNAMICS IN NUCLEAR HORMONE RECEPTOR TRANSACTIVATION. **David Lohry**, Taylor Stevens, Mark Remec Pavlin, Balananda DK Putcha, Tongye Shen, Elias J. Fernandez

2427-Pos Board B99
BINDING-COUPLED-FOLDING OF INTRINSICALLY DISORDERED PROTEIN EXHIBITS A HIERARCHICAL ENERGY LANDSCAPE. **Xiakun Chu**, Jin Wang

2428-Pos Board B100
LONG-RANGE INTERACTIONS MEDIATED BY THE DISORDERED NFKB TRANSCRIPTION ACTIVATION DOMAIN. **Dominic Narang**, Wei Chen, Allen Po, Elizabeth A. Komives

2429-Pos Board B101
CONTROL OF CELLULAR NETWORKS BY STRUCTURAL DISORDER. **Nikolay V. Dokholyan**, Onur Dagliyan, Klaus M. Hahn

2430-Pos Board B102
STRUCTURE AND DYNAMICS OF INTRINSICALLY DISORDERED AND UNFOLDED PROTEINS: INVESTIGATIONS USING SMALL-ANGLE SCATTERING AND NEUTRON SPIN-ECHO SPECTROSCOPY. Felix Ameseder, Laura R. Stingaciu, Aurel Radulescu, Olaf Holderer, Peter Falus, Michael Monkenbusch, Ralf Biehl, Dieter Richter, **Andreas M. Stadler**

Intrinsically Disordered Proteins (IDP) and Aggregates III (Boards B103 - B133)

2431-Pos Board B103
UNDERSTANDING THE KINETIC ROLES OF 14-3-3ZETADURING TAU FILAMENT FORMATION. **Junwen Xiong**, Meng Gao, Yongqi Huang

2432-Pos Board B104
MEMBRANE INTERACTIONS OF IAPP. **Mikkel H. Christensen**, Birgit Schiøtt

2433-Pos Board B105
INHIBITION OF A-SYNUCLEIN AMYLOID FIBRIL ELONGATION BY BLOCKING FIBRIL ENDS. **Volodymyr V. Shvadchak**, Kseniia Afitska, Anna Fucikova, Dmytro A. Yushchenko

2434-Pos Board B106
COMPARING EARLY STAGES OF AMYLOID-BETA AGGREGATION IN DIFFERENT MEMBRANOUS ENVIRONMENTS. **Abhilash Sahoo**, Hongcheng Xu, Silvina Matysiak

2435-Pos Board B107
UNDERSTANDING AND PREVENTING AGGREGATION IN ALPHA-SYNUCLEIN. **Lisa J. Lapidus**

2436-Pos Board B108 TRAVEL AWARDEE
TERMINAL CAPPING OF AMYLOIDOGENIC TAU FRAGMENTS MODULATES THEIR FIBRILLATION PROPENSITY. **Shruti Arya**, Pritam Ganguly, Sarah L. Claud, Andrea Arsiccio, Kristi Lazar Cantrell, Joan Emma Shea, Michael T. Bowers

2437-Pos Board B109
OBSERVATION OF STRUCTURAL GROWTH OF FIBRILS OF AMYLIN PROTEIN. **Suparna Khatun**, Shikha Kumari, Agneyo Ganguly, Nisha Pawar, Amar Nath Gupta

2438-Pos Board B110 TRAVEL AWARDEE
STRUCTURAL OPTIMIZATION OF A-SYNUCLEIN FIBRIL GROWTH INHIBITORS. **Kseniia Afitska**, Volodymyr V. Shvadchak, Dmytro A. Yushchenko

2439-Pos Board B111
OLIGOMER CROSS-PROPAGATION BETWEEN WILD-TYPE AND MUTANT AMYLOID-B IMPLICATE CONFORMATIONAL STRAINS IN AD PHENOTYPES. **Morgan Malone**, Dexter N. Dean, Vijay Rangachari

2440-Pos Board B112
SUMOYLATION OF THE NT17 DOMAIN OF HUNTINGTIN INFLUENCES AGGREGATION AND BINDING TO LIPID MEMBRANES. **Faezeh Sedighi**, Justin A. Legleiter

2441-Pos Board B113
THE PRESENCE OF MITOCHONDRIA INFLUENCES HUNTINGTIN AGGREGATION. **Adewale Adegbuyiro**, Justin A. Legleiter

2442-Pos Board B114
POST TRANSLATIONAL MODIFICATION OF AB INFLUENCES AGGREGATION IN THE PRESENCE AND ABSENCE OF LIPIDS. **Albert W. Pilkington**, Justin A. Legleiter

2443-Pos Board B115
IMPACT OF N-TERMINAL ACETYLATION ON ALPHA-SYNUCLEIN AMYLOID FORMATION. **Matthew D. Watson**, Jennifer C. Lee

2444-Pos Board B116
INVESTIGATION OF THE VARIOUS STRUCTURES OF ALPHA-SYNUCLEIN AND THEIR INTERACTIONS WITH SMALL MOLECULES. **John Ferrie**, Sam G. Giannakoulias, E. James Petersson

2445-Pos Board B117
INVESTIGATING C99 IN AMYLOID FORMATION USING MOLECULAR DYNAMICS: FROM SIMPLE TO COMPLEX NEURONAL MODELS. **Jenny Pin-Chia Hsu**, Birgit Schiøtt

2446-Pos Board B118
INTERPLAY BETWEEN TWO ISOFORMS OF THE FUNCTIONAL AMYLOID PMEL17 REPEAT DOMAIN. **Dexter N. Dean**, Jennifer C. Lee

2447-Pos Board B119 TRAVEL AWARDEE
STRUCTURAL EVALUATION OF AROMATIC RESIDUES IN A-SYN AND THEIR ROLE IN GLYCAN BINDING AND CELLULAR UPTAKE. **Jonathan M. Musila**, Elizabeth Rhoades

2448-Pos Board B120
B-SYNUCLEIN AMELIORATES A-SYNUCLEIN TOXICITY BY MODULATING FIBRIL SHEDDING AND SEEDING PROCESSES. **Xue Yang**, Jonathan K. Williams, Jean Baum

2449-Pos Board B121
ALPHA-SYNUCLEIN MODULATES STIMULATED EXOCYTOSIS AND BINDS TO MITOCHONDRIA. **Meraj Ramezani**, Marcus Wilkes, Tapojyoti Das, David Holowka, David Eliezer, Barbara Baird

2450-Pos Board B122
ALPHA-SYNUCLEIN DISRUPTS INTER-MEMBRANE INTERACTIONS. **Peter J. Chung**, Qingteng Zhang, Hyeondo Luke Hwang, Alessandra Leong, Eric Dufresne, Suresh Narayan, Erin J. Adams, Ka Yee C. Lee

2451-Pos Board B123
ALPHA SYNUCLEIN INCREASES MEMBRANE BINDING WITH RISING LATERAL TENSION. **Jaclyn Ann Robustelli**, Zheng Shi, Tobias Baumgart

2452-Pos Board B124
THE EFFECT OF AMYLOID PRECURSOR PROTEIN DIMERIZATION ON ITS CONFORMATION AND CLEAVAGE. **Jacob B. Usadi**, Karl Freed, Esmael Haddadian

2453-Pos Board B125
A-SYNUCLEIN BINDS EXTRACELLULAR COMPLEX N-LINKED GLYCANS. **Melissa Birol**, Slawomir P. Wojcik, Andrew D. Miranker, Elizabeth Rhoades

2454-Pos Board B126
TARGETING SOLUBLE AMYLOID OLIGOMERS IN ALZHEIMER'S DISEASE THROUGH DISORDERED PRION PEPTIDES. **Zachary A. Levine**

2455-Pos Board B127 TRAVEL AWARDEE
TAU AMYLOID AGGREGATES: THE CHOICE OF PATHWAYS MAKES THE DIFFERENCE. **Yann Fichou**, Songi Han

2456-Pos Board B128 TRAVEL AWARDEE
MULTISCALE INVESTIGATION OF MONOMERIC ALPHA-SYNUCLEIN STRUCTURE AND AGGREGATION. **Daisy Alvarado**, Frank X. Vazquez

2457-Pos Board B129
BIOPHYSICAL INSIGHTS INTO HOW LIPID MEMBRANES MODULATE HUNTINGTIN AGGREGATION ASSOCIATED WITH HUNTINGTON'S DISEASE. **Justin Legleiter**

2458-Pos Board B130
INVESTIGATING THE EFFECTS OF MODEL SURFACES ON SYNTHETIC PRION PEPTIDE AGGREGATION. **Elizabeth A. Yates**, Catherine M. Yip

2459-Pos Board B131
METAL-PROMOTED ALPHA-SYNUCLEIN MODIFICATIONS STEER THE AGGREGATE CONFORMATION. **Heather R. Lucas**, Dinendra L. Abeyawardhane, Ricardo D. Fernández, Denver R. Heitger, Ashley K. Forney, Cody J. Murgas, Alyson Curry

2460-Pos Board B132
CHARACTERIZATION OF THE EARLY STAGES OF TAU AGGREGATION IN THE PRESENCE OF POLYPHOSPHATES. **Sanjula P. Wickramasinghe**, Hope E. Merens, Justine Lempart, Ursala Jakob, Elizabeth Rhoades

2461-Pos Board B133
NEUROTOXIC HIV-TAT AUTOCLEAVES AND FORMS NOVEL AMYLOID-LIKE FIBRILLAR STRUCTURES. **Alina L. Popescu Hategan**, Edward L. Mertz, Joseph Steiner, Elena Karnaukhova, Lisa Henderson, Jeff Kowalak, Emilios K. Dimitriadis, Avindra Nath

Membrane Protein Folding (Boards B134 - B142)

2462-Pos Board B134
BILAYER DEPTH DEPENDENCE OF HYDROPHOBIC AMINO ACID TRANSFER FREE ENERGIES. **Dagan C. Marx**, Karen G. Fleming

2463-Pos Board B135
PROBING BAMA'S ROLE IN THE ASSEMBLY OF TRIMERIC AUTOTRANSPORTER ADHESINS. **David Ryoo**, Karl Lundquist, James C. Gumbart

2464-Pos Board B136
DEVELOPING A SINGLE-MOLECULE PLATFORM TO UNDERSTAND OUTER MEMBRANE PROTEIN BIOGENESIS. **Megan Mitchell**, Marcelo Sousa

2465-Pos Board B137
DIMERIC FKPA ACTS AS AN ANTI-AGGREGASE ON A NATIVE UNFOLDED MEMBRANE PROTEIN CLIENT. **Michaela A. Roskopf**, Dagan C. Marx, Ashlee M. Plummer, Quenton R. Bubb, Karen G. Fleming

2466-Pos Board B138
VARIABLE CONSEQUENCES OF MEMBRANE TARGETING MOTIFS FOR GENETICALLY ENCODED VOLTAGE INDICATORS. **Sungmoo Lee**, Bok Eum Kang, Minyoo Kim, Yoon-Kyu Song, Bradley J. Baker

2467-Pos Board B139
FREE AND CHAPERONE BOUND UNFOLDED STATES OF OUTER MEMBRANE PROTEINS. **Neharika Chamachi**, Georg Krainer, Andreas Hartmann, Michael Schlierf

2468-Pos Board B140
LIPID MODULATION OF THE ACTIVATOR-INDEPENDENT MEMBRANE INSERTION AND REFOLDING OF THE APOPTOTIC INHIBITOR BCL-XL. **Victor Vasquez Montes**, Alexey S. Ladokhin

2469-Pos Board B141
ROLE OF DYNAMIC HYDROGEN-BOND NETWORKS IN PROTEIN ALLOSTERY. Konstantina Karathanou, Michalis Lazaratos, Malte Siemers, **Ana-Nicoleta Bondar**

2470-Pos Board B142
TUNING THE STABILITY OF MEMBRANE PROTEIN DIMERIZATION BY CHANGING THE LIPID SOLVENT. Rahul Chadda, Alejandro Gil Ley, Kacie Griffith, Lauren E. Hughes, Ana Castro, Kacey Mersch, Venkatramanan Krishnamani, Elizabeth G. Kelley, Susana Marujo-Teixeira, José Faraldo-Gómez, **Janice L. Robertson**

DNA Structure and Dynamics II (Boards B143 - B156)

2471-Pos Board B143
EVIDENCE FOR CONFORMATIONAL CAPTURE MECHANISM FOR DAMAGE RECOGNITION BY DNA REPAIRPROTEIN RAD4. Sagnik Chakraborty, **Saroj Baral**, Debamita Paul*, Peter J. Steinbach, Phoebe A. Rice, Jung-Hyun Min*, Anjum Ansari

2472-Pos Board B144
KINETICS OF DNA STRAND DISPLACEMENT. **Alexander W. Cook**, Bo Broadwater, Harold Kim

2473-Pos Board B145
INVESTIGATING STRUCTURE AND TOPOLOGY OF PROTEIN-MEDIATED DNA LOOPS VIA COMPUTATIONAL MODELING OF ELASTIC ENERGY. **Pamela J. Perez**, Wilma K. Olson

2474-Pos Board B146
BINDING OF CTAB TO SINGLE STRANDED DNA. **Pamela St. John**, Tetsuya Kawakita

2475-Pos Board B147
LABEL-FREE CHROMATIN-DNA IMAGING BY CIRCULAR POLARIZED LIGHT SCATTERING SCANNING MICROSCOPY. Aymeric Le Gratiet, **Riccardo Marongiu**, Luca Pesce, Michele Oneto, Paolo Bianchini, Giulia Zanini, Alberto Diaspro

2476-Pos Board B148
TO KINK OR NOT TO KINK: SEQUENCE-DEPENDENT DNA FLEXIBILITY UNVEILED IN COMPLEX WITH DNA-BENDING PROTEIN IHF. **Mitchell Connolly**, Aline Arra, Viktoriya Zvoda, Peter J. Steinbach, Phoebe Rice, Anjum Ansari

2477-Pos Board B149
MOLECULAR TRANSPORT THROUGH SELF-ASSEMBLED DNA NANOFLUIDIC CHANNELS. **Yi Li**, Rebecca Schulman

2478-Pos Board B150
DNA CONFORMATIONAL CHANGES PLAY A FORCE-GENERATING ROLE DURING BACTERIOPHAGE GENOME PACKAGING. Kim A. Sharp, Xiang-Jun Lu, Gino Cingolani, **Stephen C. Harvey**

2479-Pos Board B151
MEASUREMENT OF THE LENGTH DEPENDENCE OF DNA CYCLIZATION USING NEXT GENERATION SEQUENCING. **Jason D. Kahn**, Jason M. Hustedt

2480-Pos Board B152
DYNAMICS OF SUPERCOILED KNOTTED DNA: LARGE SCALE REARRANGEMENTS AND PERSISTENT MULTI STRAND INTERLOCKING. **Lucia Coronel**, Antonio Suma, Cristian Micheletti

2481-Pos Board B153
LONG-RANGE SLIPPERY HAIRPIN RECONFIGURATION AND ITS MECHANISM IN TRINUCLEOTIDE REPEATS REVEALED BY SINGLE-MOLECULE SPECTROSCOPY. **I-Ren Lee**, Cheng-Wei Ni, Yu-Jie Wei, Yang-I Shen, Chien Chen

2482-Pos Board B154
ENHANCEMENT OF DISSOCIATION KINETICS OF BIOMOLECULES THROUGH THE USE OF ALTERNATING ELECTRIC FIELDS. **Sebastian Sensale**, Zhangli Peng, H.C. Chang

2483-Pos Board B155
AN ALGORITHM FOR RECONSTRUCTING THE DYNAMICS OF SUPERCOILED DNA. **Todd D. Lillian**, Saeed Babamohammadi

2484-Pos Board B156
CPG METHYLATION OF THE C9ORF72 NUCLEOTIDE REPEAT EXPANSION ALTERS G-QUADRUPLEX TOPOLOGICAL DISTRIBUTION. **Kadir Ozcan**, Aaron Haeusler

Protein-Nucleic Acid Interactions II (Boards B157 - B181)

2485-Pos Board B157
CELLULAR DISTRIBUTION AND DIFFUSIVITY OF HFQ WITH INTERACTING RNAS. **Seongjin Park**, Karine Prévost, Matt Reyer, Emily Heideman, Wei Liu, Eric Massé, Jingyi Fei

2486-Pos Board B158
STRUCTURAL CHARACTERIZATION OF A PEPTIDE DERIVED FROM A LAB-EVOLVED PROTEIN THAT TARGETS HIV-1 TAR RNA. **Sai Shashank Chavali**, Ivan Belashov, Jermaine Jenkins, Joseph Wedekind

2487-Pos Board B159
NUCLEOTIDE-DEPENDENT STABILITY OF NUCLEOSOME-CHD1 COMPLEXES. **Samaneh Ghassabi Kondalaji**, Ren Ren, Ilana M. Nodelman, Gregory D. Bowman

2488-Pos Board B160
A HIGH-THROUGHPUT PLATFORM FOR PROBING MECHANISMS OF TRANSCRIPTION FACTOR-DNA BINDING. **Arjun Aditham**, Polly M. Fordyce

2489-Pos Board B161
CAENORHABDITIS ELEGANS MORC-1 TOPOLOGICALLY TRAPS AND COMPACTS DNA. **HyeongJun Kim**, Linda Yen, Somsakul Wongpalee, Joseph Loparo, Steve Jacobsen

2490-Pos Board B162
AN EFFECTIVE SCORING FUNCTION WITH ATOMIC AND COARSE-GRAINED HYBRID REPRESENTATION FOR PROTEIN-RNA INTERACTIONS. Jiahua He, **Shengyou Huang**

2491-Pos Board B163
INVESTIGATING THE DNA BINDING ACTIVITY OF THE POLYBROMO-1 BROMODOMAINS. **Saumya M. De Silva**, Yangtian Shangguan, Tyler M. Weaver, Brianna E. Lupo, Catherine A. Musselman

2492-Pos Board B164
DETERMINATION OF THE MECHANISM OF RNA REGULATION BY CPSF30 UTILIZING BOTH BIOPHYSICAL AND STRUCTURAL APPROACHES. **Jordan D. Pritts**, Abdulafeez A. Oluyadi, Daniel Deredge, Patrick L. Wintrode, Sarah L. J. Michel

2493-Pos Board B165
RNA G-QUADRUPLEX IS RESOLVED BY REPETITIVE AND ATP DEPENDENT MECHANISM OF DHX36. **Ramreddy Tippana**, Michael C. Chen, Natalia A. Demeshkina, Adrian R. Ferré-D'Amaré, SuA Myong

2494-Pos Board B166
DEEP LEARNING MODELS EXPLORE THE STRUCTURAL EFFECTS OF TRANSCRIPTION FACTOR-DNA COMPLEXES ON BINDING SPECIFICITY. **Tyler C. Shimko**, Polly M. Fordyce

2495-Pos Board B167
RRM2 OF CELF1 PROTEIN FROM *PLASMODIUM FALCIPARUM* PREFERENTIALLY BINDS TO UG REPEATS RNA. **Garima Verma**, Neel Sarovar Bhavesh

2496-Pos Board B168
SINGLE-STRANDED DNA BINDING AND CROSSLINKING ACTIVITIES OF THE VIRAL RESTRICTION FACTOR APOBEC3G CHARACTERIZED BY FORCE SPECTROSCOPY . **Ioulia F. Rouzina**, Michael Morse, Nabuan Naufer, Yuqing Feng, Linda Chelico, Mark C. Williams

2497-Pos Board B169
NMR STUDIES OF CONFORMATIONAL SELECTION OF HNRNP H ON RNA RECOGNITION AND ITS INTERACTION WITH THE HIV EXONIC SPLICING SILENCER ESS2P RNA. **Liang-Yuan Chiu**, Srinivas Penumutchu, Niyati Jain, Andrew Sugarman, Blanton S. Tolbert

2498-Pos Board B170
USING SINGLE MOLECULE METHODS TO STUDY MECHANISMS OF SITE SPECIFIC DNA CLEAVAGE. **Allen C. Price**, Stephen D. Parziale, Karissa Mehrtens, Anna D. Ware, Emily K. Matozel, Nathaniel Dale

2499-Pos Board B171
THE ROLE OF INTERFACIAL HYDRATION IN THE TRANSCRIPTION FACTOR PU.1/DNA COMPLEX. **Amanda V. Albrecht**, Hye Mi Kim, Gregory M. K. Poon

2500-Pos Board B172
CRYO-EM STRUCTURE OF THE P-ELEMENT TRANSPOSASE STRAND-TRANSFER COMPLEX. **Elizabeth H. Kellogg**, George Ghanim, Eva Nogales, Donald C. Rio

2501-Pos Board B173
FUNCTIONAL IMPLICATIONS OF THE RECQ HELICASE - TOPOISOMERASE III - SSB COMPLEX: INSIGHTS FROM SINGLE MOLECULE MEASUREMENTS. **K. Maria Mills**, Yeonee Seol, Keir C. Neuman

2502-Pos Board B174
ESTABLISHING A SINGLE-MOLECULE FRET SYSTEM FOR STUDYING DNA-PROTEIN INTERACTIONS. **Dacheng Zhao**, Ishita Mukerji, Candice Etson

2503-Pos Board B175
COHESIN SA2 AND EWSR1 IN R-LOOP REGULATION. **Hong Wang**, Ashwin Ghadiyaram, Hai Pan, Yanlin Fan, Parminder Kaur, Aparna Gorthi, Robert Riehn, Alexander J.R. Bishop, Yizhi Jane Tao

2504-Pos Board B176
CHARACTERIZATION OF THE INTERACTIONS OF FRAGILE-X MENTAL RETARDATION PROTEIN WITH *C9ORF72* REPEAT EXPANDED RNA. **Kendy A. Pellegrene**, Mihaela Rita Mihailescu, Jeffrey D. Evanseck

2505-Pos Board B177
SINGLE-MOLECULE STUDY OF TRF2 MEDIATED DNA COMPACTION USING PHYSIOLOGICALLY RELEVANT LONG TELOMERIC DNA. **Parminder Kaur**, Ryan Barnes, Hai Pan, Patricia Opresko, Robert Riehn, Hong Wang

2506-Pos Board B178
STRUCTURAL REARRANGEMENT OF DNA FOR CRISPR-CAS9 NUCLEASE SPECIFICITY REGULATED BY THE REC2 DOMAIN. **Keewon Sung**, Jinho Park, Younggyu Kim, Nam Ki Lee, Seong Keun Kim

2507-Pos Board B179
ALPHA-SYNUCLEIN BINDS TO DNA AND MODULATES ITS PHYSICAL PROPERTIES. **Kai Jiang**, Sandra Rocha, Alvina Westling, Sriram KK, Kevin D. Dorfman, Pernilla Wittung-Stafshede, Fredrik Westerlund

2508-Pos Board B180
SIMULATION OF H2A.B CONTAINING HISTONE VARIANT NUCLEOSOME. **Havva Kohestani**, Jeffery M. Wereszczynski

2509-Pos Board B181
QUANTIFYING ANTICANCER DRUG DOXORUBICIN BINDING TO DNA USING OPTICAL TWEEZERS. **Zachary Ells**, Brian Dolle, Thayaparan Paramanathan

Membrane Physical Chemistry II (Boards B182 - B207)

2510-Pos Board B182
INTRINSIC CURVATURES FROM GLOBAL X-RAY SCATTERING DATA ANALYSIS OF INVERTED HEXAGONAL PHASES. **Moritz P.K. Frewein**, Johannes Kremser, Primoz Ziherl, Georg Pabst

2511-Pos Board B183
STATISTICAL ANALYSIS OF ACYL CHAIN CONFINEMENT IN LIPID MEMBRANES. **Abhinav Ramkumar**, Xiaoling Leng, Horia I. Petrache

2512-Pos Board B184
PARAMETERIZATION OF THE CHARMM FORCE FIELD FOR ETHER LIPIDS AND MODEL LINEAR ETHERS. **Alison Leonard**, Richard W. Pastor, Jeffery B. Klauda

2513-Pos Board B185
PROTONATION STATES AND CONFORMATIONS OF INOSITOL AND PHOSPHOINOSITOL PHOSPHATES FROM MOLECULAR SIMULATIONS. **Brian Radak**

2514-Pos Board B186
LIPID NANOMATERIALS FOR PACLITAXEL DELIVERY IN CANCER THERAPEUTICS: EFFECT OF PEGYLATION AND CHARGE ON THE MORPHOLOGY AND EFFICACY. **Victoria Steffes**, Zhening Zhang, John Crowe, Scott MacDonald, Kai K. Ewert, Bridget Carragher, Clinton S. Potter, Cyrus R. Safinya

2515-Pos Board B187
MODELING *PSEUDOMONAS AERUGINOSA* INNER PLASMA MEMBRANE IN PLANKTONIC AND BIOFILM MODES. **Yalun Yu**, Jeffery B. Klauda

2516-Pos Board B188
LIPID CHARGE INCREASES THE BENDING RIGIDITY OF BILAYER MEMBRANES. **Hammad Ali Faizi**, Jan Steinkühler, Shelli L. Frey, Rumiana Dimova, Petia M. Vlahovska

2517-Pos Board B189
CHARGE MELTING OF LIPOSOME COLLOIDAL CRYSTALS. **Joel Cohen**, Andrew Ford

2518-Pos Board B190 TRAVEL AWARDEE
MEASUREMENTS OF LIPID VESICLE CHARGE IN SOLUTIONS OF ZWITTERIONS. **Azam Shafieenezhad**, Rania Ousman, Ryan Z. Lybarger, Bruce D. Ray, Horia I. Petrache

2519-Pos Board B191
MEMBRANE DEFORMATION UNDER ISOTROPIC EXTERNAL STRESS. K. J. Mallikarjunaiah, Jacob J. Kinnun, **Horia I. Petrache**, Michael F. Brown

2520-Pos Board B192
FLUORESCENCE STUDIES OF LIPID DISTRIBUTION IN BILAYERS UNDER OXIDATIVE STRESS. **Md Khorshed Alam**, Ivo Vinklárek, Gerhard Gröbner, Lennart B-Å Johansson, Radek Sachl

2521-Pos Board B193
MITOCHONDRIAL MEMBRANE ORGANIZATION UNDER OXIDATIVE STRESS: INSIGHT BY SOLID-STATE NMR AND NEUTRON REFLECTOMETRY. Artur P. Dingeldein, Tobias Sparrman, Jörgen Åden, Hanna P. Wacklin, Luke A. Clifton, **Gerhard Grobner**

2522-Pos Board B194
THE ROLE OF HYDRODYNAMIC FORCES IN NUCLEAR PORES ASSEMBLY. **Vasily V. Kuvichkin**

2523-Pos Board B195
MICROSCOPIC INSIGHTS INTO BIOLOGICAL RELEVANCE OF MEMBRANE CHANNELS IN GAS TRANSPORT ACROSS LIPID MEMBRANES. **Paween Mahinthichaichan**, Emad Tajkhorshid

2524-Pos Board B196
UNDERSTANDING HOW ALPHA-SYNUCLEIN MODIFIES STERIC INTERACTIONS OF SILICA SUPPORTED LIPID BILAYERS IN CROWDED ENVIRONMENTS. **Hyeondo (Luke) Hwang**, Peter J. Chung, Alessandra Leong, Ka Yee C. Lee

2525-Pos Board B197
PARTITIONING OF VIBRIO CHOLERAE AUTOINDUCER CAI1 AND ITS PRECURSORS INTO LIPID MEMBRANES SUGGESTS THE DIRECT RELEASE MECHANISM. **Hannah Cetuk**

2526-Pos Board B198
BINDING OF HUMAN BETA DEFENSIN TYPE 3 WITH NEGATIVELY CHARGED LIPID MEMBRANES. **Liqun Zhang**

2527-Pos Board B199
AMINO ACIDS BIND TO AND INFLUENCE THE STRUCTURE OF FATTY ACID VESICLES. **Zachary R. Cohen**, Andrew Ramsay, Caitlin E. Cornell, Roy A. Black, Sarah L. Keller

2528-Pos Board B200
DOPAMINE INTERACTION WITH MEMBRANE SURFACES. **Adhitya Ramkumar**, Samuel Canner, Bruce D. Ray, Horia I. Petrache

2529-Pos Board B201
BINDING AND COMPETITION OF BE^{2+} AND CA^{2+} WITH MODEL PHOSPHOLIPID MEMBRANES. **Sergei Sukharev**, Curtis W. Meuse

2530-Pos Board B202 TRAVEL AWARDEE
BUDDING AND FISSION OF VESICLES INDUCED BY SMALL SOLUTE MOLECULES. **Rikhia Ghosh**, Andrea Grafmueller, Reinhard Lipowsky

2531-Pos Board B203
INTERFACIAL AND HYDROPHOBICITY SCALES FOR SMALL DRUG-LIKE MOLECULES FROM ATOMISTIC FREE ENERGY CALCULATIONS. **W.F. Drew Bennett**, Stewart He, Helgi Ingolfsson

2532-Pos Board B204
NMR STUDY OF PARTITION AND PERMEATION PROPERTIES OF GA(III) CHELATES. **Maria Rangel**, Silvia Vinhas, Galya Ivanova, Silvia Lopes, Sofia Ferreira

2533-Pos Board B205
MEMBRANE LIPIDS ALTER UNCOUPLING EFFECT OF 2,4 DINITROPHENOL. **Olga Jovanovic**, Lars Gille, Mario Vazdar, Elena E. Pohl

2534-Pos Board B206 TRAVEL AWARDEE
COMPUTATIONAL MECHANICAL STUDIES OF *E. COLI* TYPE-1 PILI ADHESION WITH HOMOGENEOUS SURFACES. **Jeremy M. G. Leung**, Eileen M. Spain

2535-Pos Board B207
MECHANISMS OF ADHESION OF A BACTERIAL PREDATOR TO SURFACE WITH QUANTITATIVE FORCE MEASUREMENTS. **Yuyu Chen**, Eileen M. Spain

Membrane Active Peptides and Toxins II (Boards B208 - B229)

2536-Pos Board B208
MEMBRANES MATTER: PREDICTING DRUG TOXICITY. **R Lea Sanford**, Jeanne Chiaravalli-Giganti, Wesley Chao, Anotonio Luz, J. Fraser Glickman, Olaf S. Andersen

2537-Pos Board B209
BIOPHYSICAL APPROACHES TOWARD UNDERSTANDING THE MOLECULAR MECHANISM OF ACTION OF THE MITOCHONDRIAL THERAPEUTIC SS-31 (ELAMIPRETIDE). **Nathan N. Alder**, Wayne Mitchell, Emily Ng, Kevin Boyd, Jeffrey Tamucci, Eric May, Nicholas Eddy, Hazel Szeto

2538-Pos Board B210
KINK IN HELICAL PEPTIDES AFFECTS MEMBRANE PORE FORMATION. Alzbeta Turkova, Ivo Kabelka, Tereza Kralova, Lukas Sukenik, Sarka Pokorna, Martin Hof, **Robert Vacha**

2539-Pos Board B211
SPHINGOMYELIN PLAYS A CRITICAL ROLE IN MEMBRANE-RELATED EFFECTS INDUCED BY THE STEROID SAPONIN GINSENOSIDE RH2. **Sandrine L. Verstraeten**, Maria Janikowska-Sagan, Emily J.S. Claereboudt, Laurence Lins, Magali Deleu, Donatienne Tyteca, Marie-Paule Mingeot-Leclercq

2540-Pos Board B212
NOVEL F13,F15 GRAMICIDIN SUBUNITS PREDICTED TO CROSS BILAYER MEMBRANES AND FORM ION CHANNELS. **Matthew Brownd**, Matthew J. McKay, Denise V. Greathouse, Olaf S. Andersen, Roger E. Koeppe

2541-Pos Board B213
CONFORMATIONAL SAMPLING OF THE PH LOW INSERTION PEPTIDE IS TUNED BY PH. **Nicolas C. Frazee**, Blake Mertz

2542-Pos Board B214
USING PH SENSITIVE PEPTIDES FOR THE ENDOSOMAL RELEASE OF ANTIBODIES. **Eric Wu**, Sarah Y. Kim, Kalina Hristova, William C. Wimley

2543-Pos Board B215
THE PH SENSITIVE ATRAM PEPTIDE HITCHHIKES ON HUMAN SERUM ALBUMIN EN ROUTE TO TARGET DISEASED ACIDIC TISSUES. **Vanessa P. Nguyen**, Stephen J. Kennel, Jonathan S. Wall, Francisco N. Barrera

2544-Pos Board B216
THE PH-SPECIFIC THERMODYNAMIC INTERMEDIATES OF PHLIP MEMBRANE INSERTION. Sarah A. Otieno, Lukas M. Klees, Anqi Zhang, Heather M. Giza, Samuel Z. Hanz, Bianca Chakravorty, Lan Yao, **Ming An**, Wei Qiang

2545-Pos Board B217
PEPTIDE-ENHANCED CARGO TRANSPORT ACROSS 2D AND 3D EPITHELIAL BARRIERS: A STRUCTURE-FUNCTION INVESTIGATION. **Alexander Komin**, Max I. Bogorad, Ran Lin, Honggang Cui, Peter C. Searson, Kalina Hristova

2546-Pos Board B218
TRANSLOCATION OF CPP-CARGO PROTEIN FUSIONS INTO *CANDIDA ALBICANS* CELLS AND DESIGNING FOR ENHANCED TRANSLOCATION WITH SIMULATIONS. **Sayanee Adhikari**, Mahdi Ghorbani, Katherine Dura, Jeffery B. Klauda, Amy J. Karlsson

2547-Pos Board B219
ENERGETICS AND KINETICS OF MEMBRANE PROTEIN-DETERGENT INTERACTIONS. Aaron Wolfe, **Liviu Movileanu**

2548-Pos Board B220
DETERMINING THE ESSENTIAL UNFOLDING STEP IN PROTEIN TRANSLOCATION USING ANTHRAX TOXIN. **Koyel J. Ghosal**, Bryan A. Krantz

2549-Pos Board B221
DETERMINING THE HIGH-RESOLUTION STRUCTURES OF THE ANTHRAX TOXIN PROTECTIVE ANTIGEN PORE BOUND TO ITS LETHAL AND EDEMA FACTORS. **Nathan J. Hardenbrook**, Shiheng Liu, Kang Zhou, Jiansen Jang, Z. Hong Zhou, Bryan Krantz

2550-Pos Board B222
ELUCIDATING THE EFFECT OF LISTERIOLYSIN O STRUCTURAL INTERMEDIATES ON LIPID DIFFUSIVITY. **Ilanila Ilangumaran Ponmalar**, Ganapathy Ayappa, Jaydeep Kumar Basu

2551-Pos Board B223
RECOMBINANT EXPRESSION AND REFOLDING OF A POTASSIUM CHANNEL-ACTIVATING THREE-FINGER TOXIN. **Jamye Moya**, Adel K. Hussein, Sebastien F. Poget

2552-Pos Board B224
EBOLA VIRUS DELTA-PEPTIDE ACTS AS AN ENTEROTOXIC VIROPORIN *IN VIVO*. **Shantanu Guha**, Lilia Melnik, Robert F. Garry, William C. Wimley

2553-Pos Board B225 TRAVEL AWARDEE
MECHANISM OF CATECHIN-MEDIATED INHIBITION OF RTX TOXIN ACTIVITY. En Hyung Chang, **Angela C. Brown**

2554-Pos Board B226
CHARACTERIZATION OF COMBINED CHOLESTEROL AND INTEGRIN INTERACTIONS FOR RTX TOXIN ACTIVITY. **Eric Krueger**, Angela C. Brown

2555-Pos Board B227
A BILAYER-BASED IN VITRO ASSAY FOR BOTULINUM HOLOTOXIN POTENCY ASSESSMENTS. **Runzhi Lai**, Eric N. Ervin

2556-Pos Board B228
ARTIFICIAL MEMBRANE ATTACK COMPLEX THROUGH DNA-GUIDED SELF-ASSEMBLY OF PORE-FORMING PEPTIDES: BIOLOGICAL NANOPORES WITH PROGRAMMABLE DIAMETER. **Aziz Fennouri**, Jonathan List, Julie Ducrey, Laura Pascual, Frederick Bertani, Sandra Rodriguez Gonzalo, Simon F. Mayer, Jerry Yang, Michael Mayer

2557-Pos Board B229
DISTINCT ROLES OF SNARE-MIMICKING LIPOPEPTIDES DURING INITIAL STEPS OF MEMBRANE FUSION. **Alexander Kros**

Protein-Lipid Interactions: Structures (Boards B230 - B251)

2558-Pos Board B230
LIVE ACTION OF ESCRT III MACHINERIES IN MEMBRANE REMODELLING: MEMBRANE DEFORMATION & MEMBRANE SCISSION. **Sourav Maity**, Christophe Caillat, Nicola De Franceschi, Maryam Alqabandi, Nolwenn Miguet, Patricia M. Bassereau, Winfried Weissenhorn, Wouter H. Roos

2559-Pos Board B231
DRIVING FORCES STABILIZING CELLULAR PRION PROTEIN (PRP^C) MONOMERS AND DIMERS ON THE CELL SURFACE. **Frances Tiffany Morden**, India Claflin, Patricia Soto

2560-Pos Board B232
INFLUENCE OF CHARGED LIPIDS ON GLUTAMIC ACID CONTAINING TRANSMEMBRANE HELICES. **Brooke E. Nunn**, Matthew J. McKay, Denise V. Greathouse, Roger E. Koeppe

2561-Pos Board B233
POSITION DEPENDENT ORIENTATION DIFFERENCE OF TRANSMEMBRANE PEPTIDES FLANKED BY SINGLE OR MULTIPLE HISTIDINE RESIDUES. **Fahmida Afrose**, Denise V. Greathouse, Roger E. Koeppe

2562-Pos Board B234
HELIX FRAYING AND ORIENTATION OF A TRANSMEMBRANE PEPTIDE HAVING A LONG HYDROPHOBIC CORE AND ANCHORED BY INTERFACIAL ARGININE RESIDUES. **Sara J. Sustich**, Fahmida Afrose, Denise V. Greathouse, Roger E. Koeppe

2563-Pos Board B235
INVESTIGATING THE CONFORMATIONAL DYNAMICS OF THE MEMBRANE ENZYME LSPA. **Tracy A. Caldwell**, Linda Columbus

2564-Pos Board B236
CHARACTERIZING THE STRUCTURE OF STYRENE-MALEIC ACID COPOLYMER-LIPID NANOPARTICLES (SMALPS) USING RAFT POLYMERIZATION FOR MEMBRANE PROTEIN SPECTROSCOPIC STUDIES. **Benjamin D. Harding**, Gunjan Dixit, Kevin M. Burridge, Indra D. Sahu, Carole Dabney-Smith, Richard Edelmann, Dominik Konkolewicz, Gary A. Lorigan

2565-Pos Board B237
CHARACTERIZATION OF ALPHA-HELIX DISTORTIONS AT A MEMBRANE SURFACE AND A PARTIAL 3(10)-HELIX BY SOLID-STATE NMR. **Matthew J. McKay**, Denise V. Greathouse, Roger E. Koeppe

2566-Pos Board B238
LIPID OPTIMIZATION TO IMPROVE THE SOLID-STATE NMR SPECTRA FROM MEMBRANE-SPANNING HELICES WITH GLUTAMIC ACID. **Kelsey A. Marr**, Matthew J. McKay, Denise V. Greathouse, Roger E. Koeppe

2567-Pos Board B239 TRAVEL AWARDEE
LIPID MEMBRANE INFLUENCES INTERACTION BETWEEN THE C1 DOMAIN OF MUNC13-1 AND THE ACTIVATOR. **Youngki You**, Binhan Yu, Tatyana Igumenova, Joydip Das

2568-Pos Board B240
PROTEIN-LIPID INTERACTIONS REGULATE ATG3 ACTIVITY IN AUTOPHAGY. **Erin R. Tyndall**, Yansheng Ye, Zhenyuan Tang, Hong-Gang Wang, Fang Tian

2569-Pos Board B241
STICHOLYSINS, SPHINGOMYELIN AND CHOLESTEROL: A CLOSER LOOK INTO A TRIPARTITE INTERACTION. **Juan Palacios Ortega**, Sara García-Linares, Esperanza Rivera-de-Torre, Jose G. Gavilanes, Álvaro Martínez-del-Pozo, J Peter Slotte

2570-Pos Board B242
A_{2A} ADENOSINE RECEPTOR ACTIVATION STUDIED BY ALL-ATOM SIMULATION. **Long Chen**, Edward R. Lyman

2571-Pos Board B243
MEMBRANE BINDING BY SYNAPTOTAGMIN-LIKE PROTEIN 4: SITE DIRECTED MUTAGENESIS OF THE LIPID INTERACTION SURFACE. **Aml A.A Alnaas**, Julianna Oviedo, Abena Siriboe, Sherleen Tran, Mikias Negussie, Hai Lin, Jefferson Knight

2572-Pos Board B244
LIPID-LIPID AND LIPID-PROTEIN INTERACTIONS OF THE MATRIX DOMAIN OF HIV-GAG AT THE VIRAL ASSEMBLY SITE. **Viviana Monje-Galvan**, Gregory A. Voth

2573-Pos Board B245
A CARTOGRAPHIC VIEW OF MEMBRANE TARGETING AND ASSOCIATION OF THE C2 DOMAIN FROM PROTEIN KINASE C. **Muyun Lihan**, Emad Tajkhorshid

2574-Pos Board B246
ANNEXIN V IS A SENSOR OF NEGATIVE PLASMA MEMBRANE CURVATURE. **Christoffer Dam Florentsen**, Guillermo S. Moreno Pescador, Alexander K. Sonne, Jesper Nylandsted, Poul Martin Bendix

2575-Pos Board B247
SUBSTRATE INDUCEDCONFORMATIONAL CHANGES OF LIPOSOME-BOUND CYTOCHROME C. **Raghed Kurbaj**, Bridget Milorey, Reinhard Schweitzer-Stenner

2576-Pos Board B248
MEMBRANE-BOUND STRUCTURES AND ASSOCIATED ELECTRON TRANSPORT FUNCTIONS OF CYTOCHROME C. **Minh D. Phan**, Keel Yong Lee, Hanyu Wang, James F. Browning, Sushil K. Satija, John F. Ankner

2577-Pos Board B249
PS MEMBRANE ASYMMETRY INFLUENCES THE FOLDING AND INSERTION OF A TRANSMEMBRANE HELIX. **Haden L. Scott**, Frederick A. Heberle, John Katsaras, Francisco N. Barrera

2578-Pos Board B250
CAPTURING DYNAMIC TRANSPORTER-LIPID INTERACTIONS. **Argyris Politis**

2579-Pos Board B251
STRUCTURAL BASIS FOR THE LIPID-MEDIATED INTERACTION OF TUBULIN WITH VDAC REVEALED BY NEUTRON REFLECTOMETRY. **David P. Hoogerheide**, Sergei Y. Noskov, Philip A. Gurnev, Tatiana K. Rostovtseva, Sergey M. Bezrukov

Excitation-Contraction Coupling II (Boards B252 - B266)

2580-Pos Board B252
IDENTIFICATION OF NOVEL RYR1 INHIBITORS BY HIGH-THROUGHPUT SCREENING USING ER CA^{2+} MEASUREMENT. **Hiroyuki Matsukawa**, Takashi Murayama, Takuya Kobayashi, Nagomi Kurebayashi, Mari Ishigami-Yuasa, Shuichi Mori, Hiroyuki Kagechika, Takashi Sakurai

2581-Pos Board B253
DETERMINATION OF HEAT PRODUCTION IN HUMAN SKELETAL MUSCLE FROM MEASUREMENTS OF BASAL CA^{2+} MOVEMENTS. Christopher J. Barclay, **Bradley S. Launikonis**

2582-Pos Board B254
ENHANCEMENT OF SARCOLEMMAL CALCIUM INFLUX IN A NOVEL MOUSE MODEL OF MALIGNANT HYPERTHERMIA. **Vikas Kaura**, José R López, Marie-Anne Shaw, Paul D. Allen, Philip M. Hopkins

2583-Pos Board B255
MUTATION ANALYSIS OF THE CALCIUM BINDING SITE OF SKELETAL MUSCLE RYANODINE RECEPTOR CALCIUM RELEASE CHANNEL. Venkat R. Chirasani, Le Xu, Jordan S. Carter, Hannah G. Addis, Daniel A. Pasek, Nikolay V. Dokholyan, Gerhard Meissner, **Naohiro Yamaguchi**

2584-Pos Board B256
MOLECULAR DYNAMICS SIMULATION OF RYANODINE RECEPTOR IN THE PRESENCE AND ABSENCE OF CA^{2+} BINDING. **Han Wen**, Wenjun Zheng

2585-Pos Board B257
EFFECTS OF NOVEL RYR2 INHIBITORS ON DISEASED HEARTS. **Nagomi Kurebayashi**, Takashi Murayama, Mai Tamura, Shuichi Mori, Mari Yuasa-Ishigami, Hiroyuki Kagechika, Junji Suzuki, Kazunori Kanemaru, Masamitsu Iino, Sachio Morimoto, Takashi Sakurai

2586-Pos Board B258 TRAVEL AWARDEE
COOPERATIVE GATING AMONG ION-CHANNEL SPECIES IN JUNCTIONAL SARCOPLASMIC RETICULUM. **Elisa Venturi**, Fiona O'Brien, David Eberhardt, Katja Witschas, Sam El-Ajouz, Tsunaki Iida, Miyuki Takeshima, Hiroshi Takeshima, Rebecca Sitsapesan

2587-Pos Board B259
STRUCTURE DEVELOPMENT OF OXOLINIC ACID, A NOVEL INHIBITOR OF TYPE 1 RYANODINE RECEPTOR (RYR1) CA^{2+} RELEASE CHANNEL. **Yoshiaki Nishijima**, Takashi Murayama, Shuichi Mori, Hiroto Iinuma, Noriaki Manaka, Nagomi Kurebayashi, Mari Ishigami-Yuasa, Hiroyuki Kagechika, Takashi Sakurai

2588-Pos Board B260
INVESTIGATION OF MUTANT RYANODINE RECEPTOR CHANNEL ACTIVITY USING FUNCTIONAL ANALYSIS AND MOLECULAR DYNAMICS. **Toshiko Yamazawa**, Haruo Ogawa, Maki Yamaguchi, Takashi Murayama, Hideto Oyamada, Junji Suzuki, Nagomi Kurebayashi, Kazunori Kanemaru, Takashi Sakurai, Iino Masamitsu

2589-Pos Board B261
CHARACTERIZATION OF AN ANIMAL MODEL FOR CONGENITAL MYOPATHIES LINKED TO RECESSIVE *RYR1* MUTATIONS. Moran Elbaz, Alexis Ruiz, Jan Eckhardt, Susan Treves, **Francesco Zorzato**

2590-Pos Board B262
ROLE OF DYSFERLIN'S C2A DOMAIN IN VOLTAGE-INDUCED CALCIUM RELEASE AFTER OSMOTIC SHOCK IN MURINE SKELETAL MYOFIBERS. **Valeriy I. Lukyanenko**, Joaquin Muriel, Robert J. Bloch

2591-Pos Board B263
MEASUREMENTS OF TRIADIC CALCIUM IN DIFFERENTIATED MUSCLE FIBERS USING A GCAMP PROBE TARGETED TO THE JUNCTIONAL SR MEMBRANE. **Colline Sanchez**, Christine Berthier, Bruno Allard, Vincent Jacquemond

2592-Pos Board B264
MATHEMATICAL MODEL TO SIMULATE SR CALCIUM RELEASE IN MAMMALIAN SKELETAL MUSCLE WITH IMPAIRED T-TUBULAR STRUCTURE. Vincent Jacquemond, Peter Szentesi, Candice Kutchukian, Beatrix Dienes, **Laszlo Csernoch**

2593-Pos Board B265
POST-DEVELOPMENTAL KNOCKOUT OF ORAI1-MEDIATED STORE-OPERATED CALCIUM ENTRY IMPROVES MUSCLE PATHOLOGY IN A MOUSE MODEL OF MUSCULAR DYSTROPHY. **Maricela García-Castañeda**, Antonio Michelucci, Robert T. Dirksen

2594-Pos Board B266
MULTIPLE SITES OF INTERACTION MAY BE INVOLVED IN THE REGULATION OF $CA_V1.1$ BY STAC3. **Alexander Polster**, Philip M. Hopkins, Kurt G. Beam

Exocytosis and Endocytosis II (Boards B267 - B294)

2595-Pos Board B267
TO PINPOINT THE LOCATION AND THE ORIENTATION OF PROTEINS ASSOCIATED WITH DENSE-CORE VESICLES (DCVS) USING CLEM. **Bijeta Prasai**, Gideon Haber, Kem A. Sochacki, John A. Ciemniecki, Justin W. Taraska

2596-Pos Board B268
RELATION BETWEEN RELEASE OF CATECHOLAMINES AND FFN511 STUDIED WITH ELECTROCHEMICAL DETECTOR ARRAYS. **Shailendra Singh Rathore**, Meng Huang, Manfred Lindau

2597-Pos Board B269
NS510, A HIGH AFFINITY FLUORESCENT CATECHOLAMINE SENSOR FOR MONITORING NOREPINEPHRINE EXOCYTOSIS. **Xin A. Liu**, Le Zhang, Timothy Glass, Kevin D. Gillis

2598-Pos Board B270
CONDITIONAL KNOCKOUT OF THE SEROTONIN TRANSPORTER (SERT) DEMONSTRATES ITS ROLE IN ACCUMULATING AND MAINTAINING 5-HT HOMEOSTASIS IN THE SYMPATHOADRENAL SYSTEM. **Rebecca L. Brindley**, Mary Beth Bauer, L. Anne Walker, Meagan A. Quinlan, Ana MD Carneiro, Ji-Ying Sze, Randy D. Blakely, Kevin PM Currie

2599-Pos Board B271
THE SEROTONIN TRANSPORTER MODULATES THE QUANTAL SIZE OF VESICULAR RELEASE EVENTS IN ADRENAL CHROMAFFIN CELLS. Rebecca L. Brindley, **Kevin P. Currie**

2600-Pos Board B272
HIGH THROUGHPUT DRUG TESTING OF TRANSMITTER RELEASE EVENTS IN CHROMAFFIN CELLS WITH SURFACE MODIFIED CMOS IC. **Meng Huang**, Shailendra Rathore, Manfred Lindau

2601-Pos Board B273
CHROMOGRANIN A, THE MAJOR LUMENAL PROTEIN IN CHROMAFFIN GRANULES, CONTROLS FUSION PORE EXPANSION. **Prabhodh S. Abbineni**, Mary A. Bittner, Daniel Axelrod, Ronald W. Holz

2602-Pos Board B274
ALPHA TO BETA CELLS: A PATHWAY TOWARDS A DIABETES CURE. **Michael R. DiGruccio**, Dave W. Piston

2603-Pos Board B275
DETECTING EARLY RISK OF TYPE 2 DIABETES DURING AN ORAL GLUCOSE TOLERANCE TEST. **Joon Ha**, Arthur Sherman

2604-Pos Board B276 TRAVEL AWARDEE
EXTRACELLULAR ZINC CONTRIBUTES TO THE SLOW POLYSPERMY BLOCK. **Katherine L. Wozniak**, Wesley A. Phelps, Miler T. Lee, Anne E. Carlson

2605-Pos Board B277
THE MOLECULAR MECHANISM AND STRUCTURAL ANALYSIS OF MEMBRANE INTERACTION VIA FERA AND C2 DOMAINS IN FERLINS ASSOCIATED WITH MUSCULAR DYSTROPHY AND CANCER. **Faraz M. Harsini**, Anthony A. Bui, Michael Latham, Anne M. Rice, Mark A. White, Mazdak Bradberry, Edwin R. Chapman, Sukanya Lakshmi, Andrei Turtoi, Isaac L. Scott, Matthew Dominguez, Elahe Masoumzadeh, Jon J. McCord, Jacob Gendelman, Roger Bryan Sutton[10]

2606-Pos Board B278
CALCIUM DEPENDENCE, KINETICS, AND PORE DYNAMICS OF PHYSIOLOGICAL VESICLE FUSION WITH PLANAR SUPPORTED BILAYERS. **Alex J.B. Kreutzberger**, Volker Kiesling, Binyong Liang, Patrick Seelheim, Arun Anantharam, J. David Castle, Lukas K. Tamm

2607-Pos Board B279
SYNAPTOTAGMIN-7 ENDOWS A SUBPOPULATION OF CHROMAFFIN GRANULES WITH DISTINCT CALCIUM SENSING AND FUSION PROPERTIES. **Mounir Bendahmane**, Alina Chapman-Morales, Noah A. Schenk, Zhang Shuang, Paul M. Jenkins, David R. Giovannucci, Arun Anantharam

2608-Pos Board B280 TRAVEL AWARDEE
PIP2 DRIVES CALCIUM-INDEPENDENT ACTIVATION OF TANDEM C2-DOMAIN CALCIUM SENSORS. **Mazdak M. Bradberry**, Huan Bao, Xiaochu Lou, Edwin R. Chapman

2609-Pos Board B281
FUSION PORE DILATION BY SYNAPTOTAGMIN-1. Zhenyong Wu, Nadiv Dharan, Sathish Thiyagarajan, Ben O'Shaughnessy, **Erdem Karatekin**

2610-Pos Board B282
DOMAIN STABILITY AND FUNCTIONAL ANALYSIS AT THE AD3 LOCUS OF SYNAPTOTAGMIN 1 C2 DOMAINS. **Anthony A. Bui**, Faraz M. Harsini, Anne M. Rice, Souvic Karmakar, Kerry Fuson, R. Bryan Sutton

2611-Pos Board B283
HOW CA^{2+} AND SYNAPTOTAGMIN TRIGGER SNARE-MEDIATED MEMBRANE FUSION. **Volker Kiessling**, Alex J.B. Kreutzberger, Binyong Liang, Sarah B. Nyenhuis, Patrick Seelheim, J. David Castle, David S. Cafiso, Lukas K. Tamm

2612-Pos Board B284
STRUCTURAL CHARACTERIZATION OF FULL-LENGTH SYNAPTOTAGMIN-1 TO *CIS* OR *TRANS* MEMBRANES. **Sarah B. Nyenhuis**, David S. Cafiso

2613-Pos Board B285
SYNAPTIC VESICLE FUSION AND DOCKING DURING THE FIRST 14 MILLISECONDS AFTER AN ACTION POTENTIAL. **Grant F. Kusick**, Shigeki Watanabe

2614-Pos Board B286
SYNAPSIN: A NOVEL INSIGHT FOR PKA PHOSPHO-DOMAINS IN INHIBITING RELEASE PROBABILITY. Agustin Gonzalez-Ruiz, Jose Guzman-Gutierrez, Pedro Feliciano-Ramos, **Ramon A. Jorquera**

2615-Pos Board B287
SEQUENTIAL LINK OF KISS-AND-RUN MECHANISM AND CLASSICAL EXOCYTOSIS AT HIPPOCAMPAL SYNAPSES. **Andreas W. Henkel**

2616-Pos Board B288
CALCIUM CHANNELS GATE CALCIUM-INDEPENDENT BUT VOLTAGE-DEPENDENT SECRETION IN MAMMALIAN CELLS. **Zhuan Zhou**, Rong Huang, Yuan Wang, Jie Li, Xiaohan Jiang, Yinglin Li, Feipeng Zhu, Changhe Wang, Zuying Chai

2617-Pos Board B289
SEC1/MUNC18-FAMILY PROTEINS CATALYZE DIRECTIONAL SNARE ASSEMBLY BY TEMPLATING SNARE FOLDING AND ASSOCIATION. Junyi Jiao, Mengze He, Sarah Port, Baker Richard, Yonggang Xu, Hong Qu, Yujian Xiong, Yukun Wang, Huaizhou Jin, Travis Eisemann, Frederick M. Hughson, **Yongli Zhang**

2618-Pos Board B290
A MECHANISM FOR EXOCYTOTIC ARREST BY THE COMPLEXIN C-TERMINUS. **Mazen Makke**

2619-Pos Board B291
NSF-MEDIATED DISASSEMBLY OF ON- AND OFF PATHWAY SNARE COMPLEXES AND INHIBITION BY COMPLEXIN. **Ucheor B. Choi**, Minglei Zhao, K. Ian White, Axel Brunger

2620-Pos Board B292
THE NUMBER OF SNARE COMPLEXES CHANGING CONFORMATION DURING VESICLE FUSION. **Ying Zhao**, Qinghua Fang, Satyan Sharma, Shrutee Jakhanwal, Reinhard Jahn, Manfred Lindau

2621-Pos Board B293
FUSION PORE DYNAMICS AND SNARE COMPLEX MOBILITY. **Satyan Sharma**, Manfred Lindau

2622-Pos Board B294
THREE STAGES OF NEUROTRANSMITTER RELEASE: CA-TRIGGERED UNCLAMPING, SNARE RING ASSEMBLY AND SNARE-MEDIATED MEMBRANE FUSION. **Zachary A. McDargh**, Anirban Polley, Ben O'Shaughnessy

Membrane Receptors and Signal Transduction II (Boards B295 - B315)

2623-Pos Board B295
MONOMERS OF AMPA-TYPE GLUTAMATE RECEPTOR SUBUNITS DIFFUSE IN AND OUT OF SPINES; UNRAVELING BY SINGLE-MOLECULE TRACKING. **Jyoji Morise**, Kenichi G.N. Suzuki, Ayaka Kitagawa, Yoshihiko Wakazono, Kogo Takamiya, Taka A. Tsunoyama, Hiromu Takematsu, Akihiro Kusumi, Shogo Oka

2624-Pos Board B296
BINDING FREE ENERGY CALCULATIONS OF NMDA GLUTAMATE RECEPTORS. **Adithya Polasa**, Dylan S. Ogden, Mahmoud Moradi

2625-Pos Board B297
STRUCTURAL CORRELATES OF AGONIST BINDING TO NEUROTRANSMITTER BINDING SITES. Sushree Tripathy, **Stephen M. Muehlemann**, Wenjun Zheng, Anthony Auerbach

2626-Pos Board B298
ROLE OF B-GLUCAN STRUCTURE IN DECTIN-1 SIGNALING AND MULTIMERIZATION IN INNATE FUNGAL IMMUNITY. **Eduardo U. Anaya**, Aaron K. Neumann

2627-Pos Board B299
IMPORTANCE OF ORDERED ENVIRONMENT IN THE EARLY STAGE OF MAST CELL SIGNALING STUDIED BY IMAGING FLUORESCENCE CORRELATION SPECTROSCOPY. **Nirmalya Bag**, David A. Holowka, Barbara A. Baird

2628-Pos Board B300
NANOSCALE ORGANIZATION AND MOBILITY OF LIGANDS DIRECT T CELL ACTIVATION. Joschka Hellmeier, Viktoria Motsch, Rene Platzer, Andreas Karner, Johannes Preiner, Gerhard J. Schuetz, Johannes B. Huppa, **Eva Sevcsik**

2629-Pos Board B301
LIVE AND SIMULTANEOUS READOUT OF NFAT AND ERK ACTIVATION IN T CELLS REVEALS MULTIPLE DIMENSIONS OF TCR SIGNALING. **Jenny J. Y. Lin**, Shalini T. Low-Nam, Steven A. Alvarez, Jay T. Groves

2630-Pos Board B302
BEYOND THE TCR, ANTIGEN DISCRIMINATION IN T CELLS CONTINUES IN THE LAT:GRB2:SOS PROTEIN CONDENSATE. **Shalini T. Low-Nam**, Jenny JY Lin, Darren B. McAffee, Steven A. Alvarez, Scott D. Hansen, Kole T. Roybal, Jay T. Groves

2631-Pos Board B303 TRAVEL AWARDEE
A MEMBRANE-ACTIVATED, UNIVERSAL T-CELL RECEPTOR AGONIST. **Kiera B. Wilhelm**, Michael P. Coyle, Geoffrey P. O'Donoghue, Jenny JY Lin, Shalini T. Low-Nam, Jay T. Groves

2632-Pos Board B304
SINGLE PMHC:TCR BINDING EVENTS PRECIPITATE LAT ASSEMBLIES CAPABLE OF SPATIALLY DECOUPLING FROM THE ORIGINATING LIGAND. **Darren B. McAffee**, Shalini T. Low-Nam, Jenny JY Lin, Steven A. Alvarez, Scott D. Hansen, Jay T. Groves

2633-Pos Board B305
MECHANICAL RESPONSES OF CANCER CELLS TO DIFFERENT MATRICES MEASURED BY AFM AND FRET. **Fang Tian**, Tsung-Cheng Lin, Liang Wang, Sidong Chen, Jun Chu, Ching-Hwa Kiang, Hyokeun Park

2634-Pos Board B306
COMPUTATIONAL MODEL OF RGD-CONTAINING COMPUTATIONAL MODEL OF RGD-CONTAINING PEPTIDES AND THEIR EFFECTS ON INTEGRIN BINDING. Tamara C. Bidone, Aravind Rammohan, **Matt McKenzie**, Gregory A. Voth

2635-Pos Board B307
TOTAL RECONSTITUTION OF RECEPTOR-MEDIATED RAS ACTIVATION BY SOS IN VITRO REVEALS KINETIC AND CONFORMATIONAL LAYERS OF REGULATION IN MAPK SIGNALING . **Steven Alvarez**, William Y. C. Huang, Hiu Yue Monatrice Lam, Shalini T. Low-Nam, Young Kwang Lee, Jean K. Chung, Scott D. Hansen, Yasushi Kondo, Kabir H. Biswas, John Kuriyan, Jay T. Groves

2636-Pos Board B308
CANCER CELL HAS LOWERED THRESHOLD OF SIGNALING TRANSDUCTION EXCITABLE NETWORK CONTROLLED BY PIP-RAS INTERACTION. **David Huiwang Zhan**

2637-Pos Board B309
DYNAMIC PARTITIONING AND CONVECTION: A NEW MECHANISM FOR THE SELF-ORGANIZATION PATTERN OF THE EXCITABLE CORTICAL WAVES? **Tatsat Banerjee**, Yuchuan Miao, Debojyoti Biswas, Pablo A. Iglesias, Peter N. Devreotes

2638-Pos Board B310
QUANTIFICATION OF G1-CYCLIN DYNAMICS IN YEAST BY SCANNING NUMBER AND BRIGHTNESS. Savanna Dorsey, **Pooja Goswami**, Jing Cheng, Yogitha Thattikota, Sylvain Tollis, Catherine A. Royer, Mike Tyers

2639-Pos Board B311
RHOA MEDIATED JUXTACRINE REGULATION OF GLUCAGON SECRETION. **Yong Hee Chung**, David W. Piston

2640-Pos Board B312
PROTEIN KINASE A DYNAMICS ARE ALTERED AT THE OUTER MITOCHONDRIAL MEMBRANE IN CARDIAC SYMPATHETIC NEURONS FROM PREHYPERTENSIVE RATS. **Dan Li**, Adib Tarafdar, Kun Liu, David J. Paterson

2641-Pos Board B313
ROLE OF STORE OPERATED CALCIUM CHANNEL COMPLEX IN THE INFLAMMATORY SIGNALING IN PERIPHERAL SENSORY NEURONS. Alexandra S. Hogea, Shihab Shah, **Nikita Gamper**

2642-Pos Board B314
MECHANISTIC CHARACTERIZATION OF THE E102Q MUTATION IN THE SIGMA 1 RECEPTOR. **Hideaki Yano**, Ara M. Abramyan, Sett Naing, Leanne Liu, Lei Shi

2643-Pos Board B315
ELUCIDATION OF SIGNALING MECHANISM OF ANP RECEPTOR BY X-RAY CRYSTALLOGRAPHY. **Haruo Ogawa**, Masami Kodama

TRP Channels (Boards B316 - B343)

2644-Pos Board B316
MOLECULAR MECHANISM OF LIGAND-INDUCED TRPV2 CHANNEL ACTIVATION. **Shasha Feng**, Huisun Lee, Ruth Anne Pumroy, Amrita Samanta, Vera Moiseenkova-Bell, Wonpil Im

2645-Pos Board B317
SHORT- AND LONG-DISTANCE ALLOSTERIC COUPLING IN CAPSAICIN-INDUCED TRPV1 ACTIVATION. **Simon Vu**, Bo Hyun Lee, Xian Xiao, Fan Yang, Jie Zheng

2646-Pos Board B318
STRUCTURAL INSIGHTS ON TRPV5 GATING BY ENDOGENOUS MODULATORS. **Taylor Hughes**, Ruth Pumroy, Aysenur Yazici, Marina Kasimova, Edwin Carl Fluck, Kevin Huynh, Amrita Samanta, sudheer kumar molugu, Hong Zhou, Vincenzo Carnevale, Tibor Rohacs, Vera Moiseenkova-Bell

2647-Pos Board B319
THE ROLE OF CALMODULIN IN REGULATING CALCIUM-PERMEABLE PKD2L1 CHANNEL ACTIVITY. **Eunice Y. Park**, Misun Kwak, Youngjoo Baik, Insuk So

2648-Pos Board B320
REGULATION OF PKD2L1 BY CALCIUM EFFECTORS. **Amitabha Mukhopadhyay**, Leo Ng, Thuy Vien, Paul DeCaen

2649-Pos Board B321
CAMKII REGULATES TRPC6 MEDIATED STRESS STIMULATED CONTRACTILITY IN MUSCULAR DYSTROPHY. **Brian L. Lin**, Sumita Mishra, Grace E. Kim, Suraj Kanann, Jinying Yang, Chulan Kwon, Mark Anderson, Steven S. Pullen, David A. Kass

2650-Pos Board B322
UNDERSTANDING PROTEIN-LIPID INTERACTIONS OF TRP CHANNELS OF THE POLYCYSTIN FAMILY, THROUGH MD SIMULATIONS AND STRUCTURAL STUDIES. **Qinrui Wang**, George Hedger, Prafulla Aryal, Mariana Grieben, Ashley C. W. Pike, Jiye Shi, Elisabeth P. Carpenter, Mark S. P. Sansom

2651-Pos Board B323
ESSENTIAL RESIDUES REQUIRED FOR THE OPENING OF A POLYCYSTIN TRP CHANNEL. **Leo CT Ng**, Thuy N. Vien, Amitabha Mukhopadhyay, Paul G. DeCaen

2652-Pos Board B324
FORCE TRANSDUCTION IN THE NOMPC MECHANOSENSITIVE CHANNEL. **Sara Capponi**, David Argudo, Neville Bethel, Michael Grabe

2653-Pos Board B325
MECHANISM OF PROTON INHIBITION OF TRPV3. **Haiyuan Wang**, Qiaochu Wang, Jinbin Tian, Michael X. Zhu

2654-Pos Board B326
CONSERVED ALLOSTERIC PATHWAYS FOR ACTIVATION OF TRPV3 REVEALED THROUGH ENGINEERING VANILLOID-SENSITIVITY. Feng Zhang, Kenton Swartz, **Andres Jara-Oseguera**

2655-Pos Board B327 TRAVEL AWARDEE
SELECTIVITY AND CHARACTERIZATION OF THE PERMEANT ION EFFECT IN THE RAPIDTRANSITIONS ON THE PORE OF TRPV1 CHANNEL. **Miriam Garcia Avila**, Javier Tello Marmolejo, Gisela E. Rangel-Yescas, Leon D. Islas

2656-Pos Board B328
AGONIST-DEPENDENT PLASTICITY IN THE TRPC3 SELECTIVITY FILTER. Oleksandra Tiapko, Sanja Curcic, Gema Guedes de la Cruz, Toma Glasnov, **Klaus Groschner**

2657-Pos Board B329
TEMPERATURE-DEPENDENT HEAT CAPACITY ($\Delta C_p(T)$) MODIFICATION OF THE THERMODYNAMIC FRAMEWORK FOR THERMOTRP CHANNELS ELIMINATES PREDICTED DUAL THERMOSENSITIVITY. **Frank Yeh**, Richard Aldrich

2658-Pos Board B330 TRAVEL AWARDEE
ACTIVATION OF TRPV1 BY LIPIDS: CAN LIPID TAILS BRIDGE THE GAP BETWEEN THE VANILLOID BINDING SITE AND THE PERIPHERAL CAVITIES? **Eleonora Gianti**, Michael L. Klein, Tibor Rohacs, Vincenzo Carnevale

2659-Pos Board B331 TRAVEL AWARDEE
CONFORMATIONAL ENSEMBLE OF THE HUMAN TRPV3 ION CHANNEL. **Lejla Zubcevic**, Mark A. Herzik Jr., Mengyu Wu, William F. Borschel, Marscha Hirschi, Albert Song, Gabriel C. Lander, Seok-Yong Lee

2660-Pos Board B332
PHOSPHATIDYLINOSITOL INHIBITS TRPV1 VIA ITS VANILLOID BINDING SITE. **Aysenur Torun Yazici**, Eleonora Gianti, Marina A. Kasimova, Vincenzo Carnevale, Tibor Rohacs

2661-Pos Board B333
AN ANCIENT TRPM2 ORTHOLOG IS A TRUE CHANNEL-ENZYME, BUT ITS CATALYTIC ACTIVITY IS UNCOUPLED FROM PORE GATING. **Balazs Toth**, Iordan Iordanov, Laszlo Csanady

2662-Pos Board B334
MINING THE DROSOPHILA GUSTATORY RECEPTOR FAMILY FOR NEW THERMOSENSITIVE PROTEINS. **Marzie Amirshenava**, Benton R. Berigan, Aditi Mishra, Benjamin C. Zars, Taylor G. Hallman, Troy Zars, Lorin S. Milescu, Mirela Milescu

2663-Pos Board B335
DIFFERENTIAL EFFECTS OF CELL-TO-CELL CONTACT ON TRPC4 CHANNEL ACTIVATION BY ENGLERIN A AND $G_{I/O}$-COUPLED RECEPTOR AGONIST. **Lin Gao**, Qiaochu Wang, Michael X. Zhu

2664-Pos Board B336
RECEPTOR MEDIATED ACTIVATION OF TRPC3 CHANNEL WHEN AT ER PM JUNCTIONS. **Haiping Liu**

2665-Pos Board B337
INVESTIGATION OF TRPM4 IN PROSTATE CANCER CELLS WITH NOVEL SMALL MOLECULE INHIBITORS. **Anna Borgström**, Barbara Hauert, Sven Kappel, Clémence Delalande, Jean-Louis Reymond, Christine Peinelt

2666-Pos Board B338
TRPC4 CHANNELS ARE A KEY PLAYER IN HIPPOCAMPAL NEURONAL DEVELOPMENT. **Jaepyo Jeon**, Michael Xi Zhu

2667-Pos Board B339
TRPV2 IS CRUCIAL FOR THE DEVELOPMENT OF INTERCALATED DISCS IN MOUSE HEARTS. **Yuki Katanosaka**, Makoto Shibuya, Yoshihiro Ujihara, Satoshi Mohri, Keiji Naruse

2668-Pos Board B340 TRAVEL AWARDEE
BIOPHYSICAL PROPERTIES OF THE ELECTROPERMEABILIZATION-INDUCED MEMBRANE CONDUCTANCE IN PATCH CLAMPED ADRENAL CHROMAFFIN CELLS. **Lisha Yang**, Sophia Pierce, Gale L. Craviso, Normand Leblanc

2669-Pos Board B341
PHB REGULATES TRAFFICKING OF TRPM8 TO THE PLASMA MEMBRANE. **Lusine Demirkhanyan**, David Goa, Eleonora Zakharian

2670-Pos Board B342
SPECTROSCOPIC STUDIES OF PURIFIED RAT TRPV1. Gilbert Q. Martinez, **Marium M. Raza**, Sharona E. Gordon

2671-Pos Board B343
CANNABIDIOL DIRECTLY ACTIVATES TRPV2. **Aaron Gochman**, Andres Jara-Oseguera, Kenton Swartz

Voltage-gated K Channels II (Boards B344 - B368)

2672-Pos Board B344
DETERMINING FUNCTIONAL KCNQ1/KCNE1 SUBUNIT INTERACTIONS IN THE KCNQ1/KCNE1 CHANNEL. **Xiaoan Wu**, Marta E. Perez, Kevin J. Sampson, Robert S. Kass, Peter H. Larsson

2673-Pos Board B345
CONFORMATIONAL DYNAMICS OF THE INTRINSIC LIGAND IN THE CNBHD OF THE VOLTAGE-GATED POTASSIUM CHANNEL HERG. **Sara J. Codding**

2674-Pos Board B346
DIFFERENTIAL SENSITIVITY OF CARDIAC ION CHANNELS TO POLYUNSATURATED FATTY ACID ANALOGUES. **Briana Bohannon**, Sara I. Liin, Peter Larsson

2675-Pos Board B347
RE-EDUCATION OF TUMOR ASSOCIATED MACROPHAGES BY TRABECTEDIN. **Diego A. Peraza**, Ana B. Garcia-Redondo, Adrian Povo-Retana, Sara Arias, Ana M. Briones, Lisardo Boscá, Carlos M. Galmarini, Carmen Valenzuela

2676-Pos Board B348
TWO-PRONGED AROMATIC ARGININE-MIMICS AS HV1 PROTON CHANNEL INHIBITORS. **Chang Zhao**, Liang Hong, Jason D. Galpin, Christopher A. Ahern, Francesco Tombola

2677-Pos Board B349
PHARMACOLOGICAL MODULATION OF KV3 POTASSIUM CURRENTS. **Nadia Pilati**, Michele Speggiorin, Giuseppe Alvaro, Charles H. Large

2678-Pos Board B350
EPR SPECTROSCOPIC STUDIES OF THE VOLTAGE SENSOR DOMAIN (Q1-VSD) OF HUMAN KCNQ1 POTASSIUM ION CHANNEL IN LIPID BILAYERS. **Gunjan Dixit**

2679-Pos Board B351
EFFECT OF LIPOPHILIC MOLECULES ON EPILEPSY-CAUSING MUTATIONS OF NEURONAL KCNQ CHANNELS. Ludwig Andersson, Marta E. Perez, Sara I. Liin, Fredrik Elinder, Peter H. Larsson, **Rene Barro-Soria**

2680-Pos Board B352
PKC ACTIVATION DECREASES KV1.5 PROTEIN EXPRESSION THROUGH ACCELERATING ENDOCYTIC CHANNEL DEGRADATION. **Tingzhong Wang**, Yuan Du, Jun Guo, Wentao Li, Tonghua Yang, Shetuan Zhang

2681-Pos Board B353
IDENTIFYING COMMON STRUCTURAL FEATURES FOR ELECTROMECHANICAL COUPLING BETWEEN DOMAIN-SWAPPED AND NON-DOMAIN SWAPPED POTASSIUM CHANNELS. **Ana I. Fernández-Mariño**, Kenton J. Swartz

2682-Pos Board B354
CAVEOLAR KV1.3 TARGETING PARTICIPATES IN THE ADIPOCYTE PHYSIOLOGY. Mireia Perez-Verdaguer, Jesusa CCapera Aragones, Maria Ortego-Dominguez, Joanna Bielanska, Núria Comes, Rafael J. Montoro, Marta Camps, **Antonio Felipe**

2683-Pos Board B355
DEVELOPMENT OF BK CHANNEL AGONISTS AND ANTAGONISTS THAT TARGET A COMMON RECOGNITION AREA IN THE ACCESSORY BETA1 SUBUNIT. Anna N. Bukiya, Guruprasad Kuntamallappanavar, Abby L. Parrill, **Alex M. Dopico**

2684-Pos Board B356
PROTEOMICS ANALYSIS POINTS AT NOVEL CELLULAR PARTNERS FOR THE *KCNMB1* PROTEIN PRODUCT. Kelsey North, David Kakhniashvili, Alex M. Dopico, **Anna N. Bukiya**

2685-Pos Board B357
USING CLICK CHEMISTRY AND VOLTAGE CLAMP FLUORIMETRY TO STUDY STRUCTURAL DYNAMICS OF MEMBRANE PROTEINS. **Kanchan Gupta**, Gilman E. S. Toombes, Kenton J. Swartz

2686-Pos Board B358
STRUCTURE OF THE INTERMEDIATE STATE OF THE HUMAN KCNQ1 CHANNEL VOLTAGE-SENSOR DOMAIN. Keenan C. Taylor, **Po wei Kang**, Panpan Hou, Nien-Du Yang, Georg Kuenze, Jingyi Shi, Jarrod A. Smith, Kelli McFarland White, Hui Huang, Dungeng Peng, Alfred L. George Jr., Jens Meiler, Robert L. McFeeters, Jianmin Cui, Charles R. Sanders

2687-Pos Board B359
DYNAMICS OF THE PAS DOMAIN AND CYCLIC NUCLEOTIDE-BINDING HOMOLOGY DOMAIN INTERACTION PROBED WITH A FLUORESCENT NONCANONICAL AMINO ACID (L-ANAP) IN HERG POTASSIUM CHANNELS. **Ashley A. Johnson**, Matt C. Trudeau

2688-Pos Board B360
CP1 IS A POTENT I_{KS} CHANNEL ACTIVATOR WHICH ACTS BY SUBSTITUTING PHOSPHATIDYLINOSITOL 4,5 BISPHOSPHATE. **Yongfeng Liu**, Xianjin Xu, Moawiah M. Naffaa, Hongwu Liang, Guohui Zhang, Panpan Hou, Hongzhan Wang, Junyuan Gao, Jingyi Shi, Ira Cohen, Xiaoqin Zou, Jianmin Cui

2689-Pos Board B361
SINGLE CHANNEL STUDIES OF THE CATION PERMEATION PATHWAY OF THE SHAKER KV ISOLATED VOLTAGE-SENSING DOMAIN (IVSD). **Juan Zhao**, Rikard Blunck

2690-Pos Board B362
DECOUPLING BETWEEN VOLTAGE SENSOR MOVEMENT AND PORE OPENING OF KV2.1 CHANNELS. **Matthew J. Marquis**, Rebecka J. Sepela, Jon T. Sack

2691-Pos Board B363
MECHANISM OF BK CHANNEL INHIBITION BY THE OPIOID AGONIST LOPERAMIDE. **Alexandre G. Vouga**, Michael E. Rockman, Marlene A. Jacobson, Brad S. Rothberg

2692-Pos Board B364
MODULATION OF KV1.3 BY THE GUT PEPTIDE GLUCAGON-LIKE PEPTIDE 1. **Daniel R. Landi Conde**, Genevieve A. Bell, Debra A. Fadool

2693-Pos Board B365
CONSERVED RESIDUES AT THE INTERFACE BETWEEN THE S4 AND S5 SEGMENTS ARE CRITICAL FOR NORMAL GATING OF HCN CHANNELS. **Rosamary Ramentol**, Marta E. Perez, H. Peter Larsson

2694-Pos Board B366
ENDOCANNABINOIDS FACILITATE THE OPENING OF THE M-CHANNEL. **Johan E. Larsson**, Liin Sara

2695-Pos Board B367
A STRUCTURAL MODEL OF FAST INACTIVATION IN SHAKER K_V CHANNELS. **Miguel Holmgren**, Ariela Vergara-Jaque, Horacio Poblete, Francisco Palma, Adam S. Lowet, Angel de la Cruz Ladrau, Alexander Sukharev, Jeffrey Comer

2696-Pos Board B368
ELECTROPHYSIOLOGICAL AND PHARMACOLOGICAL CHARACTERIZATION OF A NOVEL AND POTENT NEURONAL KV7 OPENER SCR2682 FOR ANTIEPILEPSY. **Yani Liu**, Fan Zhang, Bo Liang, huangming Chen, Hailin Zhang, KeWei Wang

Bacterial Mechanics, Cytoskeleton, and Motility (Boards B369 - B376)

2697-Pos Board B369
A COMPREHENSIVE VIEW OF TYPE IV PILUS RETRACTION FORCES ACROSS THE BACTERIAL DOMAIN. **Nicolas Biais**

2698-Pos Board B370
MECHANICAL FORCES ARE A REACTIVITY SWITCH FOR AN ADHESIN THIOESTER BOND. **Daniel J. Echelman**, Alvaro Alonso, Shubhasis Haldar, Rafael Tapia-Rojo, Edward C. Eckels, Julio M. Fernandez

2699-Pos Board B371
CONSTRICTIVE FORCE AS THE KEY SYMMETRY-BREAKING FACTOR FOR BACTERIAL CELL DIVISION. **Lam T. Nguyen**

2700-Pos Board B372
TRACKING THE MOVEMENT OF A SINGLE PROKARYOTIC CELL IN EXTREME ENVIRONMENTAL CONDITIONS. **Masayoshi Nishiyama**, Yoshiyuki Arai

2701-Pos Board B373
INSIGHTS INTO THE MECHANISM OF ARCHAELLAR MOTOR ROTATION FROM OBSERVATION OF UNEXPECTEDLY HIGH TORQUE. **Takayuki Nishizaka**

2702-Pos Board B374
RAPID LIGHT-TRIGGERED SPATIAL REORGANIZATION OF PROTEINS IN LIVING BACTERIA CELLS. **Ryan J. McQuillen**, Jie Xiao

2703-Pos Board B375
MINC-MIND COPOLYMERS CAPTURE FTSZ FILAMENTS TO FACILITATE THE REGULATION OF Z-RING LOCALIZATION. **Yaodong Chen**, Ping Wang, Na Wang, Xueqin Ma, Li Bian

2704-Pos Board B376
DYNAMICS OF FTSI, AN ESSENTIAL BACTERIAL CELL WALL SYNTHESIS PROTEIN. **Joshua McCausland**, Jie Xiao

Cell Mechanics, Mechanosensing, and Motility III (Boards B377 - B403)

2705-Pos Board B377
MODELLING COLLECTIVE GRADIENT SENSING WITH LEADER AND FOLLOWER CELLS. **Austin Hopkins**, Brian A. Camley

2706-Pos Board B378
DYNAMIC CROSSLINKING OF THE ACTIN CYTOSKELETON GOVERNS INTRACELLULAR MECHANICS. **Loïc Chaubet**, Hossein K. Heris, Allen J. Ehrlicher, Adam G. Hendricks

2707-Pos Board B379
CORRELATING BIOCHEMICAL IMPACT OF ENVIRONMENTAL TOXICANTS ON HUMAN NEURAL STEM CELLS TO BIOPHYSICAL CHANGES. **Gautam Mahajan**, Moo-Yeal Lee, Chandrasekhar R. Kothapalli

2708-Pos Board B380
TRANSITION BETWEEN SWIMMING AND CRAWLING: A MODEL OF EUKARYOTIC CELL MOTILITY. **Melissa H. Mai**, Brian A. Camley

2709-Pos Board B381
CELL RESPONSE TO LIQUID CRYSTAL ORDER. **Kirsten D. Endresen**, Francesca Serra, Michael A. Lepori

2710-Pos Board B382
ECM-SUBSTRATE INTERFACIAL FORCES DICTATE CELL COALESCENCE ON VISCOELASTIC SUBSTRATES. **Divyanshu Mishra**, SU GUO, Paul Matsudaira

2711-Pos Board B383
IPMK LOSS INHIBITS CELLULAR MOTILITY AND CONTRACTILITY. **Abinash Padhi**, Becky Tu-Sekine, Matthew Apperson, Sunghee Jin, Amrinder S. Nain, Sangwon F. Kim

2712-Pos Board B384
UNDER DIABETIC CONDITIONS REACTIVE OXYGEN SPECIES INHIBITS CORNEAL EPITHELIAL CELL MIGRATION AND TIGHT JUNCTION FORMATION VIA AKT SIGNALING. **Qiwei Jiang**, Denis Kaili, Jonaye Freeman, Bingchuan Geng, Tao Tan, Yanhong Luo, Jianfeng He, Miyuki Takeshima, Hiroshi Takeshima, Heather Chandler, Hua Zhu

2713-Pos Board B385
THE ROLE OF CLP36 IN PANCREATIC CANCER CELLS DURING MIGRATION AND IN CELL SHAPE MORPHOLOGY. **Eleana Parajon**, Dustin G Thomas, Eric S. Schiffhauer, Douglas N. Robinson

2714-Pos Board B386
PHYSICAL MODEL FOR CELL MIGRATION GUIDED BY ELASTIC PROPERTIES OF THE SUBSTRATE. **Susana Márquez**, Rodrigo Soto, Miguel Concha, German Reig

2715-Pos Board B387
THERMOTAXIS INVOLVES SPONTANEOUS BACKWARD SWIMMING IN *CHLAMYDOMONAS*. Masaya Sekiguchi, Shigetoshi Kameda, Satoshi Kurosawa, Megumi Yoshida, **Kenjiro Yoshimura**

2716-Pos Board B388
4-HYDROXYACETOPHENONE MODULATES THE CYTOSKELETON THROUGH NONMUSCLE MYOSIN-2C TO REDUCE METASTASIS. Darren Bryan, Melinda Stack, Katarzyna Krysztofiak, Urszula Cichoń, Dustin Thomas, Alexandra Surcel, Eric Schiffhauer, Douglas Robinson, **Ronald S. Rock**, Ralph Weichselbaum

2717-Pos Board B389
JUNCTIONAL FORCES MAINTAIN ISOMETRIC TENSION OF THE EPITHELIAL MONOLAYER. **Lewis E. Scott**, Christopher A. Lemmon, Seth H. Weinberg

2718-Pos Board B390
NANOMECHANICAL PROPERTIES AS A BIOMARKER TO DIFFERENTIATE STATE OF CELL USING AFM. **Jyoti Wala**

2719-Pos Board B391
CELLULAR TRACTION FORCES AND LOCATIONS OF ADHESION SITE REGULATE CELL FUNCTIONS. **Jyoti Wala**, Soumen Das

2720-Pos Board B392
CHANGES IN MECHANICAL PROPERTY OF HUMAN DERMAL FIBROBLAST INDUCED BY ELECTRIC FIELD STIMULATION. **Se Jik Han**, Kyung Sook Kim, Sangwoo Kwon

2721-Pos Board B393
IN VIVO TENSION SENSORS DELIVER NOVEL INSIGHT INTO MECHANICS OF ZEBRAFISH GASTRULATION. **Bernhard Wallmeyer**, Arne Hofemeier, Timo Betz

2722-Pos Board B394
FORCE-DEPENDENT ALLOSTERIC ENHANCEMENT OF AE-CATENIN BINDING TO F-ACTIN BY VINCULIN. Nicolas A. Bax, **Derek L. Huang**, Sabine Pokutta, Alexander R. Dunn, William I. Weis

2723-Pos Board B395
BIOMECHANICAL AND STRUCTURAL INVESTIGATION OF PERIPHERAL NERVOUS SYSTEM MICROENVIRONMENT DURING DEVELOPMENT. **Gonzalo Rosso**, Jochen Guck

2724-Pos Board B396
REGULATION OF EPITHELIAL MESENCHYMAL TRANSITION UNDER COMPLIANT POLYDIMETHYLSILOXANE SUBSTRATE. **Mousumi Mandal**, Monika Rajput, Anji Anura, Tanmaya Pathak, Jyotirmoy Chatterjee

2725-Pos Board B397
NOVEL METHOD OF DETERMINING CELLULAR TRACTION FORCES DURING EMT. **Brian P. Griffin**, Christopher A. Lemmon

2726-Pos Board B398
STUDY OF CANCER CELL MECHANICS BY TRACTION FORCE MICROSCOPY. **Yuwen Mei**, Justin Raupp, Takeshi sakamoto

2727-Pos Board B399 TRAVEL AWARDEE
A NON-INVASIVE METABOLIC INVESTIGATION OF BREAST CANCER INVASION. **Austin E. Y. T. Lefebvre**, Freddie A. Adame, Michelle A. Digman

2728-Pos Board B400
CELL CYCLE SYNCHRONIZATION FOR THE STUDY OF DNA WRAPPED SINGLE WALLED CARBON NANOTUBE INFLUENCE ON NEURAL STEM CELLS. **Swetha Chandrasekar**

2729-Pos Board B401
MECHANOBIOLOGICAL CONTROL OF THE IMMUNE RESPONSE. **Huw Colin-York**, Yousef Javanmardi, Emad Moeendarbary, Christian Eggeling, Marco Fritzsche

2730-Pos Board B402
PROBING FLUCTUATIONS AND AVALANCHES IN THE CYTOSKELETON WITH ACTIVE MICROPOST ARRAYS. **Yu Shi**, Daniel H. Reich, Christopher L. Porter, John C. Crocker

2731-Pos Board B403
POINT MUTATION OF THE ICE-BINDING SITE IN ANTIFREEZE PROTEIN MODIFY THE COLD TOLERANCE IN *CAENORHABDITIS ELEGANS*. **Masahiro Kuramochi**, Chiaki Takanashi, Akari Yamauchi, Motomichi Doi, Kazuhiro Mio, Sakae Tsuda, Yuji C. Sasaki

Actin Structure, Dynamics, and Associated Proteins (Boards B404 - B410)

2732-Pos Board B404
NOVEL ACTIN REGULATORY ACTIVITIES OF THE IQGAP-APC-DIA1 COMPLEX REVEALED BY SINGLE-MOLECULE IMAGING. **Gregory Hoeprich**, Maria Angeles Juanes, Bruce Goode

2733-Pos Board B405
EXPERIMENTALLY VARYING THE NUMBER OF SUPER-REPEATS IN THE NEB GENE OF THE MOUSE - ASSESSING THE ROLE OF NEBULIN IN THIN FILAMENT LENGTH REGULATION. **Balazs Kiss**, Paola Tonino, Justin Kolb, John E. Smith, Henk L. Granzier

2734-Pos Board B406
ELUCIDATING STEPS IN ACTIN POLYMERIZATION AND NUCLEATION USING A COARSE-GRAINED MODEL OF MULTIPROTEIN COMPLEX FORMATION. **Brandon G. Horan**, Dimitrios Vavylonis, Jeetain Mittal

2735-Pos Board B407
A NEW TWIST ON THE MECHANISM OF MUTATION-INDUCED TROPOMYOSIN DYSFUNCTION. Michael J. Rynkiewicz, Jeffrey R. Moore, Stuart G. Campbell, **William Lehman**

2736-Pos Board B408
QUANTITATIVE MASS IMAGING OF ACTIN NUCLEATION. **Nikolas Hundt**, Gavin Young, Daniel Cole, Max Hantke, Philipp Kukura

2737-Pos Board B409
MECHANOSENSITIVITY OF ACTIN BUNDLES. **Jahnavi Chikireddy**

2738-Pos Board B410
IMPACT OF A BETA-III-SPECTRIN MUTATION ON THE STRUCTURE AND FUNCTION OF DYSTROPHIN ABD1. **Adam W. Avery**, Michael E. Fealey, Thomas S. Hays, David D. Thomas

Membrane Pumps, Transporters, and Exchangers II (Boards B411 - B438)

2739-Pos Board B411
STRUCTURAL DETERMINANTS OF THE HASBT-LIGANDS INTERACTIONS. Gamsjäger Viktoria, **Claire Colas**, Gerhard F. Ecker

2740-Pos Board B412
SUBSTRATE BINDING AND CONFORMATIONAL CHANGES OF THE BILE ACID SYMPORTER $ASBT_{NM}$. **Fiona B. Naughton**, Patrick Becker, Deborah Brotherton, Alexander D. Cameron, Oliver Beckstein

2741-Pos Board B413
FUNCTIONAL CHARACTERIZATIONS OF PURIFIED CTR COPPER TRANSPORTER PROTEINS REVEAL A NOVEL MECHANISM OF ION SELECTIVITY AND TRANSPORT. **Kehan Chen**, Yaping Pan, Ming Zhou

2742-Pos Board B414
STRUCTURAL BASIS OF ION SELECTIVITY AND PERMEATION IN THE HIGH-AFFINITY COPPER TRANSPORTER CTR1. **Peng Yuan**

2743-Pos Board B415
SPECIES DIFFERENCES IN MONOVALENT ANION SUBSTRATE SELECTIVITY IN THE SODIUM IODIDE SYMPORTER (NIS). **Susanna C. Concilio**, Hristina Zhekova, Sergei Noskov, Stephen J. Russell

2744-Pos Board B416
PERCHLORATE BINDING TO A CRYPTIC ALLOSTERIC SITE CHANGES THE MECHANISM OF IODIDE TRANSPORT BY THE NA^+/I^- SYMPORTER (NIS). Alejandro Llorente Esteban, Andrea Reyna-Neyra, Rian W. Manville, Geoffrey W. Abbott, Nancy Carrasco, **Leon M. Amzel**

2745-Pos Board B417
ATYPICAL RCK DOMAIN PRESENT IN A TWO COMPONENT K^+/H^+ ANTIPORTER. **Tatiana Cereija**, Joao Pedro Leitao Guerra, Joao H. Morais Cabral

2746-Pos Board B418
QUANTITATIVE SIMULATIONS OF ALTERNATING ACCESS IN SODIUM-SOLUTE SYMPORTERS. **Paola Bisignano**, Sara Capponi, John M. Rosenberg, Michael Grabe

2747-Pos Board B419
USING PHYLOGENY TO DECIPHER ELECTROGENICITY IN CATION/PROTON ANTIPORTERS. **Gal Masrati**, Manish Dwivedi, Abraham Rimon, Yael Gluck-Margolin, Amit Kessel, Haim Ashkenazy, Itay Mayrose, Etana Padan, Nir Ben-Tal

2748-Pos Board B420
NA^+/CA^{2+} EXCHANGER IN HUMAN IPSC DERIVED CARDIOMYOCYTES: FUNCTIONAL EVIDENCE AND RELEVANCE FOR BEATING BEHAVIOR. **Maria Barthmes**, Krisztina Juhasz, Andre Bazzone, Ulrich Thomas, Sonja Stoelzle-Feix, Andrea Bruggemann, Michael George, Niels Fertig

2749-Pos Board B421
UNRAVELLING THE TOPOLOGICAL ORGANIZATION OF THE A2-REPEAT OF THE MAMMALIAN SODIUM-CALCIUM EXCHANGER. **Namuna Panday**, Kyle J. Scranton, Shuzhen Zhang, Scott John, Michela Ottolia

2750-Pos Board B422
MOLECULAR BASIS FOR ION RECOGNITION AND TRANSPORT IN A NA^+/CA^{2+} EXCHANGER. **Fabrizio Marinelli**, Emel Ficici, Jose' D. Faraldo-Gómez

2751-Pos Board B423 TRAVEL AWARDEE
CLC CONFORMATIONAL LANDSCAPE AS STUDIED BY SMFRET. **Ayush Krishnamoorti**, Ricky C. Cheng, Vladmir Berka, Merritt Maduke

2752-Pos Board B424
MODELLING OF ION BINDING AND SELECTIVITY IN SLC4 TRANSPORTERS. **Hristina R. Zhekova**, Mirna Damergi, Sergei Yu. Noskov, Jiansen Jiang, Z. Hong Zhou, Alexander Pushkin, Ira Kurtz

2753-Pos Board B425
DUAL-SUBSTRATE ACCESSING MECHANISM OF AN MFS TRANSPORTER FOR LYSOPHOSPHOLIPID FLIPPING ACROSS THE CELL MEMBRANE. **Lei Zheng**, Yibin Lin, R. N. V. Krishna Deepak, Hao Fan

2754-Pos Board B426
UPTAKE DYNAMICS IN THE LACTOSE PERMEASE (LACY) MEMBRANE PROTEIN TRANSPORTER. Dari Kimanius, Erik R. Lindahl, **Magnus Andersson**

2755-Pos Board B427 TRAVEL AWARDEE
DIRECT PROTEIN-LIPID INTERACTIONS SHAPE THE CONFORMATIONAL LANDSCAPE OF SECONDARY TRANSPORTERS. **Chloe Martens**, Mrinal Shekhar, Antoni Borysik, Andy Lau, Eamonn Reading, Emad Tajkhorshid, Paula Booth, Argyris Politis

2756-Pos Board B428
EXPLORING DYNAMIC TRANSITIONS IN AN ARGININE TRANSPORTER. **Zhiyi Wu**, Simon Newstead, Philip C. Biggin

2757-Pos Board B429
TRANSPORT ACTIVITY AND NOVEL INHIBITORS OF HUMAN GLUT9 CHARACTERIZED BY MOLECULAR MODELING AND ELECTROPHYSIOLOGY. Jinping Zhang, Yanyu Chen, Ting Wu, Qunsheng Lan, Ze-an Zhao, Ying Cao, Pingzheng Zhou, **Jianxin Pang**

2758-Pos Board B430
MODULATION OF ORIENTATIONAL DYNAMICS OF EXCITATORY AMINO ACID TRANSPORTER-1 BY CHOLESTEROL. **Shashank Pant**, Emad Tajkhorshid

2759-Pos Board B431
MECHANISM AND POTENTIAL SITES OF POTASSIUM INTERACTION WITH THE GLUTAMATE TRANSPORTER EAAC1. **Jiali Wang**, Christof T. Grewer

2760-Pos Board B432
VOLTAGE DEPENDENT INHIBITOR BINDING TO PLASMA-MEMBRANE GLUTAMATE TRANSPORTERS. **Laura J. Zielewicz**, Jiali Wang, Elias Ndaru, Christof T. Grewer

2761-Pos Board B433
EVOLUTION OF ION SPECIFICITY IN GLUTAMATE TRANSPORTERS. **Krishna Reddy**, Olga Boudker

2762-Pos Board B434 TRAVEL AWARDEE
MILLISECOND TIME RESOLUTION BY HS-AFM LINE SCANNING OF FAST GLTPH DYNAMICS. **Tina R. Matin**, George R. Heath, Gerard Huysmans, Olga Boudker, Simon Scheuring

2763-Pos Board B435
MECHANISTIC CHARACTERIZATION OF THE ALLOSTERIC COMMUNICATIONS BETWEEN THE CENTRAL BINDING SITE AND THE EXTRACELLULAR VESTIBULE OF THE SEROTONIN TRANSPORTER. **Ara M. Abramyan**, Per Plenge, Pia Weikop, Ulrik Gether, Benny Bang-Andersen, Lei Shi, Claus J. Løland

2764-Pos Board B436
IBOGAINE BINDS HUMAN SEROTONIN TRANSPORTER IN MULTIPLE FUNCTIONAL STATES. **Zhiyu Zhao**, Po-Chao Wen, Jonathan Coleman, Dongxue Yang, Eric Gouaux, Emad Tajkhorshid

2765-Pos Board B437
BRIDGING THE GAP BETWEEN FUNCTIONAL AND STRUCTURAL DATA. **Verena Burtscher**, Matej Hotka, Thomas Stockner, Jan-Philipp Machtens, Walter Sandtner

2766-Pos Board B438
IDENTIFYING STRUCTURAL DETERMINANTS OF HIGH-POTENCY MDPV BINDING AT THE HUMAN DOPAMINE TRANSPORTER S1 BINDING SITE. **Tyler WE Steele**, Brian Ruiz, Zachary Spires, Jose M. Eltit

Computational Neuroscience (Boards B439 - B442)

2767-Pos Board B439 TRAVEL AWARDEE
THE MISSED ROLE OF CYTOSKELETAL FILAMENTS IN INFORMATION PROCESSING. **Christian C. Hunley**

2768-Pos Board B440
GENERATING A 4D ATLAS OF NUCLEAR POSITIONS IN EMBRYONIC *CAENORHABDITIS ELEGANS*. Ryan Christensen, Alexandra Bokinsky, Anthony Santella, Mark Moyle, Min Guo, Andrew Lauziere, Evan Ardiel, Harshad D. Vishwasrao, Brandon Harvey, **Michael Levin**, Nensi Karaj, William Mohler, Daniel Daniel Colón-Ramos, Zhirong Bao, Hari Shroff

2769-Pos Board B441
ANALYSIS OF PHOSPHOINOSITIDE-DEPENDENCE OF ACTION POTENTIAL FIRING IN SYMPATHETIC NEURONS BY ELECTROPHYSIOLOGICAL RECORDINGS AND MATHEMATICAL MODELING. **Martin Kruse**, Rayne Whitten

2770-Pos Board B442
EFFECT OF COLUMNAR NEURAL GROUPING ON NETWORK SYNCHRONIZATION. **Joseph S. Tumulty**, Luis Cruz

Computational Methods and Bioinformatics II (Boards B443 - B467)

2771-Pos Board B443
QM/MM STUDY ON CLEAVAGE MECHANISM CATALYZED BY ZIKA VIRUS NS2B/NS3 SERINE PROTEASE. **Bodee Nutho**, Adrian Mulholland, Thanyada Rungrotmongkol

2772-Pos Board B444
NETWORK-BASED MODELING OF AMYLOID FIBRIL FORMATION. **Gianmarc Grazioli**, Yue Yu, Megha H. Unhelkar, Rachel W. Martin, Carter T. Butts

2773-Pos Board B445
IN SILICO ANALYSIS OF AMINO ACID SUBSTITUTIONS RESULTING FROM SNPS ASSOCIATED WITH INFLAMMATORY BOWEL DISEASE. **Constance Jeffery**, Chang Chen

2774-Pos Board B446
COMPUTATIONAL ANALYSIS OF SPECTROSCOPICAL PROPERTIES AND BINDING AFFINITIES OF OXYLUCIFERIN ANALOGS IN FIREFLY LUCIFERASE PROTEIN. **Vardhan Satalkar**, Xiaoliang Pan, Enrico Bennasi, Yihan Shao

2775-Pos Board B447
IN SILICO EXPERIMENTS AS A METHOD TO COMPARE TRANSPORTES MECHANISM. **Yuly E. Sánchez**, Julian Aguilar

2776-Pos Board B448
COMPARATIVE STUDY OF FLAGELLAR AND CYTOPLASMIC DYNEINS. **Nayere Tajielyato**, Joshua Alper, Emil Alexov

2777-Pos Board B449
COMPUTATIONAL DESIGN OF DRUGLIKE ALLOSTERIC INHIBITORS OF AXL AND MET RECEPTOR TYROSINE KINASES. **D. S. Dalafave**, K. Sureshkumar

2778-Pos Board B450
PREDICTION OF NOVEL HOST-PATHOGEN INTERACTIONS FOR HELICOBACTER PYLORI THROUGH INTERFACE MIMICRY AND THEIR IMPLICATIONS TO GASTRIC CANCER. **Emine Guven Maiorov**, Chung-Jung Tsai, Buyong Ma, Ruth Nussinov

2779-Pos Board B451
COMPUTATIONAL MODELLING OF TRIADIN'S CONTRIBUTION TO SUDDEN CARDIAC DEATH IN CATECHOLAMINERGIC POLYMORPHIC VENTRICULAR TACHYCARDIA-5 (CPVT-5). **Laura Coonfield**, Aman Ullah, W. Jonathan Lederer, M. Saleet Jafri

2780-Pos Board B452
INTEGRATED COMPUTATIONAL MODEL OF LUNG TISSUE BIOENERGETICS. **Xiao Zhang**, Ranjan K. Dash, Anne Clough, Dexuan Xie, Elizabeth Jacobs, Said Audi

2781-Pos Board B453
CANCER-ML: MODELING FITNESS OF UNREGULATED RAS MUTANTS USING COMPUTATIONAL MUTAGENESIS AND MACHINE LEARNING. **Majid Masso**, Arnav Bansal, Akhil Gajjala, Preethi Prem, Iosif I. Vaisman

2782-Pos Board B454
ANOMALOUS HEAT DISSIPATION OF A BROWNIAN MOTOR. **Karina Mazzitello**, Yi Jiang, Miguel Arizmendi, Jose Iguain, Fereydoon Family

2783-Pos Board B455
THE EFFECT OF THE CELLULAR ENVIRONMENT AND CONFORMATIONAL DYNAMICS ON OPTIMAL ELECTROSTATIC INTERACTIONS WITHIN THE BARSTAR-BARNASE COMPLEX: A COMPUTATIONAL APPROACH. **Alyssa J. Kranc**, Mala L. Radhakrishnan

2784-Pos Board B456 TRAVEL AWARDEE
ROLES OF NUCLEAR CONFINEMENT, EXCLUDED VOLUME, AND PERSISTENCE ON TAD FORMATIONS, CHROMOSOME TERRITORIES, AND CHROMATIN-NUCLEAR ENVELOPE INTERACTIONS. **Samira Mali**, Alan Perez-Rathke, Qiu Sun, Gamze Gursoy, Jie Liang

2785-Pos Board B457
NEW METHOD TO DETERMINE THE EFFECT OF DIMERIZATION ON PROTEIN FLEXIBILITY FROM MOLECULAR DYNAMICS SIMULATION USING STRUCTURAL HIERARCHY. **Arghya Chakravorty**, Jonathan Higham, Emil Alexov, Richard H. Henchman

2786-Pos Board B458
COMPUTATIONAL PREDICTIONS OF DRUG-PROTEIN BINDING KINETICS WITH A HYBRID MOLECULAR DYNAMICS, BROWNIAN DYNAMICS, AND MILESTONING APPROACH. **Benjamin R. Jagger**, Christopher T. Lee, J. Andrew McCammon, Rommie E. Amaro

2787-Pos Board B459
TOWARD REDUCING HERG AFFINITIES FOR DAT INHIBITORS WITH A COMBINED MACHINE LEARNING AND MOLECULAR MODELING APPROACH. **Andrew D. Fant**, Soren Wacker, Joslyn Jung, Jiqing Guo, Ara M. Abramyan, Henry J. Duff, Amy H. Newman, Sergei Y. Noskov, Lei Shi

2788-Pos Board B460
GLYCAN STRUCTURE MODELING AND SIMULATION. **Wonpil Im**

2789-Pos Board B461
PHYSICAL BINDING OF THE TOBACCO SMOKE CARCINOGEN NNK DIAZONIUM ION TO THE HUMAN TUMOR SUPPRESSOR GENE TP53 EXON 5. **Christos Deligkaris**

2790-Pos Board B462
TRANSIENT ANOMALOUS SUBDIFFUSION OF DNA-BINDING SPECIES IN THE NUCLEUS: THE FINAL MODEL. **Michael J. Saxton**

2791-Pos Board B463
DYNAMICAL NETWORK ANALYSIS OF PROTEIN:RNA COMPLEXES MADE EASY. **Marcelo Cardoso dos Reis Melo**, Rafael C. Bernardi, Zaida Luthey-Schulten

2792-Pos Board B464
MEGADOCK-WEB: AN INTEGRATED DATABASE OF HIGH-THROUGHPUT STRUCTURE-BASED PROTEIN-PROTEIN INTERACTION PREDICTIONS. **Masahito Ohue**, Takanori Hayashi, Yuri Matsuzaki, Keisuke Yanagisawa, Yutaka Akiyama

2793-Pos Board B465
TMB-IBIOMES: A DATABASE OF ALL ATOM SIMULATION AND ANALYSIS FOR NUCLEOSOMES. **Ran Sun**, Zilong Li, Thomas Connor Bishop

2794-Pos Board B466
IMPLEMENTATION OF THE FDA CIPA QNET MODEL FOR DRUG SAFETY SCREENING WHICH INCREASES EFFICIENCY 25 FOLD. Leigh Korbel, Glenna Bett, **Randall Rasmusson**

2795-Pos Board B467
TCPRO: AN IN-SILICO RISK ASSESSMENT TOOL FOR BIOTHERAPEUTIC PROTEIN IMMUNOGENICITY. **Osman N. Yogurtcu**, Zuben E. Sauna, Joseph R. McGill, Million A. Tegenge, Hong Yang

Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence (Boards B468 - B494)

2796-Pos Board B468
A REVISED COARSE-GRAINED MODEL OF CIRCULAR DICHROISM OF PROTEINS. **Mauricio D. Carbajal-Tinoco**, Carmen Giovana Granados-Ramírez

2797-Pos Board B469
SPECTRAL ASSIGNMENT OF LYSOZYME COLLECTIVE VIBRATIONS. **Yanting Deng**, Jeffrey Mckinney, Tod Romo, Alan Grossfield, Andrea Markelz

2798-Pos Board B470
THE EFFECTS OF CARBAMAZEPINE, AN ANTI-EPILEPTIC DRUG, ON STRUCTURE AND SURFACE ROUGHNESS OF HEALTHY RAT BONE TISSUES: AN FTIR MICROSPECTROSCOPY AND AFM MICROSCOPY STUDY. **Sebnem Garip**, Feride Severcan

2799-Pos Board B471
ENVIRONMENT-DEPENDENT PHOTOPHYSICS OF AN ASYMMETRICAL CYANINE. **Nikita Kumari**, Marcia Levitus

2800-Pos Board B472
NOVEL FLUORESCENCE TOOL FOR MEASURING PROTEIN BINDING KINETICS AND ENERGY TRANSFER OVER FULL FLUORESCENCE SPECTRAL RANGES. **Karen E. Steege Gall**, Alex Siemiarczuk

2801-Pos Board B473 TRAVEL AWARDEE
TWIN-FRET: A NEW MOLECULAR RULER FOR BIOMOLECULES. **Sankar Jana**, Marta Diez-Castellnou, Euan R. Kay, Carlos Penedo

2802-Pos Board B474
EVALUATION OF CELL CULTURE MEDIA USING ABSORPTION AND TRANSMISSION FLUORESCENCE EXCITATION EMISSION MATRIX (A-TEEM) SPECTROSCOPY. **Marinella Sandros**, Boqian Yang, Karoly Csatorday, Adam Gilmore, Alvin Togonon, John Bobiak

2803-Pos Board B475 TRAVEL AWARDEE
CHARACTERIZATION OF LIPIDS IN LEISHMANIA INFECTED CELLS BY SERS MICROSCOPY. **Vesna Zivanovic**, Geo Semini, Michael Laue, Daniela Drescher, Toni Aebischer, Janina Kneipp

2804-Pos Board B476
THE FLUORESCENCE LIFETIME OF BOUND NADH: CLUES FROM THE PHASOR PLOTS. **Suman Ranjit**, Leonel S. Malacrida, Enrico Gratton

2805-Pos Board B477
INVESTIGATION OF THE STRUCTURAL EFFECTS OF RADIOTHERAPY DOSE RATE ON RAT LUNG TISSUE: AN FTIR IMAGING STUDY. **Ipek Ozyurt**, Sebnem Garip, Fatma Kucuk Baloglu, Faruk Zorlu, Feride Severcan

2806-Pos Board B478
THE DISRUPTION OF BETA SHEETS IN AMYLOIDOGENIC SEQUENCES BY GLY-GLY-ALA. **Sarah A. Petty**, Andrew T. Mullin, Sam A. Michelhaugh, Benjamin R. Fitzgerald

2807-Pos Board B479
FLUORESCENCE LIFETIME IMAGING OF TETRACYCLINE-STAINED RETINAL HYDROXYAPATITE: AN EARLY BIOMARKER FOR AGE-RELATED MACULAR DEGENERATION? **Richard B. Thompson**, Henryk Szmacinski, Kavita Hegde, Adam Puche, Trevor McGill, Martha Neuringer, Imre Lengyel

2808-Pos Board B480
IN VIVO CELL TRACKING AND CLEARED TISSUE IMAGING WITH EXTENDED FIELD OF VIEW SELECTIVE PLANE ILLUMINATION MICROSCOPY. **Leonardo A. Saunders**, Devin Pace, Arianna Gentile, Dominik Stich, Angeles B. Ribera, Douglas P. Shepherd

2809-Pos Board B481
ROTATIONAL AND TRANSLATIONAL DIFFUSION IN CONCENTRATED FICOLL SOLUTIONS. Elton Jhamba, **Hacene Boukari**

2810-Pos Board B482
AUTOMATION OF A LASER TWEEZERS RAMAN SPECTROSCOPY APPARATUS FOR BIOLOGICAL INVESTIGATIONS. **Nathaniel W. Scott**, Scott Hancock, Brooke C. Hester, Jennifer L. Burris

2811-Pos Board B483
DIAMOND B23 BEAMLINE FOR SYNCHROTRON RADIATION CIRCULAR DICHROISM (SRCD): HIGH THROUGHPUT CD (HTCD) AND CD IMAGING (CDI) APPLICATIONS. **Rohanah Hussain**, Tamas Javorfi, Charlotte Hughes, Giuliano Siligardi

2812-Pos Board B484
WIDEFIELD MULTI-FREQUENCY FLUORESCENCE LIFETIMEIMAGING USING A TWO-TAP CMOS CAMERA WITHLATERAL ELECTRIC FIELD CHARGE MODULATORS. **Hongtao Chen**, Ning Ma, Keiichiro Kagawa, Shoji Kawahito, Michelle Digman, Enrico Gratton

2813-Pos Board B485
SENSITIVE TIME-CORRELATED SINGLE PHOTON COUNTING SYSTEMS FOR LUMINCESCENCE SPECTROSCOPY OF SMALL MOLECULES AND BUILDING BLOCKS. **Christian Oelsner**, Eugeny Ermilov, Frank Birke, Felix Koberling, Matthias Patting, Marcus Sackrow, Nick Bertone, Michael Wahl, Rainer Erdmann

2814-Pos Board B486
FRET AT THE SINGLE MOLECULE LEVEL USING MOLECULAR BRIGHTNESS AND FLUORESCENCE CORRELATION SPECTROSCOPY. **Robert C. Miller**, Rowan Simonet, Christin Libal, Cody Aplin, Anh Cong, Margaret Gurumani, Emma Kauffman, Hong Bok Lee, Arnold J. Boersma, Erin D. Sheets, Ahmed A. Heikal

2815-Pos Board B487
THE FLUORESCENCE STUDY OF THE COMPLEXATION OF NANOEMULSIO AND PROTOPORPHYRINE IX. **Maurice O. Iwunze**

2816-Pos Board B488
SPECTRAL PHASOR ANALYSIS ON NANOSECOND-GATED AUTOFLUORESCENCE REVEALS REAL TIME INFORMATION ON CELLULAR NAD(P)H CONFORMATION DURING CHEMICALLY-INDUCED METABOLIC RESPONSE. **Paul K. Urayama**, Audrey Short, Martin Heidelman, Max Kreider, Andrew I. Rodriguez, Chong Kai Wong, Nazar Al Aayedi, Zhifan Cai

2817-Pos Board B489
INFRARED SPECTROSCOPY OFFERS TREMENDOUS POTENTIAL IN CANCER DIAGNOSIS. **Feride Severcan**, Sherif Abbas, Dilek Yonar, Salih Emri

2818-Pos Board B490
EARLY WARNING DETECTION OF CARCINOGENS AND OTHER CONTAMINANTS FOR SURFACE WATER TREATMENT PLANTS USING SIMULTANEOUS ABSORBANCE-TRANSMITTANCE AND FLUORESCENCE EXCITATION-EMISSION SPECTROSCOPY. **Adam M. Gilmore**, Linxi Chen

2819-Pos Board B491
SERS AS AN EFFECTIVE PROBE TO ADSORPTION AND CONFORMATION OF BIOMOLECULES ON THE METAL SURFACES. **Qing Huang**

2820-Pos Board B492
STRUCTURAL AND SPECTROSCOPIC STUDY OF THE TYROSINE KINASE INHIBITOR PD-153035. **Muhammad Khattab**, Daryll Knowles, Feng Wang, Andrew Clayton

2821-Pos Board B493
FLUOROPHORE-INDUCED PLASMONIC CURRENT. **Josh Moskowitz**, Christopher D. Geddes

2822-Pos Board B494
BEATING NYQUIST LIMITS FOR THE MEASUREMENT OF FLUOROPHORE BLINKING RATES USING IMAGE CORRELATION AND CAMERA DETECTION. **Simon Sehayek**, Yasser Gidi, Viktorija Glembockyte, Hugo Bradao, Paul Wiseman, Gonzalo Cosa

Molecular Dynamics III (Boards B495 - B512)

2823-Pos Board B495
ESTIMATION OF TIME-VARYING SINGLE PARTICLE TRACKING MODELS USING LOCAL LIKELIHOOD. **Boris I. Godoy**, Nicholas A. Vickers, Sean B. Andersson

2824-Pos Board B496
COMBINING GOAL-ORIENTED ENHANCED SAMPLING AND BAYESIAN ENSEMBLE MODELLING OF SAXS AND NMR DATA TO MODEL THE SOLUTION ENSEMBLE OF STAPHYLOCOCCUS AUREUS ISDH. **Joseph A. Clayton**, Jeffery M. Wereszczynski

2825-Pos Board B497
COMBINING CRYO-EM AND SIMULATION TO UNDERSTAND LIGAND BINDING IN PENTAMERIC LIGAND GATED ION CHANNELS. **E. Joseph Jordan**, Christian Blau, Erik R. Lindahl

2826-Pos Board B498
GPU ACCELERATED COMPUTATION OF ISOTROPIC CHEMICAL SHIFTS OFFERS NEW DIMENSION OF STRUCTURE REFINEMENT IN LARGESCALE MOLECULAR DYNAMICS SIMULATION. **Alexander J. Bryer**, Eric F. Wright, Mauricio Ferrato, Thomas Huber, Edwin Ortiz, Robert Searles, Sunita Chandrasekaran, Juan R. Perilla

2827-Pos Board B499
SELF-ASSEMBLY OF 2D VIRAL CAPSIDS WITH OSCILLATORY INTERACTIONS. **Jacob R. Swartley**, Jessica Niblo, Zhongmin Zhang, Kateri H. DuBay

2828-Pos Board B500
IN SEARCH OF A STRUCTURAL PATTERN IN CRAZY SUGARSIDENTIFICATION OF CONFORMATION CLUSTERS OF THE OLIGOSACCHARIDES WITHIN GLYCOPROTEINS WITH LEUS. **Aysegul Turupcu**, Chris Oostenbrink

2829-Pos Board B501
IMPACT OF BRANCHING ON THE CONFORMATIONAL HETEROGENEITY OF THE LIPOPOLYSACCHARIDE FROM KLEBSIELLA PNEUMONIA: IMPLICATIONS FOR VACCINE DESIGN. **Asaminew H. Aytenfisu**, Raphael Simon, Alexander D. MacKerell

2830-Pos Board B502
INFLUENCE OF CHOLESTEROL ON PI(4,5)P_2 CLUSTERING IN MODEL MEMBRANES. **Kyungreem Han**, Anne-Marie Byrant, Richard M. Venable, Arne Gericke, Richard W. Pastor

2831-Pos Board B503
MOLECULAR SIMULATION STUDIES OF E. COLI O171, O175, AND O181 LPS AND V. CHOLERAE O1 LPS SYMMETRIC BILAYERS. **Emanuel Luna**, Seonghoon Kim, Wonpil Im

2832-Pos Board B504
INTERACTION OF FREE DOCOSAHEXAENOIC ACID WITH LIPID BILAYER: A MOLECULAR DYNAMICS STUDY. Olivia White, **Mohammad Alwarawrah**

2833-Pos Board B505
MOLECULAR STRUCTURE OF THE LONG PERIODICITY PHASE IN THE STRATUM CORNEUM. **Eric Wang**, Jeffery B. Klauda

2834-Pos Board B506
MICROSECOND KINETICS OF ION TRANSPORT AND MEMBRANE INTERFACE BINDING IN ELECTRICALLY STRESSED LIPID BILAYERS. **Federica Castellani**, Esin B. Sozer, P. Thomas Vernier

2835-Pos Board B507
DISCONTINUOUS WRAPPING TRANSITION OF NANOPARTICLE BY TENSIONLESS LIPID MEMBRANES. **Eric J. Spangler**, Mohamed Laradji

2836-Pos Board B508
A NEW LIPID FORCE FIELD (FUJI) FOR LENNARD-JONES PME. **Hideaki Fujitani**

2837-Pos Board B509 TRAVEL AWARDEE
EXTENDING THE AMBER LIPID FRAMEWORK FOR ATOMISTIC MODELING OF ORGANIC-LIPID CONJUGATES. Rachel J. Dotson, Gary Angles, **Sally C. Pias**

2838-Pos Board B510
CHARMM-GUI SYNTHETIC POLYMER MODELER FOR MODELING AND SIMULATION OF SYNTHETIC POLYMERS. **Yeol Kyo Choi**, Tibo Duran, Wonpil Im

2839-Pos Board B511
COMPUTATIONAL STUDY OF CALCIUM PHOSPHATE MINERALIZATION IN EXTRACELLULAR VESICLES. **Rudramani Pokhrel**, Bernard S. Gerstman, Joshua D. Hutcheson, Prem P. Chapagain

2840-Pos Board B512
THE KEY ROLE OF TEMPERATURE AND LIPID COMPOSITION IN MODULATING THE INTAKE OF GOLD NANOPARTICLES INTO THE PLASMA MEMBRANE. **Fabio Lolicato**, Loic Joly, Hector Martinez-Seara Monne, Giovanna Fragneto, Jaakko Akola, Marco Maccarini, Ilpo Vattulainen

Electron Microscopy (Boards B513 - B535)

2841-Pos Board B513
LEGINON'S EXTENDED IMAGE SHIFT MODE INCREASES THE THROUGHPUT FOR SINGLE PARTICLE DATA COLLECTION. **Edward T. Eng**, Anchi Cheng, William J. Rice, Mykhailo Kopylov, Laura Y. Kim, Ashleigh M. Raczkowski, Daija Bobe, Kelsey Jordan, Kotaro Kelley, Clinton S. Potter, Bridget Carragher

2842-Pos Board B514
3D-STRUCTUAL MODELING OF DIFFERENTIATION AND DEVELOPMENTAL PROCESS USING ADVANCED ELECTRON MICROSCOPY AND LIGHT MICROSCOPY. Takako Ichinose, Takeshi Itabashi, Hikari Mori, Junpei Kuroda, Masaki Imayasu, Sei Saitoh, Shigeru Kondo, **Atsuko H. Iwane**

2843-Pos Board B515
SINGLE PARTICLE CRYO-EM WORKFLOW: STRUCTURES OF APOFERRITIN AND ALDOLASE. **Daija Bobe**, William J. Rice, Edward T. Eng, Laura Y. Kim, Mykhailo Kopylov, Ashleigh M. Raczkowski, Bridget Carragher, Clinton S. Potter

2844-Pos Board B516
EASING EXHAUSTIVE RIGID-BODY AND FLEXIBLE FITTING IN UCSF CHIMERA. Pablo Solar, **Pablo Chacon**, Jose Ramon Lopez-Blanco

2845-Pos Board B517
STRUCTURAL ANALYSIS OF MOUSE PLATELETS USING SERIAL BLOCK-FACE SCANNING ELECTRON MICROSCOPY. **Kenny Ling**, Yajnesh Vedanaparti, Michael P. Tobin, Rohan P. Desai, Guofeng Zhang, Irina D. Pokrovskaya, Brian Storrie, Maria A. Aronova, Richard D. Leapman

2846-Pos Board B518
STRUCTURAL STUDIES OF THE T- AND RP4-PILI USING CRYO-EM. **Mark A. Kreutzberger**, Spencer Hughes, Vincent Conticello, Edward H. Egelman

2847-Pos Board B519
TOWARDS A SOLUTION OF THE A-B-Z QUESTION USING Z-DISKS ISOLATED FROM THE FLIGHT MUSCLE OF LETHOCERUS INDICUS. **Fatemeh A. Abbasi Yeganeh**, Corinne Summerill,, Kenneth A. Taylor, Hamidreza Rahmani, Dianne Taylor, Zhongjun Hu

2848-Pos Board B520
INVESTIGATING THE STRUCTURAL MECHANISM OF THE STALLED BACTERIAL RIBOSOME BOUND TO A DRUG THAT TARGETS TRANS-TRANSLATION. **Atousa Mehrani**, Eric D. Hoffer, Tyler D. P. Goralski, Kenneth C. Keiler, Christine M. Dunham, Scott Stagg

2849-Pos Board B521
CHARACTERIZATION OF THE DE64 DIRECT ELECTRON DETECTOR. **Joshua H. Mendez**, Scott M. Stagg

2850-Pos Board B522
HYBRID ANALYSIS OF MAB FLEXIBILITY BY ELECTRON MICROSCOPY AND SCATTERING. **Thomas E. Cleveland**, Travis Gallagher, Jianfang Liu, Gang Ren, John Marino

2851-Pos Board B523
HIGH RESOLUTION CRYO-ELECTRON MICROSCOPY OF CLATHRIN CAGE NETWORKS. **Sarah M. Smith**, Kyle L. Morris, Mary Halebian, Corinne J. Smith

2852-Pos Board B524
HUNTING FOR THE ADHESION MOLECULE, RETINOSCHISIN, IN RETINA USING CEMOVIS. **Bernard Heymann**, Christopher K E Bleck, Robert N. Fariss, Alexandr Smirnov, Dennis C. Winkler, Camasamudram Vijayasarathy, Rick Huang, Altaira D. Dearborn, Paul A. Sieving, Alasdair C. Steven

2853-Pos Board B525
THE STRUCTURAL BASIS FOR RELEASE FACTOR ACTIVATION DURING TRANSLATION TERMINATION REVEALED BY TIME-RESOLVED CRYOGENIC ELECTRON MICROSCOPY. **Ziao Fu**, Gabriele Indrisiunaite, Sandip Kaledhonkar, Binita Shah, Ming Sun, Bo Chen, Robert A. Grassucci, Mans Ehrenberg, Joachim Frank

2854-Pos Board B526
CRYO-ELECTRON TOMOGRAPHY, FASTER: DEVELOPMENT OF A FAST-INCREMENTAL TILTING SCHEME FOR RAPID TOMOGRAM ACQUISITION. Georges Chreifi, Songye Chen, **Lauren Ann Metskas**, David Mastronarde, Grant J. Jensen

2855-Pos Board B527
IMPROVED VISUALIZATION OF STRUCTURE AT THE NANO-SCALE IN ENTIRE EUKARYOTIC CELLS BY FINE ALIGNMENT OF SERIAL BLOCK FACE SEM IMAGE STACKS. **Qianping He**, Matthew D. Guay, Guofeng Zhang, Richard D. Leapman

2856-Pos Board B528
POLARIZATION AGENTS FOR SENSITIVITY-ENHANCED NMR SPECTROSCOPY IN CELLS. Byung Joon Lim, **Galia T. Debelouchina**

2857-Pos Board B529
IMPROVED DE NOVO MAIN-CHAIN TRACING METHOD MAINMAST FOR MULTI-CHAIN MODELING, LOCAL REFINEMENT, AND GRAPHICAL USER INTERFACE. **Genki Terashi**, Yuhong Zha, Daisuke Kihara

2858-Pos Board B530 TRAVEL AWARDEE
STRUCTURAL INSIGHTS INTO ENTRY AND ANTIBODY NEUTRALIZATION OF EASTERN EQUINE ENCEPHALITIS VIRUS. **Syed Saif Hasan**, Chengqun Sun, Arthur Kim, Yasunori Watanabe, Chun-Liang Chen, Thomas Klose, Geeta Buda, Max Crispin, Michael S. Diamond, William B. Klimstra, Michael G. Rossmann

2859-Pos Board B531
ENDOPHILIN B1 AND MEMBRANE REMODELING AT THE BRINK OF DEATH. Veer Bhatt, Robert Ashley, **Anna C. Sundborger-Lunna**

2860-Pos Board B532
AN INTERMEDIATE STATE OF HUMAN BK CHANNEL RECONSTITUTED IN LIPOSOMES. Lige Tonggu, **Liguo Wang**

2861-Pos Board B533
CRYO-EM IMAGING OF KV1.2 CHANNELS WITH MEMBRANE POTENTIAL APPLIED. **Hideki Shigematsu**, Youshan Yang, Yangyang Yan, Fred J. Sigworth

2862-Pos Board B534
RECONSTRUCTION OF AVERAGE SUBTRACTED TUBULAR REGIONS (RASTR). **Peter S. Randolph**, Scott Stagg

2863-Pos Board B535
STRUCTURAL INSIGHTS INTO THE DISEASE-CAUSING MUTANT A-ACTININ 4 K255E BOUND TO F-ACTIN. **Weili Zheng**, Joan L. Arolas, Slobodan Vujin, Kristina Djinovic-Carugo, Edward H. Egelman

Biosurfaces (Boards B536 - B539)

2864-Pos Board B536
INVESTIGATING THE BIOPHYSICAL CHANGES IN PREY CELLS UNDER ATTACK BY WILD BDELLOVIBRIO. **Ciara Dwyer**, Catherine B. Volle

2865-Pos Board B537
CHARACTERIZING THE PERSISTANCE AND ADHESION OF MULTI-SPECIES BIOFILMS DURING AND AFTER PREDATION BY BDELLOVIBRIO. **Celestine Ooko**, Catherine B. Volle

2866-Pos Board B538
COMPUTATIONAL AND EXPERIMENTAL APPROACHES TO UNDERSTAND A LIVING BIOTIC-ABIOTIC INTERFACE USING GOLD BINDING PEPTIDES. **Meagan C. Small**, Deborah A. Sarkes, Hong Dong, Dimitra N. Stratis-Cullum, Margaret M. Hurley

2867-Pos Board B539
PROBING BIOPHYSICOCHEMICAL INTERACTIONS AT NANO-BIO INTERFACE OF PEROVSKITE TANDEM BIOSOLAR CELLS. **Subhabrata Das**, Teguh Citra Asmara, Zhaoning Song, Andrivo Rusydi, Bernardo Barbiellini, Ponisseril somasundaran, Venkatesan renugopalakrishnan

Bioengineering (Boards B540 - B554)

2868-Pos Board B540
DESIGN AND IMPLEMENTATION OF 3D-PRINTABLE OPTOMECHANICAL COMPONENTS. **Ryan Bullis**, Julie Gunderson

2869-Pos Board B541
MACROPHAGE CHECKPOINT BLOCKADE AND TUMOR MECHANICS IN A CELL-BASED IMMUNOTHERAPY. **Lawrence J. Dooling**, Jason C. Andrechak, Charlotte R. Pfeifer, Dennis E. Discher

2870-Pos Board B542
PROBING THE ROLE OF HIV ANTIGEN NANOSCALE ORGANIZATION ON B-CELL ACTIVATION WITH DNA ORIGAMI. **Remi Veneziano**, Tyson Moyer, Matthew B. Stone, Sudha Kumari, William R. Schief, Mark Bathe, Darrell Irvine

2871-Pos Board B543
SELF-INTERACTIONS OF A VIRUS GLYCAN SHIELD. **Eric E. Ogharandukun**, Hashanthi K. Abeyratne-Perera, Preethi Chandran

2872-Pos Board B544
THE TREATMENT OF MDA-MB-231 BREAST CANCER CELLS WITH BIOCOMPATIBLE MANGANESE IRON OXIDE NANOPARTICLES AS DRUG CARRIERS. **Negin Farzad**, Christina Zito, Saion K. Sinha

2873-Pos Board B545
ULTRASOUND-MEDIATED TARGETED DRUG DELIVERY IN T-CELLS. **Alina Karki**, Emily Giddings, Mercedes Rincon, Junru Wu

2874-Pos Board B546 TRAVEL AWARDEE
STABLE HYBRID NANOPORES FOR BIOMOLECULE SENSING. **Mehrnaz Mojtabavi**, Sandra Greive, Benjamin Cressiot, Xinqi Kang, Alfred Anston, Meni Wanunu

2875-Pos Board B547
A FATTY ACID INDUCES THE FUNCTIONAL ASSEMBLY OF A CHANNEL PROTEIN INTO PHOSPHOLIPID VESICLES. **Claire Hilburger**, Kamryn Lewis, Miranda Jacobs, Neha P. Kamat

2876-Pos Board B548
TUNING MEMBRANE COMPOSITION TO ENHANCE DNA-MEDIATED VESICLE FUSION. **Justin A. Peruzzi**, Neha P. Kamat

2877-Pos Board B549
DOES MEMBRANE ASYMMETRY AFFECT NANOPARTICLE-MEMBRANE INTERACTIONS. **Saeed Nazemidashtarjandi**, Amir M. Farnoud

2878-Pos Board B550
ENGINEERING A COILED COIL PROTEIN AS PH SENSOR. **Ameed Hashmi**, Mourad Sadqi, Victor Muñoz

2879-Pos Board B551
ENGINEERING A CYTOCHROME WITH A TUNABLE BANDGAP POTENTIAL. **Samuel D. Fontaine**, Coleman Swaim, P. Raj Pokkuluri, Oleksandr Kokhan

2880-Pos Board B552
PHOTO-CONTROL OF SMALL GTPASE RAS GDP-GTP EXCHANGE REACTION USING NOVEL PEPTIDE INHIBITOR MODIFIED WITH AZOBENZENE DERIVATIVES. **Nobuyuki Nishibe**, Masahiro Kuboyama, Kenichi Taii, Toshio Nagashima, Toshio Yamazaki, Shinsaku Maruta

2881-Pos Board B553
PHOTO-CONTROL OF SMALL GTPASE RAS USING PHOTO RESPONSIVE PEPTIDE INHIBITOR WHICH MIMIC AH HELIX OF SOS. **Masahiro Kuboyama**, Nobuyuki Nishibe, Kenichi Taii, Toshio Nagashima, Toshio Yamazaki, Kazunori Kondo, Shinsaku Maruta

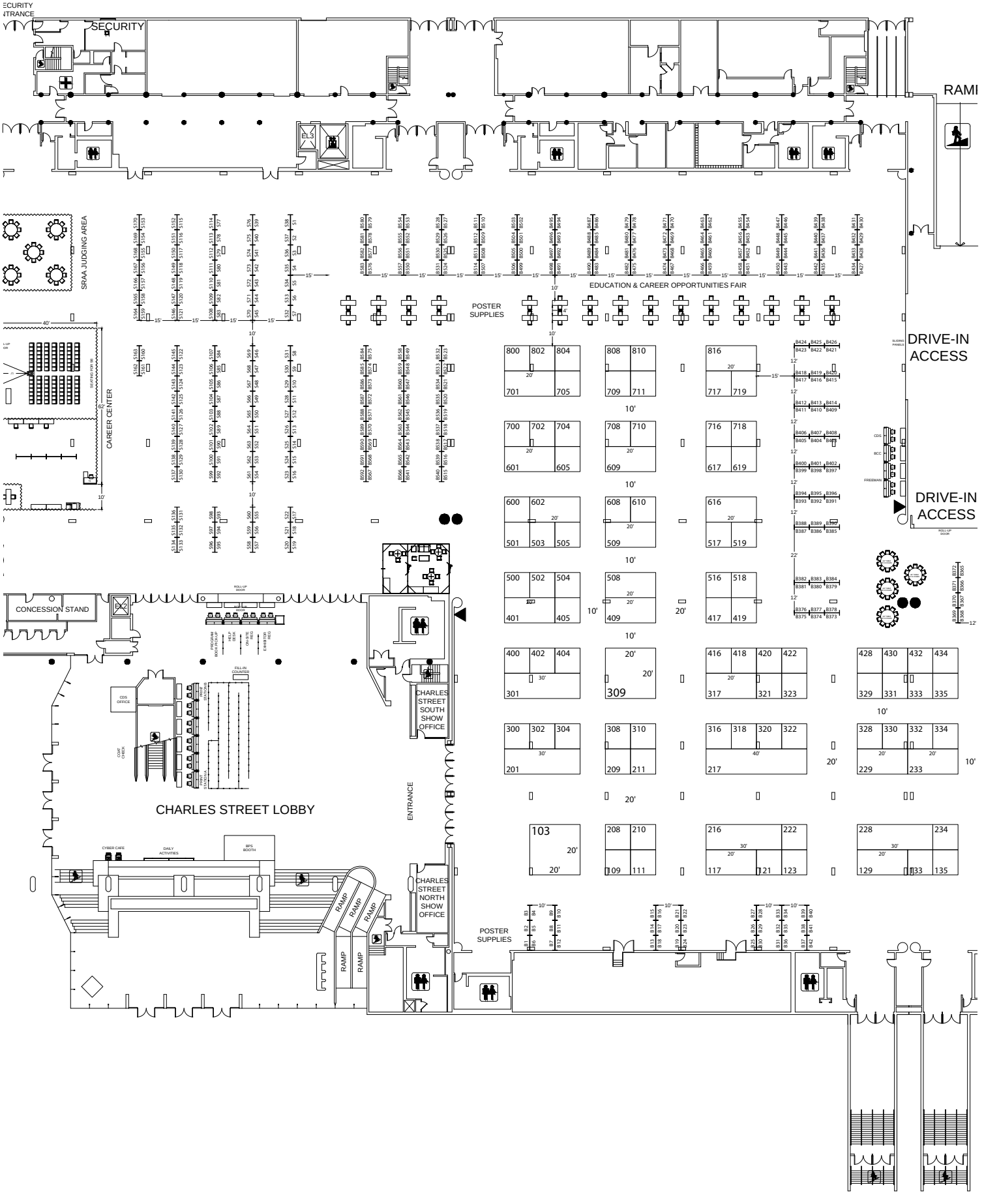
2882-Pos Board B554
PHOTO-CONTROL OF RAS GDP-GTP EXCHANGE USING THE SOSAH MIMICKING PEPTIDES MODIFIED WITH SPIROPYRAN DERIVATIVE. **Kenichi Taii**, Nobuyuki Nishibe, Kei Sadakane, Shinsaku Maruta

Notes

Notes

Exhibitor List and Booth Numbers

Booth Number		Exhibitor
409		89 North
504		AAT Bioquest Inc
320		Abbelight
502		Abberior Instruments America LLC
229		Agilent
605		AIP Publishing
321		ALA Scientific Instruments Inc
432		Alembic Instruments Inc
602		Allen Institute for Cell Science
705		Alvéole
316		Anatrace | Molecular Dimensions
241		Andor Technology
500		Anton Paar
509		Applied Photophysics
243		Arago Bio - Refeyn
328		ASI/Applied Scientific Instrumentation
239		Asylum Research
810		Aurora Scientific Inc
228		Avanti Polar Lipids Inc
616		Beckman Coulter Life Sciences
802	NEW 2019	BioCAT
329		Bio-Logic USA
404	NEW 2019	BioTek Instruments Inc
109		BMG LABTECH
301		Bruker Corporation
709		Cambridge University Press
700		Carl Zeiss Microscopy LLC
242		Cedarlane
609		Cell Press
508		Chroma Technology
452	NEW 2019	CoolLED
800		Cytocybernetics Inc
259		Ecocyte Bioscience US LLC
501		Edinburgh Instruments
816		Electron Microscopy Sciences
400		ELEMENTS SRL
340		Embi Tec
346	NEW 2019	Excelitas Technologies
419		Expression Systems
330	NEW 2019	FISBA US
318		Fluicell AB
519	NEW 2019	Fluorescence Innovations Inc
347		ForteBio
808	NEW 2019	FUJIFILM Cellular Dynamics
702		GATTAquant
446		Gene Tools LLC
246		Hamamatsu Corporation
440		HEKA Elektronik
342		Hellma USA
309		HORIBA Scientific
211		ID Quantique SA
233		IonOptix
405		Ionovation GmbH
601		IOP Publishing
238		ISS
708		Jackson ImmunoResearch Laboratories Inc
234	NEW 2019	JASCO
333		JETSTREAM - CLOUD
600		Journal of General Physiology
210		KinTek Corporation
310	NEW 2019	Laboratory for Fluorescence Dynamics
338		LaCroix Precision Optics
716		Larodan AB
516	NEW 2019	Leica Microsystems
254		Linnowave
701		LUMICKS
216		Mad City Labs Inc
253		Malvern Panalytical
710	NEW 2019	Matreya LLC
348		Metrion Biosciences
331	NEW 2019	Micro Photonics
420	NEW 2019	MicroData Instrument Inc
458		Mizar Imaging
117		Molecular Devices
442		Multi Channel Systems
217		Nanion Technologies
505		NanoSurface Biomedical
428		NanoTemper Technologies
417		Narishige International USA Inc
257		NeoBiosystems Inc
434		Newport Corporation
302		Nicoya Lifesciences
317		Nikon Instruments Inc
323		npi electronic GmbH
422		OLIS Inc
222		Olympus America Inc
332		ONI
322		PCO America
252		Peptides International Inc
208		Photometrics
308		PI (Physik Instrumente)
401		PicoQuant Photonics North America Inc
123		Precision Plastics
610		Pressure BioSciences Inc
334		Prior Scientific Inc
416		Quantum Northwest Inc
503		Rapp OptoElectronic GmbH
619		Royal Society Publishing
339		RPMC Lasers Inc
209		SB Drug Discovery
300		Semrock, a business unit of IDEX Health & Science
258		SENSAPEX
704		Siskiyou Corporation
247		Sophion Bioscience A/S
608		Springer Nature
402		Strex
201	NEW 2019	Sutter Instrument
256		T&T Scientific Corporation
517	NEW 2019	TA Instruments
518		The Company of Biologists
717		The Journal of Physiology
103		Thorlabs
304		TMC
335	NEW 2019	Tokai Hit Co Ltd
111		Tokyo Chemical Industry Co Ltd
349		Tomocube Inc
430	NEW 2019	TOPTICA Photonics
719		tousimis
438		Warner Instruments
617		Wyatt Technology Corporation
711	NEW 2019	Xenocs
718		ZenBio Inc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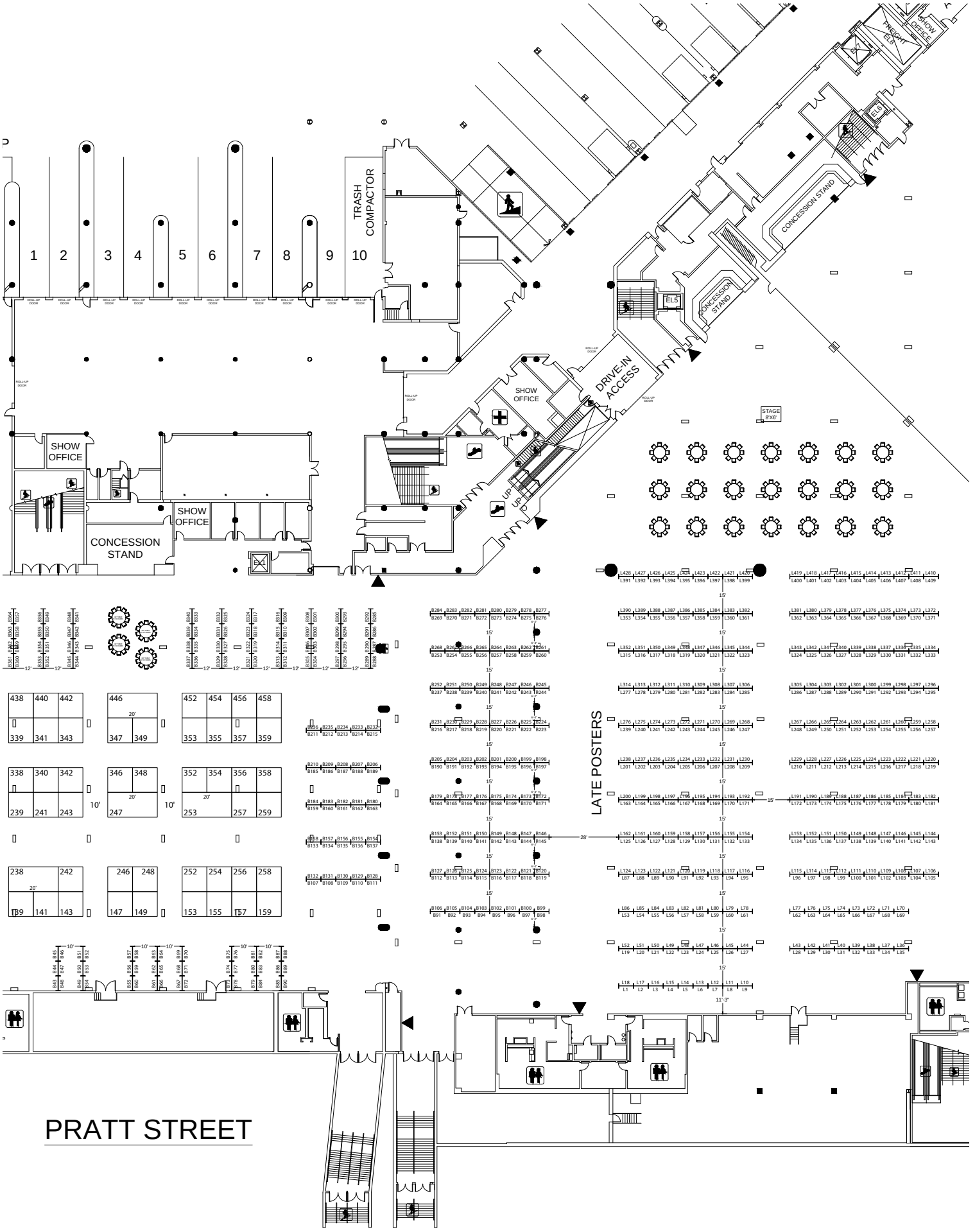
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Ion channel HTS - easy & even more flexible.

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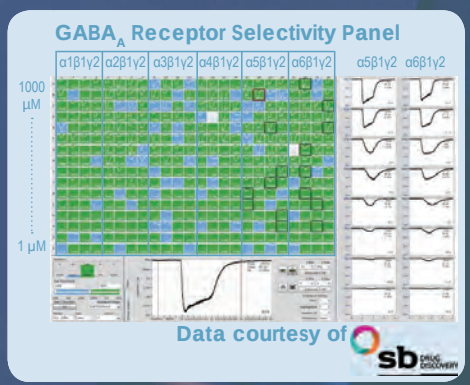
Nanion Symposium: Ion Channels and Transporters in the Spotlight

Confirmed Speakers:

"Always Look On the Bright Side of Life Science"
Dr. Jean-Francois Rolland, Axxam, Italy

"Probing the evolution of bacterial multidrug export using SSM electrophysiology"
Dr. Randy Stockbridge, University of Michigan, USA

Monday March 4, 12:30 – 2:00 P.M.
Room 301, Baltimore Convention Center



WELCOME!

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Exhibit Dates and Times

Sunday, March 3 ..... 10:00 AM–5:00 PM
Monday, March 4 ..... 10:00 AM–5:00 PM
Tuesday, March 5 ..... 10:00 AM–4:00 PM

Coffee Served Daily ..... 10:15 AM–11:00 AM

Afternoon Snack Served Sunday – Tuesday ..... 1:45 PM–3:00 PM

Exhibit Raffle

To win an Amazon Echo, pick up a Passport Competition booklet inside the entrance of the Exhibit Hall. Visit participating exhibitors, talk to them to find out the answer to their question, get your passport stamped, and drop off your completed passport at the Society Booth before 2:30 PM on Tuesday, March 5. Winner will be announced on Tuesday, March 5, at 3:00 PM in front of the Exhibit Hall. You must be present to win.

Exhibitor Presentations

Exhibitor Presentations will take place in Rooms 301 and 303 on the 3rd floor of the Baltimore Convention Center.
See page 162 for detailed descriptions.

Room 301

Sunday, March 3

10:30 AM – 12:00 PM	HORIBA Scientific
2:30 PM – 4:00 PM	IonOptix

Monday, March 4

10:30 AM – 12:00 PM	Bruker Corporation
12:30 PM – 2:00 PM	Nanion Technologies
2:30 PM – 4:00 PM	Alvéole
4:30 PM – 6:00 PM	Molecular Devices

Room 303

Sunday, March 3

9:30 AM – 11:00 AM	Mizar Imaging
11:30 AM – 1:00 PM	Leica Microsystems
1:30 PM – 3:00 PM	Carl Zeiss Microscopy LLC
3:30 PM – 5:00 PM	Wyatt Technology Corporation
5:30 PM – 7:00 PM	ELEMENTS SRL

Monday, March 4

9:30 AM – 11:00 AM	Bruker Corporation
11:30 AM – 1:00 PM	Asylum Research
1:30 PM – 3:00 PM	Bruker Corporation
3:30 PM – 5:00 PM	NanoSurface Biomedical
5:30 PM – 7:00 PM	LUMICKS

Tuesday, March 5

9:30 AM – 11:00 AM	Sophion Bioscience A/S

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Wyatt Technology Corporation

**As of January 18, 2019*

Room 301: Sunday, March 3

10:30 AM – 12:00 PM

HORIBA Scientific

Unique Fluorescence Molecular Fingerprinting in Action: What Can CCD Detection Do for You?

Fluorescence is a standard tool for the study of changes on the molecular level, but it is now also becoming an emerging technique for molecular fingerprinting and spectral kinetics. The Duetta™ 2-in-1 fluorescence and absorbance spectrometer from HORIBA Scientific is a unique and powerful benchtop instrument that provides so much more than standard PMT-based scanning benchtop fluorometers. CCD detection technology, and incorporated absorbance measurements, provide more data, with more accuracy, and in less time. In this presentation, HORIBA Scientific will demonstrate two of many methods for which Duetta is uniquely equipped to measure fluorescent samples. First, Duetta can measure protein binding and FRET over the full emission range (250-1100 nm), demonstrating the effects of both donor and acceptor spectra over time with true spectral kinetics. In addition, the method of measuring Absorbance-Transmittance Excitation Emission Matrices (A-TEEMs) gives information about the molecular fingerprint of a mixture for use in component analysis of mixtures. The use of the absorbance detector enables inner-filter effect correction, which can easily be overlooked using standard fluorometers.

Full Spectral Kinetics and FRET
Because Duetta uses a CCD detector for emission detection, kinetics over the entire emission spectrum (250-1100 nm) instead of only at one or two different emission wavelengths. We will demonstrate the binding of a small molecule, 1,8-anilinonaphthalene sulfonate (ANS), to bovine serum albumin protein (BSA) that shows both the decrease in donor emission (BSA) and the increase of the acceptor emission (ANS) as an example of FRET kinetics. The binding of ANS to hydrophobic pockets in BSA is a known phenomenon, but is typically only measured as a kinetics experiment at the ANS emission wavelength of 475 nm. Historically, concentration-dependent experiments where emission spectra are collected over a range of ANS or protein concentrations, or both, are used to show binding kinetics or FRET as well. Duetta easily measures both the donor BSA (tryptophan) emission as well as the acceptor ANS emission during binding and shows that energy transfer occurs over the full spectral range. This is a unique capability for a benchtop fluorometer in the field of biological fluorescence.

A-TEEM Molecular Fingerprinting
The use of fluorescence for molecular fingerprinting is a relatively new concept and just as exciting if not more so than spectral kinetics. In most applications, changes in fluorescence intensity, or wavelength, or both, correlate to changes in physical properties of a sample. A-TEEM is a method of measuring the full fluorescence contour plot of a sample at all excitation wavelengths and all emission wavelengths. The matrix is then corrected for effects of high concentration (inner-filter effect) using the absorbance spectrum. The resulting A-TEEM gives an accurate profile of all emitting species and in turn, gives more information about the content of the sample in question, thus making it a better data set for chemometric and quantitative analysis. Solutions of tryptophan and 2-aminopurine, a fluorescent derivative of adenine, are used to demonstrate 1.) Effects of high absorbance/concentration on the fluorescence profile; and 2.) The A-TEEM profile for detection of multiple components.

Speaker
Karen Gall, Applications Scientist, HORIBA Scientific

2:30 PM – 4:00 PM

IonOptix

High-Content, High-Throughput Calcium and Contractility Measurements in Intact Cardiomyocytes

High-content excitation-contraction coupling measurements in cardiomyocytes have historically been a slow, labor-intensive process requiring significant user involvement. While challenging, this methodology has proven itself essential throughout countless publications in the study of cardiac physiology and disease. Throughput, however, has limited the scope of calcium and contractility measurements and restricted study sample size and the number of conditions that can be tested in a given investigation. To improve the speed of data acquisition and analysis without compromising data quality, several advancements needed to be made to both the instrument hardware and software. Through its collaboration with IonOptix, CytoCypher's MultiCell system improves on the traditional instrument by introducing many innovative approaches, including a cutting-edge fast motorized microscope and automated processes to improve throughput while preserving data fidelity. The new MultiCell system provides high optical and temporal resolution calcium and cell shortening data as well as automatic, "single-click" analysis. New features focused on pipelining data acquisition have improved the reliability and reproducibility of data collection. The resulting methodology is orders of magnitude faster, permitting investigations with greater statistical power and higher confidence.

In this presentation, we will demonstrate the CytoCypher MultiCell high-throughput system for calcium and contractility measurements on intact, isolated myocytes. We will also show our protocols for these experiments, along with the analysis and statistical treatment of the resulting data sets. With this novel instrument, we have consistently acquired and analyzed data from over 1,000 cardiomyocytes per day.

Speaker
Michiel Helmes, CEO, CytoCypher/CSO, IonOptix

Room 301: Monday, March 4

10:30 AM – 12:00 PM

Bruker Corporation

Using NMR (Nuclear Magnetic Resonance) and EPR (Electron Paramagnetic Resonance) in Biophysics

Magnetic resonance offers many insights into how biological systems function. The two techniques shed light on the identity of species, dynamics, and structures of proteins, peptides, nucleotides, and lipids. The speakers will present an overview of these techniques and applications for people who may be new to the field and wish to incorporate them in their studies.

NMR is a valuable tool for the study of structures and dynamic processes of proteins, peptides and nucleotides. NMR is also well suited to study the interaction of such molecules. Various NMR methods exist to study the interaction of proteins with small molecules in drug discovery, interactions of proteins with each other or with peptides and nucleotides.

In drug discovery fragment based screening by NMR is a well-established technique. A brief presentation of these methods will be included.

The investigation of interaction between larger molecules is facilitated by several NMR methods and by the use of isotopic labeling. Interactions such as protein oligomerization, protein-protein and proteinnucleotide interaction in solutions can be investigated. An overview of these techniques and applications will be included.

In contrast to NMR, EPR detects unpaired electrons in free radicals and transition metal ions. One electron transfer reactions result in unpaired electrons. Examples of paramagnetic species encountered in biology are:

- ROS (Reactive Oxygen Species), RNS (Reactive Nitrogen Species)
- Amino acid radicals such as tyrosine and tryptophan radicals
- Paramagnetic intermediates in photosynthesis
- Metalloenzymes

In addition to these naturally occurring paramagnetic species, spin labels can be incorporated into a number of biomolecules via SDSL (Site Directed Spin Labeling). Applications and techniques are:

- Motional dynamics of proteins, peptides, and nucleotides via linsehape analysis
- Accessibility studies in membrane proteins or peptides via saturation measurements
- Distance measurements (2-8 nm) via DEER (Double Electron-Electron Resonance) to complement other structural methods such as Xray, NMR, CryoEM and FRET

An introduction to the techniques and applications will be presented.

Speakers
Ralph Weber, Senior Application Scientist, Bruker Corporation
Clemens Anklin, Vice President Applications, Bruker Corporation

12:30 PM – 2:00 PM

Nanion Technologies

Ion Channels and Transporters in the Spotlight

Nanion Technologies is the leading solution provider for electrophysiologists since 2002. If you are studying ion channels and electrogenic transporters, our chip- and plate-based devices are well suited to advance your research and screening projects. In our portfolio, you will find instrumentation for automated patch clamp, bilayer recordings, SSM-based electrophysiology, impedance and extracellular field recordings, covering the needs for low, medium and high throughput assays. Our workshop will start with an introduction by Dr. Niels Fertig (CEO, Nanion) and Dr. Andrea Brüggemann (CSO, Nanion), as a guide through the overall capabilities of Nanion´s technology portfolio. In continuation, we will welcome our speakers, Dr. Jean-Francois Rolland (Axxam) and Prof. Dr. Randy Stockbridge (University of Michigan), among others.

As a part of our workshop, Dr. Rolland will focus on his recent work on assay development in ion channel drug discovery, using the high throughput automated patch clamp screening platform, the SyncroPatch 384/768PE. Application areas of this powerful system, recording from up to 768 cells simultaneously, range from high throughput screening (HTS), cardiac safety assessment and efficacy screening, to the analysis of ion channel mutations. The SyncroPatch 384/768PE supports voltage- and current clamp recordings, temperature control, and minimal cell usage. In addition to the use of stably transfected cell lines, more challenging cell assays including stem cell-derived cells, transiently transfected cells or primary cells can be used successfully. In this presentation Dr. Rolland will also discuss the highly promising approach of using optogenetics combined with automated patch clamp technology in HTS. This method, using light to modulate molecular events in a targeted manner in living cells, could lead to cheaper, faster and highly reliable assays, suitable for running the early steps of ion channels' drug discovery programs, especially when combined to automated electrophysiology. Among others, data obtained from Axxam´s bPAC-HCN2 cell line that was successfully assayed on SyncroPatch 384PE, will be presented.

In continuation, Dr. Stockbridge will be focused on electrogenic transporter assay technology, the SURFE2 R. The SURFE2 R N1 (single channel) and SURFE2 R 96SE (96 channels) technologies enable label-free real time measurements of electrogenic transporter protein activity. Employing SSM (solid supported membrane)-based electrophysiology, the SURFE2 R instruments compensate for the low turnover rate of these proteins by measurement of up to 109 transporters in parallel. Dr. Stockbridge, as an expert in measuring membrane transport function, will present her recent data obtained on the SURFE2 R N1 instrument. She has undertaken a comparative mechanistic analysis to understand how drug export function evolved in the SMR (small multidrug resistance) exporters family. This involved screening panels of potential substrates (drugs and other compounds) to understand how substrate specificity differs among the drug exporters, guanidinium exporters, and various evolutionary intermediates.

The Nanion team is excited to meet you at our workshop. Join us to learn more about how our "smart tools for electrophysiologists" can help take your research to the next level!

Speakers
Andrea Brüggemann, CSO, Nanion Technologies
Niels Fertig, CEO, Nanion Technologies
Jean-Francois Rolland, Head of Electrophysiology, Axxam
Randy Stockbridge, Assistant Professor, University of Michigan

2:30 PM – 4:00 PM

Alvéole

Bioengineering Relevant Cellular Microenvironments with Primo®

In vivo, the cellular microenvironment has a crucial impact on the regulation of cell behavior and functions, such as cellular differentiation, proliferation and migration. One of the challenges confronting cell biologists is to mimic this microenvironment in vitro in order to more efficiently study living cells and model diseases. To this end, we present the PRIMO device developed by ALVEOLE. This contactless and maskless UV projection system based on the LIMAP technology(1) allows to control the biochemical and mechanical properties of in vitro microenvironments. We will first show that PRIMO is a suitable tool to print biomolecules on substrates (including glass, plastic, soft/stiff substrates, textured surfaces, etc.) with an exquisite control over protein densities (micropatterning). Then, we will also present how the projected UV light can be used in order to structure photosensitive resists (such as SU8) and create molds onto which elastomeric solutions can be polymerized (microfabrication).

Finally, one of our users will share his research conducted with PRIMO. He used this technology in order to structure and functionalize hydrogels (microstructuration combined with micropatterning) paving the way for 3D cell culture onto controlled, reproducible soft substrates(2). Visit www.alveolelab.com for more information.

Speakers
Aurélien Pasturel, University of Bordeaux, CNRS, Alvéole
Pierre-Olivier Strale, Senior Scientist, Alvéole

4:30 PM – 6:00 PM

Molecular Devices

Supercharge Your Patch-Clamp Data Acquisition and Analysis with the New Axon pCLAMP 11 Software

The patch-clamp technique remains the best method for examining ion channel physiology and membrane biophysics. Axon Instruments and pCLAMP software continue to push the envelope with new innovations with best-in-class systems and software. In this user meeting we learn about new features of pCLAMP 11 software and methods to optimize your workflow and simplify experiments.

Speaker
Jeffrey Tang, Senior Global Axon Electrophysiological Application Scientist, Molecular Devices

Room 303: Sunday, March 3

9:30 AM – 11:00 AM

Mizar Imaging

Tilt – High-Resolution Light Sheet Imaging

Mizar Imaging is proud to introduce the Tilt, the first high-resolution light sheet imaging system that is a simple add-on to most inverted microscopes. When installed on your microscope, the Tilt does not interfere with any existing modalities so you can easily add the Tilt to an inverted microscope, including a TIRF or Spinning Disc confocal microscope system, to add the ability to do long term live cell imaging with the lowest possible photobleaching and phototoxicity.

The Tilt is well-suited to image both larger organisms, such as C. elegans, Drosophila, Danio rerio and other similar model organisms as well as imaging high-resolution intracellular dynamics inside single cells. This remarkable diversity is realized because the Tilt can work with any objective on your microscope – from 20x through 150x. There is no limit to what you can do with the Tilt.

The key benefit of light sheet imaging is significantly reducing the photobleaching and phototoxicity of your sample. The Tilt is no exception. When imaging with the Tilt, cells can be kept alive for hours and even days. This is aided by an optional incubation chamber for the Tilt, which allows for precise control of temperature (heating and cooling available), CO2 and humidity.

The Tilt light-sheet imaging system is the ideal solution for long-term live-cell imaging of a wide array of samples with the added benefit of being a simple, low cost add-on to an existing inverted microscope.

Speaker
Chris Baumann, Sales and Product Manager, Mizar Imaging

11:30 AM – 1:00 PM

Leica Microsystems

Leica SP8 FALCON: A New Way to Generate Fluorescence Lifetime Images at Confocal Speed

Functional imaging is a rapidly growing field, because understanding the function and interaction of molecules is the key to revealing the underlying biology. In this context, fluorescence lifetime imaging (FLIM) is a powerful tool, providing valuable information beyond spectral imaging. FLIM is immune to concentration artifacts and sensitive to molecular environment, but previous FLIM solutions were slow and difficult to implement, particularly for complex imaging workflows. Therefore, FLIM imaging has so far been limited to specialized laboratories and classical TCSPC has been unable to deliver the speeds needed to address most of the biological processes.

We present SP8 FALCON, the fast, intuitive and totally integrated all-Leica FLIM solution. SP8 FALCON delivers video-rate FLIM with pixel-by-pixel quantification, thanks to a unique combination of fast electronics, sensitive spectral hybrid detectors (Leica HyDs), and a novel concept for measuring time. Photon arrival times can now be recorded at count rates typical for standard confocal imaging. The system has ultra-short dead time, and powerful built-in algorithms take care of the data acquisition and analysis, while keeping accuracy and excellent data quality. This talk explains the technical implementations enabling this new level of performance and explains the new way to generate FLIM images.

SP8 FALCON with STED enables STED-FCS at high count rate and separation of multiple fluorophores spectrally overlapping with nanoscopic resolution.

SP8 DIVE (Leica multiphoton system) with spectrally tunable non-descanned detector (Leica 4Tune detector) combined with FALCON allows metabolic imaging, species separation and in vivo FLIM imaging.

The deep integration of SP8 FALCON into the Leica SP8 platform provides easy access to complex FLIM experiments, enabling fast FLIM-FRET, 3D- and 4D-imaging modes, high-content screening, and autofluorescence component separation.

1:30 PM – 3:00 PM

Carl Zeiss Microscopy LLC

ZEISS Elyra 7 with Lattice SIM, a New Platform for Fast and Gentle 3D Superresolution Microscopy

Life sciences research often requires you to measure, quantify and understand the finest details and sub-cellular structures of the sample. Whether you are working with tissue, bacteria, organoids, neurons, living or fixed cells, ZEISS Elyra 7 takes your images beyond the diffraction limit of conventional microscopy to superresolution. Examine the fastest processes in living samples – in large fields of view, in 3D, over long time periods, and with multiple colors.

Lattice SIM enables fast imaging of 3D volumes with resolution down to 120 nm laterally and 300 nm axially. Due to higher light efficiency, the new Lattice SIM technology provides gentle superresolution imaging of living specimens at up to 255 frames per second. Using less light to illuminate the specimen means imaging longer with less bleaching of the sample. The novel Lattice SIM technology allows you to uncover new mechanistic details and quantify the finest subcellular structures in large fields of view.

ZEISS Elyra 7 can be expanded with single molecule localization microscopy (SMLM) for techniques such as PALM, dSTORM and PAINT. ZEISS Elyra 7's SMLM module delivers molecular resolution in large 3D volumes and powerful post-processing algorithms for quantification. Choose freely among labels when imaging with resolutions down to 20 nm laterally and 50 nm axially. Count molecules and come to understand, molecule-by-molecule, how individual proteins are arranged within a structural context.

ZEISS Elyra 7 is a flexible research grade live cell microscope from ZEISS. The new Apotome mode allows fast optical sectioning of 3D samples and total internal reflection microscopy provides live imaging capability for membrane and single molecule studies.

Join this workshop and learn how the newest member of the ZEISS imaging portfolio, ZEISS Elyra 7, can help your imaging experiments in completely new ways.

Speaker
Renée Dalrymple, Sales Development Manager, Carl Zeiss Microscopy LLC

3:30 PM – 5:00 PM

Wyatt Technology Corporation

From Proteins to Exosomes: Tools for Essential Biophysical QC, Characterization, and Isolation

In this seminar we will present solutions for some of the key biophysical characterization challenges encountered in the course of biophysical research. The tools to overcome these challenges are based on:

- multi-angle light scattering (MALS) for determining absolute molar mass and size of macromolecules and nanoparticles from small peptides to vesicles;
- dynamic light scattering (DLS) for determining the hydrodynamic radii of particles from 0.2 to 5000 nm;
- asymmetric-flow field-flow fractionation (AF4) for separation and characterization of particle distributions from 1 nm to 10 µm
- composition-gradient MALS (CG-MALS) for label-free analysis of biomolecular interactions to determine binding affinity and absolute stoichiometry in solution

The combination of these measurement techniques with each other and with other methods of automated sample preparation and delivery creates a powerful toolkit that is useful across many fields of experimental bioscience. The presentation will include applications to:

- quality control of proteins and other biomacromolecules to ensure reliable, repeatable studies of structure and interactions
- rapid optimization of crystallization conditions
- analysis of oligomeric state, protein-protein and protein-nucleic acid complexes
- understanding self-assembly, aggregation and fibril formation
- characterization of vesicle size and content, and high-resolution size-based isolation of exosomes and exomeres.

In addition to describing the principles and instrumentation of SEC-MALS, AF4-MALS, CG-MALS and DLS, we will perform a live demo of protein and buffer characterization by automated DLS in microwell plates.

Speaker
Eric Seymour, Senior Application Scientist, Wyatt Technology Corporation

5:30 PM – 7:00 PM

ELEMENTS SRL

Portable and Cost-Effective Low-Noise Amplifiers for Electrophysiology and Nanopore Applications

Ultra-portable and cost-effective amplifier technology is now a reality accessible to any electrophysiology research lab, thanks to Elements microelectronic-based design of custom microchip (ASIC) using standard and low-cost CMOS processes.

Elements provides an integrative solid-state solution to measure currents in the picoampere (10-12 pA) range, with bandwidths up to hundreds of kHz, featuring very low noise recordings, signal digitalization thanks to the internal Analog-to-Digital converter, signal generator, digital data elaboration,and USB powered, all in a tiny form factor (i.e. 42x18x78 mm) or about the size of a point-and-shoot digital camera!

In this presentation, we will be featuring our latest electrophysiology product, the world's smallest integrated patch clamp amplifier, as well as a portable nanopore kit for protein detection using disposable glass nanopore chips.

During the event will be presented these two use cases:

1. ePatch amplifier was used to record the current of HCN channels transiently expressed in HEK293T cells, with the aim to test the effect of Lamotrigine, a widely used anticonvulsant drug, on the biophysical proprieties of the current. Data courtesy of Dr. A. Moroni - University of Milan - Italy and Dr. Bina Santoro - Columbia University - New York – USA
2. Portable Nanopore Reader: example of DNA fragment translocations through glass nanopore chips. Data courtesy of Dr. D. Niedzwiecki, Goeppert– USA

Attend this presentation to learn about:

- The advantages of using a versatile and compact nano-current amplifier technology,
- Portable nanopore solution for protein detection using disposable nanopore chips,
- How the world smallest and cheapest patch clamp amplifier is radically changing voltage-clamp measurements!

Complimentary Italian hors d'oeuvres and drinks will be served! Seating is limited. Be the first to RSVP by emailing info@elements-ic.com to receive a copy of the presentation and be entered in a raffle to receive a free 30-day trial of the ePatch or nanopore Kit amplifier!

Speakers
Federico Thei, CEO, ELEMENTS SRL
Filippo Cona, Software Engineer, ELEMENTS SRL
Alessandro Porro, Application Scientist, ELEMENTS SRL
Serge Kaddoura, NanoscaleLABS

Room 303: Monday, March 4

9:30 AM – 11:00 AM

Bruker Corporation

Advances in Dye Development and Microscopy for Live Cell Superresolution Microscopy with the Vutara 352

Expanding the frontier of super-resolution imaging requires advances in both microscopy hardware and fluorescent labels. Here we describe a cooperative effort to improve both technological fronts with the ultimate goal of live-cell super-resolution microscopy. Bruker's Vutara 352 super-resolution microscope has been designed for live-cell super-resolution microscopy with both high spatial and temporal resolution capabilities. The patented biplane module allows simultaneous two-color imaging in 3D while the sCMOS detector enables fast imaging of biological phenomena. Although this microscope system is capable of live-cell super-resolution imaging, it has been stymied by limitations in the current generation of live-cell-compatible fluorophores. Extant live-cell probes are either fluorescent proteins with low photon counts—and therefore low localization precision—or organic dyes, which require high laser power resulting in phototoxicity in living samples. To remedy this problem, we developed spontaneously blinking (SB) versions of the Janelia Fluor and Alexa Fluor dyes, which blink under physiological conditions at low laser power while still providing high photon counts. In particular, the spontaneously blinking Janelia Fluor 549 (SB-JF549) and red-shifted SB-JF646 are cell-permeable and are easily conjugated to HaloTag or SNAP-tag ligands, making them ready to use in live cell multi-color superresolution experiments. The SB dyes, in combination with the Vutara 352, provide a powerful methodology for simultaneous imaging, localization and visualization of live-cell single-molecule localization data, while offering numerous statistical tools to quantify the data into publishable results.

Speaker
Robert Hobson, Applications Scientist, Bruker Corporation

11:30 AM – 1:00 PM

Asylum Research

Capturing Biochemical Reactions with Video-Rate AFM

Oxford Instruments Asylum Research will present the latest data acquired with its Cypher VRS, the world's first and only full-featured video-rate AFM. The Cypher VRS Atomic Force Microscope sets a new standard with easy operation—enabling high resolution imaging of dynamic events at high speeds, up to 625 lines/second which corresponds to about 10 frames per second. This speed is about 300x faster than typical AFMs and 10x faster than current "fast scanning" AFMs.

One of the strengths of traditional AFMs is its capability to monitor dynamic events in near-native conditions (i.e. in liquid at biologically relevant temperatures). However, capturing biological processes in real-time has been challenging up until now. Video rate AFMs provide that temporal resolution, allowing researchers to observe the progression of these reactions and capture kinetics. Video rate AFMs have allowed researchers to conduct a new set of experiments including biochemical reactions, membrane dynamics, conformational changes, self-assembly and degradation. In most cases, the spatial resolution is not compromised enabling researchers to locate the target or active site while tracking the progression of the reaction. They can observe structural dynamics of biomolecules and then correlate it to their function.

We will present a set of data to illustrate the potential of this new capability. Examples include DNA digestion and cleavage, DNA origami conformation changes, protein fiber assembly, membrane dynamics including molecular structure and rearrangement in the bacteriorhodopsin membrane, lipid bilayer growth, assembly of Type I collagen into fibrils and dynamic motion of CTAB hemi-micelles at the solid (HOPG) – liquid (aqueous buffer) interface.

Speaker
Sophia Hohlbauch, Applications Scientist, Asylum Research

1:30 PM – 3:00 PM

Bruker Corporation

Investigating Dynamic Biological Processes with High-Speed, High-Resolution Correlative AFM-Light Microscopy

The ability of atomic force microscopy (AFM) to obtain three-dimensional topography images of biological molecules and complexes with nanometer resolution and under near-physiological conditions remains unmatched by other imaging techniques. However, the typically longer image acquisition times required to obtain a single high-resolution image (~minutes) has limited the advancement of AFM for investigating dynamic biological processes. While recent years have shown significant progress in the development of high-speed AFM (HS-AFM), the ability to scan faster has typically been achieved at the cost of decreased scanner range and restricted sample size. As such, these HS-AFM systems have mainly been focused on studying single molecule dynamics and have been very limited in their ability to conduct live cell imaging.

The novel NanoWizard® ULTRA Speed A AFM not only enables high-speed studies of time-resolved dynamics associated with cellular processes, it's latest scanner technologies and compact design also allow full integration of AFM into advanced commercially available light microscopy techniques. Thus, fast AFM imaging of several frames per second can be seamlessly combined with methods such as epifluorescence, confocal, TIRF, STED microscopy, and many more. Please join us for this informative seminar where we will present how the latest advances in the ULTRA Speed A AFM are being applied to study a wide-range of biological samples, from individual biomolecules to mammalian cells and tissues. We will also describe how this unique system is enabling new research opportunities with high-speed, highresolution correlative AFM-light microscopy.

Speaker
Andrea Slade, BioAFM Product Manager, JPK BioAFM Center, Bruker Nano Surfaces

3:30 PM – 5:00 PM

NanoSurface Biomedical

Biomimetic Cell Culture Platforms for Enhancing Cell Biology Studies

Cells use structural and mechanical cues from the extracellular matrix (ECM) to regulate a broad spectrum of processes such as cell signaling, electrophysiology, differentiation, division, and even life and death. Over the past few decades, the literature has demonstrated that many cell types cultured in conventional flat, rigid, and static culture conditions lack both structural and functional phenotypes seen in the body, and that the lack of extracellular cues contributes significantly to the disconnect between in vitro experimental results and in vivo observation. We will demonstrate that ECM-inspired substrate nanotopography drastically improves the structural and functional development of a variety of cell types. Specifically, we show how NanoSurface Cultureware and the NanoSurface Cytostretcher can be utilized to study the effects of cell-nanotopography interactions on adhesion, signaling, polarity, migration, physiology, and differentiation across many cell types and model systems including cancer biology, human epithelia, and cardiovascular function. Further, we will describe how the differentiation of induced pluripotent stem cells can be accelerated and enhanced by providing a more biomimetic culture environment. We will also illustrate how the combination of nanotopography and mechanical stretch can enhance the in vitro phenotypes of cells in culture.

Speaker
Nicholas Geisse, Chief Science Officer, NanoSurface Biomedical

5:30 PM – 7:00 PM

LUMICKS

A Versatile Platform for High-Resolution Single-Molecule Research: Expanding Capabilities and Exploring New Possibilities

Proteins interact with nucleic acids and the cytoskeleton to perform biological processes that are key to cell metabolism and life. The direct observation of such interactions in real time and at the singlemolecule enable scientists to make new discoveries and to test current biological models. Singlemolecule studies of cytoskeleton filaments and their interaction to associated proteins are often developed in surface-based assays where the glass surface is used as a substrate to rigidly anchor the biological molecules of interest. To capture the dynamics of the system and its interactions, the samples are typically labeled with fluorescent dyes and are imaged with fluorescence methods. However, despite the versatility of fluorescent methods, label-free imaging methods are desirable to better mimic the native biological conditions and to reduce photo-damage due to fluorescence excitation during long experiments.

Here, we present our recent developments to further enable discoveries in the field of biology and biophysics with a special focus in surface-based assays. We present a novel instrument arrangement that includes optical tweezers in combination with Interference Reflection Microscopy (IRM) and Total Internal Reflection Fluorescence (TIRF) Microscopy. IRM is a recently introduced imaging method that allows visualization of biological structures in 3D without the need for fluorescence labeling and with sensitivity exceeding that of Differential Interference Contrast (DIC) microscopy. In addition, we show the latest applications of these technologies and how they enhance our understanding of several fields of biology, including molecular motors and cytoskeleton filaments, DNA/RNA-protein interactions, protein folding/unfolding, cell membranes, and genome structure and organization. These applications show that the technological advances in hybrid single-molecule methods for imaging and manipulation can be turned into easy-to-use and stable instruments with the ability to open up new venues in many research areas.

Speakers
Andrea Candelli, Application Scientist, LUMICKS
Sara Tafoya, Application Scientist, LUMICKS
Trey Simpson, Application Scientist, LUMICKS

ROOM 303: Tuesday, March 5

9:30 AM – 11:00 AM

Sophion Bioscience A/S

Electrophysiological Characterization Using Automated Patch Clamp (QPatch and Qube) of hiPSC-Derived Neurological Disease Models, New Automated Patch Clamp Ion Channel Assays for CiPA Cardiac Safety Testing (Dynamic hERG and LQT3 Late Nav1.5) and Nav1.7 Drug Discovery

Successful ion channel drug discovery requires the integration of multiple technologies and workflows. Sophion Bioscience is a leader in automated patch clamp technology, providing medium to high throughput, automated patch clamp to the pharmaceutical industry and universities. The QPatch and Qube are fully automated patch clamp systems, executing simultaneous 8, 16, 48 or 384 parallel patch clamp recordings in conjunction with computer controlled liquid handling and on-board cell handling. Sophion partners with other biotech companies to create robust, ion channel and electrophysiological workflows for drug development for ion channel targets. During this workshop, three industry speakers will provide insight into the drug discovery process. Dr Kadla Roskva Rosholm will present how hiPSCderived neurological disease models have been characterized by use of high throughput electrophysiology at Sophion Bioscience. Next, Dr Marc Rogers from Metrion Biosciences will present their development of new automated patch clamp ion channel assays for CiPA cardiac safety testing: dynamic hERG and LQT3 late Nav1.5. Finally, Dr Brian Moyer will present on Amgen's Nav1.7 drug discovery program.

Speakers
Kadla Roskva Rosholm, Application Scientist, Sophion Bioscience A/S
Marc Rogers, Chief Scientific Officer, Metrion Biosciences
Brian Moyer, Scientific Director, Department of Nueroscience, Amgen

Company Name Booth Number

89 North 409
20 Winter Sport Lane, Suite 135
Williston, VT 05495
www.89north.com

89 North provides innovative solutions for fluorescence imaging featuring the LDI, a state-of-the-art 7-line laser illuminator with up to 1 watt of power per channel, available with fiber optic output or liquid light guide. Also on display from our international partners are the new X-Light V3 spinning disk confocal from CrestOptics, the new OptoTIRF illuminator from Cairn Research, and the UGA-42 GEO from Rapp Optoelectronic. 89 North offers engineering and manufacturing expertise to customize existing products or to create new solutions for system integration.

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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™, Calbryte™-520 and FLIPR calcium assay kits, fluorescent ion indicators, fluorescent labeling reagents, cell and in vivo imaging probes. We also offer a full spectrum of apoptosis probes and assay kits.

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France
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Abbelight has developed the first 3D super-resolution microscope (SMLM) with isotropic 15 nm precision over the largest field of view (200x200 micron). The result of 10 years of research in single molecule imaging, abbelight provides cutting-edge instruments, software and expertise to accelerate the imaging workflow of your research project.

Abberior Instruments America LLC 502
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Cambridge, MA 02139
www.abberior-instruments.com

Abberior Instruments develops and markets STED super resolution microscopes. Founded by Stefan Hell our imaging systems are highly innovative. Further, we provide STED microscopes from low to high budget.

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Farmingdale, NY 11735
www.alascience.com

As manufacturers (fluidics, chambers, temperature controllers, etc.) and distributors (npi, Sutter, Narishige, TMC) of instruments for patch/cellular 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 432
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Canada
www.alembicinst.com

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ALLEN INSTITUTE for CELL SCIENCE

Allen Institute for Cell Science 602
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Seattle, WA 98109
cellscience.alleninstitute.org

Launched by Paul G. Allen in 2014, the Allen Institute for Cell Science studies the cell as an integrated system. The Institute is producing novel visual, dynamic, predictive models of the cell to accelerate biological research. The Institute provides public tools, including gene edited cell lines, methods, images, and models on www.allencell.org.

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Paris, 75005
France
www.alveolelab.com

Specialized in tools for bioengineering custom microenvironments, Alvéole presents PRIMO: contactless and maskless custom photopatterning to create and fine-tune in vitro cell microenvironments. PRIMO allows to control the topography (via microfabrication) and biochemistry (via protein micropatterning) of all standard cell culture substrates (stiff, soft, flat, microstructured) for reliable and reproducible in vitro microenvironments and better cell experiments.

Anatrace | Molecular Dimensions 316

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Company Name Booth Number

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www.anton-paar.com

Anton Paar is a leading supplier of analytical instrumentation focused on the biophysical characterization of proteins, liposomes and other nanoscale analytes. Specific technologies include: Small-angle X-ray Scattering (SAXS) for the nano and sub-nano scale characterization of sample size, shape, inner structure and orientation of proteins, nanoparticles, liposomes and core/shell particles as well as Dynamic Light Scattering (DLS) for the measurement of particle size, zeta potential, molecular mass and transmittance of proteins, liposomes, nanoparticles, emulsions, and protein complexes.

Applied Photophysics 509

100 Cumming Center, 440C
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Applied Photophysics Ltd is the premium supplier of kinetics and Circular Dichroism instrumentation to the life sciences marketplace. We are global leaders in Laser Flash Photolysis and Stopped Flow Spectrometers with over 700 systems worldwide. Our premier range is the Chirascan family of instruments using next generation Circular Dichroism technology, opening up new areas of application interest including clone selection and biopharmaceutical formulations. The latest exciting development with our Chirascan range is the world's first truly automated CD being launched later in 2011.

Arago Bio - Refeyn 243

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United Kingdom
www.aragobio.com

We present mass photometry - weighing molecules with light. Our disruptive technology starts a new era of quantitative biomolecular analysis by enabling the accurate mass-measurement of single molecules directly in native solution. We showcase the first generation of mass photometry systems which deliver intuitive answers to the challenges of analyzing protein purity and homogeneity, or enable the quantification of protein complex assembly and biomolecular interactions.

Company Name Booth Number

ASI/Applied Scientific Instrumentation 328

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Eugene, OR 97402
www.asiimaging.com

ASI manufactures hardware for laboratory & microscope automation including: extremely precise closed-loop DC servo motor X Y stages & Z drives, PZ-2000 piezo stages for ultra-precise & fast Z-axis focusing, ultra precise & stable XY stages for super resolution microscopy, LED based (CRISP) feedback systems for maintaining submicron level focusing, FTP-2000 series focusing platforms for fixed stage microscopes, light sheet & single plane illumination microscopy (SPIM), CLARITY objectives & imaging systems, complete custom microscope systems based around the RAMM open frame platform, high-speed filter wheels, microinjectors & micromanipulators, and a wide range of other devices including custom system solutions & complete imaging and photometric systems. We work directly with end users, as well as a wide range of OEM's and imaging partners, to provide anything from individual components to fully automated turnkey systems. ASI's products are backed with a five year warranty & unparalleled customer support.

Asylum Research 239

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Aurora Scientific Inc 810

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.

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Avanti Polar Lipids Inc has served the Pharmaceutical, Nutraceutical Industries and Lipid Researchers since 1967. Divisions: Research Products-Highest Purity Lipid Reagents cGMP Manufacturing-API & Contract Manufacturing Adjuvants-Immunotherapy & Vaccine Development Analytical Services-Lipid Analysis Lipidomics-MS Standards, Antibodies & Lipid Toolbox Formulations- Liposomes & Nanoparticles Equipment- Liposome Production Tools Custom Services-Synthesis & Beyond.

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BioCAT 802

NEW 2019

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Argonne, IL 60439
www.bio.aps.anl.gov

The Biophysics Collaborative Access Team (BioCAT), supported by NIH, operate a national user facility at the Advanced Photon Source, Argonne National Laboratory, to study the structure and dynamics of biological systems at the molecular level. The primary research techniques supported are 1) static, time resolved, and spatially resolved fiber (muscle, connective tissue, nucleic acids and amyloids) diffraction. 2) static and time-resolved scattering studies of macromolecules in solution for the study of protein/nucleic acid folding, protein/ligand interactions, and the structure of complexes.

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CoolLED 452

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Cytocybernetics makes the first truly plug and play dynamic clamp system for single cell voltage clamp. Attaching to any existing voltage clamp system, the Cybercyte is dedicated to simulating voltage gated currents in real-time. Markov and Hodgkin and Huxley type models are supported. The unique analog/digital architecture eliminates the chronic instabilities and high random latency errors associated with general purpose Windows based systems. In addition, the system can also be used to introduce currents from heterologously expressed channels to study the effects of kinetic mutations.

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elements-ic.com

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Company Name Booth Number

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Sweden
www.fluicell.com

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Company Name Booth Number

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NEW 2019

1755 Prior Avenue
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ForteBio 347

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Company Name Booth Number

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HAMAMATSU

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Company Name Booth Number

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Company Name Booth Number

ID Quantique SA 211

Chemin de la Marbrerie 3
Carouge / Geneva, 1227
Switzerland
www.idquantique.com

IDQ's visible & NIR (near infrared) SPAD detectors, superconducting nanowire SNSPD systems, and picosecond timing electronics are used in membrane biophysics and single cell dynamics with TCSPC. TCSPC is at the heart of many methods in photoluminescence, phosphorescence and fluorescence lifetime (e.g. FLIM, FRET) and fluorescence correlation spectroscopy (FCS, etc.) and is applied to e.g. protein-protein, receptor-ligand, RNA-protein, and biopolymer interactions, in studies of conformational changes in membrane channels & other hetero-structures, and with quantum dots and other nanomaterials.

IonOptix 233

396 University Avenue
Westwood, MA 02090
www.ionoptix.com

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Company Name Booth Number

Ionovation GmbH 405

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Germany
www.ionovation.com

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Company Name Booth Number

ISS 238

1602 Newton Drive
Champaign, IL 61822
www.iss.com

ISS activities include two product lines: the fluorescence analytical division (time-resolved spectrofluorometers, laser scanning time-resolved confocal microscopes, STED microscope) and the medical division (for the absolute measurement of oxygen saturation in brain and muscle tissues). A variety of modular components complements the instrumentation: laser diodes, LEDs, high pressure cell and fiber optic sensors; data acquisition cards for FCS and FLIM; laser launchers; detector units. Applications include lifetime measurements, single-molecule microscopy, FRET, FLIM, FCS, PCH, STED.

Jackson ImmunoResearch Laboratories Inc 708

872 W Baltimore Pike
West Grove, PA 19390
www.jacksonimmuno.com

Specializing in affinity-purified secondary antibodies (many adsorbed against other species) conjugated with Alexa Fluor®, DyLight™, and Cyanine fluorescent dyes; R-PE; and other detection ligands. Other products include anti-IgG, Light Chain specific for Western blotting after IP, Alexa Fluor® 680 and 790 for highly sensitive Western blots. ISO 9001:2015 registered.

JASCO 234

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 JASCO J-1000 Series Spectrophotometers provide an optical bench specifically designed for high sensitivity measurements in the far- and near-UV regions. Temperature control systems can be coupled with multi-position cells to run thermal melts. Automated high-throughput CD can obtain measurements on up to 192 samples without user intervention, saving both time and money. Microsampling cells provide measurements on sample volumes as low as 2 microliters.

JETSTREAM - CLOUD 333

NEW 2019

2709 E 10th Street
Bloomington, IN 47408
www.jetstream-cloud.org

Jetstream is NSF's first production cloud facility and is part of the NSF eXtreme Digital (XD) program. It is a Infrastructure-as-a-Service platform that supports hundreds of virtual machines (VMs) and data volumes. Jetstream enables on-demand access to interactive, user-configurable computing and analysis capability. It is used by researchers, educators, software developers, and science gateway creators. Jetstream also seeks to democratize access to cloud capabilities and promote sharable, reproducible research.

Journal of General Physiology 600

950 Third Avenue, Floor 2
New York, NY 10022
jgp.rupress.org

Journal of General Physiology (JGP) publishes mechanistic and quantitative cellular and molecular physiology of the highest quality. All editorial decisions are made by research-active scientists. Established in 1918, JGP recently celebrated 100 years. JGP publishes 12 issues per year.

Company Name Booth Number

KinTek Corporation 210

7604 Sandia Loop
Austin, TX 78735
www.kintekcorp.com

KinTek is the world leader for state-of-the-art kinetic analysis that supersedes anecdotal single molecule studies. We offer premier research instruments supported by first-class service. At the meeting we will show our new Auto-Stopped-Flow with optional robotic sample loader, 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.

Laboratory for Fluorescence Dynamics 310

3120 National Sciences II
University of California, Irvine
Irvine, CA 92697
www.lfd.uci.edu

The Laboratory for Fluorescence Dynamics (LFD) is a national research resource center for biomedical fluorescence spectroscopy, supported by the National Institute of Health (NIGMS) and the University of California, Irvine (UCI). Main activities: Services and Resources: state-of-the-art lab for fluorescence measurements, microscopy, spectroscopy. Research and Development: design, test, and implement advances in the technology of hardware, software, biomedical applications. Training and Dissemination: disseminates knowledge of fluorescence spectroscopic principles, instrumentation, applications.

LaCroix Precision Optics 338

NEW 2019

PO Box 2556, 50 LaCroix Drive
Batesville, AR 72503
www.lacroixoptics.com

Since 1947, LaCroix Precision Optics has positioned itself as a premier domestic volume and prototype manufacturer of custom precision optics. Capabilities include Spherical, Aspherical, Plano, and custom coated optics. At our facility in Batesville, Arkansas, we use both traditional methods and advanced CNC processing to achieve the highest level of precision and quality demanded by our customers. We are certified to ISO 9001:2015 and is ITAR certified and compliant. We take great pride in producing quality optics made to specification, world-class service, and a fair price.

Company Name Booth Number

Larodan AB 716

Retzius väg 8
Solna, 171 65
Sweden
www.larodan.com

Larodan makes a comprehensive range of research grade lipids for use as analytical standards and reagents, serving customers all around the world. Our products include all classes of lipids, from simple fatty acids and methyl esters to complex oxylipins, glycerides, and phospholipids. We are headquartered at the Karolinska Institute in Stockholm, Sweden, with US offices in Michigan.

Leica Microsystems 516

1700 Leider Lane
Buffalo Grove, IL 60089
www.leica-microsystems.com

Leica Microsystems develops and manufactures microscopes and scientific instruments for the analysis of microstructures and nanostructures. The company is one of the market leaders in compound and stereo microscopy, digital microscopy, confocal laser scanning microscopy, electron microscopy sample preparation, optical coherence tomography, and surgical microscopes.

Linnowave 254

NEW 2019

Henkestrasse 91
Erlangen, 91052
Germany
www.linnowave.com

Linnowave is a startup company based in Erlangen (Germany) developing innovative equipment for state of the art high-resolution microscopy applications. We push today's technical limits in optical sciences by combining classical and integrated optics with modern nano- and microfabrication techniques, that were formerly only accessible to the semiconductor industry. Over 15 years of combined experience in high-resolution microscopy and spectroscopy in quantum optical as well as biophysical research allow us to come up with unconventional but yet simple solutions.

LUMICKS 701

552 Massachusetts Ave
Cambridge, MA 02142
lumicks.com

LUMICKS is the leading supplier of Dynamic Single-Molecule and Cell analysis instruments for the study of molecular motor activity, protein folding, DNA-protein interactions, and cell-target avidity. Our optical tweezers and acoustic force spectroscopy instruments enable the analysis of complex dynamic details related to the behavior and interaction of single molecules and cells.

Company Name Booth Number

Mad City Labs Inc 216

2524 Todd Drive
Madison, WI 53713
www.madcitylabs.com

For 20 years, Mad City Labs has been the trusted name in designing and manufacturing nanopositioning systems and precision microscopy instruments for biophysicists. Our products include Piezo Nanopositioners, Precision Micropositioners, Atomic Force Microscopes (AFM), Near Field Scanning Optical Microscopes (NSOM), and Single Molecule Microscopes Our nanopositioners feature proprietary PicoQ® sensors with ultra-low noise & high stability performance. PicoQ® sensors combined with our innovative flexure guided stage designs leads to outstanding stability & sub-nanometer precision for super resolution microscopy, atomic force microscopy, optical/magnetic tweezers, and high resolution imaging. When paired with our high precision micropositioning systems they are the ideal building blocks for nanoscopy applications. Mad City Labs AFMs achieve atomic step resolution by leveraging the performance of our closed loop nanopositioners. Affordable and available in a variety of configurations with automated software and calibration. The RM21® MicroMirror TIRF microscope is a unique multi-spectral TIRF microscope. The MicroMirror TIRF spatially segregates the excitation wavelengths leading to improved signal-to-noise ratios and efficient data collection. Ideal for Colocalization single molecule spectroscopy, smFRET, and dark-field TIRF. The entire range of RM21® single molecule microscopes are designed for advanced fluorescence microscopy and are nanopositioner-ready to facilitate nanoscopy methods. Advantages: direct optical pathway access, high stability & precision alignment, flexible configurations, and TIRF module options. Mad City Labs specializes in finding the correct instrument solutions for your biophysics applications. Stop by and visit with our scientists and engineers during the exhibit!

Company Name Booth Number

Malvern Panalytical 253

117 Flanders Road
Westbourough, MA 01581
www.malvernpanalytical.com

Malvern Panalytical is a leader in analytical characterization, creating expert solutions for the challenges associated with maximizing productivity, developing better quality products and getting them to market faster. We provide superior, customer-focused solutions and services which deliver tangible economic impact through chemical, biophysical and structural analysis.

Matreya LLC 710

2178 High Tech Road
State College, PA 16803
www.matreya.com

Matreya is a manufacturer of high purity lipids for life science research. Matreya offers gangliosides, sphingolipids, glycolipids, ceramides, phospholipids, enzyme inhibitors, fluorescent/biotin labeled glycolipids, tocopherols, tocotrienols, fatty acids, hydroxy fatty acids, reference mixtures, and custom synthesis. When you require quality and consistency, along with rapid delivery, you may rely on Matreya.

Metrion Biosciences 348

NEW 2019

Riverside 3, Suite 1, Granta Park
Cambridge, CB21 6AD
United Kingdom
www.metrionbiosciences.com

Metrion Biosciences is a UK-based CRO offering high quality ion channel drug discovery services to our clients on a global scale. Metrion's Leadership Team consists of highly experienced drug discovery professionals who work in a collaborative manner with our clients. Metrion's expertise spans ion channel screening to support medicinal chemistry, custom cell line generation, custom assay development (including phenotypic and translational assays) plus a panel of highly validated cardiac safety profiling assays. Our team has worked on ion channel targets spanning many therapeutic areas.

Micro Photonics 331

1550 Pond Road, Suite 110
Allentown, PA 18104
www.microphotonics.com

Micro Photonics presents the 3T Analytik Quartz Crystal Microbalance instruments for label-free research on molecular interactions and electrochemical effects on the basis of quartz crystal microbalances. A full range of QCM-D with up to 4 flow cells, temperature control, and optional automatic liquid handling.

MicroData Instrument Inc 420

NEW 2019

1207 Hogan Drive
South Plainfield, NJ 07080
www.microdatamdi.com

MicroData Instrument Inc has more than 25 years history of designing and manufacturing many different advanced research instruments and devices. MDI provides scientists and researchers with a broad selection of advanced drug and bio-reagent deliver systems, including microinjectors, multichannel microperfusion systems and inverted microscope work station platform and manipulators. MDI also produces a new generation of pneumatic and programmable micropipette pullers, quartz micropipette pullers, glass pipette precision Microforge-Grinder Centers and unique automatic multi-pipette pullers.

Mizar Imaging 458

NEW 2019

7 MBL Street, Lillie 220
Woods Hole, MA 02543
www.mizarimaging.com

Mizar Imaging brings you the Mizar Tilt: a light-sheet add-on that works even with oil immersion objectives. Sample prep is easy, imaging is easy, and it fits on most scopes. Image live cells in multiple colors with minimal photodamage, now at the resolution you need.

Molecular Devices 117

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San Jose, CA 95134
www.moleculardevices.com

At Molecular Devices, we enable our customers to unravel the complexity of biological systems. We provide platforms for high-throughput screening, genomic and cellular analysis, colony selection and microplate detection. These leading-edge products empower scientists to improve productivity and effectiveness, ultimately accelerating research and the discovery of new therapeutics.

Multi Channel Systems 442

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Reutlingen, 72770
Germany
www.multichannelsystems.com

Multi Channel Systems provides scientific equipment for electrophysiological research: MEA-Systems for extracellular recordings, automated patch clamp systems, and robots for TEVC in Xenopus oocytes.

Nanion Technologies 217

Ganghoferstr 70A
Munich, 80339
Germany
www.nanion.de

Nanion is a leading provider of automated patch clamp instrumentation with throughput capabilities ranging from 1, 8 and up to 768 cells in parallel. Nanion also provides devices for cardiotoxicity screening, parallel bilayer recordings and membrane transporter protein recordings. We are your one-stop-shop for ion channel research, drug discovery and safety screening.

NanoSurface Biomedical 505

4000 Mason Road, Suite 304
Seattle, WA 98195
www.nanosurfacebio.com

NanoSurface Biomedical Inc is a biotechnology company based in Seattle, WA and was founded in 2015. NanoSurface's technologies specialize in nanopatterned surfaces that imitate the native extracellular matrix and structure cultured cells into physiologically relevant tissue models. Flagship products include NanoSurface Cultureware and the NanoSurface Cytostretcher. NanoSurface Biomedical seeks to accelerate discovery to improve human health by providing innovative products and services for drug development, disease modeling, and cell biology research.

NanoTemper Technologies 428

400 Oyster Point Boulevard, Suite 336
South San Francisco, CA 94040
www.nanotemper-technologies.com

NanoTemper Technologies is deeply committed to the best customer experience. Central to this is a strong focus on enabling researchers to easily, efficiently, and accurately perform protein characterization. With a broad offering of systems, software and consumables for evaluating binding affinities and protein stability, scientists in pharmaceutical, biotech or academic labs will find an optimized workflow, quality results and responsive customer support. Work with a deeply experienced and globally operating team, and realize the NanoTemper experience.

Narishige International USA Inc 417

415 Bayview Avenue
Amityville, NY 11701
usa.narishige-group.com

With over 50 years of experience and credibility, Narishige offers the latest in micromanipulation technology with a wide range of products for both in vivo and in vitro experiments such as isolation stages, motorized/manual manipulators, pullers, microforges, patch clamp systems, perfusion systems, and stereotaxic instruments. We are always eager to hear your opinions and requests. Narishige products can be customized to fit your unique needs, allowing us to be the craftsman for your solutions.

NeoBiosystems Inc 257

1407 Heckman 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. 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.

Newport Corporation 434

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Irvine, CA 92606
www.newport.com

Newport is a brand within the MKS Instruments Light & Motion division. The Newport product portfolio consists of a full range of solutions including motion control, optical tables and vibration isolation systems, photonics instruments, optics and opto-mechanical components. For more information, visit www.newport.com

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Nikon Instruments Inc 317

1300 Walt Whitman Road
Melville, NY 11747
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Nikon Instruments Inc is a world leader in the development and manufacture of optical and digital imaging technology. With over 100 years of optical expertise, Nikon provides individual optical components and complete imaging systems ranging from basic documentation microscopes to confocal, and Super Resolution, powered by NIS-Elements imaging software.

npi electronic GmbH 323

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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 422

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ONI 332

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United Kingdom
www.oxfordni.com

ONI creates state of the art fluorescence microscopes with single-molecule sensitivity. Designed to operate on regular surfaces & with a footprint smaller than a piece of A4 letter paper, the Nanoimager promises to revolutionize the entire microscopy workflow – providing researchers with tools to unveil nanometric structures that were previously invisible. It offers quantitative analysis for super-resolution microscopy, single-particle tracking, and single-molecule FRET. The Nanoimager is compact and affordable, making molecule microscopy techniques accessible to the wider research community.

PCO America 322

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Romulus, MI 48174
www.pco-tech.com

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Peptides International Inc 252

11621 Electron Drive
Louisville, KY 40299
www.pepnet.com

Peptides International manufactures & distributes biochemical products for drug discovery & research at universities, institutes, & pharmaceutical/biotech companies throughout the world. Our Louisville laboratory specializes in peptides of all types, solid phase resins such as CLEAR™, CLEAR-OX™, KLH, amino acid derivatives, & custom peptide synthesis. We are experts in toxins & RGD peptides. Other exceptional products that we offer include: proteins, enzyme inhibitors & substrates, click chemistry items, & combinatorial peptide libraries. We can take you from R & D to cGMP, effortlessly.

Photometrics 208

3440 East Britannia Drive #100
Tucson, AZ 85706
www.photometrics.com

Founded in 1978, Photometrics is the world's premier designer and manufacturer of high-performance CMOS, EMCCD and CCD cameras for life science research. The original architect of the world's first scientific-grade microscopy EMCCD camera, Photometrics maintains its leadership role with the release of the Prime 95B, the first Scientific CMOS camera with 95% quantum efficiency. Photometrics also offers comprehensive OEM support, including fully characterized, cost-efficient imaging systems and components. Photometrics is headquartered in Tucson, Arizona.

Company Name Booth Number

PI (Physik Instrumente) 308

16 Albert Street
Auburn, MA 01501
www.pi-usa.us

ISO-9001-Certified, Global Leader in Precision Motion Solutions. Piezo Mechanisms, Air Bearings, Hexapods, Photonics Alignment, Nanopositioning, Micropositioning, Piezo Positioning Systems, Linear Motors & Rotary Stages for OEM & Research. Products: Nanopositioning Systems; 6-Axis Hexapod Alignment Systems, Microscopy Stages; Lens Positioners; Tip/Tilt Mirrors; Piezo Transducers, Piezo Actuators; Piezo Motors, Piezo Drivers & Digital Motion Controllers; Voice Coil Actuators, MicroMotion Robots.

PicoQuant Photonics North America Inc 401

9 Trinity Drive
West Springfield, MA 01089
www.picoquant-usa.com

Product lines include Pulsed Diode Lasers, Time-Correlated Single Photon Counting (TCSPC) electronics and detectors, fluorescence lifetime spectrometers, time-resolved fluorescence microscopes and upgrade kits for Laser Scanning Microscopes. Applications include Single Molecule Spectroscopy, Fluorescence Lifetime Imaging (FLIM), Fluorescence Resonance Energy Transfer (FRET), Fluorescence Correlation Spectroscopy (FCS), super-resolution microscopy.

Precision Plastics 123

6405 A Ammendale Road
Beltsville, MD 20705
www.precisionplastics.com

Precision Plastics is a custom plastic fabrication shop and OEM manufacturer that works closely with scientist to design, engineer and make custom laboratory equipment. We also have an extensive line of microscope enclosures and will make them to fit any microscope and application. We also make animal restraints, insect cages, scent trails, fume hoods, mazes, plethysmographs, manifolds, Beta shields, growth chambers, custom tanks and just about anything else you can think of. Please contact us, we'd love to work with you!

Company Name Booth Number

Pressure BioSciences Inc 610

14 Norfolk Avenue
South Easton, MA 02375
www.pressurebiosciences.com

Pressure BioSciences Inc (OTCQB: PBIO) is a leader in the development of pressure-based platform solutions for the life sciences industry. Our products/services are based on three patented, pressure-enhanced platforms: Pressure Cycling Technology (PCT) for use in the design and characterization of biotherapeutic drugs. Pressure Enabled Protein Manufacturing Technology (PreEMT), for use in creation of novel protein therapeutics, and manufacturing of follow-on biologics. Ultra Shear Technology (UST). offers the potential to produce stable nanoemulsions of oil-like products in water.

Prior Scientific Inc 334

80 Reservoir Park Drive
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www.prior.com

Prior Scientific manufactures custom and stock precision electro-mechanical & optical components & systems. With a variety of micro- and nano-positioning products, we can customize solutions to meet your exact needs. We make Piezo stages, linear motor stages, laser autofocus systems, filter cube changers, motorized nosepieces, micromanipulators, physiology platforms & microscope stands. Prior Scientific excels in the creation of OEM prototypes, custom-built products & complete system solutions according to individual customer requirements for any optical, focusing or positioning application.

Quantum Northwest Inc 416

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Quantum Northwest builds Peltier-based, temperature-controlled cuvette holders for spectroscopy. Our 18 models of cuvette holder are optimized for UV-Vis absorption, fluorescence, circular dichroism, Raman and FTIR. We make single cell holders as well as multi-cell cuvette changers. We are particularly adept at configuring these models of cuvette holder for many different spectrometer designs. We make stand-alone cuvette holders for laser spectroscopy and for use with fiber optic spectroscopy systems. New products are now available for neutron scattering.

Rapp OptoElectronic GmbH 503

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Germany
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United Kingdom
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The Royal Society journal Interface, edited by Prof Richard Cogdell FRS, University of Glasgow, publishes research and reviews. Its sister journal Interface Focus, edited by Prof Russell Foster FRS, University of Oxford, publishes themed issues. Our authors benefit from constructive and timely peer review, where both the physical and life sciences are considered equally; open access options; high production standards; high levels of article usage rates; and promotion by a dedicated press office. To find out more, please visit booth 619 and Dr. Tim Holt will be happy to answer your questions.

Company Name Booth Number

RPMC Lasers Inc 339

203 Joseph Street
O'Fallon, MO 63366
www.rpmclasers.com

RPMC Lasers Inc (Incorporated in 1996) is the leading laser distributor in North America. We offer diode lasers, laser modules, solid state lasers and amplifiers, and fiber lasers and amplifiers. We also offer custom solid-state lasers and laser diode subsystems. We have over 1500 different laser diodes and solid-state lasers from technology leading manufacturers in the US, Europe, and Asia. Our goal is to provide high quality technical advice with an in-depth knowledge of the products we offer at an attractive value proposition, the best laser at a fair price.

SB Drug Discovery 209

West of Scotland Science Park
Glasgow, G20 0XA
United Kingdom
www.sbdrugdiscovery.com

SB Drug Discovery is a contract research organization specializing in ion channel, GPCR and transporter drug discovery services including recombinant cell line generation, assay development, high throughput screening and selectivity profiling. With over 150 recombinant ion channel cell lines, SB's ion channel discovery team combines one of the largest commercial sources of ion channel reagents with high throughput electrophysiology to offer a complete resource for drug discovery screening, lead optimization and selectivity.

Semrock, a business unit of IDEX Health & Science 300

3625 Buffalo Road, Suite 6
Rochester, NY 14624
www.semrock.com

Semrock, a business unit of IDEX Health & Science, 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.

Company Name Booth Number

SENSAPEX 258

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www.sensapex.com

The uM-workstations for electrophysiology, imaging and optogenetics are demonstrating, featuring ZERO DRIFT uMp micromanipulators and uMs microscopes: -Smooth, stable and drift free positioning -Compact, scalable and cost-efficient multiple manipulator systems -20 mm of movement, 5 nm resolution, 100 nm repeatability -Fast piezo thrusts for intracellular recordings -Battery-operated system (rechargeable) -Millisecond synchrony and open source SDK for PC control.

Siskiyou Corporation 704

110 SW Booth Street
Grants Pass, OR 97526
www.siskiyou.com

Siskiyou Corporation manufactures micromanipulators, motion control devices, tissue slicers, translation stages, probe clamps, construction hardware, adjustable platforms, tilt tables, and other laboratory equipment for microbiological research and general experimenting. Siskiyou Corporation carries a full line of micromanipulators: coarse manual, Huxley style, hydraulic, and motorized.

Sophion Bioscience A/S 247

Baltorpvej 154
Ballerup, 2750
Denmark
www.sophion.com

Sophion was founded almost 20 years ago by a group of passionate electrophysiologists, with the shared purpose of making patch clamping objective and independent of user skills to provide faster, more accurate and objective patch clamping results. With our products QPatch and Qube we cover most throughput needs and provide the user with real whole-cell patch clamp data based on true gigaseals. With our technical, biological and application support we help our partners achieving their targets and ensuring uncompromised data quality in a user-friendly environment from assay setup to data analysis.

Springer Nature 608

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Strex 402

10060 Carroll Canyon Road, Suite 100
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strexcell.com

Strex manufactures innovative biological research instruments. Our most popular products are our Cell Stretching Systems for cell culture, uniaxial, and biaxial stretch. These devices mimic mechanical cell strain in cell cultures and create an environment similar to in vivo conditions. The most common cell or tissue types are: endothelial cells, cardiomyocyte, blood vessel tissue, heart tissue, bladder tissue and lung tissue/cells. Microscope mountable options are available as well. We also provide an innovative LN2-free Controlled Rate Freezer for benchtop use. Contact us for more information.

Company Name Booth Number

Sutter Instrument 201

One Digital Drive
Novato, CA 94949
www.sutter.com

This year we will be showcasing several exciting products. The dPatch® is a dual headstage integrated digital patch clamp amplifier with built-in digitizer and comprehensive SutterPatch software. The award winning Lambda OBC Optical Beam Combiner is a patented concept for combining separate light sources with different spectra into a single output beam. The BOB is a flexible open architecture upright microscope that can be configured for your research needs. In addition, the stainless steel TRIO manipulator provides greater stability.

T&T Scientific Corporation 256

201 E Moody Avenue
Knoxville, TN 37920
www.ttscientific.com

NEW 2019

T&T Scientific Corporation produces low-cost, fully assembled, and single-use liposome extrusion devices that simplify the process of preparing liposomes for research laboratories, manufacturing facilities, and clinical settings. T&T Scientific's NanoSizerTM extruders are provided fully assembled, ready to use, and they do not require any assembly or cleaning which enables a more efficient process. NanoSizer extruders are single-use which means they are clean every time, eliminating the risk of contamination. Automated NanoSizer extrusion equipment is transforming liposome production of a small and large volume of solutions alike, simplifying scale-up from research and development through to final large scale manufacturing.

Company Name Booth Number

TA Instruments 517

159 Lukens Drive
New Castle, DE 19720
www.tainstruments.com

At TA Instruments we believe in offering solutions through quantitative understanding and multi-parameter analysis. By measuring native systems via their heat production, we enable scientists to address both questions of "how stable" and "how fast", two tenets of a chemical system. Our Affinity ITC and Nano DSC, both with automated options, are high precision calorimeters for label-free measurements of binding interactions, biomolecular structure and stability. We also offer the ultra-sensitive TAM IV isothermal calorimeter, a configurable platform with applications ranging from shelf-life stability for small molecule and biologics, amorphicity content, microbial activity, and more. Visit us to learn about the very latest in our applications using native assays.

The Company of Biologists 518

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Cambridge, Cambridgeshire CB24 9LF
United Kingdom
www.biologists.com

NEW 2019

The Company of Biologists is a not for profit publishing organisation dedicated to supporting and inspiring the biological community. The Company publishes five specialist peer-reviewed journals: Development, Journal of Cell Science, Journal of Experimental Biology, Disease Models & Mechanisms and Biology Open. It offers further support to the biological community by facilitating scientific meetings and communities, providing travel grants for researchers and supporting research societies.

The Journal of Physiology 717

30 Farringdon Lane
London, EC1R 3AW
United Kingdom
jp.physoc.org

The Journal of Physiology publishes groundbreaking research that elucidates new physiological principles or mechanisms. It publishes papers in all areas of physiology, with an emphasis on human and mammalian physiology, including work at the molecular level, the level of the cell membrane, single cells, tissues or organs and systems physiology. The Journal is FREE to publish in for all authors, has no page or figure limits, and is compliant with all major public access mandates including NIH. An Open Access option is available. The 2017 Two-Year Impact Facot is 4.540.

Thorlabs 103

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www.thorlabs.com

Thorlabs has been proud to serve the photonics industry for over 25 years. With increasing use of photonics technologies in the life sciences, we have grown our capabilities to serve the life science and biomedical markets with purpose-built components and systems. Thorlabs offers multiphoton, OCT, and widefield imaging systems, as well as cameras, lasers, optics, fiber, electronics, and mechanical components. Our offices, located in 9 countries, are focused on providing same-day shipping of stocked components, a fast response to customer inquiries, and fast turnaround on custom needs.

TMC 304

15 Centennial Drive
Peabody, MA 01960
www.techmfg.com

TMC designs and manufactures a complete line of floor vibration isolation systems and laboratory tables for biophysics research. Products include the world-renowned CleanBench vibration isolated lab table, and the Everstill active vibration isolation benchtop platform, as well as the brand new CleanBench Aktiv lab table that combines pneumatic and active vibration isolation for unprecedented performance. For large precision instruments like electron microscopes TMC offers the STACIS family of active piezoelectric solutions that help keep these instruments inside their vibration specifications.

Tokai Hit Co Ltd 335

306-1 Gendoji-cho
Fujinomiya-shi, Shizuoka 418-0074
Japan
www.tokaihit.com

Happiness for Cells, Success for Researchers For BPS 2019, we will introduce: - New Microscope Environmental enclosure for temperature control - Media-exchange-system for various applications with TTL operation & high-quality - IonOptics OEM Electrostimulation chamber system Various system and customization are possible with Tokai Hit to support successful cell-culturing. They are unique and only available from Tokai Hit. A fail-proof Incubation/Stress-Free Quality/Intuitive operation Please visit our booth 335 and see our new devices.

Tokyo Chemical Industry Co Ltd 111

NEW 2019

9211 N Harborgate Street
Portland, OR 97203
www.TCIchemicals.com

TCI is a leading global manufacturer and supplier of specialty chemicals to the chemical, pharmaceutical, biotech, electronic, and environmental industries. Drawing on over 80 years of synthetic organic chemistry experience, TCI develops new technology that produces rare and novel compounds. Our current catalog lists over 28,000 products for use in research and production. Our manufacturing capabilities include multistep synthesis and continuous production from milligram to ton scale for custom and contract research services. Visit our website www.TCIchemicals.com today!

Tomocube Inc 349

2nd Floor, KHE Building, 48 YUuseong-daero
Daejeon, 34109
South Korea
www.tomocube.com

Tomocube is dedicated to delivering products that can enhance biological and medical research via novel optical solutions that can assist Tomocube in understanding, diagnosing, and treating human diseases. Current optical microscopes only provide users with a 2D view of their sample. To get a 3D view, users must use expensive and invasive electron or confocal microscopes, which require extensive pre-preparation of samples and are not amenable to dynamic samples such as live cells. Our platform enables researchers to measure nanoscale, real-time, dynamic images of individual living cells without the need for sample preparation.

TOPTICA Photonics 430

5847 County Road 41
Farmington, NY 14425
www.toptica.com

TOPTICA is a privately held technology driven company, which develops, produces and sells diode and ultrafast fiber lasers for scientific and industrial applications. The company sets its own challenge to regularly present exciting product innovations and world firsts.

tousimis 719

NEW 2019

2211 Lewis Avenue
Rockville, MD 20851
www.tousimis.com

Tousimis is a globally recognized manufacturer of highly reliable CPD systems. We are based in the Washington, DC area with global sales and service support. We have over four decades' experience designing and fabricating our CPD systems. Our CPD process reproducibly preserves micro & Nano 3D structure. Current applications include: Biological, MEMS, Gel, Nano Particle, C-Nanotubes, Graphene, and others. Please visit and learn about how we can benefit your Biophysical research!

Company Name Booth Number

Warner Instruments 438

1125 Dixwell Avenue
Hamden, CT 06514
www.warneronline.com

Warner Instruments manufactures a large selection of products ideal for biophysics and electrophysiology, from microscopy-based manual patch clamp systems to high-throughput ion channel screening platforms. Imaging/recording chambers, perfusion and temperature control systems are our specialties. We also offer an extensive line of intra and extracellular amplifiers and planar lipid bilayer workstations. New in 2019 is our touch screen enabled Valve Control System. The Smart Ephys family of products, encompassing the collective expertise of Warner, HEKA, Multi Channel Systems and TBSI offers complete solutions for all areas of electrophysiology research. Whether you work with oocytes, iPSCs, slices or cardiomyocytes, we have the tools to help you improve and accelerate the pace of discovery.

Wyatt Technology Corporation 617

6330 Hollister Avenue
Santa Barbara, CA 93117
www.wyatt.com

Wyatt Technology is the recognized leader in light scattering instrumentation and software for determining absolute molar mass, size, charge and interactions of macromolecules and nanoparticles in solution. Wyatt provides in-line multi-angle static light scatteringSEC-MALS; field flow fractionation (separation with no stationary phase)- FFF-MALS; composition gradients for interaction analysis - CG-MALS; high-throughput dynamic light scattering-DLS; high-sensitivity electrophoretic mobility-MP-PALS; differential refractometry, and differential viscosity.

Company Name Booth Number

Xeonics 711

7 Pomeroy Lane, Unit #3
Amherst, MA 01002
www.xenocs.com

Xenocs makes SAXS/WAXS instruments for protein, RNA, lipid, micelles and other nano scale materials. For protein conformation, SAXS can give you the envelope of your protein. For protein folding, the Kratky plot is extremely sensitive. The BioXolver can be used for automated measurements from a 96-well plate using 5 uL of material. The BioXolver can also measure SEC-SAXS for highly monodisperse fractionated protein sample measurements. With a very low Qmin (0.006 A-1), variable detector distance, the BioXolver is a workhorse. Xenocs brings SAXS/WAXS measurements to your lab.

ZenBio Inc 718

NEW 2019

3200 East Highway 54, Suite 100
Research Triangle Park, NC 27709
www.zenbio.com

Zen-Bio is a leading global provider of advanced cell-based solutions and services to the life science, cosmetics, and personal care communities. The company, founded in 1995, was a pioneer in adipose derived stem cells (ASCs) and continues this legacy by providing cutting edge human primary cell culture products and services. Our mission is to provide the highest quality human cell systems, reagents, blood products and contract services to our research partners; to develop and commercialize innovative research tools and to leverage our expertise through research and development.

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Thematic Meetings 2019

Multiscale Modeling of Chromatin: Bridging Experiment with Theory

Les Houches, France
March 31–April 5, 2019

Quantitative Aspects of Membrane Fusion and Fission

Padova, Italy
May 6–10, 2019

Revisiting the Central Dogma of Molecular Biology at the Single-Molecule Level

Lima, Peru
July 15–18, 2019

Abstract Submission Deadline: March 8, 2019
Early Registration Deadline: April 5, 2019

Biology and Physics Confront Cell-Cell Adhesion

Aussois, France
October 14–18, 2019

Abstract Submission Deadline: June 14, 2019
Early Registration Deadline: June 14, 2019

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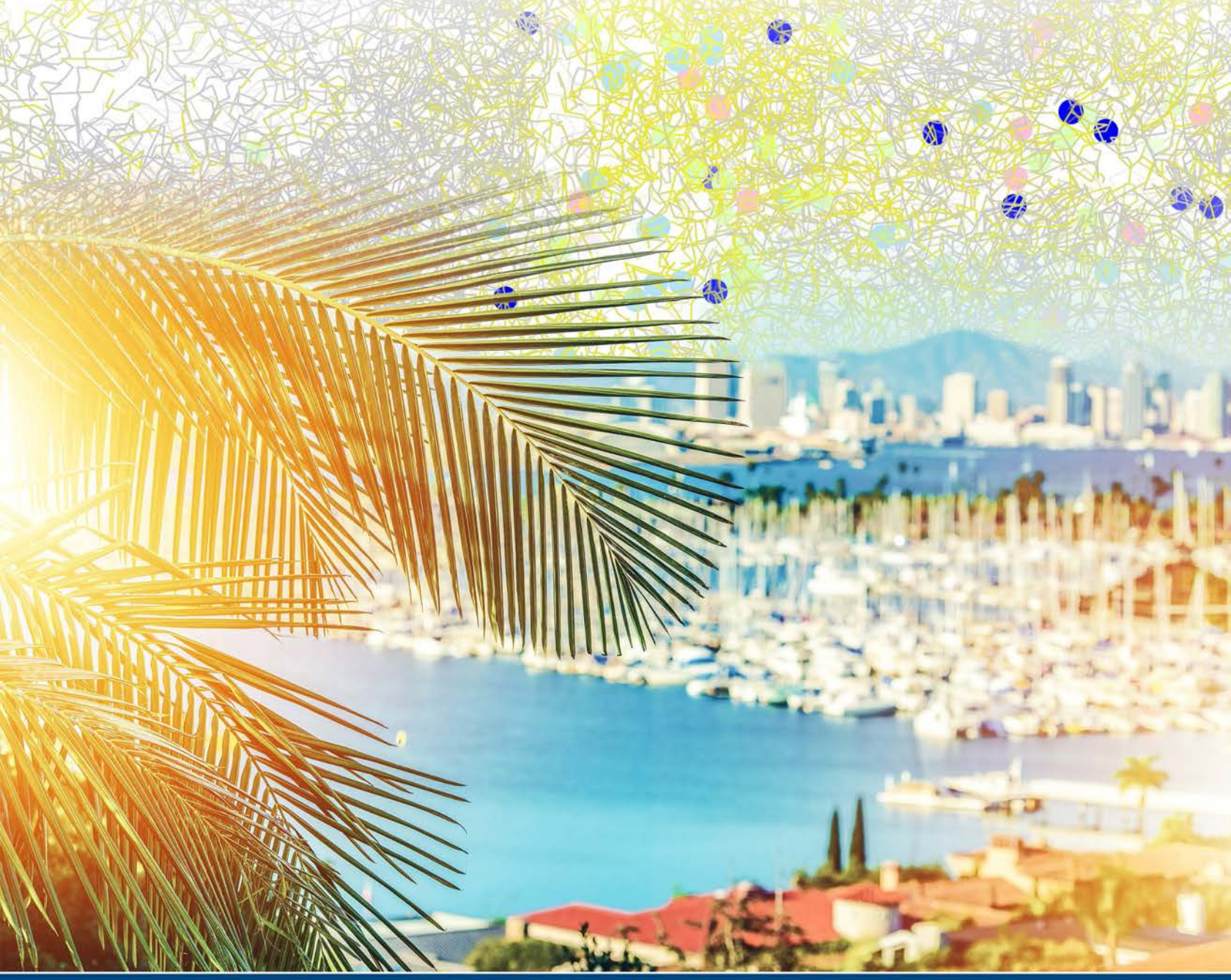
2020

64th Annual Meeting of the Biophysical Society

February 15–19, 2020 ▪ San Diego, California



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